Well Completion Report

Injection Well No. 1 Construction Completion Report Water/Wastewater Treatment Plant

November 2001

HAZEN AND SAWYER
Environmental Engineers & Scientists

THE CITY OF COOPER CITY
Someplace Special

City of Cooper City Utility Department

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Hazen and Sawyer, P.C.
2101 Corporate Blvd.
Boca Raton, FL 33431
561 997-8070
Fax: 561 997-8159

November 21, 2001

Joseph R. May, P.G.
STATE OF FLORIDA
Department of Environmental Protection
Groundwater Section - UIC
400 North Congress Avenue
West Palm Beach, Florida 33401

Construction Completion Report
Concentrate Disposal Well Construction
City of Cooper City
DEP Permit No. 0153012-001-UC

Dear Mr. May:

In fulfillment of the above-referenced permits and Florida Administrative Code Rule 62-528, Hazen and Sawyer, P.C. (H&S) and Water Technology Associates are pleased to submit the attached Concentrate Disposal Well Construction Completion Report on behalf of the City of Cooper City. The wells are located at the Cooper City Water / Wastewater Treatment Plant (WTP/WWTP). The report presents the results of the construction and testing performed during the drilling of the concentrate disposal well (IW-1) and the associated deep dual-zone monitor well (MW-1).

The drilling and testing program of IW-1 and MW-1 provides reasonable assurance of the presence of confinement between 1,770 and 3,000 feet below pad level (bpl), and a suitable lower monitoring zone above the confinement. The presence of favorable geologic conditions enables the use of the injection wells for disposal of concentrate and treated effluent at the WTP/WWTP in accordance with existing State and Federal Underground Injection Control regulations.

The well construction and testing have been completed, however, the surface equipment installation is still under construction. It is anticipated that the surface equipment will be complete within a few months. Surface equipment as-built drawings and the operation and maintenance manual will be submitted at that time along with a request to begin operational testing of the wells.

We request that the Department begin review of this completion report to expedite approval of operational testing which will enable the County to use the wells.

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Hazen and Sawyer, P.C.
2101 Corporate Blvd.
Boca Raton, FL 33431
561 997-8070
Fax: 561 997-8159

Thank you in advance for your timely response to this request. Please feel free to contact us should you have any questions.

In accordance with Rule 62-528.340(4) FAC, we certify under penalty of law that this document and all attachments were prepared under our direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on our inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of our knowledge and belief, true, accurate, and complete. We are aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

HAZEN AND SAWYER, P.C.

Michael W. Wengrenovich, P.E.
Registration No. 34939

11-21-01

Albert Muniz, P.E.
Registration No. 35587

John Largey

WATER TECHNOLOGY ASSOCIATES, INC.

11.21.01

James A. Wheatley, P.G.
Registration No. 530

CITY OF COOPER CITY

George A. Haughney, P.E.
Utilities Director

Very truly yours,

HAZEN AND SAWYER, P.C.

Albert Muniz, P.E.
Vice President

Attachment

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CITY OF COOPER CITY
WATER / WASTEWATER TREATMENT PLANT
CONCENTRATE DISPOSAL WELL CONSTRUCTION

Distribution List

Joseph R. May, P.G.
State of Florida
Department of Environmental Protection
Groundwater Section - UIC
400 North Congress Avenue
West Palm Beach, Florida 33401
Telephone: (561) 681-6691

Mark A. Silverman, P.G.
State of Florida
Department of Environmental Protection
Groundwater Section - UIC
400 North Congress Avenue
West Palm Beach, Florida 33401
Telephone: (561) 681-6695

Richard Deuerling, P. G.
State of Florida
Department of Environmental Protection
Bureau of Groundwater Protection - UIC
2600 Blair Stone Road
Tallahassee, Florida 32301
Telephone: (850) 921-9417

Ron Reese, P.G.
United States Geological Survey
Water Resources Division
9100 Northwest 36th Street
Suites 106 and 107
Miami, Florida 33178
Telephone: (305) 717-5821

Steven D. Anderson, P.G.
South Florida Water Management District
Post Office Box 24680
3301 Gun Club Road
West Palm Beach, Florida 33416
Telephone: (561) 753-2400, Ext. 4726

Garth D. Hinckle, Jr., P.E.
Broward County - Department of
Natural Resources Protection
218 Southwest First Avenue
Fort Lauderdale, Florida 33301
Telephone: (954) 519-1256

Nancy Marsh
Groundwater / UIC Section
USEPA, Region IV
61 Forsyth Street, Southwest
Atlanta, Georgia 30303-3104
Telephone: (404) 562-9450

George A. Haughney, P.E.
Donald Long
City of Cooper City
11791 Southwest 49th Street
Cooper City, Florida 33330
Telephone: (954) 434-5519

Albert Muniz, P.E.
Hazen and Sawyer, P.C.
2101 Corporate Boulevard
Boca Raton, Florida 33431
Telephone: (561)997-8070

Michael W. Wengrenovich, P.E.
Hazen and Sawyer, P.C.
4000 Hollywood Boulevard
Seventh Floor, North Tower
Hollywood, Florida 33021
Telephone: (954) 987-0066

James A. Wheatley, P.G.
Water Technology Associates, Inc.
513 U.S. Highway 1, Suite 202
North Palm Beach, Florida 33408
Telephone: (561) 844-7436

Concentrate Disposal Well
Construction Completion Report

City of Cooper City
Water/Wastewater Treatment Plant

November 2001

HAZEN AND SAWYER
Environmental Engineers & Scientists

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1.0 Injection Well Program

1.1 Introduction

On March 14, 2000, Cooper City was issued Permit No. 0153012-0015-UC by the Florida Department of Environmental Protection (FDEP) for the construction of one 14-inch diameter Class-1 injection well (IW-1) and associated dual-zone deep monitor well (MW-1). A copy of the permit is included in Appendix A. The wells are located at the Cooper City Water Treatment Plant/Wastewater Treatment Plant (WTP/WWTP). A location map of the project site is presented in Figure 1.

The wells were constructed in accordance with Contract Documents prepared by Hazen and Sawyer (H&S) entitled Contract Documents for the Construction of the Concentrate Disposal Well, dated September 13, 2000. These plans and specifications for drilling one injection well and one dual zone monitor well formed the basis of a contract between the Cooper City and Youngquist Brothers, Inc. (referred to hereinafter as "the Contractor").

H&S was retained by the City of Cooper City (the City) to provide construction management services for the project. H&S utilized the services of Water Technologies Associates, Inc. (WTA), to provide partial field observation and certain hydrogeologic services. The H&S and WTA team is hereinafter referred to as "the Engineer". On-site supervision was provided by the Engineer during testing, geophysical logging, casing installation, and cementing operations. Construction phase responsibilities of the Engineer included obtaining FDEP approval on key elements of the project and reporting project progress weekly to the Technical Advisory Committee (TAC) which included members from the FDEP, the Broward County Department of Planning and Environmental Protection (BCDPEP), the South Florida Water Management District (SFWMD) and the United States Geological Society (USGS). The United States Environmental Projection Agency (EPA) is copied on TAC correspondence, but is not a member of the TAC.

1.2 Purpose

The purpose of this report is to summarize the information obtained during the construction and testing of IW-1 and MW-1. The report describes the methods used to analyze the data, documents the approved casing setting depths and monitoring zones for MW-1, demonstrates mechanical integrity of the injection well, identifies confinement above the injection zone, and verifies that the well is suitable for the designed pumping rates to allow long term operational testing of the injection well.

1.3 Elements of the Injection Well Contract

The project specifications contained provisions for the construction and testing of the one injection well and the associated monitor well. The well design was based on the data obtained from other wells in the area. The 14-inch diameter injection well was constructed 3,400 feet below land surface. The deep dual-zone monitor well (also called the monitor well) was constructed to a total depth of 1,950 feet.

Provisions of the contract included:

- Monitoring depth, weight on bit, rate of penetration, inclination and drilling fluid during the drilling of the wells;
- Collecting and logging geologic cuttings (samples), to confirm lithologic boundaries and gross lithologic properties;
- Collecting and analyzing conventional cores to complement the geologic logging and to identify hydrologic properties of the lithologic formations;
- Conducting the following geophysical logs at various points during the well construction: X-Y caliper, gamma ray, fluid conductivity, dual induction, borehole compensated sonic/VDL, fluid resistivity, temperature, flowmeter and borehole televiewer;
- Conducting an open hole video (television) survey;
- Conducting straddle packer and single packer tests in discrete zones of the injection well pilot hole in order to determine the hydrologic properties of lithologic units;
- Collecting and analyzing of water samples taken during the packer tests to determine water quality variations with depth;
- Conducting casing cement top temperature logs and cement bond logs on various casing strings during the cementing operations;
- Collecting and analyzing background water samples from the monitoring zones and the injection zones;
- Conducting a hydrostatic pressure test, video survey and radioactive tracer survey on the final casing string to determine mechanical integrity of the injection well; and
- Conducting a short term injection test in the completed injection well to demonstrate the ability of the injection well system to accept effluent at the design flow rate.

2.0 Well Drilling and Construction

2.1 Well Construction

The injection well was constructed prior to the construction of the dual-zone monitor well (i.e., MW-1). The monitor well was constructed approximately 70 feet east of IW-1. The location of these wells are presented in Figure 2. During the drilling of the wells, geophysical logging and testing were performed. Well construction was in accordance with the FDEP construction permit. Refer to Appendix A for a copy of the permit.

The drilling of IW-1 and MW-1 proceeded generally as identified in the project specifications. The project specifications identified an outline of a drilling plan with the intention of making modifications to the plan as site specific conditions warranted. The plan included setting steel casing at selected depths in order to maintain the formation during drilling and to facilitate the proposed testing. Drilling activities are summarized in the following outlines, which identify nominal depths.

> To consistently record downhole depth, all well measurements are recorded in terms of depth below pad level (bpl). Actual depths of casings are identified in the profile of the completed well IW-1 and MW-1 presented in Figures 3 and 4, respectively. The injection well was constructed as generally follows:

- Drill a nominal 12¼-inch diameter pilot hole to approximately 250 feet bpl using the mud rotary method.
- Backplug pilot hole with cement.
- Drill a nominal 58-inch diameter borehole to approximately 250 feet bpl using the mud rotary method.
- Set and cement 50-inch diameter steel casing to a depth of 250 feet bpl.
- Drill a nominal 12¼-inch diameter pilot hole to approximately 1,000 feet bpl using the mud rotary method
- Drill a nominal 50-inch diameter borehole to approximately 1,000 feet bpl using the mud rotary method.
- Set and cement 42-inch diameter steel casing to a depth of 1,000 feet bpl.
- Drill a nominal 12¼-inch diameter pilot hole to approximately 2,030 feet bpl using the reverse air method and coring at depths selected by the Engineer.
- Backplug pilot hole with cement.

- Drill a nominal 42-inch diameter borehole to approximately 2,000 feet bpl using the reverse air method.

- Set and cement 34-inch diameter steel casing to a depth of 2,000 feet bpl

- Drill a nominal 12¼-inch diameter pilot hole to approximately 3,000 feet bpl using the reverse air method and coring at depths selected by the Engineer.

- Backplug pilot hole with cement.

- Drill a nominal 34-inch diameter borehole to approximately 2,975 feet bpl using reverse air method.

- Drill a nominal 24-inch diameter hole to approximately 3,400 feet bpl using reverse air method.

- Set and cement 24-inch diameter steel casing to a depth of 3,000 feet bpl.

- Set in place a 14-inch diameter steel tubing and packer assembly at 2,955 feet bpl, filling the annular space of the final casing with annular fluid including rust inhibitor.

The drilling of MW-1 proceeded generally as identified in the project specifications. Drilling activities are summarized in the following outline. The depth of the monitor zones was based on the data collected during the drilling and testing of IW-1. The selection of the monitor zone depths is discussed later in the report. The monitor well was constructed as generally follows:

- Drill a nominal 32-inch diameter borehole to approximately 250 feet bpl using the mud rotary method.

- Set and cement in place a 24-inch diameter steel casing at 250 feet bpl.

- Drill a nominal 24-inch diameter borehole to approximately 1,710 feet bpl using the mud rotary method.

- Set and cement in place 16-inch diameter steel casing at 1,660 feet bpl using cement baskets.

- Drill a nominal 16-inch diameter borehole to approximately 1,850 feet bpl using the mud rotary method.

- Drill a nominal 16-inch diameter borehole to approximately 1,950 feet bpl using the mud rotary method.

- Set and cement in place 6⅝-inch diameter steel casing at 1,900 feet bpl using cement baskets, filling the annular space of the final casing with cement from 1,900 to 1,710 feet bpl.

- Drill out cement plug.

The upper monitor zone (UMZ) was established between 1,660 and 1,710 feet bpl and the lower monitor zone (LMZ) between 1,900 and 1,950 feet bpl. The upper outside 1,710 feet of the 6⅝-inch diameter casing was coated with a corrosion resistant epoxy-phenolic compound. An as-built profile of the completed MW-1 is presented in Figure 4.

2.2 Data Collection

Data was collected during the construction of the wells using various methods and procedures as described in this Section. Independent testing and laboratory analyses performed by subcontractors of Youngquist Brothers, Inc. included the following: geophysical logging was performed by Florida Geophysical Logging, Inc., water quality analyses were performed by Sanders Laboratories, and testing of rock cores was performed by Ardaman & Associates, Inc. and Core Labs. Additional water quality analyses were performed by Cooper City WTP/WWTP Laboratory.

Except as noted, measurements of footage in the wells are referenced to the pad level. The National Geologic Vertical Datum (NGVD) elevation of IW-1 and MW-1 are 8.8 and 8.5 feet, respectively.

Daily progress and activities were monitored and recorded. The Engineer prepared daily progress reports during well construction. The Contractor prepared independent daily reports. In addition to recording daily drilling progress, the reports included other pertinent drilling information such as drilling speed, weight on the drill bit, penetration rates, and relative hardness of the formations. Problems encountered during drilling were observed and noted. All activities related to the installation of well casings, cementing or other materials, as well as their quantities, were recorded. Detailed descriptions of test procedures and data collection, including results of inclination surveys to verify hole straightness, were recorded. The length and configuration of tools introduced into the borehole were noted. Copies of the daily and weekly progress reports were transmitted to the TAC members on a weekly basis. Graphs of the drilling weight on bit (WOB) and rate of penetration (ROP) are presented in Appendix B.

An inclination survey was conducted every 90 feet in all pilot and reamed holes to confirm straight hole requirements for the wells. The results from the inclination surveys are presented in Appendix C.

2.3 Geologic Samples

Samples of drilled cuttings were collected and analyzed from the drilling of the injection well and monitor well pilot holes. Circulation time (the time required for drilled cuttings to reach the surface) was calculated regularly to ensure that accurate sample depths were recorded. After initial examination, the Engineer's on-site personnel described the samples. A geologic description of each sample was entered into a log. The cuttings from the confining interval were classified in accordance with the scheme of Dunham (1962). These logs are presented in Appendix D. Two sets of drill cuttings were bagged in 10-foot intervals. After the wells were completed, the Contractor sent one set of these samples to the Florida Bureau of Geology in Tallahassee, Florida.

2.4 Cores

During the drilling of the injection well pilot hole, conventional core samples were collected. These samples were reviewed and select samples were sent to an independent laboratory for analysis. The results of the analyses are used to demonstrate confinement. Core depths were selected by the Engineer primarily on the basis of reviewing and interpreting information from other nearby wells and information obtained during the drilling of the injection well including weight on bit, rate of penetration and lithology. The Contractor used 4-inch inside diameter core barrels for this project. Each core was approximately ten feet long. Cores from IW-1 were taken at the depths identified in Table 1.

Samples from each core were selected and sent for analysis to an independent laboratory, Ardaman and Associates. These samples were tested for several parameters including permeability, porosity and specific gravity. Core laboratory analysis results and geologic core descriptions are presented in Appendix E. A summary of the hydraulic conductivity from the laboratory analyses of the cores is presented in Table 2.

2.5 Geophysical Logs

At the completion of each stage of hole drilling, geophysical logs were conducted. The purpose of these logs was to assist in casing seat selection, identify confining sequences and to help identify the location of monitoring zones. The geophysical logs performed, including a brief description of the information provided by the logs, are as follows:

- X-Y Caliper - Identification of hole diameter and hole geometry.
- Gamma Ray - Measurement of the natural gamma ray radiation of the formation, used as a tie-in between logs.
- Dual Induction Log - A resistivity log. Identifies differentiation between limestone and dolomite beds, and, along with the gamma ray log, is useful in the correlation of lithologic units.
- Borehole Compensated Sonic Variable Density Log (VDL) - Identification of the confining sequences, as well as identification of zones which could cause problems during cementing.
- Flow Meter Surveys - Determination of where fluid may be entering or exiting the borehole.
- Temperature - Provides a profile of static and dynamic temperature of the borehole, may be useful in determining changes in fluid movement.

- Borehole Televiewer (BHTV) - Determination of where structural features (bedding planes, fractures, vugs and voids) are located.

- Cement Top Temperature - Verification of the annular space fill-up after each cementing stage.

- Cement Bond Log - Used to assess the quality of the bond between the inner casing and the cement grout around the casing. The resulting curve of the log is a function of casing size and thickness, cement strength and thickness, degree of cement bonding and tool centering.

Geophysical logs were transmitted to TAC members on a weekly basis during construction. Geophysical logs are presented in Appendix F and are boxed separately. Box 1 contains logs from IW-1 and Box 2 contains logs from MW-1. For convenience, many of the same type of logs were merged together (e.g. the dual induction log for MW-1 presented in Box 2 is continuous from 251 to 1,850 feet bpl). Also in Appendix F is an index of the logs performed and a tabulation of the logs included in each box.

During the geophysical logging and testing of the well, the Engineer was on site to witness the logging and verify quality control procedures. The quality control maintained during the testing program was, to a large extent, provided by Florida Geophysical Logging, Inc. Industry standard quality control measures were observed and are documented on the logs. Detailed information of the tool calibration program utilized by Florida Geophysical Logging is also included in attached Appendix F.

2.6 Video Surveys

Video surveys were conducted and recorded in VHS format in the injection well pilot holes from 1,000 to 3,410 feet bpl and in the injection casing from land surface to 2,955 feet bpl. Video surveys were also performed on both monitoring zones of MW-1. Color video surveys were made with the camera lens in two positions - downhole with a radial view and uphole with a horizontal rotating position. Air development was used to displace suspended solids from the well prior to performing the television survey. The open hole survey allowed the reviewer to visually inspect the formations encountered in the borehole, as well as to observe potential fractures and water-producing zones. Acceptable picture clarity was obtained in the surveys. A log describing the formation and structural features observed in the open hole of the injection well and monitor well are presented in Appendix G. A copy of video tape survey is also included in Appendix G, however, for convenience, the tapes are boxed separately with the geophysical logs. Injection well IW-1 tapes are included in Box 1 and MW-1 tapes are included in Box 2.

2.7 Packer Tests

Straddle packer tests were performed after pilot hole construction of the injection well. Two inflatable packers (plugs) are set in the borehole and water is pumped from between the packers. Packer tests were conducted at intervals to either support demonstration of confinement, to determine water quality so as to define the base of the Underground Source of Drinking Water

(USDW), or to identify potential monitoring zones. The packers were used to isolate zones to perform drawdown and recovery tests. The straddle packer intervals were selected based on reviewing and interpreting information from geophysical logs, lithology, cores and other packer tests. Eight straddle packer tests were performed in IW-1.

One of the straddle packer tests performed in the injection well identified an acceptable monitoring zone, the upper monitoring zone, for MW-1. The selection of the depth of the lower monitoring zone was revised and as a result, a single packer test was performed in the MW-1 at the proposed lower monitor zone. In this test, a single inflatable packer is set in the borehole and water is pumped from the open hole below the packer.

The packers were lowered into the pilot hole to the selected interval on the 7⅝-inch (outside) diameter drill pipe, inflated and seated against the formation. A 4-inch diameter submersible pump was lowered into the drill pipe approximately 200 feet to introduce stress on the isolated interval. Prior to starting the tests, each zone was developed free of any drilling fluids by means of air lifting and pumping until the specific conductance stabilized. Development time is identified in Table 3. The isolated zone was then allowed to recover from development before beginning the pumping test. During drawdown and recovery, water level measurements were obtained using a data logger attached to a pressure transducer (In-situ Hermit 2000-C). In addition to the hermit data logger, a battery-operated downhole pressure recorder was used for backup and quality control. The pressure transducer was lowered to a known depth. The method of analysis used on the data collected and recorded during the packer tests was the Modified Non-Equilibrium Formula derived by Cooper and Jacob (1946). The equation of the Cooper-Jacob method is as follows:

where:

$$T = \frac{264Q}{\Delta s}$$

T = coefficient of transmissivity (gpd/ft)
Q = pumping rate (gpm)
Δs = change in drawdown over one log cycle (ft)

The calculated hydraulic conductivity from the packer tests are presented in Table 4. The raw packer test data and data plots are presented in Appendix H. Based on the stabilization of the fluid specific conductance prior to starting the packer tests and the drawdown characteristics of the data shown in this Appendix, all of the hydraulic conductivity values presented from the packer tests are considered valid.

2.8 Packer Test Water Quality Samples

Water samples obtained during the packer tests were analyzed in the field for temperature and conductivity. These water samples were collected during the drawdown phase of the packer test and sent to an independent laboratory for additional analysis. The samples were analyzed and the results are presented in Appendix I. A compilation of the packer test water quality data is presented in Table 5. Log derived water graphs were prepared to compare to the packer test water quality test. This graph shows good correlation, and is presented in Appendix J.

2.9 Casing

Casing heat numbers stamped on the casing were verified with the mill certificates prior to running casing in the hole. Certified welders assembled random length casing into approximate 80-foot lengths in the on-site staging area. Copies of the casing mill certificates are presented in Appendix K. Cementing plans for each casing string were proposed by the Contractor and reviewed by the Engineer prior to cementing. After accepting the proposed plan, casing was set and cemented. A copy of the cement reports for each casing run is presented in Appendix L.

Final casing installations were pressure tested. The monitor well 16 and 6⅝-inch casings were pressure tested as identified below. The 24-inch injection well casing was tested as part of the demonstration of mechanical integrity and are described in Section 4, Final Testing.

On April 30, 2001, the monitor well 16-inch injection well casing was internally pressurized to 90 psi. No pressure change was observed over the 60-minute test period, which is within the allowable change. A copy of the test gauge certification records and certified results of the hydrostatic pressure test are contained in Appendix M.

On May 10, 2001, the monitor well 6⅝-inch injection well casing was internally pressurized to 73.5 psi. A pressure increase of 1.5 psi was observed over the 60-minute test period. This increase represents a 2.0 percent change in the original pressure, which is within 5.0 percent maximum allowable change. A copy of the test gauge certification records and certified results of the hydrostatic pressure test are contained in Appendix M.

On June 1, 2001 the annulus between the 24-inch casing and the 14-inch tubing was pressurized to 155 psi. A pressure decline of 2.25 psi was observed over a sixty-minute test period. This decline represents a 1.5 percent change in the test gauge inspection certification records and certified results of the hydrostatic pressure test are attached. This test was witnessed by James A. Wheatley, P.G., and Len Fishkin from FDEP.

2.10 Cement Bond Logs

Cement bond logs are used to assess the quality of the bond between the casing and the cement grout. The resulting curve of the log is a function of casing size and thickness, cement strength and thickness, degree of cement bonding and tool centering.

The travel time curve (left log track) is run to determine if the tool is properly centered. The critical travel time is the time recorded when the tool is absolutely centralized in high signal areas, areas with no cement (free pipe). Factors affecting the travel time curve are cycle skipping that can be caused by fast formation arrivals and formations that are so dense they actually have a faster transit time than the casing. The basic transit time of steel is slower than some dolomites and limestones. On the amplitude curves (center log track), a time gate is set at the time corresponding to the expected arrival of the casing signal, and the amplitude of the signal in that gate is recorded. A high amplitude indicates a larger casing signal, and therefore a poorer cement bond; a low amplitude indicates a good bond.

The variable density display (left log track) displays the entire wave signal. If there is no bond, an arrival is seen at the time corresponding to the casing velocity. As the cement becomes thicker and stronger (compressive strength), the casing signal becomes weaker.

On March 23, 2001, a cement bond log was performed in the injection well 24-inch casing. From the travel time log it can be seen that good tool centralization was maintained for the entire log. The variable density display shows no strong casing signal on any section of the 24-inch casing. The cement bond log conducted in IW-1 demonstrated that there is a good cement seal around the 24-inch diameter casing and that there are no channels or conduits that would allow fluid movement adjacent to the casing. A copy of the log is included in Appendix F.

On April 23, 2001, a cement bond log was performed in the monitor well 16-inch casing. From the travel time log, it can be seen that good tool centralization was maintained for the entire log. The amplitude curve from the casing seat to 400 feet bpl shows most readings not over 15 millivolts, indicating an excellent bond. The variable density display shows no strong casing signal on any section of the 16-inch casing. The cement bond log conducted in the dual-zone monitoring well 16-inch casing demonstrate that there is a good cement seal around the 16-inch diameter casing and that there are no channels or conduits that would allow fluid movement adjacent to the casing. A copy of the log is included in Appendix F.

2.11 Tubing and Packer

A positive seal packer was installed in the 24-inch casing at a depth of 2,955 feet bpl. The 14-inch injection tubing is seated on the packer and is centered by centralizers. This configuration allows the tubing to be replaced at a later time without damaging the well. A copy of the packer specifications is presented in Appendix N. An as-built profile of IW-1 is presented in Figure 3.

2.12 Monitor Zone Depths

The selection of monitor zones for MW-1 was established based on information available from the drilling and testing of IW-1 and was approved by FDEP. The upper monitor zone was established between 1,660 and 1,710 feet bpl and the lower monitor zone between 1,900 and 1,950 feet bpl. An as-built profile of MW-1 is presented in Figure 4.

3.0 Subsurface Conditions

3.1 Background

This section presents the site specific geologic and hydrogeologic information obtained during this project and the results of various tests made during construction of IW-1 and MW-1.

3.2 Generalized Geologic Setting

A well defined, extensive sequence of carbonate sediments is present at the Cooper City WTP/WWTP site. This is consistent with information obtained from other projects in the area. The geologic units found during construction of the monitoring well satisfy the requirements of FAC Rule 62-528. The presence of a suitable confining sequence and suitable monitor zones were confirmed by geophysical logging and testing. A brief description of the various geologic units follows.

From land surface to approximately 240 feet bpl, the sediments are comprised of limestone, sandy limestone, limey sandstone, sandy clay and varying amounts of unconsolidated shell and sand. The limestone and sandy limestone are a light gray to grayish olive packstone and grainstone. The limey sandstone is generally light gray to grayish yellow and olive, fine to medium-grained and slightly phosphatic. The sandy clay is grayish olive, soft, plastic and slightly calcareous with very fine to fine-grained quartz sand. Various amounts of shell and quartz sand are also present in these sediments.

The dissolution features and generally poor cementation apparent in the upper 240 feet of sediments give this unit the high permeability characteristic of the Biscayne Aquifer. These sediments are Pleistocene to Miocene in age and correspond to descriptions of the Anastasia and Plamico Sand formations.

From approximately 240 to 810 feet bpl, the sediment is predominantly composed of an olive gray, plastic clay. From 810 to about 980 feet bpl, the sediment is predominantly carbonate marl. The marl is mostly pale or light grayish olive, soft and composed of silty clay with interbedded limestone present throughout the interval. The limestone varies from grayish olive to dark gray and is micritic. The sediments in the interval between approximately 240 and 980 feet bpl are Miocene to Late Eocene in age and correspond to the Hawthorn Formation.

From about 980 to 2,040 feet bpl, the sequence is composed almost entirely of limestone interbedded with dolomite, typically a pale orange to grayish orange, fine to medium grained packstone. Below 1,897 feet bpl, thin beds and stringers of dolomite are present. The limestone in this sequence is Middle to Late Eocene age and is delineated as part of the Avon Park Limestone. In the interval from 2,210 to 3,030 feet bpl, limestone is interbedded with dolomite, light to moderate yellowish-brown and fine to medium grained to cryptocrystalline. These dolomite units comprise about 20 percent of the sequence. The limestone in this interval is generally very pale orange, pellodial or micritic, fine to medium grained and soft. The section is comprised of sediments of Early to Middle Eocene Age of the Avon Park Limestone.

Below 3,030 feet bpl the sequence is composed almost entirely of dolomite. The dolomite in the upper interval is predominantly pale yellowish or moderate brown, massive, fine grained or micritic and dense with some dissolution features. The interbedded limestone in the upper interval consists of pale orange to tan, fine to medium grained, soft and biosparite. This section contains sediments of Early Eocene Age corresponding to the Lower Avon Park Limestone Formation.

The highly cavernous "boulder zone" extends from approximately 3,000 to at least 3,400 feet bpl in the Lower Oldsmar Formation. The lower limit of the injection zone was not determined since drilling was terminated at approximately 3,400 feet bpl. The television surveys indicate that the dolomite in this zone exhibits extensive dissolution cavities as well as fracturing.

The various formations penetrated by IW-1 and MW-1 correlate closely with those encountered in the other wells in the area, demonstrating the continuity and uniformity of the beds. A hydrogeologic cross section of the wells on site is presented in Appendix D.

3.3 Hydrogeologic Setting

The upper 240 feet of rock and sediments are Pleistocene and Upper Miocene sandstone, limestone, clay and unconsolidated sand and shell. These sediments comprise the Biscayne Aquifer which is used as a source of drinking water throughout South Florida.

Underlying the Biscayne Aquifer are approximately 680 feet of Miocene clay and marl of the Hawthorn Formation which form a confining bed between the Biscayne Aquifer and the Oligocene to Eocene limestones and dolomites of the Floridan Aquifer. The clay and marl confining sequence is called the Hawthorn Formation. Water from the Floridan Aquifer in South Florida contains concentrations of dissolved solids which exceed drinking water standards. The aquifer is not currently used as a main source of drinking water in Broward County; however, some water utilities have begun to use it.

Within the Eocene limestones, a confining sequence has been identified between 1,650 and 2,000 feet bpl as discussed later in Section 3.5. It consists of a thick sequence of dense limestone with some interbedded layers of dolomite and is discussed in greater detail later in this report.

3.4 Water Quality

Water samples were collected from isolated sections of the borehole during the single packer and straddle packer tests. The water samples from the packer tests were analyzed for selected parameters to establish background water quality and to identify the depth at where there is 10,000 mg/l of total dissolved solids (TDS).

The tests were conducted in intervals considered suitable as confining zones and intervals suitable as monitor zones. During the packer tests, a sample of the formation water from the tested interval was collected just prior to shutting off the pump, after significant development time. Water samples from the packer tests were analyzed for TDS, chloride, sulfate, specific conductivity, ammonia as nitrogen, nitrate as nitrogen, nitrite as nitrogen, total kjeldahl nitrogen and total organic nitrogen. Results of the laboratory analyses are presented in Appendix I. Table 5 summarizes the results of the laboratory analyses from the packer tests.

The base of the USDW is defined as water having less than 10,000 mg/l TDS. The base of the USDW was identified by performing water quality analysis on samples obtained from packer tests and geophysical log interpretation. Based on the water quality testing, the base of the USDW currently occurs 1,770 feet bpl. Also used in determining TDS is the dual induction geophysical log. From this log water quality can be derived. The log derived water quality data places the base of the USDW at 1,770 feet. This data is confirmed by the water quality results of the packer test conducted in IW-1 between 1,763 and 1,779 feet bpl, which yielded 10,500 mg/L total dissolved solids. A copy of the log derived water quality graph from IW-1 is attached and is presented in Appendix J.

Below 1,000 feet bpl, water samples of the drilling fluid were taken every 30 feet. Samples of the drilling fluid can sometimes provide qualitative information of the formation fluid, but since the samples are of the drilling fluid, quantitative data from the formation can not be obtained. As expected, the water quality analysis from these samples provided little useful data.

3.5 Confinement Analysis

The approach to the evaluation of vertical confinement at the Cooper City WTP/WWTP is as follows. Available borehole geophysical, geological data and open hole testing data were used to identify intervals from 1,770 (base of the USDW) to 3,000 feet bpl that exhibit confining properties. The vertical confinement provided by each interval was then evaluated. Particular attention was paid to locating beds of limestone, dolomite, clay or marl that have low matrix vertical hydraulic conductivities and are not penetrated by fractures and/or solution cavities. Such tight beds provide the primary vertical confinement of the injected effluent.

3.5.1 Identification of Confining Units

The presence of satisfactory confining sequences between 1,770 and 3,000 feet bpl was established at the WTP/WWTP during the drilling of IW-1. A letter previously submitted to the TAC documented the presence of this confinement on site. This letter from the Engineer is dated February 22, 2001 and is referred to as the "24-inch Casing Seat Request".

3.5.2 Geophysical Logs

The wire line geophysical logs for IW-1 were examined in detail for the presence of units of rock that could provide vertical confinement for injected fluids. A combination of sonic, caliper and resistivity logs was used to identify well-cemented limestone and/or dolomite beds that would be expected to have low matrix porosities and hydraulic conductivities. Borehole video surveying logs were used to locate fractures and/or cavernous zones that could be conduits for vertical fluid flow. Information on the orientation and thickness of beds was also obtained from the borehole video survey logs.

The development and conditioning of the wells prior to logging is not an issue for the sonic, caliper, gamma ray, temperature, resistivity and borehole video survey logs as these logs were designed to and are often run in mudded boreholes. Fine scale features, such as bed contacts, are readily distinguishable on the borehole video survey log, which indicates that borehole conditions did not have a significant adverse effect on log quality.

Flowmeter, temperature, and fluid resistivity/conductivity logs provide information on the location of flow zones into wells and on changes in the salinity of formation water. Temperature and fluid resistivity/conductivity logs did not provide useful information concerning vertical confinement in the 2,000 to 3,000 feet bpl interval. Flowmeter logs are of limited value for identifying individual beds with low vertical hydraulic conductivities because a single zone of high hydraulic conductivity very often dominates the flow for the entire tested interval.

3.5.3 Characterization of Well Cuttings

Cuttings collected during the pilot hole drilling of in IW-1 (land surface to 3,000 feet bpl) were examined in detail for lithology, macroporosity (visible porosity) and apparent matrix hydraulic conductivity using a stereomicroscope. A copy of the geologic log is attached. The cuttings were grab samples collected at 10-foot intervals during the construction of the well. The lithology of the limestone cuttings was characterized using the limestone classification scheme of Dunham (1962). The most common grain types were silt to fine-sand sized rounded carbonate grains that are described as either peloids (fecal pellet-shaped grains of indeterminate origin) or as bioclasts (transported fossil fragments). The mineralogy of the samples (calcite versus dolomite) was confirmed by reaction with dilute hydrochloric acid. Dolomite was classified according to crystal size as being either cryptocrystalline (crystals are not visible with the low powered microscope) or microcrystalline (crystals are visible with the low-powered microscope), finely crystalline (1/64 to 1/16 mm) or medium crystalline (1/16 to 1/4 mm).

The macroporosity (visible porosity) of the samples was characterized as being either very low (< 2%), low (2-5%), moderate (5-15%), high (15-25%), or very high (>25%). The apparent matrix hydraulic conductivity was qualitatively evaluated as being very low to high based on the porosity, size of the pores, and likely degree of interconnection of the pores. Geological logs for each well are contained in Appendix D.

3.5.4 Core Examination and Data Analysis

The six cores were taken from 2,200 to 2,802 feet bpl in IW-1. The lithology of the cores was evaluated to determine if there were any significant biases in the cutting samples. The well cuttings appeared to have somewhat less intergranular carbonate mud than the cores. In some limestone cuttings, the carbonate mud appeared to have been washed out of the samples during drilling. Some limestone cuttings, particularly grainstone and packstone lithologies, thus appear to be more porous than they actually are. The cores were also examined for the presence of fractures or solution features (vugs) that might be conduits for vertical fluid flow. A copy of the core descriptions are contained in Appendix E. Sections of each core were selected and submitted for laboratory analysis for hydraulic conductivity. Results from the laboratory core analysis are summarized in Table 2. The complete laboratory analysis is presented in Appendix E.

3.5.5 Packer Test Data

Single and straddle packer test data collected during the drilling of IW-1 and MW-1were analyzed for information on the hydraulic conductivity of potential confining units. The straddle packer data were analyzed using the Cooper and Jacob (1946) modification of the Theis (1935) non-equilibrium equation (i.e., the straight-line method). The transmissivity values calculated from both the pumping and recovery phase data for each test were similar.

It should be noted that the transmissivity and average hydraulic conductivities values calculated from the packer test data are largely a function of horizontal hydraulic conductivities. Packer test data thus tend to over estimate vertical hydraulic conductivities. For example, a packer test performed on an interval containing one or more high hydraulic conductivity beds interbedded between very low hydraulic conductivity beds would give a high transmissivity and average hydraulic conductivity value whereas the interval would have a very low vertical hydraulic conductivity. The results from each packer pumping test are contained in Appendix H. A summarization of the results of the packer tests is shown in Table 4.

3.5.6 Stratigraphic Correlation

The geologic and geophysical logs of IW-1, and MW-1 indicate excellent correlation as would be expected from wells in such close proximity. An example of this excellent correlation can be seen when the dual induction logs from IW-1 and MW-1 are placed side by side. With the logs in this position, it can be seen that the logs are nearly identical. Examples of this can be seen on the gamma ray log with peaks at 1,440 feet bpl are at the same depth and of the same magnitude. This correlation can also be seen on the VDL and dual induction logs.

3.5.7 Testing Quality Control Quality Assurance

For each of the testing procedures conducted, quality control and quality assurance procedures were implemented and documented. A copy of the calibration theory and practice for the geophysical logs conducted are contained in Appendix F. Quality control procedures for the packer testing are contained in Appendix H.

3.5.8 Criteria for Identification of Confinement Intervals

Beds or intervals of rock that are likely to offer good vertical confinement were identified using the following criteria:

- Low sonic transit times and derived sonic porosities.
- Variable density log (VDL) pattern consisting of either straight parallel vertical bands, where lithology is relatively uniform, or a "chevron" pattern of continuous parallel bands, where the formation consists of interbedded rock with differing densities and/or degrees of consolidation. Fractured rock typically has an irregular VDL log pattern.
- Low hydraulic conductivities calculated using packer pump test data.

- Low macroporosity (i.e., visible pore spaces) and a high degree of cementation (hardness) as observed in microscopic examination of cuttings and core samples.
- Borehole diameters on caliper logs close to the bit size. Fractured dolomite and limestone is commonly manifested by an enlarged borehole.
- Relatively high resistivities, which in the middle and lower Floridan Aquifer System are often indicative of tight dolomite and or limestone beds.
- Absence of evidence of fractures on the video survey and borehole televiewer log.

3.6 Confinement Intervals

The confinement properties of the strata between the base of the USDW (+/- 1,770 feet bpl) and 3,000 feet bpl was evaluated using the above criteria and data. The confining intervals are discussed below.

3.6.1 Interval From 2,200 to 2,290 Feet Below Pad Level

This interval consists predominantly of light-colored limestone and dolomitic limestones. Grainstones and packstones are the most common lithologies. The grainstones and packstones are interbedded with subsidiary beds of carbonate-mud rich lithologies (fossiliferous mudstones and wackestones).

The borehole televiewer log indicates that the beds are horizontal and range in thickness from approximately 0.5 to 10 feet. The bedding appears to consist of stacked sequences of carbonate sand-rich (grainstones and packstones) and carbonate mud-rich (packstones to mudstones) limestones. The mudstone and wackestone beds, which have low macroporosities and are well cemented, can provide better vertical confinement than the thicker grainstone and packstone beds.

A packer test was performed over the interval 2,269 to 2,285 feet bpl within this confinement interval and yielded hydraulic conductivities ranging from 9.3×10^{-5} to 6.0×10^{-5} cm/sec. Analyses of cores collected in this interval yielded hydraulic conductivities ranging from 3.9×10^{-10} to 4.3×10^{-4} cm/sec. The analysis of the flowmeter data indicates little or no fluid entry in to the borehole over this confinement interval. No evidence of vertical fractures or solution cavities was visible on the borehole televiewer log or the television survey video. The geologic and geophysical data for this interval are characteristic of good vertical confinement.

A copy of the flowmeter analysis is attached. No evidence of vertical fractures or solution cavities was visible on the borehole televiewer log or the television survey video. The geological and geophysical data for this interval are characteristic of good vertical confinement.

3.6.2 Interval From 2,360 to 2,650 Feet Below Pad Level

This interval consists of interbedded light-colored limestones and dolomites. Grainstones and packstones are the most common lithologies. The grainstones and packstones are interbedded with subsidiary beds of carbonate-mud rich lithologies (fossiliferous mudstones and wackestones). The borehole televiewer log indicates that the beds are horizontal and range in thickness from approximately 0.5 to 10 feet. The bedding appears to consist of stacked sequences of carbonate sand-rich (grainstones and packstones) and carbonate mud-rich (packstones to mudstones) limestones. The mudstone and wackestone beds, which have low macroporosities and are well cemented, can provide better vertical confinement than the thicker grainstone and packstone beds.

A packer test was performed over the interval 2,515 to 2,531 feet bpl within this confinement interval and yielded hydraulic conductivities ranging from 1.4×10^{-4} to 1.3×10^{-4} cm/sec. Analyses of cores collected in this interval yielded hydraulic conductivities ranging from 5.8×10^{-7} to 2.8×10^{-4} cm/sec. The analysis of the flowmeter data indicates little or no fluid entry in to the borehole over this confinement interval. No evidence of vertical fractures or solution cavities was visible on the borehole televiewer log or the television survey video. The geologic and geophysical data for this interval are characteristic of good vertical confinement.

3.6.3 Interval From 2,650 to 2,810 Feet Below Pad Level

This interval consists of light-colored limestones. Grainstones and packstones are the most common lithologies. The grainstones and packstones are interbedded with subsidiary beds of carbonate-mud rich lithologies (fossiliferous mudstones and wackestones). At about 2,800 feet bpl a layer of clay was encountered. The borehole televiewer log indicates that the beds are horizontal and range in thickness from approximately 0.5 to 10 feet. The bedding appears to consist of stacked sequences of carbonate sand-rich (grainstones and packstones) and carbonate mud-rich (packstones to mudstones) limestones. The mudstone and wackestone beds, which have low macroporosities and are well cemented, can provide better vertical confinement than the thicker grainstone and packstone beds.

Two packers test were performed over the intervals 2,724 to 2,740 and 2,794 to 2,810 feet bpl within this confinement interval and yielded hydraulic conductivities ranging from 8.2×10^{-5} to 1.1×10^{-4} cm/sec. Analyses of cores collected in this interval yielded hydraulic conductivities ranging from 5.8×10^{-7} to 2.8×10^{-4} cm/sec. The analysis of the flowmeter data indicates little or no fluid entry in to the borehole over this confinement interval. A copy of the flowmeter analysis is attached. No evidence of vertical fractures or solution cavities was visible on the borehole televiewer log or the television survey video. The geologic and geophysical data for this interval are characteristic of good vertical confinement.

3.6.4 Interval From 2,885 to 2,975 Feet Below Pad Level

This interval consists of light-colored limestones. Grainstones and packstones are the most common lithologies. The grainstones and packstones are interbedded with subsidiary beds of carbonate-mud rich lithologies (fossiliferous mudstones and wackestones). At about 2,800 feet bpl a layer of clay was encountered. The borehole televiewer log indicates that the beds are horizontal and range in thickness from approximately 0.5 to 10 feet. The bedding appears to consist of stacked sequences of carbonate sand-rich (grainstones and packstones) and carbonate mud-rich (packstones to mudstones) limestones. The mudstone and wackestone beds, which have low macroporosities and are well cemented, can provide better vertical confinement than the thicker grainstone and packstone beds.

No packer tests were performed over this interval. Comparison of the geologic and geophysical data available indicates that this interval is similar if not the same as the confinement interval 2,650 to 2,810 feet bpl. The analysis of the flowmeter data indicates little or no fluid entry in to the borehole over this confinement interval. No evidence of vertical fractures or solution cavities was visible on the borehole televiewer log or the television survey video. The geological and geophysical data for this interval are characteristic of good vertical confinement.

3.6.5 Confinement Summary

During the drilling and testing of these wells at the at the Cooper City WTP/WWTP, an extensive program was implemented to identify confinement between the base of the USDW and the depth 3,000 feet bpl. An unprecedented number of cores and packer tests were performed over a relatively small depth interval.

The limestones and dolomites present from 1,770 to 2,000 feet bpl in IW-1 have geological and geophysical characteristics indicative of good confinement. The available borehole televiewer and television surveys show no evidence of fractures or cavernous zones that could be conduits for the upward migration of injected effluent. The majority of the 1,770 to 2,000 feet bpl interval consists of horizontally bedded, fossiliferous limestone. The limestones have visible porosities (i.e. macroporosities) estimated to range mostly between 0 and 15%. Sonic and core sample total porosities range mostly between 33 and 45%. The majority of the porosity of the limestones is microporosity (microporosity = total porosity minus macroporosity). Microporosity rocks, where unfractured, typically have low hydraulic conductivities. The vertical hydraulic conductivity of core samples range from 1.6×10^{-9} to 1.0×10^{-3} cm/sec.

Dolomite beds located between 1,790 and 1,830 feet bpl and between 1,930 and 2,000 feet bpl provide very good confinement in addition to that provided by the limestone. Vertical core hydraulic conductivity from these zones ranging from 1.6×10^{-9} to 1.0×10^{-8} cm/sec. These dolomite beds show no evidence of fractures in the borehole video survey logs and television surveys. The absence of indicators of effluent in samples above 2,000 feet bpl provides strong evidence for the presence of effective confinement between 1,900 and 2,000 feet bpl. The low vertical hydraulic conductivity limestone and dolomites beds present between 1,750 and 2,000 feet bpl provide additional confinement and protection of the USDW. The combined hydrogeological, geological and geophysical data provide reasonable assurance that confinement exists below the USDW.

4.0 Final Testing

4.1 General

After the injection well construction was completed, the injection well was tested for mechanical integrity, background water samples were taken from MW-1 and a short term injection test on IW-1 was performed. The mechanical integrity testing (MIT) includes a hydrostatic pressure test of the injection casing, a temperature log, a video survey and a radioactive tracer survey (RTS). The short-term injection test consisted of injecting secondary treated plant effluent into the well for a twenty four-hour period.

4.2 Background Water Quality

Water samples were obtained from both the upper and lower monitor zones of MW-1 and the IW-1 injection zone. Prior to sampling, the wells were developed by using the reverse air procedure then allowing the well to flow naturally for a minimum of three well volumes. The samples were analyzed for a variety of constituents to establish the "natural" or background quality of the water. Background water quality laboratory analytical results from the injection zones of IW-1 and the upper and lower monitor zones of MW-1 are presented in Appendix O.

Water samples of the plant effluent were analyzed and the results of the analysis are presented in Appendix O.

4.3 Mechanical Integrity Testing

In accordance with FAC Rule 62-528, the injection wells were tested for mechanical integrity. Testing consisted of a hydrostatic pressure test of the injection casing, a temperature log, a television survey and a RTS. The hydrostatic pressure test, which was conducted at a pressure at least 50% greater than the maximum allowable operating pressure, identifies internal casing integrity. The temperature log identifies temperature variations in the well. The television survey provides visual verification of internal casing integrity. The radioactive tracer survey provides data on the external mechanical seal of the casing. The following describes the testing methods, results of the testing and presents the interpretation of the data collected during the mechanical integrity tests.

4.3.1 Casing Pressure Test

On March 26, 2001, the 24-inch injection well casing was internally pressurized to 152 psi. A pressure change was not observed over the 60-minute test period. This represents a 0.0 percent change in the original pressure, which is within the 5.0 percent limits specified by the regulations. A copy of the test gauge certification records and certified results of the hydrostatic pressure test are contained in Appendix M. This test was witnessed by Michael Wengrenovich, P. E. and Len Fishkin, P.G. (FDEP).

4.3.2 Annulus Pressure Test

On June 1, 2001 with the tubing (14-inch diameter) and permanent positive seal packer installed, the annulus between the tubing and the 24-inch casing was internally pressurized to 155 psi. A pressure decline of 2.25 psi was observed over the sixty-minute test period. This decline represents a 1.5 percent change in the original pressure, which is within the 5.0 percent limit specified by the regulations. A copy of the test gauge certification record and certified results of the hydrostatic pressure test are contained in Appendix M. James A. Wheatley, P.G. and Len Fishkin (FDEP) witnessed the test.

4.3.3 IW-1 Temperature Log

On June 1, 2001, Florida Geophysical Logging, Inc. conducted a temperature log on IW-1 from the surface to a total depth of 3,410 feet bpl. The temperature log showed a decline from about 80° F to about 69° F to a depth of 3,000 feet bpl. Below this point, the temperature decreases to about 55° F to a total depth of 3,410 feet. James A. Wheatley, P.G. witnessed the test. A copy of the temperature log is contained in Appendix F.

4.3.4 IW-1 Television Survey

A video survey of IW-1 was performed on March 28, 2001. The survey was performed from pad level to a depth of 3,410 feet bpl. Water clarity was good, enabling the camera to capture clear images of the casing interior, casing seat and open-hole section. The survey revealed that the casing was in excellent condition. A video copy of the television survey is included in Appendix G.

4.3.5 IW-1 Radioactive Tracer Survey

On June 1, 2001, a radioactive tracer survey (RTS) was conducted on IW-1. A schematic of the logging tool is shown in Figure 5. The test began with Florida Geophysical Logging, Inc., conducting a background gamma ray log (GRL) and a casing collar locator (CCL). The background GRL was "memorized" and subsequently reprinted on each out-of-position logging run to serve as a means of comparison. Each logging run is identified by its name presented at the top of the log. After the completion of the background GRL, the logging tool ejector was calibrated to a 0.25 millicurie (mCi) per second discharge, and the reservoir was loaded with 10 mCi of radioactive Iodine 131. The RTS was witnessed by James A. Wheatley, P.G., and Len Fishkin, P.G. (FDEP).

The first test conducted was a dynamic test (TEST #1). An injection rate of 50 gpm was established using potable water. For this test, the tracer ejector port was positioned five feet above the bottom of the casing (2,975 feet) and 2 MCi slug of tracer material was released under pumping conditions. Time drive monitoring was started upon release of the tracer. At about the 30-second mark, the middle detector (located 3.1 feet below the ejector) showed evidence of the slug dispersing downward from the ejector. At about the 3-minute mark, the bottom gamma ray detected the tracer slug. No increase in gamma detection by the top gamma ray detector was seen during the 60-minute monitoring period. The tools were then logged out of position (LOG OUT OF POSITION #1) to a depth of 2,750 feet bpl. Results of the log out position showed no indication of tracer material movement up hole. The injection casing was then flushed with approximately 7,000 gallons of potable water. Following the flushing, an out of log position was conducted (LOG AFTER FLUSH #1) from below the casing to 2,750 feet bpl. This log shows no indication of tracer material movement up hole. These results are interpreted as providing evidence that the casing integrity is sound and there are no channels behind the casing.

The next test conducted was a second dynamic test (TEST #2). An injection rate of 114 gpm was established using potable water. For this test, the tracer ejector port was positioned five feet above the bottom of the casing (2,975 feet) and 2 MCi slug of tracer material was released under pumping conditions. Time drive monitoring was started upon release of the tracer. At about the 30-second mark, the middle detector (located 3.1 feet below the ejector) showed evidence of the slug dispersing downward from the ejector. At about the 2-minute mark, the bottom gamma ray detected the tracer slug. No increase in gamma detection by the top gamma ray detector was seen during the 60-minute monitoring period. The tools were then logged out of position (LOG OUT OF POSITION #2) to a depth of 2,750 feet bpl. Results of the log out position showed no indication of tracer material movement up hole. The injection casing was then flushed with approximately 7,000 gallons of potable water. Following the flushing, an out of log position was conducted (LOG AFTER FLUSH #2) from below the casing to 2,750 feet bpl. This log shows no indication of tracer material movement up hole. These results are interpreted as providing evidence that the casing integrity is sound and there are no channels behind the casing.

The third and final test conducted was also a dynamic test (TEST #3). An injection rate of 310 gpm was established using potable water. For this test, the tracer ejector port was positioned five feet above the bottom of the casing (2,975 feet) and 2 MCi slug of tracer material was released under pumping conditions. Time drive monitoring was started upon release of the tracer. At about the 15-second mark, the middle detector (located 3.1 feet below the ejector) showed evidence of the slug dispersing downward from the ejector. At about the 15-second mark, the bottom gamma ray detected the tracer slug. No increase in gamma detection by the top gamma ray detector was seen during the 60-minute monitoring period. The tools were then logged out of position (LOG OUT OF POSITION #3) to a depth of 2,750 feet bpl. Results of the log out position showed no indication of tracer material movement up hole. These results are interpreted as providing evidence that the casing integrity is sound and there are no channels behind the casing.

Following the LOG OUT POSITION #3, the logging tool was lowered to a depth of 3,102 feet bpl and the remainder of the tracer material was released. The tools were then lowered to the bottom of the open hole (3,410 feet) and a final background log was conducted.

4.3.6 MIT Conclusions

Based on the results of the temperature log, hydrostatic pressure tests, video survey and radioactive tracer survey, IW-1 has demonstrated to have mechanical integrity.

4.4 Injection Test

On June 12, 2001 a controlled injection test was conducted on IW-1 utilizing plant effluent as the source of water for testing. The test consisted of a 24-hour background period, during which transducers were placed at a depth of 2,960 feet bpl in IW-1 to monitor bottom hole pressure changes. Transducers were also placed such that wellhead and annulus pressure changes of IW-1 and both zones of the dual-zone monitoring well (MW-1) could be monitored. After performing background monitoring, the 12-hour was started. The injection test was conducted at two rates the first rate 4,300 gpm (10.4 ft/sec) lasted 11 hours, during the last hour of the test the rate was increased to 5,150 gpm (12.4 ft/sec). The maximum well head pressure during the test was 79 psi well within the allowable 2/3 of the pressure test conducted on the annulus. Wellhead shut-in pressure is approximately 33 psi. A copy of the data obtained during the injection test as well as a site survey and wellhead elevations are presented in Appendix P. A summary of the injection rates and wellhead pressure is presented below:

Injection Rate (gpm)	Wellhead Pressure (psi)
4,300	64.5
5,150	79.0

5.0 Findings and Recommendations

5.1 Findings

The following list summarizes the findings identified during the construction of the injection and monitor wells.

- The base of the USDW, the point where the water contains 10,000 mg/l TDS, occurs at 1,770 feet bpl.
- The confining sequence generally occurs between 1,770 feet and 3,000 feet bpl.
- Vertical hydraulic conductivity determined from core testing within the confining sequences ranged from $9.3x10^{-9}$ to $1.4x10^{-3}$ cm/sec.
- Hydraulic conductivity was determined from packer testing within the confining sequences ranging from $9.3.0x10^{-5}$ to $1.46x10^{-4}$ cm/sec.
- The data demonstrates the existence of an extremely transmissive injection zone below 3,000 feet bpl saturated with saline water (containing more than 10,000 mg/l TDS) similar to that which exists at other on-site operating injection wells.
- The injection zone is capable of accepting the maximum design flowrate equivalent to a velocity of 12 feet per second in the wells at a reasonable injection pressure that will not promote fractures in the injection zone or confining sequences.
- IW-1 was successfully pressure tested at 152 psi (24-inch casing) and at 155 psi (14-inch tubing).
- The testing program has demonstrated that IW-1 has mechanical integrity.
- One dual-zone monitor well was drilled with the upper lower monitor zone located from 1,660 to 1,710 feet bpl and the lower zone from 1,900 to 1,950 feet bpl.

5.2 Conclusions

The presence of favorable geologic conditions, a highly transmissive injection zone filled with water having greater than 10,000 mg/l TDS, suitable confining sequence, and suitable monitor zones will permit the use of injection wells for disposal of treated effluent at the Cooper City WTP/WWTP in accordance with existing state and federal underground injection control regulations.

Based on the results of the geophysical logging and testing performed at the Cooper City WTP/WWTP, injection well IW-1 has mechanical integrity and is ready to begin operational testing.

5.3 Recommendations

Operation of the monitor well is to begin within one month after the construction of the surface facilities is complete. Injection well operation may begin operating under the construction permit after operational testing approval is issued by FDEP.

The following recommendations are in accordance with requirements of FAC Rule 62-528 for the safe operation of an injection well system. These procedures should be carried out conscientiously to ensure compliance with the injection well construction permit (refer to Appendix A) and all regulatory requirements and to ensure successful operation of the well. Additional information on monitoring and reporting data is discussed in Section 5.4.

- Dual-zone monitor well pressure is to be continuously monitored.
- Injection wellhead pressure is to be continuously monitored.
- Flow to injection well is to be continuously monitored.
- Dual zone monitor well water quality is to be monitored weekly.
- Waste stream (plant effluent) water quality is to be monitored monthly.
- Injection well injectivity tests are to be performed quarterly.
- A complete analysis of the waste stream is to be performed yearly.
- Injection well mechanical integrity tests are to be performed every five years.
- The six shallow pad wells are to be maintained for future use.

5.4 Well Operation, Maintenance and Future Testing

When the injection well is operational, a variety of data will be collected to satisfy statutory/permit requirements and to assist in managing the system. This section discusses the basic requirements for data collection to maintain permit compliance during both the initial testing and long-term operation of the injection well system. Initially, the injection wells will be operating under the construction permits. Six months of operation are required before the City can apply for an operating permit. The construction permit for IW-1 expires March 13, 2005. It is essential that the performance data collection begin upon operational startup to establish baseline information that both satisfies regulatory requirements and serves for future data comparison and performance analyses. These records should be permanently maintained.

5.4.1 Monitor Well Data Collection

The purpose of monitor zone data collection is to detect changes in water quality attributable to the injection of treated effluent into the nearby injection well. To collect the water quality samples, the monitor zones at the dual-zone monitoring well will be equipped with two sampling pumps, one for each zone. Interconnection of piping from the different zones and wells is not permitted by FDEP. Prior to collecting water samples for analysis, at least three well volumes have to be pumped from the monitor zones. Well water is pumped to the sample sinks in the injection well pump station. Excess well water is discharged into the injection well pump station wetwell, and is pumped down the injection wells.

Dual-zone monitor well water quality is to be monitored through weekly samples from the two dual-zone monitor well zones which are to be collected and analyzed weekly for TDS, chlorides, ammonia, TKN, nitrate, nitrite, pH, specific conductance, total phosphorous, sulfate, radium 226, and radium 228. The results of these analyses are to be sent to the FDEP monthly.

The pressure in both zones of the dual-zone monitor well is to be continuously monitored and recorded. Daily and monthly average, maximum and minimum pressures are to be reported to FDEP monthly.

5.4.2 Injection Well Data Collection

Beginning with the start of the use of injection well, injection records should be maintained to evaluate injection well performance.

The pressure at the injection wellhead is to be continuously monitored and recorded. Daily monthly average, maximum and minimum pressures are to be reported to FDEP monthly.

The flowrate into the injection well is to be continuously monitored and recorded. Daily average, maximum, and minimum flow rates, as well as the total volume of effluent pumped into the well are to be reported to the FDEP on a monthly basis.

5.4.3 Injectivity Testing

Periodic determination of the injectivity of a well is used as a measure of the efficiency of a well and is a permit requirement as a management tool for the injection well system. The injectivity test involves injecting effluent into a well at three (or more) injection rates and recording the injection pressure for each rate. The shut-in pressure of the injection well is to be measured before each different injection rate. The injectivity is calculated by dividing the injection rate by the required injection pressure (wellhead injection pressure minus shut-in wellhead pressure). The result is expressed as gallons per minute per pounds per square inch (mgd/psi).

Factors effecting the injection wellhead pressure are a function of:

- The density differential between treated effluent and the formation water in the injection zone;
- The friction loss in the casing; and
- The bottom hole pressure (injection zone transmissivity).

The latter is fairly constant as long as the temperature and density of the injection and formation fluids remain constant. Friction loss in the casing and bottom hole pressure can vary as a result of changes in the flowrate, physical condition of the injection zone and physical condition of the pipe. In general, pressure builds slowly with time (for a given pumping rate) as the casing "ages". Similarly, plugging of an injection zone can cause a gradual pressure build-up over time. Testing is required to be conducted quarterly for the life of the well. The testing rates for injectivity testing should be established as soon as the well is placed in operation. The test procedure should be easily repeatable.

A specific injectivity test is required to be performed quarterly. The pumping rates should be established after the well is in operation. Flow to the wells and wellhead pressures are to be recorded during this period. Test results are to be reported to the FDEP upon completion of the testing.

5.4.4 Mechanical Integrity

An injection well has mechanical integrity when there is no leak in the casing and no fluid movement into the underground source of drinking water through channels adjacent to the well bore. Mechanical integrity testing includes a pressure test, a radioactive tracer survey, a high resolution temperature log and a television survey. This testing will be used, along with the monitoring data of the upper and lower monitor zones, to demonstrate the absence of fluid movement above the injection zone.

The injection well is to be tested for mechanical integrity every five years in accordance with FAC Rule 62-528. Based on the date of testing during construction, the next MIT to be performed on IW-1 is June 1, 2006. The proposed MIT plan must be approved by FDEP prior to performing mechanical integrity testing. Request for approval should be made approximately six months prior to the required completion date.

5.4.5 Waste Stream Analysis

Samples from the waste stream are to be collected and analyzed monthly for TDS, ammonia, TKN, nitrate, specific conductance, total phosphorous, chloride, total suspended solids, sulfate, gross alpha, radium 226, and radium 228. The results of these analyses are to be sent to the FDEP monthly.

5.5 Plugging and Abandonment Plan

In the event that an injection well has to be abandoned, the well must be effectively sealed (or plugged) to prevent upward migration of the injection zone fluid or the interchange of formation water through the borehole or along the casing. The plugging program will require the services of a qualified drilling contractor with equipment capable of installing drill pipe to a depth of 3,000 feet and pumping neat cement.

The following procedures would be followed to abandon an injection well:

- Obtain a permit from the FDEP.
- Suppress the wellhead pressure with drilling mud.

- Remove the wellhead assembly.
- Fill the open hole with crushed limestone.
- Place a sand cap on the crushed limestone to the bottom of the 24-inch casing.
- Fill the 24-inch casing with neat cement.

The following procedures would be followed to abandon a dual-zone monitor well:

- Obtain a permit from the FDEP.
- Suppress the wellhead pressure with drilling mud.
- Remove the wellhead assembly.
- Fill the deep zone and the 6⅝ -inch diameter casing with neat cement grout.
- Fill the shallow zone and the 16-inch diameter casing with neat cement grout

A cost estimate for plugging and abandoning the wells is presented in Table 6.

TABLES

Table 1
Core Depths

Core #	Depth* (feet bpl)
1	1700-1715
2	1780-1800
3	1830-1847
4	1880-1895
5	1930-1944
6	1980-1995
7	2200-2210.5
8	2275-2285
9	2445-2458
10	2519-2531
11	2735-2745
12	2790-2802

*bpl – below pad level

Table 2
Hydraulic Conductivity Derived from Cores

	Interval	Horizontal	Vertical
Core #7	2205.7-2206.2	4.3×10^{-4}	2.7×10^{-4}
	2207.2-2207.7	3.2×10^{-4}	2.8×10^{-4}
	2210.2-2210.5	2.0×10^{-10}	8.2×10^{-6}
Core #8	2276.2-2276.8	3.9×10^{-10}	1.7×10^{-9}
	2277.3-2277.8	1.1×10^{-6}	5.5×10^{-7}
	2279.4-2279.8	2.3×10^{-7}	1.0×10^{-7}
	2281.2-2281.8	--	8.2×10^{-8}
Core #9	2450.2-2450.5 (A)	--	9.9×10^{-6}
	2450.2-2450.5 (B)	--	2.9×10^{-5}
	2452.8-2453.6	1.4×10^{-5}	1.0×10^{-5}
	2454.0-2454.4	8.9×10^{-7}	5.8×10^{-7}
	2456.0-2456.4	1.3×10^{-5}	1.7×10^{-5}
Core #10	2520.2-2520.7	1.5×10^{-4}	1.4×10^{-4}
	2525.6-2526.3	1.6×10^{-3}	2.8×10^{-4}
	2528.3-2528.9	1.9×10^{-4}	1.5×10^{-4}
	2529.4-2529.9	1.8×10^{-4}	1.2×10^{-4}
Core #11	2740.7-2741.1	3.0×10^{-4}	2.9×10^{-4}
	2743.8-2744.1	3.6×10^{-7}	2.1×10^{-5}
Core #12	2759.9-2796.6	9.4×10^{-5}	8.2×10^{-5}
	2799.3-2800.0	1.2×10^{-3}	7.8×10^{-4}
	2801.2-2801.7	3.5×10^{-4}	4.1×10^{-4}

Table 3
Packer Test Development

Depth (feet bpl)	Well	Air Development Time (min)	Air Development Rate (gpm)	Pump Development Time (min)	Pump Development Rate (gpm)
1660 – 1710 d	IW-1	105	100	195	79
1763 – 1779 d	IW-1	88	325	382	80
1800 – 1850 d	IW-1	139	180	150	80
1900 – 1959s	MW-1	90	9	365	105
1950 – 1966 d	IW-1	95	100	362	75
2269 – 2285 d	IW-1	690	7	435	14
2515 – 2531 d	IW-1	540	14	375	10
2724 – 2740 d	IW-1	945	10	360	9
2794 – 2810 d	IW-1	270	20	195	21

d = Straddle packer.
s = Single packer.

Table 4
Hydraulic Conductivity Derived from Packer Tests

Depth Interval (feet bpl)	Well	Pumping Rate (gpm)	Maximum Drawdown (feet)	Drawdown Hydraulic Conductivity (cm/sec)	Drawdown Transmissivity (gpd/ft)	Recovery Hydraulic Conductivity (cm/sec)	Recovery Transmissivity (gpd/ft)
2269 – 2285	IW-1	9	114.6	9.3×10^{-5}	31.8	6.0×10^{-5}	20.6
2515 – 2531	IW-1	19	139.5	1.4×10^{-4}	47.7	1.3×10^{-4}	45.6
2724 – 2740	IW-1	18	198.6	9.2×10^{-5}	31.6	8.2×10^{-5}	27.9
2794 - 2810	IW-1	14	143.1	1.1×10^{-4}	37.3	1.1×10^{-4}	36.9

Table 5
Water Quality Analysis from Packer Tests

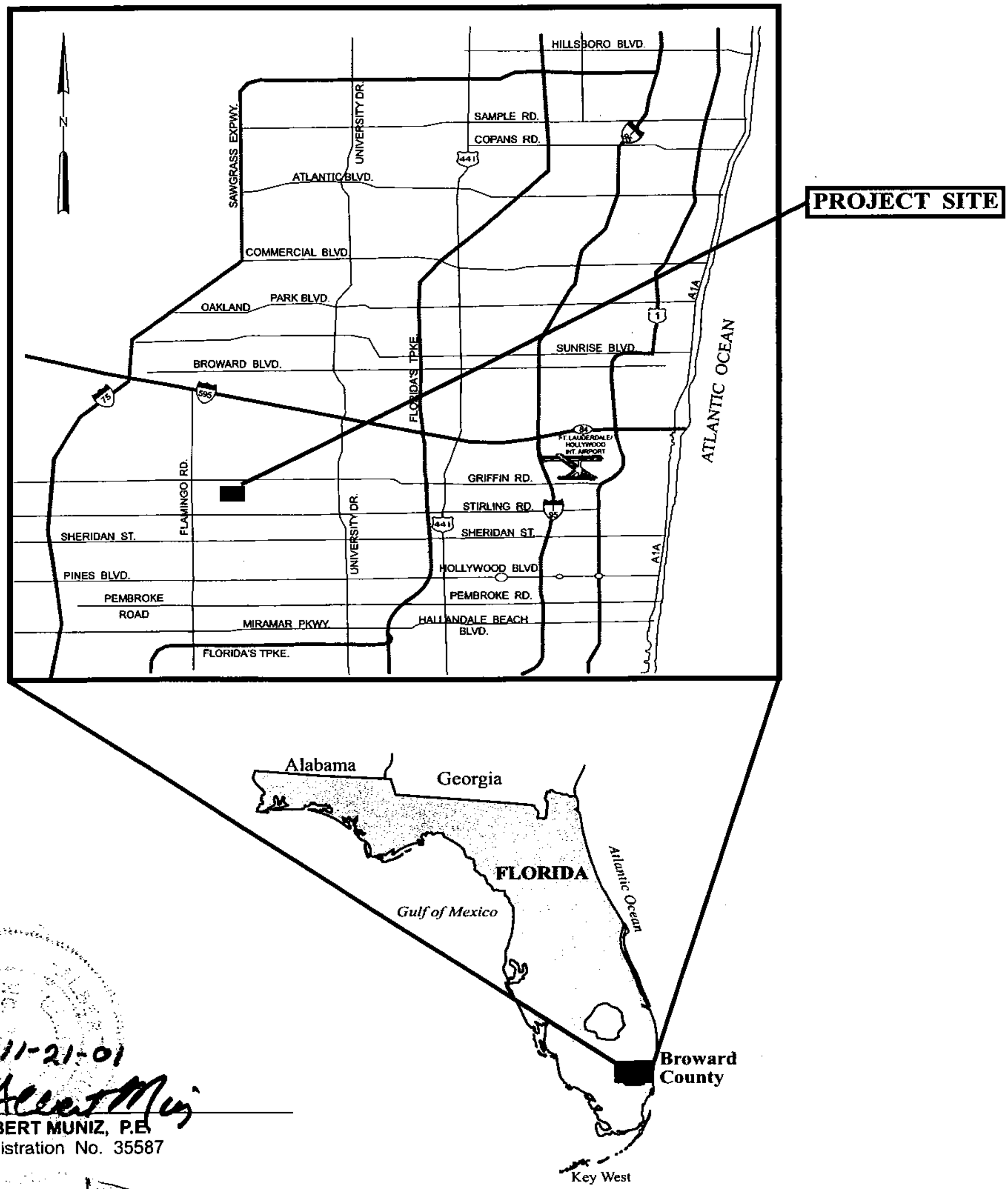
Depth Interval (feet)	Well	Ammonia (mg/l)	Chloride (mg/l)	Conductivity (umhos/cm)	Total Kjeldahl Nitrogen (mg/l)	Sulfate (mg/l)	TDS (mg/l)
1660 – 1710	IW-1	0.57	2,400	7,190	0.74	495	5,170
1763 – 1779	IW-1	0.52	6,000	42,800	0.99	365	10,800
1800 – 1850	IW-1	0.68	10,500	27,500	<0.05	370	27,500
1900 – 1950	MW-1	0.05	15,500	38,200	0.82	680	27,400
1950 – 1966	IW-1	<0.05	17,200	42,200	<0.05	950	31,400
2269 – 2285	IW-1	0.52	20,500	42,800	0.69	2,490	32,300
2515 – 2531	IW-1	0.05	20,500	36,700	0.12	2,660	38,450
2724 – 2740	IW-1	<0.05	22,000	36,700	0.13	2,830	35,600
2794 - 2810	IW-1	0.08	21,000	36,200	0.11	2,720	35,040

Table 6
Plugging and Abandonment Cost Estimates

Task	Unit Cost	Plan Estimate
Injection Well		
Mobilization	$20,000	$20,000
Mechanical Integrity Test (MIT)	$20,000	$20,000
Crushed Limestone		
4,000 cu ft	$10/cu ft	$40,000
Neat Cement		
10,000 cu ft	$10/cu ft	$100,000
20% Contingency		$36,000
TOTAL		$216,000
Dual Zone Monitor Well		
Mobilization	$10,000	$10,000
Neat Cement		
3,000 cu ft	$10/cu ft	$30,000
20% Contingency		$8,000
TOTAL		$48,000

FIGURES

40340x1.CDR



11-21-01

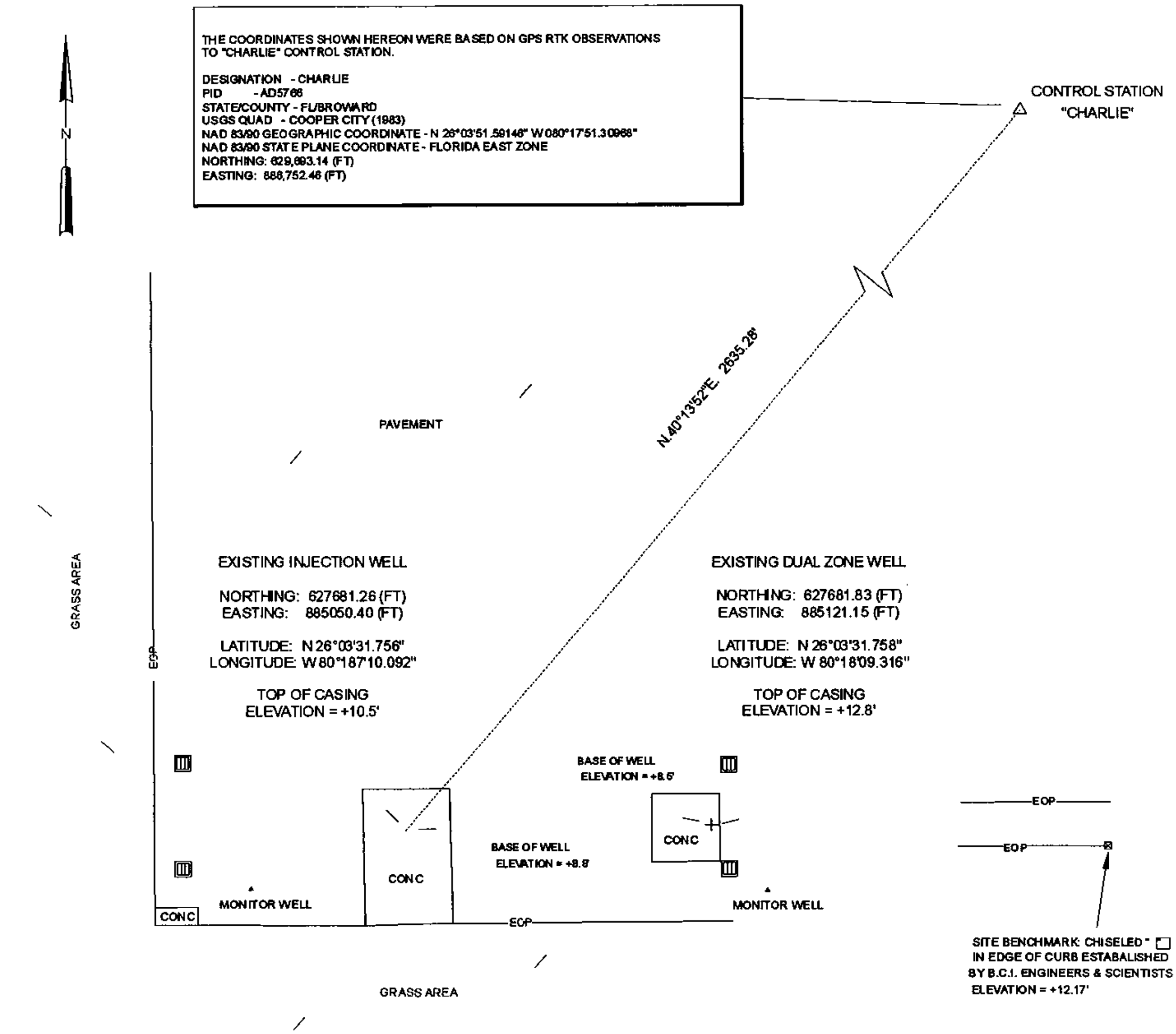
ALBERT MUNIZ, P.E.
Registration No. 35587

11·21·01

JAMES A. WHEATLEY, P.G.
Registration No. 530

HAZEN AND SAWYER Environmental Engineers & Scientists	COOPER CITY	CONCENTRATE DISPOSAL SYSTEM COOPER CITY WTP/ WWTP LOCATION MAP	FIGURE 1

40340x2.CDR



LEGEND:

CONC = CONCRETE
EOP = EDGE OF PAVEMENT
= CATCH BASIN

SURVEY PLAT

EXISTING WELL AT THE WATER TREATMENT FACILITY LOCATED IN COOPER CITY, BROWARD COUNTY, FLORIDA

NOTES:

THIS PLAT PREPARED AS A SPECIFIC PURPOSE SURVEY FOR THE PURPOSE OF LOCATING AN EXISTING WELL AT THE COOPER CITY WATER TREATMENT FACILITY IN STATE PLANE COORDINATES.

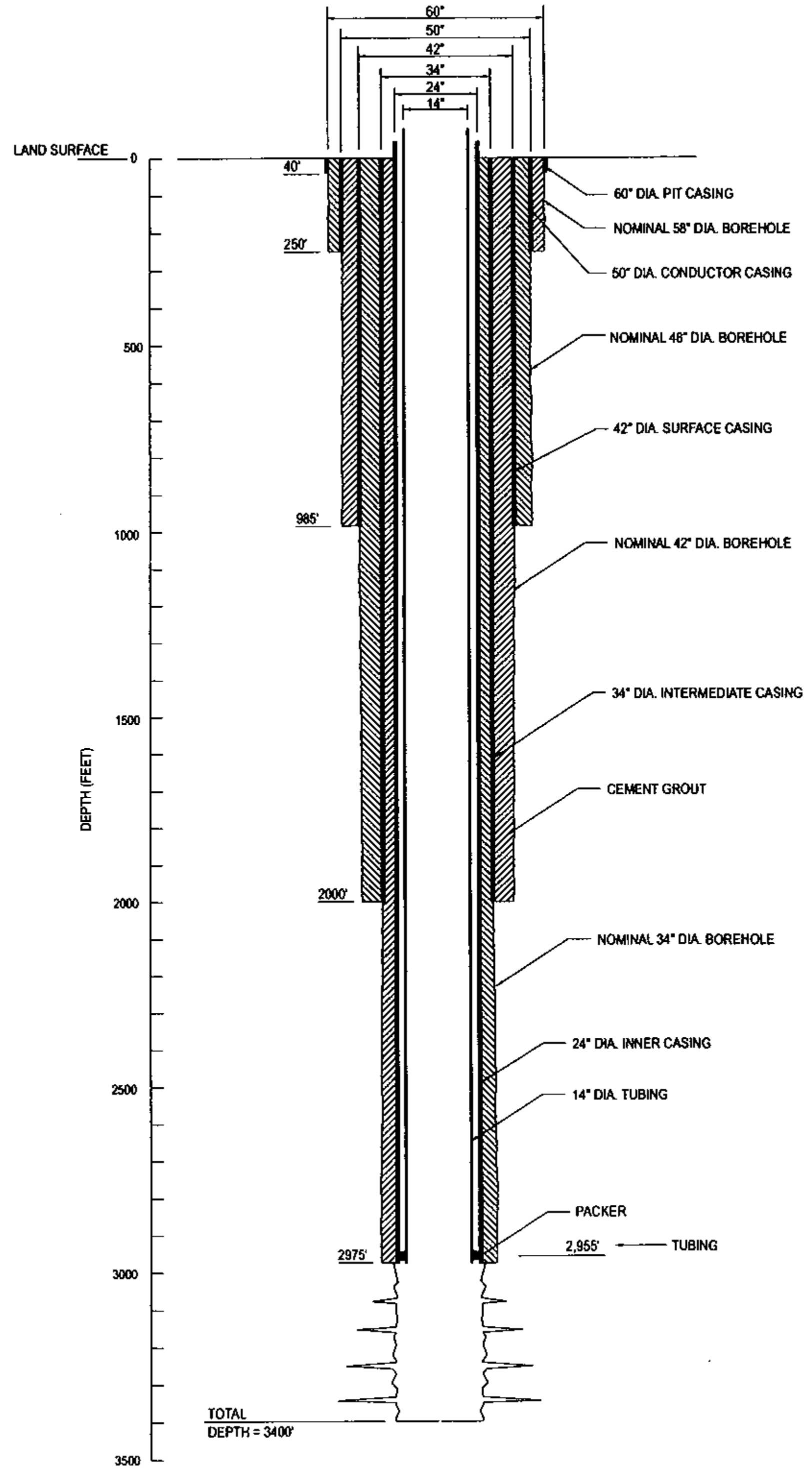
BEARINGS AND COORDINATES SHOWN HEREON ARE STATE PLANE FOR THE FLORIDA EAST ZONE NAD 83/1990 ADJUSTMENT AND BASED ON GPS RTK OBSERVATIONS TO CONTROL STATION "CHARLIE".

ELEVATIONS SHOWN HEREON ARE BASED ON THE NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD 29), FROM TIES TO CONTROL STATION "CHARLIE" ELEVATION = +8.96'.

UNDERGROUND IMPROVEMENTS, UTILITIES AND/OR FOUNDATIONS WERE NOT LOCATED UNLESS OTHERWISE SHOWN OR NOTED.

DATE OF LAST FIELD WORK: 9-13-2001

HAZEN AND SAWYER Environmental Engineers & Scientists		CONCENTRATE DISPOSAL SYSTEM COOPER CITY WTP/ WWTP	FIGURE
		WELL LOCATION SITE PLAN	2



INJECTION WELL DIAGRAM
N.T.S.

11-21-01

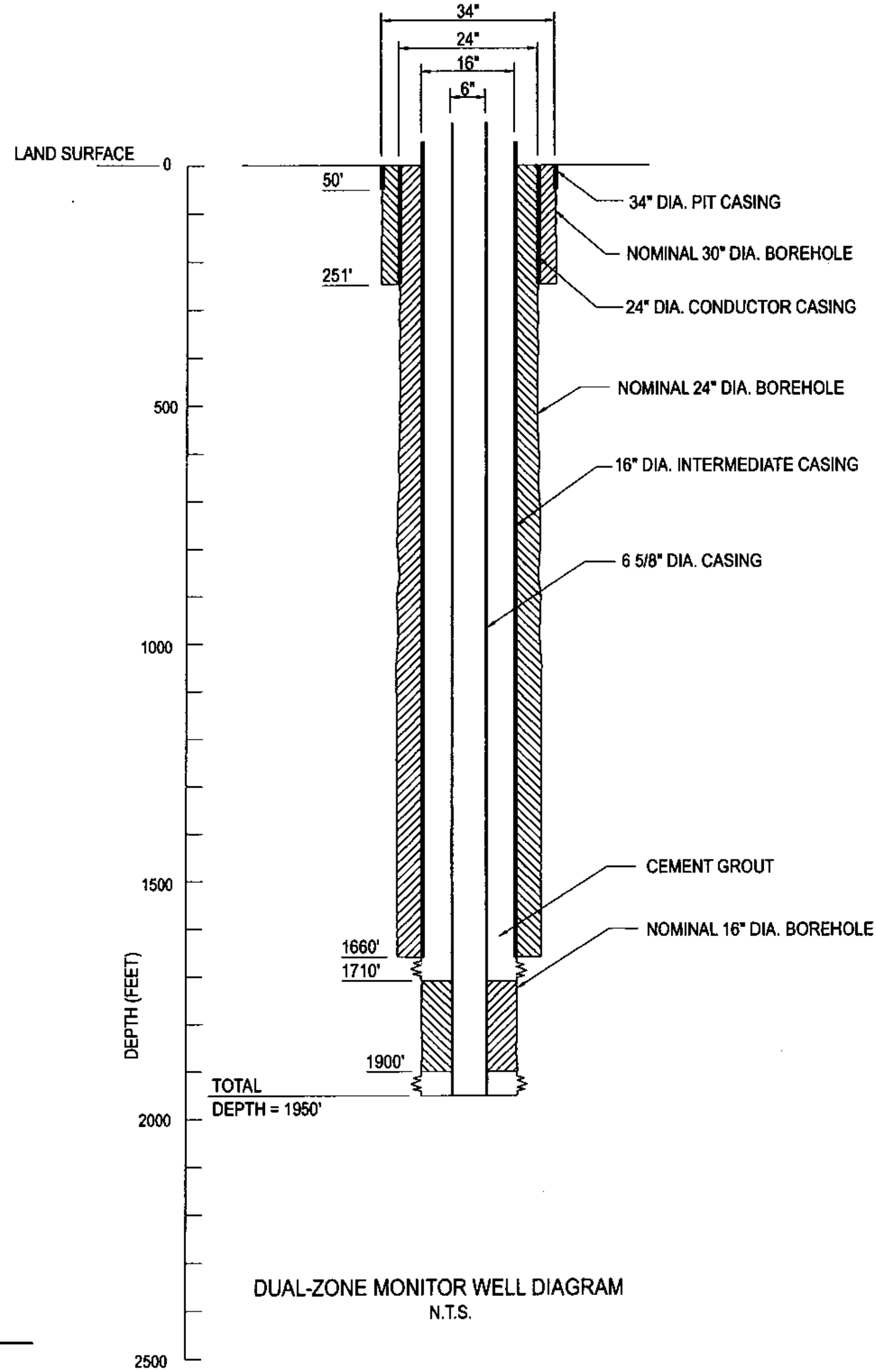
ALBERT MUNIZ, P.E.
Registration No. 35587

11·21·01

JAMES A. WHEATLEY, P.G.
Registration No. 530

HAZEN AND SAWYER Environmental Engineers & Scientists	COOPER CITY	CONCENTRATE DISPOSAL SYSTEM COOPER CITY WTP/ WWTP **Injection Well As-Built Well Profile**	FIGURE **3**

40340x4.CDR



DUAL-ZONE MONITOR WELL DIAGRAM
N.T.S.

11-21-01

ALBERT MUNIZ, P.E.
Registration No. 35587

11-21-01

JAMES A. WHEATLEY, P.G.
Registration No. 530

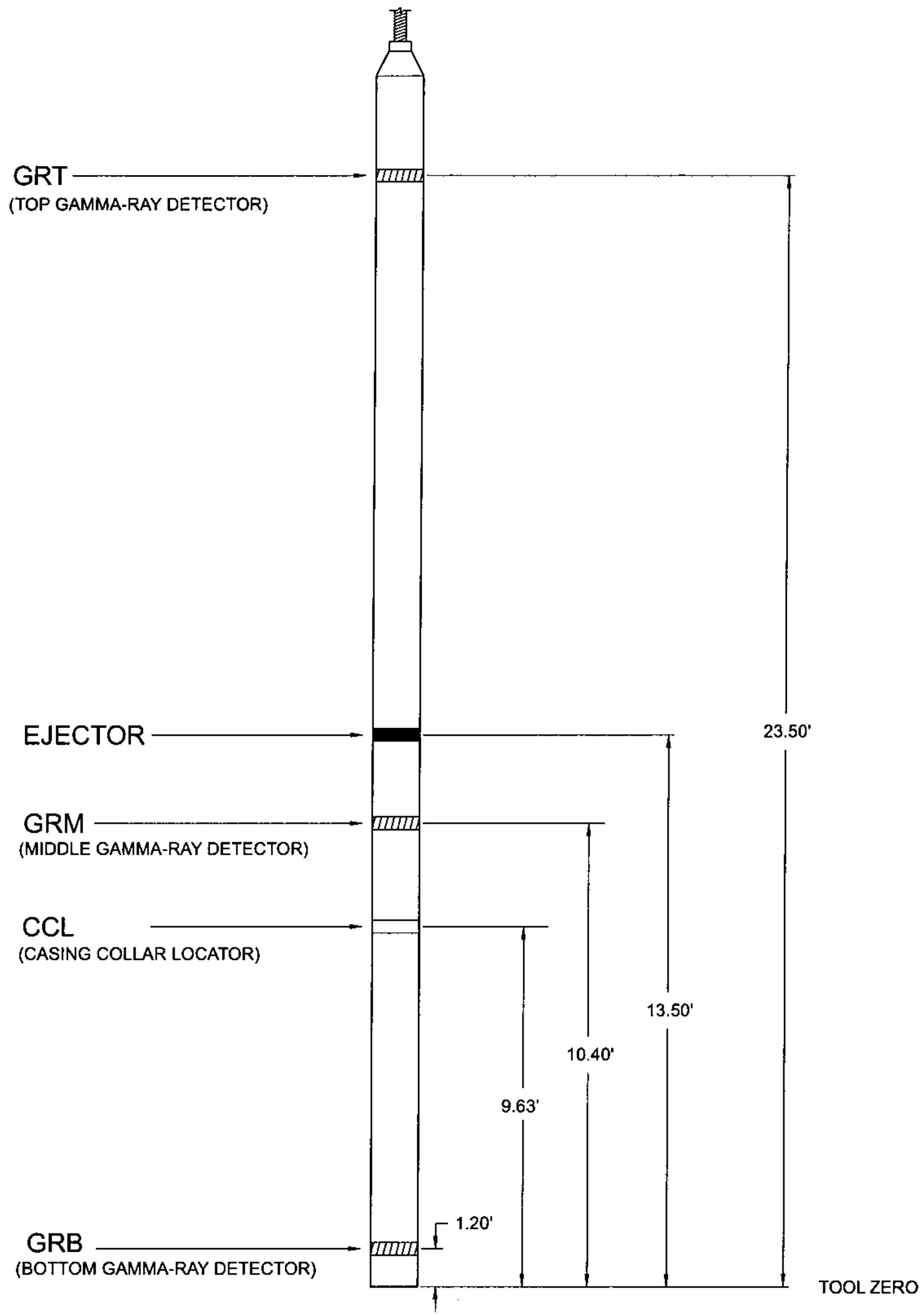
HAZEN AND SAWYER
Environmental Engineers & Scientists

COOPER CITY

CONCENTRATE DISPOSAL SYSTEM
COOPER CITY WTP/ WWTP

Dual-Zone Monitor Well As-Built Well Profile

FIGURE
4



HAZEN AND SAWYER
Environmental Engineers & Scientists

CONCENTRATE DISPOSAL SYSTEM
COOPER CITY WTP/ WWTP

RADIO ACTIVE TRACER SURVEY TOOL

FIGURE
5

APPENDICES

APPENDIX A

FDEP CONSTRUCTION PERMIT

FLORIDA

Department of Environmental Protection

Jeb Bush
Governor

Southeast District
P.O. Box 15425
West Palm Beach, Florida 33416

RECEIVED
HAZEN AND SAWYER, P.C.
Boca Raton, Florida

MAR 16 2000

40112/40340

JOB No.

David B. Struhs
Secretary

NOTICE OF PERMIT

CERTIFIED MAIL #Z220324453
RETURN RECEIPT REQUESTED

BROWARD COUNTY
UIC - City of Cooper City WTP/WWTP
FILE: 0153012-001-UC (IW-1, MW-1)

Mr. George A. Haughney, P.E.
Director of Utilities and City Engineer
City of Cooper City Department of Utilities
11791 S.W. 49th Street
Cooper City, FL 33330

Dear Mr. Haughney:

Enclosed is Permit Number 0153012-001-UC, to construct a Class I (tubing and packer) fourteen (14)-inch outside diameter (O.D.) injection well, IW-1, and to operationally test IW-1 with non-hazardous membrane softening concentrate reject water and secondary treated domestic wastewater (effluent) from the Cooper City WTP/WWTP facility, issued pursuant to Section(s) 403.087, Florida Statutes and Florida Administrative Codes 62-4, 62-520, 62-522, 62-528, and 62-550, 62-600, 62-601 and 62-660. The system shall be located at the Cooper City WTP/WWTP facility.

Any party to this Order (permit) has the right to seek judicial review of the permit pursuant to Section 120.68, Florida Statutes, by the filing of a Notice of Appeal pursuant to Rule 9.110, Florida Rules of Appellate Procedure, with the Clerk of the Department in the Office of General Counsel, Mail Stop 35, 3900 Commonwealth Blvd., Tallahassee, Florida 32399-3000; and by filing a copy of the Notice of Appeal accompanied by the applicable filing fees with the appropriate District Court of Appeal. The Notice of Appeal must be filed within 30 days from the date this Notice is filed with the Clerk of the Department.

Should you have any questions, please contact Mark A. Silverman, P.G., or Jose L. Calas, P.E., of this office at (561) 681-6695 or (561) 681-6691, respectively.

Executed in West Palm Beach, Florida.

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Melissa L. Meeker — 3/14/00
Melissa L. Meeker — Date
Director of District Management
Southeast District

MLM:ES:JLC:ms

Copies furnished to:

Christopher Farrell, Cooper City
Albert Muniz, H&S/Boca Raton
Garth Hinckle, BCDPEP

Richard Deuerling, FDEP/TLH
Brad Russell, FDEP/WPB
Francine Ffolkes, OGC

Nancy Marsh, USEPA/ATL
Ron Reese, USGS/MIA
Steve Anderson, SFWMD/WPB

CERTIFICATE OF SERVICE

This is to certify that this NOTICE OF PERMIT and all copies were mailed before the close of business on MAR 14 2000 to the listed persons.

Clerk Stamp

FILING AND ACKNOWLEDGMENT FILED, on this date, pursuant to the §120.52, Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.

Gloria Nunez — MAR 14 2000
Clerk — Date

Department of
Environmental Protection

Jeb Bush
Governor

Southeast District
P.O. Box 15425
West Palm Beach, Florida 33416

David B. Struhs
Secretary

PERMITTEE:
Mr. George A. Haughney, P.E.
Director of Utilities and City Engineer
City of Cooper City Department of Utilities
11791 S.W. 49th Street
Cooper City, FL 33330

PERMIT/CERTIFICATION NUMB[redacted]
DATE OF ISSUANCE MAR 14 2000
EXPIRATION DATE: MAR 13 2005
[redacted]
PROJECT: Construction Permit for Class I Tubing and Packer Injection Well IW-1 at the Cooper City WTP/WWTP facility

PROJECT: Permit to construct Injection Well IW-1, and to operationally test IW-1 with non-hazardous membrane softening concentrate reject water and secondary treated domestic wastewater (effluent) from the Cooper City WTP/WWTP facility.

This permit is issued under the provisions of Chapter 403.087, Florida Statutes, and Florida Administrative Code (F.A.C.) Rules 62-4, 62-520, 62-522, 62-528, and 62-550, 62-600, 62-601 and 62-660. The above named permittee is hereby authorized to perform the work or operate the facility shown on the application and approved drawing(s), plans, and other documents attached hereto or on file with the Department and made a part hereof and specifically described as follows:

TO CONSTRUCT AND OPERATIONALLY TEST: One Class I (tubing and packer) fourteen (14)-inch outside diameter (O.D.) injection well, IW-1, and a deep dual zone monitor well, MW-1. Injection Well IW-1 will be used to inject up to a flow rate of 10.0 feet per second or 6.0 million gallons per day (MGD) (peak hour flow) of non-hazardous membrane softening concentrate reject water from the Cooper City WTP and non-hazardous secondary treated domestic wastewater (effluent) from the Cooper City WWTP. The injection interval will be in the "Boulder Zone" in the lower Oldsmar Formation between approximately 2,900 feet and the total depth of the well at 3,400 feet below land surface (bls). The confinement of the injection zone from overlying underground source of drinking water (USDW) aquifers and fluid movement adjacent to the wellbore of the injection well will be monitored by two monitoring zones in Monitor Well MW-1. The lower interval shall be positioned in a transmissive interval below the USDW at an appropriate point above the injection interval and major confining units to monitor for reasonable assurance of vertical confinement of injected fluids and external mechanical integrity of the injection well. The upper interval shall be positioned in a transmissive interval immediately above the base of the USDW. Final depths will be determined during construction and field testing.

IN ACCORDANCE WITH: Application to Construct a Class I Injection Well System received March 5, 1999; associated permit processing fee received March 15, 1999; March 16, 1999 verbal Request for Information (RFI) regarding signature; response to verbal RFI received March 19, 1999; RFI dated April 16, 1999; meeting at the Southeast District office with the City and Hazen & Sawyer, the City's consultant, held April 26, 1999; Response to RFI received May 14, 1999; RFI dated June 11, 1999; Response to RFI received June 22, 1999; RFI dated July 14, 1999; Response to RFI received July 26, 1999; August 16, 1999 verbal RFI; Response to verbal RFI received August 23, 1999; comments from the Underground Injection Control - Technical Advisory Committee (UIC-TAC); publication of the Notice of Draft Permit 0153012-001-UC in the Sun-Sentinel newspaper on December 6, 1999; consideration of receipt of public comment received as a result of a public meeting held on January 6, 2000; and publication of the Intent to Issue Permit 0153012-001-UC in the Sun-Sentinel newspaper on February 3, 2000.

LOCATED AT: Cooper City WTP/WWTP, 11791 S.W. 49th Street, Cooper City, Broward County, Florida 33330.

TO SERVE: Cooper City WTP/WWTP Service Area.

SUBJECT TO: General Conditions 1-24 and Specific Conditions 1-11.

PERMITTEE:
Mr. George A. Haughney, P.E.
Director of Utilities
City of Cooper City

COUNTY: BROWARD
PERMIT/CERTIFICATION NUMBER: 0153012-001-UC
DATE OF ISSUANCE: MAR 14 2000
EXPIRATION DATE: MAR 13 2005

GENERAL CONDITIONS:

The following General Conditions are referenced in Florida Administrative Code Rule 62-528.307.

1. The terms, conditions, requirements, limitations and restrictions set forth in this permit are "permit conditions" and are binding and enforceable pursuant to section 403.141, F.S.

2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action.

3. As provided in subsection 403.087(7), F.S., the issuance of this permit does not convey any vested rights or exclusive privileges. Neither does it authorize any injury to public or private property or any invasion of personal rights, nor infringement of federal, state, or local laws or regulations. This permit is not a waiver of or approval of any other Department permit that may be required for other aspects of the total project which are not addressed in this permit.

4. This permit conveys no title to land, water, does not constitute State recognition or acknowledgment of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the State. Only the Trustees of the Internal Improvement Trust Fund may express State opinion as to title.

5. This permit does not relieve the permittee from liability for harm to human health or welfare, animal, or plant life, or property caused by the construction or operation of this permitted source, or from penalties therefrom; nor does it allow the permittee to cause pollution in contravention of Florida Statutes and Department rules, unless specifically authorized by an order from the Department.

6. The permittee shall properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed and used by the permittee to achieve compliance with the conditions of this permit, or are required by Department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by Department rules.

7. The permittee, by accepting this permit, specifically agrees to allow authorized Department personnel, upon presentation of credentials or other documents as may be required by law and at reasonable times, access to the premises where the permitted activity is located or conducted to:

   a. Have access to and copy any records that must be kept under conditions of this permit;
   b. Inspect the facility, equipment, practices, or operations regulated or required under this permit; and
   c. Sample or monitor any substances or parameters at any location reasonably necessary to assure compliance with this permit or Department rules.

   Reasonable time will depend on the nature of the concern being investigated.

8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately provide the Department with the following information:

   a. A description of and cause of noncompliance; and
   b. The period of noncompliance, including dates and times; or, if not corrected the anticipated time the noncompliance is expected to continue, and steps being taken to reduce, eliminate, and prevent the recurrence of the noncompliance. The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the Department for penalties or for revocation of this permit.

GENERAL CONDITIONS:

9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source which are submitted to the Department may be used by the Department as evidence in any enforcement case involving the permitted source arising under the Florida Statutes or Department rules, except where such use is proscribed by sections 403.111 and 403.73, F.S. Such evidence shall only be used to the extent it is consistent with the Florida Rules of Civil Procedure and appropriate evidentiary rules.

10. The permittee agrees to comply with changes in Department rules and Florida Statutes after a reasonable time for compliance; provided, however, the permittee does not waive any other rights granted by Florida Statutes or Department rules.

11. This permit is transferable only upon Department approval in accordance with rules 62-4.120 and 62-528.350, F.A.C. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the Department.

12. This permit or a copy thereof shall be kept at the work site of the permitted activity.

13. The permittee shall comply with the following:

    a. Upon request, the permittee shall furnish all records and plans required under Department rules. During enforcement actions, the retention period for all records shall be extended automatically unless the Department determines that the records are no longer required.
    b. The permittee shall hold at the facility or other location designated by this permit records of all monitoring information (including calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation) required by the permit, copies of all reports required by this permit, and records of all data used to complete the application for this permit. These materials shall be retained at least three years from the date of the sample, measurement, report, or application unless otherwise specified by Department rule.
    c. Records of monitoring information shall include:

        1) the date, exact place, and time of sampling or measurements;
        2) the person responsible for performing the sampling or measurements;
        3) the dates analyses were performed;
        4) the person responsible for performing the analyses;
        5) the analytical techniques or methods used
        6) the results of such analyses

    d. The permittee shall furnish to the Department, within the time requested in writing, any information which the Department requests to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit.
    e. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the Department, such facts or information shall be corrected promptly.

14. All applications, reports, or information required by the Department shall be certified as being true, accurate, and complete.

15. Reports of compliance or noncompliance with, or any progress reports on, requirements contained in any compliance schedule of this permit shall be submitted no later than 14 days following each scheduled date.

16. Any permit noncompliance constitutes a violation of the Safe Drinking Water Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application.

17. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

PERMITTEE:
Mr. George A. Haughney, P.E.
Director of Utilities
City of Cooper City

COUNTY: BROWARD
PERMIT/CERTIFICATION NUMBER: 0153012-001-UC
DATE OF ISSUANCE: MAR 14 2000
EXPIRATION DATE: MAR 13 2005

GENERAL CONDITIONS:

18. The permittee shall take all reasonable steps to minimize or correct any adverse impact on the environment resulting from noncompliance with this permit.

19. This permit may be modified, revoked and reissued, or terminated for cause, as provided in 40 C.F.R. sections 144.39(a), 144.40(a), and 144.41 (1998). The filing of a request by the permittee for a permit modification, revocation or reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

20. The permittee shall retain all records of all monitoring information concerning the nature and composition of injected fluid until five years after completion of any plugging and abandonment procedures specified under rule 62-528.435, F.A.C. The permittee shall deliver the records to the Department office that issued the permit at the conclusion of the retention period unless the permittee elects to continue retention of the records.

21. All reports and other submittals required to comply with this permit shall be signed by a person authorized under rules 62-528.340(1) or (2), F.A.C. All reports shall contain the certification required in rule 62-528.340(4), F.A.C.

22. The permittee shall notify the Department as soon as possible of any planned physical alterations or additions to the permitted facility. In addition, prior approval is required for activities described in rule 62-528.410(1)(h).

23. The permittee shall give advance notice to the Department of any planned changes in the permitted facility or injection activity which may result in noncompliance with permit requirements.

24. The permittee shall report any noncompliance which may endanger health or the environment including:

    a. Any monitoring or other information which indicates that any contaminant may cause an endangerment to an underground source of drinking water; or
    b. Any noncompliance with a permit condition or malfunction of the injection system which may cause fluid migration into or between underground sources of drinking water.

    Any information shall be provided orally within 24 hours from the time the permittee becomes aware of the circumstances. A written submission shall also be provided within 5 days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause, the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and the steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

SPECIFIC CONDITIONS:

1. General Requirements

   a. This permit is to construct and operationally test the City of Cooper City's Class I (tubing and packer) injection well, IW-1, and an associated dual zone monitor well, MW-1. This permit does not authorize the construction or operational testing of any other well or wells associated with the City of Cooper City WTP Injection Well System.

   b. Four permanent surficial aquifer monitor wells, identified as Pad Monitor Wells (PMWs), shall be located at the corners of the injection well drilling pad and identified by location number and pad location, i.e. NW, NE, SW, and SE. The four PMWs shall be sampled and analyzed prior to the onset of drilling. Initial analyses shall be submitted prior to the initiation of work for Department approval. The samples shall be analyzed for chlorides (mg/L), specific conductance (umho/cm), temperature, total dissolved solids (TDS) and water level (relative to NGVD). These monitor wells are to be retained in service, sampled weekly for the above parameters during the construction phase of the project, monthly during the operational testing phase and quarterly once an operation permit is granted. In addition, these monitor wells shall be sampled forty-eight (48) hours prior to any maintenance, testing (including mechanical integrity testing) or repairs to the system which represent an increased potential for accidental discharge to the surficial aquifer. The results of these analyses shall be submitted to the Department within thirty (30) days of the completion of the activity. A summary sheet from the FDEP Southeast District is attached for your use when reporting the above information. If located in a traffic area the well head(s) must be protected by a traffic bearing enclosure and cover. The cover(s) must lock and be specifically marked to identify the well and its purpose.

   c. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance procedures.

   d. No underground injection is allowed that causes or allows movement of fluid into an underground source of drinking water (USDW).

2. Construction and Testing Requirements

   a. The measurement points for drilling and logging operations shall be surveyed and referenced to the National Geodetic Vertical Datum (NGVD) of 1929 prior to the onset of drilling activities for the injection well and associated dual zone monitor well.

   b. Blow-out preventers shall be installed on the wells prior to penetration of the Floridan aquifer system.

   c. No drilling operations shall begin without an approved disposal site for drilling fluids, cuttings, or waste. It shall be the permittee's responsibility to obtain the necessary approval(s) for disposal prior to the start of construction. A detailed disposal plan shall be submitted to the Department prior to the commencement of drilling activities (for the injection and monitor wells).

   d. The Department shall be notified within 48 hours after work has commenced.

   e. Hurricane Preparedness - Upon the issuance of a "Hurricane Watch" by the National Weather Service, the preparations to be made include but are not necessarily limited to the following:

      1) Secure all on-site salt and stockpiled additive materials to prevent surface and/or groundwater contamination.

      2) Properly secure drilling equipment and rig(s) to prevent damage to well(s) and on-site treatment process equipment.

   f. Waters spilled during construction or testing of the injection well system shall be contained and properly disposed.

SPECIFIC CONDITIONS:

g. UIC-TAC and United States Environmental Protection Agency (USEPA) review and Department approval are required prior to the following stages of construction and testing:

1) Contract documents and spud date
2) Intermediate (34-inch) casing seat in injection well
3) Final (24-inch) casing seat in injection well
4) Installation of tubing (14-inch liner) and packer in injection well
5) Intermediate (16-inch) casing seat in monitor well
6) Final (6-5/8-inch) casing seat in monitor well
7) Monitor zone selection
8) Mechanical integrity testing
9) Short-term injection test
10) Operational testing

h. The geophysical logging program shall at a minimum include:

1) Prior to setting the surface casing in Injection Well IW-1, the following geophysical logs shall be run on the pilot hole, to identify the base of the Hawthorn Group at approximately 1000 feet bls, and to establish a mechanically secure casing setting depth:

- Caliper
- Gamma ray
- Dual induction

2) To determine the intermediate casing depth in Injection Well IW-1, the logs indicated below shall be run on the pilot hole. These logs shall be interpreted for stratigraphic correlation, identification of potential monitoring zones, identification of confining units, identification of producing intervals, and to aid in the casing seat determination:

- Caliper
- Gamma ray
- Dual induction
- Borehole compensated sonic with VDL display
- Borehole televiewer
- Downhole radial color television survey with rotating lens
- Logs to be run under pumping and static conditions:
  - Flowmeter
  - Temperature
  - Fluid resistivity

3) The pumping logs shall be run while pumping the borehole at a rate that adequately stresses the confining units, as shown by head loss across the beds, and allows the log interpreter to clearly identify the confining beds; or at 500 gallons per minute (gpm), whichever is greater.

4) To determine the final casing depth in Injection Well IW-1, the logs indicated below shall be run on the pilot hole. These logs shall be interpreted for stratigraphic correlation, identification of potential monitoring zones, identification of confining units, identification of producing intervals, and to aid in the casing seat determination:

- Caliper
- Gamma ray
- Dual induction
- Borehole compensated sonic with VDL display
- Borehole televiewer
- Downhole radial color television survey
- Logs to be run under pumping and static conditions:
  - Flowmeter
  - Temperature
  - Fluid resistivity

SPECIFIC CONDITIONS:

5) In the injection zone below the final casing of Injection Well IW-1, the following logs shall be run:

- Caliper
- Gamma ray
- Dual induction
- Borehole compensated sonic with VDL display
- Downhole radial color television survey
- Logs to be run under pumping and static conditions:
  - Flowmeter
  - Temperature
  - Fluid resistivity

6) In Monitor Well MW-1, the logs indicated below shall be run to the setting depth of the intermediate casing, at a minimum. These logs shall be interpreted for stratigraphic correlation and identification of monitoring zones, and to aid in the casing seat determination:

- Caliper
- Gamma ray
- Dual induction
- Borehole compensated sonic with VDL display

7) In Monitor Well MW-1, the logs indicated below shall be run from the intermediate casing depth to the total depth of the well. These logs shall be interpreted for stratigraphic correlation and identification of monitoring zones, and to aid in the casing seat determination:

- Caliper
- Gamma ray
- Dual induction
- Borehole compensated sonic with VDL display
- Temperature
- Fluid resistivity

8) Downhole television surveys shall be run in both monitoring zones of Monitor Well MW-1.

9) Caliper logs shall be run on all reamed holes.

10) Temperature logs shall be run after each stage of cementing on all casings to identify the top of the cement.

11) In the injection well and the dual zone monitor well, a cement bond log shall be run after cementing the final casing (14-inch in Injection Well IW-1 and 6-5/8-inch in Monitor Well MW-1).

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SPECIFIC CONDITIONS:

i. Straddle packer testing shall at a minimum include the following:

1) A combined total of at least six straddle packer tests shall be conducted during the drilling of Injection Well IW-1 and Monitor Well MW-1.
2) At least one (1) straddle packer test conducted in each prospective monitor zone.
3) At least four (4) straddle packer tests conducted from the lowermost zone of the USDW to the top of the proposed injection horizon. These packer tests will be used for the demonstration of confinement at the IW-1 location. For this reason the packer tests will be performed in the anticipated confining zones. At least one straddle packer test supporting the demonstration of confinement will be obtained from each interval under consideration, based on the data collected to date, to be a confining unit. [See Specific Condition (S.C.) 2.m.]. To the extent feasible, the packer tests in the confining zones shall be performed over intervals that are sufficiently narrow so as not to include high hydraulic conductivity beds.
4) At least one (1) straddle packer test conducted to determine the base of the USDW at the IW-1 location.
5) Water samples shall be collected from each straddle packer test, and analyzed for total dissolved solids (TDS), chlorides, specific conductance, sulfate, ammonia and Total Kjeldahl Nitrogen (TKN), at a minimum.
6) A five (5) gallon water sample, obtained from intervals where sufficient water is available, shall be collected at the end of each straddle packer test. These samples shall be shipped to the Underground Injection Control (UIC) Section of the Department of Environmental Protection, in Tallahassee (FDEP, UIC Program, MS 3530, Twin Towers Building, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400).

j. The depth of the USDW and the background water quality of the monitor zones shall be determined during drilling and testing. Determination of the depth of the USDW shall be accomplished, interpreted, and analyzed using the following information:

1) Water samples from packer tests with analysis and interpretation.
2) Aquifer performance tests data with analysis and interpretation.
3) Geophysical logging upon reaching the total depth of the appropriate pilot hole interval including the following logs: caliper, gamma, dual induction, borehole compensated sonic, pumping flowmeter, temperature, and fluid resistivity.
4) Plots of sonic porosity and apparent formation fluid resistivity (Rwa). Interpretation will include calculation of sonic porosity and Rwa. The input parameters used to make this calculation shall be provided.

k. The confinement of the injection zone in the injection well system from overlying aquifers shall be monitored using the dual zone monitor well and a regular monitoring program. The lower interval shall be positioned in a transmissive interval below the USDW (i.e., where groundwater contains a TDS concentration of greater than 10,000 mg/L) at an appropriate point above the injection interval and major confining units to monitor for reasonable assurance of vertical confinement of injected fluids and external mechanical integrity of the injection wells. The upper interval shall be positioned in a transmissive interval immediately above the base of the USDW (i.e., where groundwater contains a TDS concentration of less than 10,000 mg/L). The data and analysis supporting the selection of the monitoring intervals shall be submitted to the Department, the UIC-TAC and the USEPA, Region IV, Atlanta after the collection, interpretation and analysis of all pertinent cores, geophysical logs and analysis of fluid samples. The hydrogeologic evaluation of the proposed monitoring zone will be submitted only after the collection, interpretation and analysis of all pertinent cores, packer tests, geophysical logs and analysis of fluid samples. The final selection of the specific upper and lower monitoring intervals shall be approved by the Department.

l. To identify the upper and lower monitoring zones, the following information from the injection well and all available on-site sources of data shall be analyzed, interpreted and submitted for UIC-TAC and USEPA review and Department approval:

1) borehole televiewer
2) the permeability of the transition zone in the vicinity of the USDW
3) packer test data including water quality (total dissolved solids, chloride, ammonia, Total Kjeldahl Nitrogen, and specific conductance)
4) the specific capacity of the upper and lower monitor zones
5) the identification of the base of the USDW

PERMITTEE:
Mr. George A. Haughney, P.E.
Director of Utilities
City of Cooper City

COUNTY: Broward
PERMIT/CERTIFICATION NUMBER: 0153012-001-UC
DATE OF ISSUANCE: MAR 14 2000
EXPIRATION DATE: MAR 13 2005

SPECIFIC CONDITIONS:

m. Confinement for the Injection Well IW-1 location shall be demonstrated using, at a minimum, directly measured lithologic properties, geophysical evidence, and tests performed while pumping the formation, as described in Items 1) through 7) below:

1) Formation tests shall include flowmeter logs, packer tests, water quality sampling during packer tests, and analysis of drawdown curves measured during packer tests. These tests shall be conducted under pumping conditions to directly measure the hydraulic properties of the confining units.
2) For the purpose of determining confinement, flowmeter, temperature and fluid resistivity logs shall be run in the pilot hole from the base the USDW to the potential confining unit immediately prior to the intersection of the top of the injection interval, under pumping conditions, at a pumping rate that adequately stresses the confining beds (as demonstrated by head loss across the beds), so that the permeability of the zones within the potential confining intervals can be evaluated. If the confining beds are not adequately stressed by the pumping rate of the flowmeter log and/or results readily interpretable as to the extent of confinement are not obtained from the flowmeter log for any other reason, then additional straddle packer tests shall be proposed, including the specific intervals for testing, based on evaluation of geophysical logs and other available data. If so, the proposed straddle packer intervals shall be submitted to the Department, the UIC-TAC and the USEPA, Region IV, Atlanta for review and Department approval.
3) If the evaluation of permeability of zones within the potential confining intervals can not be evaluated from flowmeter logs, due to the influence of high hydraulic conductivity beds, the use of packer(s) shall be evaluated, which may allow the testing of potential low hydraulic conductivity beds by the flowmeter logs (i.e., by isolating the productive zones from the testing). If the evaluation indicates the use of packers in such a situation is not feasible or is not likely to improve the value of the flowmeter log results pertaining to testing for low conductivity beds, the Department shall be notified within twenty-four hours, with an explanation and a proposal for an alternate means of obtaining the equivalent information.
4) Prior to running the flowmeter log, information shall be recorded pertaining to the development and conditioning of the borehole, detailing all measures taken (including but not limited to the number of wiper runs with bit; a description of the extent of well development methods used, etc.) and the lengths of time applied. The pumping flowmeter logging results shall include a record of the pumping rate(s) and drawdown(s) regularly recorded throughout the test to account for possible variations in the pumping rate.
5) Other geophysical logs shall be used to provide indirect evidence to deduce or correlate formation properties measured in pumping tests and direct lithologic sample analysis.
6) Lithologic properties measured in laboratory analyses of core samples shall include: hydraulic conductivity (vertical and horizontal), Young's modulus/elastic modulus Formation factor, Archie's cementation exponent and coefficient, and specific gravity. No less than five (5) core samples shall be taken and analyzed from Injection Well IW-1.
7) To the extent feasible, core descriptions shall be used to address bedding characteristics, and lithologic descriptions from cores and cuttings shall include characterizations that pertain to the degree of confinement, including, but not limited to, texture, grain composition, grain shape (including the degree of flatness) pore geometry (including sorting and interlocking of grains), cement composition and degree of crystalization, rock matrix characteristics, and sedimentary depositional and diagenetic environment.

To the extent feasible, the descriptions and interpretations derived from the lines of testing referenced above should address the degree of confinement at the IW-1 injection well location. In addition, the geophysical logs shall be used to the extent feasible to extend the applicability of measurements of hydraulic characteristics obtained from the testing of discrete intervals, such as cores and straddle packer tests, to an entire bed or series of beds (in both the horizontal and vertical directions). The testing, analysis and interpretation of results shall be thorough enough to evaluate the extent of confinement between the top of the redefined injection zone and the base of the USDW.

PERMITTEE:
Mr. George A. Haughney, P.E.
Director of Utilities
City of Cooper City

COUNTY: Broward
PERMIT/CERTIFICATION NUMBER: 0153012-001-UC
DATE OF ISSUANCE: MAR 1 4 2000
EXPIRATION DATE: MAR 1 3 2005

SPECIFIC CONDITIONS:

n. Test results pertaining to confinement shall include and/or specifically reference the following informational and quality control items:

1) Quality control measures taken, including:

- Information which documents the calibration of tools, including field checks prior to testing.
- The conditioning/development of the borehole prior to logging, including the techniques used and the time periods in which applied, and
- Pertaining to straddle packer/pump testing - recording the pumping rate regularly throughout the test to account for possible variations in the pumping rate, and providing information regarding the detection of packer leaks, if any, during testing.

o. Representative samples of circulation fluid shall be collected during the drilling of the pilot hole of Injection Well IW-1, and during the drilling of Monitor Well MW-1. The representative samples of circulation fluid shall be collected a minimum of every thirty (30) feet in drilling from a depth of approximately 1,000 feet to the top of the "Boulder Zone" at approximately 3,000 feet bls, for Injection Well IW-1, and to the total depth of the well, for Monitor Well MW-1. The representative samples shall be analyzed for chlorides, temperature compensated specific conductance, and pH, at a minimum.

p. If effluent is encountered or suspected during pilot hole drilling and testing, the Department shall be notified immediately by telephone and in writing and immediate appropriate precautionary measures shall be taken to prevent any upward fluid movement.

q. Mechanical integrity of the injection well shall be determined pursuant to Rules 62-528.300(6)(b)1. and 62-528.300(6)(c), F.A.C.

1) The pressure test for the final casing shall be accepted if tested with a liquid-filled annular space at a high enough pressure such that the well operating pressures will never exceed 66% of the test pressure. A test tolerance of not greater than + or - 5% must be certified by the engineer of record.

2) Verification of pressure gauge calibration must be provided to the Department representative at the time of the test and in the certified test report.

r. The Department shall be notified at least seventy-two (72) hours prior to all testing for mechanical integrity.

s. All testing for mechanical integrity must be initiated during normal business hours, Monday through Friday.

t. UIC-TAC meetings are scheduled on the 2nd and 4th Tuesday of each month subject to a five (5) working day prior notice and timely receipt of critical data by all UIC-TAC members and the USEPA, Region IV, Atlanta. Emergency meetings may be arranged when justified to avoid undue construction delays.

u. The dual zone monitor well (MW-1) shall not be drilled below the base of the Hawthorn Group, located at approximately 1,000 feet, until testing to determine the lower limit of the USDW in the pilot hole of Injection Well IW-1 is completed and approved by the Department.

SPECIFIC CONDITIONS:

3. Quality Assurance/Quality Control Requirements

   a. Pursuant to Rule 62-528.440(5)(b), F.A.C., the Professional Engineer(s) of Record shall certify all documents related to the completion of the Class I injection well system (including the associated Floridan aquifer monitor well) as a disposal facility. The Department shall be notified immediately of any change of the Engineer(s) of Record.

   b. In accordance with Section 492, Florida Statutes, all documents prepared for the geological/hydrogeological evaluation of the injection well system shall be signed and sealed by a Florida Licensed Professional Geologist or qualified Florida Licensed Professional Engineer.

   c. Continuous on-site supervision by qualified personnel (engineer or geologist) is required during all testing, geophysical logging and cementing operations.

4. Reporting Requirements

   a. All reports and surveys required by this permit shall be submitted concurrently to all members of the UIC-TAC. The UIC-TAC shall consist of representatives of the following agencies:

      - Department of Environmental Protection, West Palm Beach and Tallahassee
      - United States Geological Survey (USGS), Miami
      - South Florida Water Management District (SFWMD), West Palm Beach
      - Broward County Department of Planning and Environmental Protection (BCDPEP), Ft. Lauderdale

      In addition, all reports and surveys required by this permit shall be submitted concurrently to the USEPA, Region IV, Atlanta.

   b. A drilling and construction schedule shall be submitted to the Department, all members of the UIC-TAC and the EPA, prior to site preparation for the injection well system.

   c. The Department and other applicable agencies must be notified of any unusual or abnormal events occurring during construction, and in the event the Permittee is temporarily unable to comply with the provisions of the permit (e.g., on-site spills, artesian flows, large volume circulation losses, equipment damage due to: fire, wind and drilling difficulties, etc.). Any information shall be provided orally within twenty-four (24) hours from the time the permittee becomes aware of the circumstances. A written submission shall also be provided within five (5) days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause, the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and the steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

   d. The permittee shall report any noncompliance which may endanger health or the environment, including:

      1) Any monitoring or other information which indicates that any contaminant may cause an endangerment to a USDW; or

      2) Any noncompliance with a permit condition or malfunction of the injection system which may cause fluid migration into or between USDWs.

      Any information shall be provided orally within twenty-four (24) hours from the time the permittee becomes aware of the circumstances. A written submission shall also be provided within five (5) days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause, the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and the steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

SPECIFIC CONDITIONS:

e. Weekly progress reports shall be submitted throughout the construction period for IW-1 and MW-1. These reports shall be submitted no later than the seventh (7th) day immediately following the period of record, and shall include at a minimum the following information:

1) A cover letter summary of the daily engineer report, driller's log and a projection for activities in the next reporting period.
2) Daily engineers report and driller's/work log with detailed descriptions of all drilling progress, cementing, testing, logging, and casing installation activities.
3) Lithologic and geophysical logs and water quality test results.
4) Interpretations shall be included with all test results and logs submitted under Items 2) and 3) above.
5) Detailed description of any unusual construction-related events that occur during the reporting period.
6) Weekly water quality analysis and water levels for the four pad monitor wells. [See S.C. 1.b.]
7) A certified evaluation of all logging and test results must be submitted with test data.
8) Description of the formations and lithology encountered.
9) Details of cementing operations, including the number of cementing stages, and the following information for each stage of cementing: cement slurry composition, specific gravity, pumping rate, volume of cement pumped, theoretical fill depth, and actual tag depth. From both the physical tag and the geophysical logs, a percent fill shall be calculated. An explanation of any deviation between actual versus theoretical fill shall be provided. For each casing, laboratory analysis of dry cement composition of a sample taken during the neat cement stage emplaced at the base of each casing.

f. The request to install the tubing and packer shall include:

1) Packer mechanical design, operation instructions and specifications
2) Casing mill certificates
3) Installation plan

g. Per Rules 62-528.410(4)(c), 62-528.420(4)(c) and 62-528.605(2), F.A.C., the final selection of specific injection and monitoring intervals must be approved by the Department. In order to obtain an approval, the permittee shall submit a request to the Department. The request shall be submitted concurrently to all members of the UIC-TAC and the USEPA, Region IV, Atlanta. All casing seat requests for the injection well and the Floridan aquifer monitor well shall be accompanied by technical justification. To the extent possible, each casing seat request should address the following items:

1) Lithologic and geophysical logs with interpretations, as the interpretations relate to the casing seat.
2) Water quality data (including but not necessarily limited to TDS concentrations).
3) Identification of confining units, including hydrogeologic data and interpretations.
4) Identification of monitoring zones.
5) Casing depth evaluation (mechanically secure formation, potential for grout seal).
6) Lithologic drilling rate and weight on bit data, with interpretations (related to the casing seat).
7) Identification of the base of the USDW using water quality, Rwa plots, and geophysical log interpretations.

h. Monitor zone requests shall contain the following:

1) Identification of the base of the USDW.
2) Identification of confining units.
3) Water quality of proposed monitor zone (including but not necessarily limited to TDS).
4) Transmissivity or specific capacity of proposed monitor zone.
5) Packer test drawdown curves and interpretation.

i. An interpretation of all test results and geophysical logs must be submitted with all submittals.

SPECIFIC CONDITIONS:

j. The injection test request shall contain the following justifications:

1) Cement bond logs and interpretation.
2) Final downhole television survey with interpretation.
3) Radioactive tracer test results (if the test is to be run using effluent)
4) Demonstration of mechanical integrity, which shall include Items 1) through 3) above, and the pressure testing and temperature logging results (if the test is to be run using effluent)
5) Reasonable assurance that adequate confinement exists
6) Planned injection procedures. Per Rule 62-528.405(3)(b), F.A.C., if an adequate water supply for the injection test does not exist, and the data collected during drilling provide assurance of the presence of confining bed(s), the applicant shall, after demonstrating mechanical integrity pursuant to Rules 62-528.300(6)(b)2. and (c), F.A.C., be allowed to use secondarily treated domestic wastewater effluent after disinfection or desalination concentrate for testing only with specific prior written authorization from the Department as described in Rule 62-528.100(2), F.A.C.

k. Upon completion of analysis of cores and sample cuttings, the permittee shall contact the UIC Section of the Department of Environmental Protection in Tallahassee to arrange their transfer to the Florida State Geologic Survey.

l. A final report of the construction and testing of the injection well and dual zone monitor well, shall be submitted no later than 120 days after commencement of operational testing, pursuant to Rule 62-528.430(1)(e), F.A.C. This report shall include, as a minimum, definitions of the injection interval, all relevant confining units, the depth of the base of the USDW and all monitor zones, including all relevant data and interpretations.

5. Operational Testing Requirements

a. The operational testing of the Class I injection well system under this permit shall not commence without written authorization from the Department.

b. Prior to operational testing approval, the following items must be submitted (with the request for operational testing approval) for UIC-TAC and USEPA review and Department approval:

1) Lithologic and geophysical logs with interpretations.

2) A copy of the borehole television survey of the injection well with interpretation.

3) Certification of mechanical integrity and interpreted test data.

4) Results of the short term injection test with interpretation of the data. Each well shall first be tested for integrity of construction, and shall be followed by a short term injection test of such duration to allow for the prediction of operating pressure. The test results shall include a calculation or determination of fracture pressure of the injection formation [per Rule 62-528.410(6)(b)3., F.A.C.]. The injection test shall be conducted for a minimum of twenty-four (24) hours at a rate no less than the maximum rate at which the well is to be permitted. Pressure/water level data from the injection zone and both monitor zones shall be recorded continuously for at least twenty-four (24) hours before the test and at least twelve (12) hours following the test. The following data shall be recorded, analyzed, and reported for the duration of the injection test, i.e., all data should encompass the entire background, injection and recovery periods:

- injection flow rate (MGD)
- injection pressure (psig)
- wellhead pressure with no flow (shut-in pressure in psig)
- monitor well pressures (upper and lower zones of MW-1)
- annular pressure
- tidal data
- barometric pressure

5) A description of the actual injection procedure including the anticipated maximum pressure and flow rate at which the well will be operated under normal and emergency conditions.

SPECIFIC CONDITIONS:

6) Information concerning the compatibility of the injected waste with fluids in the injection zone and minerals in both the injection zone and the confining zone.

7) Certification of completion of well construction.

8) Surface equipment (including pumping station, piping, pressure gauges and flow meters, and all appurtenances) completion certified by the Engineer of Record.

9) Draft operation and maintenance manual, including a description of surge and water hammer control and emergency discharge management plan procedures. The emergency discharge system must be fully constructed and operational (ready to operate) prior to approval of operational testing.

10) Calibration certificates for pressure gauges and flow meters.

11) Signed and sealed record "as-built" engineering drawings of the injection well system including all well construction, the pump station, subsurface and surface piping and equipment, and appurtenances.

12) The well construction drawings shall include a geologic stratigraphic cross-section depicting the corresponding formations, the base of the USDW, and the boundaries of the confining and injection zone intervals.

13) Technical specifications for the annular fluid and the pressure to be maintained on the annulus.

14) The demonstration of confinement for the Injection Well IW-1 location, prepared providing confirmation of confinement and defining the injection and confining sequences utilizing data collected during the drilling, logging and testing of the injection well and dual zone monitor well. The report shall include the results of hydraulic testing (permeability, porosity, etc.) on the cores, and shall be reviewed and updated as appropriate after the completion of any additional injection/monitor well pairs in the future from the confining interval. This submittal shall be prepared, signed, and sealed by a Florida Registered Professional Geologist or appropriately qualified Professional Engineer.

15) Wastestream analysis, sampled within six (6) months of the request for operational testing, for primary and secondary drinking water standards (62-550, F.A.C.) and minimum criteria parameters (62-520, F.A.C.) as attached.

16) Background water quality data from the monitor and injection zones, analyzed for primary and secondary drinking water standards (62-550, F.A.C.) and minimum criteria parameters (62-520, F.A.C.) as attached.

17) Other data obtained during well construction needed by the Department to evaluate whether the well will operate in compliance with Department Rules. [Rule 62-528.450(3)(a)3.i., F.A.C.]

c. Prior to operational testing, the permittee shall comply with the requirements of rule 62-528.450(3)(a),(b), and (c), F.A.C.

d. Pressure gauges and flow meters shall be installed on the injection well prior to initiating injection activities at the site.

e. Prior to the authorization of operational testing by the Department, the County shall contact the UIC Section of the Department, Southeast District, to arrange a site inspection. The inspection will determine if the conditions of the permit have been met and to verify that the injection well system is operational. During the inspection, emergency procedures and reporting requirements shall be reviewed.

SPECIFIC CONDITIONS:

6. Operational Testing Conditions

   a. Upon receipt of written authorization from the Department [S.C. 5.a.], the operational testing of the injection well system shall be subject to the following conditions:

      1) A qualified representative of the Engineer of Record shall be present for the start-up operations.

      2) The Department shall be notified in writing of the date of commencement operations.

      3) Operational testing for the system shall extend for a six (6) month period and shall be reviewed by the UIC-TAC and the USEPA at three (3) months and six (6) months after operational testing has begun. Prior to the end of the six month interval, the Department shall determine whether operational testing will be authorized to continue for a specified period of up to an additional eighteen (18) months. The Department and UIC-TAC will monitor the progress of the operational testing phase of this project. UIC-TAC meetings shall be held if necessary to aid the Department in determining if it may be necessary to modify the operational testing conditions. If requested by the Department, reports evaluating the system's progress shall be submitted to the Department, each member of the UIC-TAC, and the USEPA, Region IV, Atlanta at least two (2) weeks prior to the scheduled UIC-TAC meeting. The conditions for the operational testing period may be modified by the Department at each of these UIC-TAC review intervals.

      4) Flows to the injection well shall be monitored and controlled at all times to ensure the maximum injection rate does not exceed that rate at which the well was tested.

      5) Injection well system monitoring devices:

         a) Pursuant to Rule 62-528.425(1)(b), F.A.C., the injection well system shall be monitored by continuous indicating, recording and totalizing devices to monitor effluent flow rate and volume, and continuous indicating and recording devices to monitor injection pressure, pressure on the annulus between the tubing and the final (innermost) string of casing, and monitor zone pressure (or water level, as appropriate; all zones). All indicating, recording and totalizing devices shall be maintained in good operating condition and calibrated annually at a minimum.

         b) Pursuant to Rule 62-600.540(4), F.A.C., the surface equipment shall be such that manual backup capability to monitor flow and pressure shall be provided for systems utilizing automatic and continuous recording equipment.

      6) Pursuant to Rule 62-600.540(4)(a), F.A.C., as a minimum, the effluent pump station shall be equipped with lightning arrestors, surge capacitors or other similar devices.

      7) The flow from the monitor zones during well evacuation and sampling must not be discharged to surface waters or aquifers containing a USDW.

      8) Per Rule 62-600.540(1), F.A.C., the wastewaters conveyed to the injection well must meet the secondary treatment and pH limitations specified in Rules 62-600.420(1)(d) and 62-600.445, F.A.C.

      9) The ability to disinfect the effluent shall be maintained at all times in accordance with Chapter 62-600, F.A.C.

      10) The wastestream shall be non-hazardous in nature at all times, as defined in 40-CFR, Part 261 and as adopted in Chapter 62-730, F.A.C.

      11) Only fluids that have received treatment at the Cooper City WTP/WWTP facility and purge water from the on-site monitor wells, associated with the injection well system at the Cooper City WTP/WWTP facility, may be discharged into this well.

SPECIFIC CONDITIONS:

12) Mechanical Integrity

a) Injection is prohibited until the permittee demonstrates that the well has mechanical integrity. Prior to operational testing the permittee shall establish, and thereafter maintain, the mechanical integrity of the well at all times.
b) If the Department determines that the injection well lacks mechanical integrity, written notice shall be given to the permittee.
c) Within 48 hours of receiving written notice that the well lacks mechanical integrity, unless the Department requires immediate cessation of injection, the permittee shall cease injection into the well unless the Department allows continued injection pursuant to subparagraph (d) below.
d) The Department shall allow the permittee to continue operation of a well that lacks mechanical integrity if the permittee has made a satisfactory demonstration that fluid movement into or between USDWs is not occurring.

13) The pressure at the wellhead shall be monitored and controlled at all times to ensure the maximum pressure at the wellhead casing does not exceed 66 percent (%) of the tested pressure on the final casing and injection tubing. [See S.C. 2.q.]

14) Any failure of the Class I injection well monitoring and recording equipment for a period of more than forty-eight (48) hours shall be reported within twenty-four (24) hours to the Department. A written report describing the incident shall also be given to the Department within five (5) days of the start of the event. The final report shall contain a complete description of the occurrence, a discussion of its cause(s) and the steps being taken to reduce, eliminate, and prevent recurrence of the event, and all other information deemed necessary by the Department.

15) The injection system shall be monitored in accordance with rules 62-528.425(1)(g) and 62-528.430(2), F.A.C. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. The following injection well performance and monitor zone data shall be collected and reported to the Department in Monthly Operating Reports (MORs) as indicated below.

a) Injection well performance:

(1) Physical characteristics of the injection well:

Flow rate parameters:
- average daily flow rate to injection well (MGD)
- daily maximum sustained (15 minutes minimum) flow rate injection well (MGD)
- daily minimum sustained (15 minutes minimum) flow rate to injection well (MGD),
- monthly average of the daily flow rates to injection well (MGD)
- monthly maximum (peak hour) flow rate to injection well (MGD)
- monthly minimum flow rate to injection well (MGD)

Volume parameters:
- total daily flow to injection well (MG)
- monthly average of the daily flow volumes to injection well (MG)
- monthly maximum of the daily flow volumes to injection well (MG)
- monthly minimum of the daily flow volumes to injection well (MG)

Pressure parameters:

Injection pressure parameters:
- daily average injection pressure at injection well (psig)
- daily maximum sustained (15 minutes minimum) injection pressure at injection well (psig)
- daily minimum sustained (15 minutes minimum) injection pressure at injection well (psig)
- monthly average injection pressure at injection well (psig)
- monthly maximum sustained injection pressure at injection well (psig)
- monthly minimum sustained injection pressure at injection well (psig)

SPECIFIC CONDITIONS:

Annular pressure parameters:

- daily average annular pressure at injection well (psig)
- daily maximum sustained (15 minutes minimum) annular pressure at injection well (psig)
- daily minimum sustained (15 minutes minimum) annular pressure at injection well (psig)
- monthly average annular pressure at injection well (psig)
- monthly maximum sustained annular pressure at injection well (psig)
- monthly minimum sustained annular pressure at injection well (psig)

Miscellaneous:

- monthly wellhead pressure with no flow (shut-in pressure, psig)

(2) Chemical characteristics of the wastestream sampled from the wet well monthly:

- residue, total filterable (dried at 180° C) [total dissolved solids, TDS] (mg/L)
- chloride (mg/L)
- specific conductance (temperature compensated, umho/cm)
- total suspended solids, TSS (mg/L)
- nitrogen, ammonia, total as N (mg/L)
- nitrogen, total kjeldahl as N (TKN, mg/L)
- nitrogen, nitrate, total as N (mg/L)
- phosphorous, total as P (mg/L)
- pH (standard units, s.u.)
- sulfate, total as SO4 (mg/L)
- gross alpha (pCi/L)
- radium 226 (pCi/L)
- radium 228 (pCi/L)

The MORs shall indicate monthly averages for all parameters sampled daily.

b) Monitor well performance:

(1) Physical characteristics - upper and lower monitor zones potentiometric surface or water table height relative to NGVD (feet of head) or pressure (psig) referenced to NGVD:

- daily maximum pressure or water level (as appropriate)
- daily minimum pressure or water level (as appropriate)
- daily average pressure or water level (as appropriate)
- monthly maximum pressure or water level (as appropriate)
- monthly minimum pressure or water level (as appropriate)
- monthly average pressure or water level (as appropriate)

(2) Chemical characteristics of the upper and lower monitor zones:

Weekly sampling:

- residue, total filterable (dried at 180° C) [total dissolved solids, TDS] (mg/L)
- chloride (mg/L)
- specific conductance (temperature compensated, umho/cm)
- nitrogen, ammonia, total as N (mg/L)
- nitrogen, total kjeldahl as N (TKN, mg/L)
- nitrogen, nitrate, total as N (mg/L)
- phosphorous, total as P (mg/L)
- pH (standard units, s.u.)
- sulfate, total as SO4 (mg/L)
- gross alpha (pCi/L)
- radium 226 (pCi/L)
- radium 228 (pCi/L)

The MORs shall also indicate monthly averages for all parameters sampled weekly.

SPECIFIC CONDITIONS:

c) After the upper and lower monitor zones have been sampled weekly for at least six (6) months, the permittee may submit data for UIC-TAC and USEPA review and Department approval to demonstrate that reasonable assurance of groundwater stability has been established in justification of any request to reduce the sampling frequency to monthly. The request for reduction in sampling frequency shall be accompanied by technical justification and interpretations.

16) A minimum of three (3) well volumes of fluid shall be evacuated from the monitor systems prior to sampling for the chemical parameters listed above. All samples shall be analyzed by a State-certified laboratory.

17) All samples must be collected and analyzed in accordance with the quality assurance/quality control (QA/QC) requirements of Rule 62-160, F.A.C.

18) All injection well system data submissions including MORs shall be clearly identified on each page with facility name, I.D. Number, permit number, operator's name, license number, daytime phone number, date of sampling/recording, and type of data. Monitor zones shall be identified by well number and depth interval. The lead plant operator or higher official must sign and date each submittal. An approved summary sheet from the FDEP Southeast District UIC Section is attached.

19) The permittee shall submit monthly to the Department the results of all injection well and monitor well data required by this permit (MORs) no later than the last day of the month immediately following the month of record. The results shall be sent to the Department of Environmental Protection's Southeast District Office (FDEP, UIC Section, P.O. Box 15425, West Palm Beach, FL 33416). A copy of this report shall also be sent to the Department of Environmental Protection, Underground Injection Control Program, MS 3530, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400.

20) The permittee shall calibrate all pressure gauges, flowmeters, chart recorders, and other related equipment associated with the injection well system on a annual basis, at a minimum. The permittee shall maintain all monitoring equipment and shall ensure that the monitoring equipment is calibrated and in proper operating condition at all times. Laboratory equipment, methods, and quality control will follow USEPA guidelines as expressed in Standard Methods for the Examination of Water and Wastewater. The pressure gauges, flow meter, and chart records shall be calibrated using standard engineering methods.

21) A controlled specific injectivity test (rate/pressure) shall be conducted monthly during the operational testing phase of this permit in accordance with Rule 62-528.430(2)(d), F.A.C. The specific injectivity test shall be conducted using at least three specified injection flow rates. The high rate should approach maximum design flow. For reporting the injectivity test results, a summary sheet and sample graph from the FDEP Southeast District UIC Section is attached. The injectivity test results shall be reported to the Department in the MORs. The following data shall be recorded and reported at each injection rate:

- injection flow rate (MGD)
- injection pressure (psig)
- wellhead pressure with no flow (shut-in pressure in psig)
- monitor zone pressures (psig)

All readings shall be taken after a minimum five minute period of stabilized flow. Pursuant to Rule 62-528.430(2)(d), F.A.C., as part of the specific injectivity test, the well shall be shut-in for a period of time necessary to conduct a valid observation of pressure fall-off.

22) Within thirty (30) days of the start-up date of operational testing, the permittee shall submit a combined wastestream analysis (including the membrane softening concentrate reject water and the secondary treated domestic wastewater), for primary and secondary drinking water standards (62-550, F.A.C.) and minimum criteria parameters (62-520, F.A.C.) as attached. The analysis shall be submitted for Department approval, and copies shall be distributed concurrently to all members of the UIC-TAC and the USEPA, Region IV, Atlanta, for review.

PERMITTEE:
Mr. George A. Haughney, P.E.
Director of Utilities
City of Cooper City

COUNTY: Broward
PERMIT/CERTIFICATION NUMBER: 0153012-001-UC
DATE OF ISSUANCE: MAR 14 2000
EXPIRATION DATE: MAR 13 2005

SPECIFIC CONDITIONS:

23) Pursuant to Rules 62-528.425(1)(a) and 62-528.450(2)(f)3., F.A.C., a combined wastestream analysis (24 hour composite sample) for primary and secondary drinking water standards (Chapter 62-550, F.A.C.) and minimum criteria, see attached list, shall be submitted annually (sampled in February and submitted on or before April 30). The combined wastestream shall include the membrane softening concentrate reject water and the secondary treated domestic wastewater.

7. Surface Equipment

a. The integrity of the monitor zone sampling systems shall be maintained at all times. Sampling lines shall be clearly and unambiguously identified by monitoring zone at the point at which samples are drawn. All reasonable and prudent precautions shall be taken to ensure that samples are properly identified by monitor zone and that samples obtained are representative of those zones. Sampling lines and equipment shall be kept free of contamination with independent discharges and no interconnections with any other lines.

b. The surface equipment for the injection well system shall maintain compliance with Chapter 62-600, F.A.C. for water hammer control, screening, access for logging and testing, and reliability and flexibility in the event of damage to the well and effluent piping. A regular program of exercising the valves integral to the well head shall be instituted. At a minimum, all valves integral to the well head shall be exercised during the regularly scheduled quarterly injectivity testing.

c. The injection well and monitor well surface equipment and piping shall be kept free of corrosion at all times.

d. Spillage onto the injection well pad during construction activities, and any waters spilled during mechanical integrity testing, other maintenance, testing or repairs to the system shall be contained by an impermeable wall around the edge of the pad and directed to a sump which in turn discharges to the pumping station wet well or via other approved means to the injection well system.

e. The injection well construction pad with impermeable perimeter retaining wall shall be maintained and retained in service for the life of the injection well. The injection and monitor well pad(s) are not, unless specific approval is obtained form the Department, to be used for storage of any material or equipment at any time.

f. The four (4) surficial aquifer monitor wells installed at the corners of the injection well pad shall be secured, maintained, and retained in service.

8. Financial Responsibility

a. The permittee shall maintain the resources necessary to close, plug and abandon the injection and associated monitor wells, at all times [Rule 62-528.435(9), F.A.C.].

b. The permittee shall review annually the plugging and abandonment cost estimates. An increase of ten (10) percent or more over the cost estimate upon which financial responsibility is based shall require the permittee to submit documentation to obtain an updated Certificate of Demonstration of Financial Responsibility.

c. In the event the mechanism used to demonstrate financial responsibility should become invalid for any reason, the Permittee shall notify the Department of Environmental Protection in writing within fourteen (14) days of such invalidation. The permittee shall then within thirty (30) days of said notification submit to the Department for approval new financial documentation in order to comply with Rule 62-528.435(9), F.A.C., and the conditions of this permit.

PERMITTEE:
Mr. George A. Haughney, P.E.
Director of Utilities
City of Cooper City

COUNTY: Broward
PERMIT/CERTIFICATION NUMBER: 0153012-001-UC
DATE OF ISSUANCE: MAR 1 4 2000
EXPIRATION DATE: MAR 1 3 2005

SPECIFIC CONDITIONS:

9. Emergency Disposal

   a. All applicable federal, state, and local permits shall be in place to allow for any alternate discharges due to emergency or planned outage conditions.

   b. Any proposed changes in emergency disposal methods shall be submitted for UIC-TAC and USEPA review and Department approval prior to implementation.

   c. In the event of an emergency and/or discharge, or other abnormal event where the Permittee is temporarily unable to comply with any of the conditions of this permit due to breakdown of equipment, power outages, destruction by hazard or fire, wind, or by other cause, the Department shall be notified in person or by telephone within twenty-four (24) hours of the incident. A written report describing the incident shall also be submitted to the Department within five (5) days of the start of the incident. The written report shall contain a complete description of the emergency and/or discharge, a discussion of its cause(s), and if it has been corrected, the anticipated time the discharge is to continue, the steps being taken to reduce, eliminate, and prevent recurrence of the event, and all other information deemed necessary by the Department.

   d. The emergency disposal method consists of the following:

      1) The emergency disposal method presented in the permit application received March 5. 1999 and approved by the Department as a part of this permit, shall be maintained in fully operational order at all times.

      2) Any emergency bypass of the injection well system shall be governed by Rule 62-620.610, F.A.C. and meet the conditions of the Wastewater Facilities Permit No. FL0040398.

      3) Any proposed changes in emergency disposal methods shall be submitted for UIC-TAC and USEPA review and Department approval prior to implementation.

10. Permit Extension(s), Renewal(s) and Operation Permit Application(s)

   a. Pursuant to Rule 62-4.080(3), a permittee may request that a permit be extended as a modification of an existing permit. A request for an extension is the responsibility of the permittee and shall be submitted to the Department before the expiration of the permit. In accordance with Rule 62-4.070(4), F.A.C., a permit cannot be extended beyond the maximum 5 year statutory limit. Should operational testing need to continue beyond the 5 years of this permit, the permittee must renew the construction permit in accordance with S.C. 10.b. below. Operational testing shall not exceed two years except as provided in Rule 62-528.450(3)(e), F.A.C.

   b. If injection is to continue beyond the expiration date of this permit the permittee shall apply for, and obtain an operation permit. If necessary to complete the two-year operational testing period, the permittee shall apply for renewal of the construction permit at least sixty (60) days prior to the expiration date of this permit.

PERMITTEE:
Mr. George A. Haughney, P.E.
Director of Utilities
City of Cooper City

COUNTY: Broward
PERMIT/CERTIFICATION NUMBER: 0153012-001-UC
DATE OF ISSUANCE: MAR 14 2000
EXPIRATION DATE: MAR 13 2005

SPECIFIC CONDITIONS:

11. Signatories

a. All reports and other submittals required to comply with this permit shall be signed by a person authorized under Rules 62-528.340(1) or (2), F.A.C.

b. In accordance with Rule 62-528.340(4), F.A.C., all reports shall contain the following certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Issued this 14th day of March, 2000

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Melissa L. Meeker 3/14/00
Melissa L. Meeker
Director of District Management

MLM/ES/JLC/mas

SOUTHEAST DISTRICT UIC SECTION

SURFICIAL AQUIFER MONITOR WELL QUARTERLY REPORT

FACILITY NAME ______________________ REPORT MO/YR.______________

OPERATOR NAME______________________ LICENSE #______________

I.D.NUMBER ______________________ PERMIT #______________

INJECTION WELL #______________________

SAMPLING DATE______________________ TIME______________

	PMW #1	PMW #2	PMW #3	PMW #4
LOCATION	NE CORNER	NW CORNER	SE CORNER	SW CORNER
ELEVATION OF TOC (NGVD)				
DEPTH TO WATER (TOC)				
WATER LEVEL (NGVD)				
CHLORIDES (MG/L.)				
CONDUCTIVITY (UMHOS)				
TEMPERATURE (F)				

ANALYZED BY:______________________ SAMPLED BY:______________

PHONE #______________________ TITLE______________

SITE PLAN OF PMW LOCATIONS

PRIMARY & SECONDARY DRINKING WATER STANDARDS & MINIMUM CRITERIA

Updated September 1998

PRIMARY DRINKING WATER STANDARDS

PARAMETER

Alachlor
Aldicarb
Aldicarb sulfoxide
Aldicarb sulfone
Aroclors (Polychlorinated Biphenyls or PCB's)
Alpha, Gross
Antimony
Arsenic
Atrazine
Barium
Benzene
Benzo(a)pyrene
Beryllium
Bis(2-ethylhexyl) adipate (Di(2-ethylhexyl) adipate)
Bis(2-ethylhexyl) phthalate (Di(2-ethylhexyl) phthalate)
Cadmium
Carbofuran
Carbon Tetrachloride (Tetrachloromethane)
Chlordane
Chlorobenzene (Monochlorobenzene)
Chloroethylene (Vinyl Chloride)
Chromium
Coliforms, Total
Cyanide
2,4-D (2,4-Dichlorophenoxyacetic acid)
Dalapon (2,2-Dichloropropionic acid)
Dibromochloropropane (DBCP)
1,2-Dibromoethane (EDB, Ethylene Dibromide)
1,2-Dichlorobenzene (o-Dichlorobenzene)
1,4-Dichlorobenzene (p-Dichlorobenzene or Para Dichlorobenzene)
1,2-Dichloroethane (Ethylene dichloride)
1,1-Dichloroethylene (Vinylidene chloride)
1,2-Dichlorethylene (cis-1,2-Dichloroethylene or trans-1,2-Dichloroethylene)
cis-1,2-Dichloroethylene (1,2-Dichlorethylene)
trans-1,2-Dichloroethylene (1,2-Dichlorethylene)
Dichloromethane (Methylene chloride)
1,2-Dichloropropane
Di(2-ethylhexyl) adipate (Bis(2-ethylhexyl) adipate)
Di(2-ethylhexyl) phthalate (Bis(2-ethylhexyl) phthalate)
Dinoseb
Diquat
EDB (Ethylene dibromide, 1,2-Dibromoethane)
Endothall
Endrin
Ethylbenzene
Ethylene dichloride (1,2-Dichloroethane)
Fluoride
Glyphosate (Roundup)
Gross Alpha
Heptachlor
Heptachlor Epoxide
Hexachlorobenzene (HCB)
gamma-Hexachlorocyclohexane (Lindane)
Hexachlorocyclopentadiene
Lead

PRIMARY DRINKING WATER STANDARDS, CONT'D

PARAMETER

Lindane (gamma-Hexachlorocyclohexane)
Mercury
Methoxychlor
Methylene chloride (Dichloromethane)
Monochlorobenzene (Chlorobenzene)
Nickel
Nitrate (as N)
Nitrite (as N)
Total Nitrate + Nitrite (as N)
Oxamyl
p-Dichlorobenzene or Para Dichlorobenzene (1,4-Dichlorobenzene)
Pentachlorophenol
Perchloroethylene (Tetrachloroethylene)
Picloram
Polychlorinated biphenyl (PCB or Aroclors)
Radium
Roundup (Glyphosate)
Selenium
Silver
Silvex (2,4,5-TP)
Simazine
Sodium
Styrene (Vinyl benzene)
Tetrachloroethylene (Perchloroethylene)
Tetrachloromethane (Carbon Tetrachloride)
Thallium
Toluene
Toxaphene
2,4,5-TP (Silvex)
1,2,4-Trichlorobenzene
1,1,1-Trichloroethane
1,1,2-Trichloroethane
Trichloroethylene (Trichloroethene, TCE)
Trihalomethanes, Total
Vinyl Chloride (Chloroethylene)
Xylenes (total)

SECONDARY DRINKING WATER STANDARDS

PARAMETER

Aluminum
Chloride
Color
Copper
Corrosivity
Ethylbenzene
Fluoride
Foaming Agents (MBAS)
Iron
Manganese
Odor
pH
Silver
Sulfate
Toluene
Total Dissolved Solids (TDS)
Xylenes
Zinc

MUNICIPAL WASTEWATER MINIMUM CRITERIA
GROUND WATER MONITORING PARAMETERS

INORGANICS

Ammonia
Nitrogen (organic)
Total Kjeldahl Nitrogen
Total Phosphorus (phosphate)

VOLATILE ORGANICS

Chloroethane
Chloroform
para-Dichlorobenzene (1,4 Dichlorobenzene)
1,2-Dichloroethylene (cis-1,2-Dichloroethylene or trans-1,2-Dichloroethylene)

BASE/NEUTRAL ORGANICS

Anthracene
Butylbenzylphthalate
Dimethylphthalate
Naphalene
Phenanthrene

PESTICIDES AND PCBs

Aldrin
Dieldrin
Dioxin

ACID EXTRACTABLES

2-chlorophenol
Phenol
2,4,6-trichlorophenol

OTHER

Conductivity
Biological Oxygen Demand
Chemical Oxygen Demand
Temperature

INJECTIVITY TESTING SUMMARY SHEET

FACILITY__________________________

Deep Injection Well System
Injectivity Testing

Injection Well No. :	
DATE OF TEST:	
FDER PERMIT No.:	

____
Signature of Lead Operator

Were Wellhead Valves Exercised _______ YES _______ NO

TIME

	START	SHUT-IN PRESSURE
	MINS AFTER SHUT -IN	CALIBRATED PRESSURE GAUGE AT WELL HEAD (PSI)
	10	
	20	
	30	

COLUMN: 1	2	3	4	5	6	7	8	9	10
TIME	INJECTION WELL SHUT-IN PRESSURE AFTER 30 MINUTES (PSI)	PUMP NUMBER(S) ON-LINE	INJECTION RATE (gpm) or (mgd)	Injection Pressure after 10 minutes of pumping		PRESSURE DIFFERENTIAL (Col 5 - Col 2)	INJECTIVITY INDEX (Col 4 divide by Col 7)	UPPER MONITOR ZONE IN FEET OF HEAD ABOVE NGVD (FEET)	LOWER MONITOR ZONE IN FEET OF HEAD ABOVE NGVD (FEET)
				CALIBRATED GAUGE AT INJECTION WELLHEAD (PSI)	PRESSURE RECORDER (PSI)	FROM CALIBRATED PRESSURE GAUGE AT INJECTION WELLHEAD (PSI)	FROM CALIBRATED PRESSURE GAUGE AT INJECTION WELLHEAD (GPM / PSI)		

NOTES

1. INJECTIVITY INDEX (GPM/PSI) =

$$\frac{\text{INJECTION RATE (GPM) (COLUMN 4)}}{\text{(INJECTION PRESSURE (PSI) (COLUMN 5)} - \text{(SHUT-IN PRESSURE (PSI) (COLUMN 2)}}$$

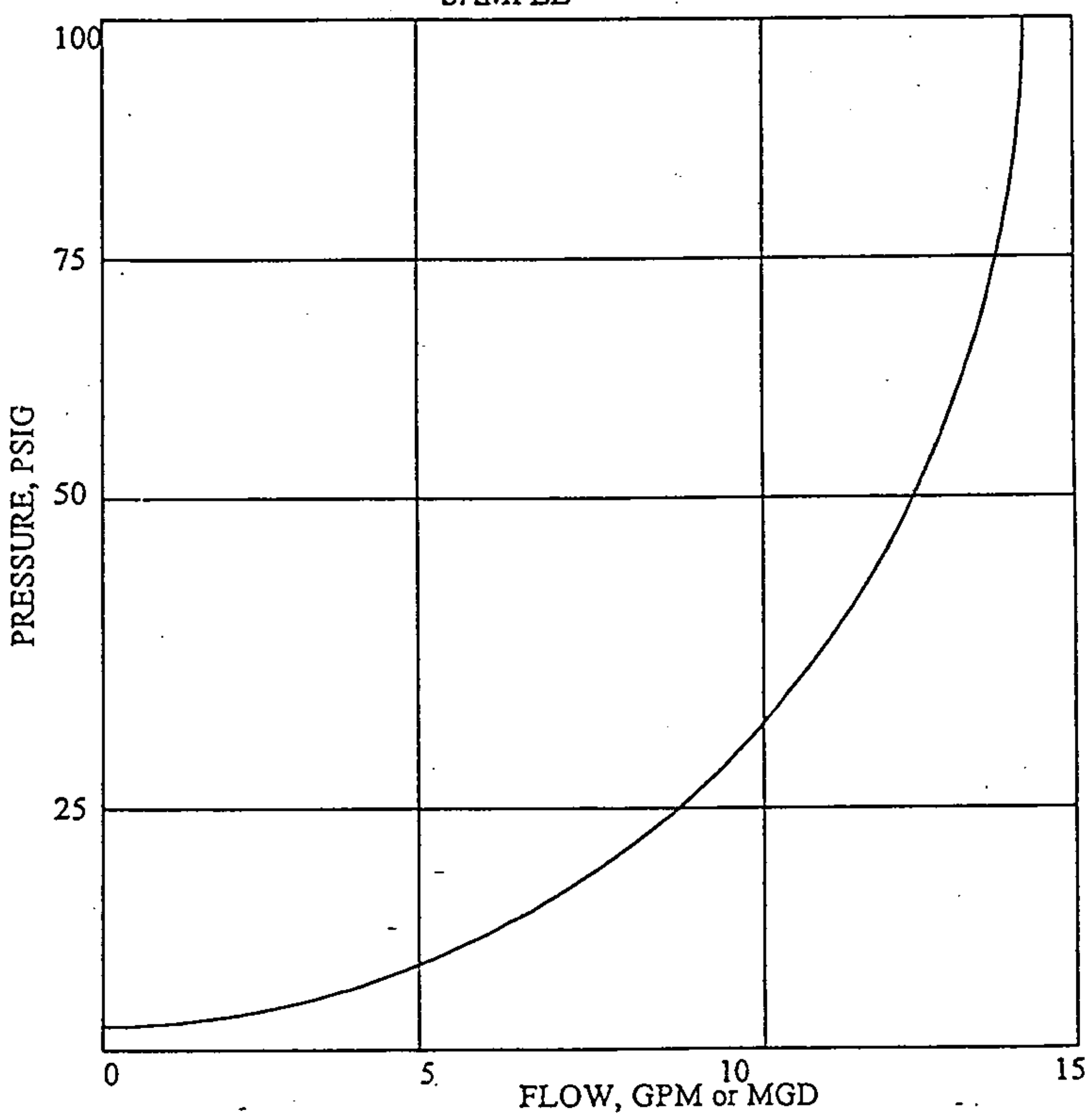
2. FOR MORE INFORMATION REGARDING EXECUTION OF THIS TEST CONSULT THE INJECTIVITY TESTING PROTOCOL IN THE O&M MANUAL

UNDERGROUND INJECTION CONTROL

DATE OF TEST :	FACILITY :
PERMIT NO. :	I.D. # :
WELL NO.	LEAD OPERATOR_______________ SIGNATURE

INJECTIVITY TEST

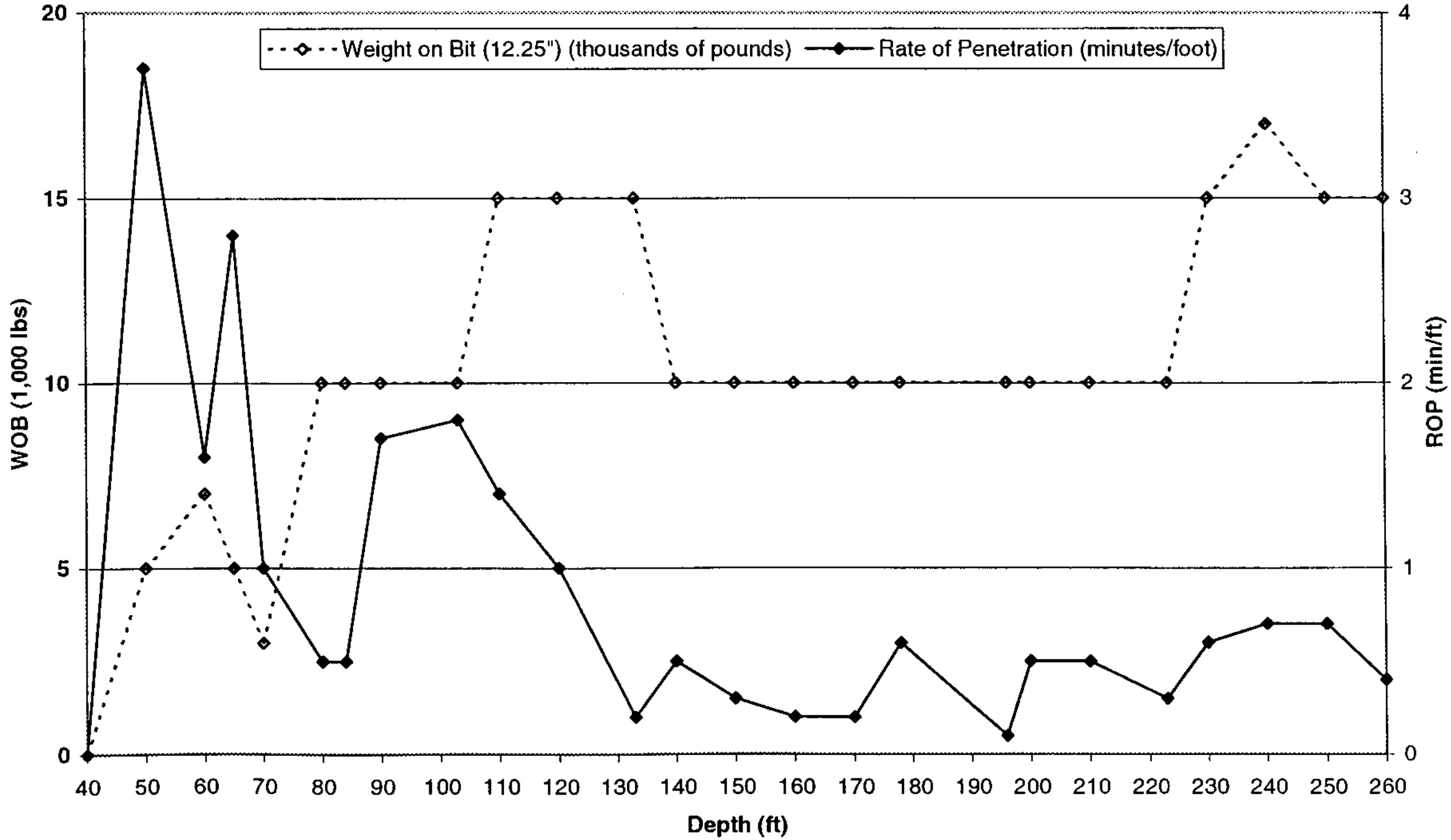
SAMPLE



APPENDIX B

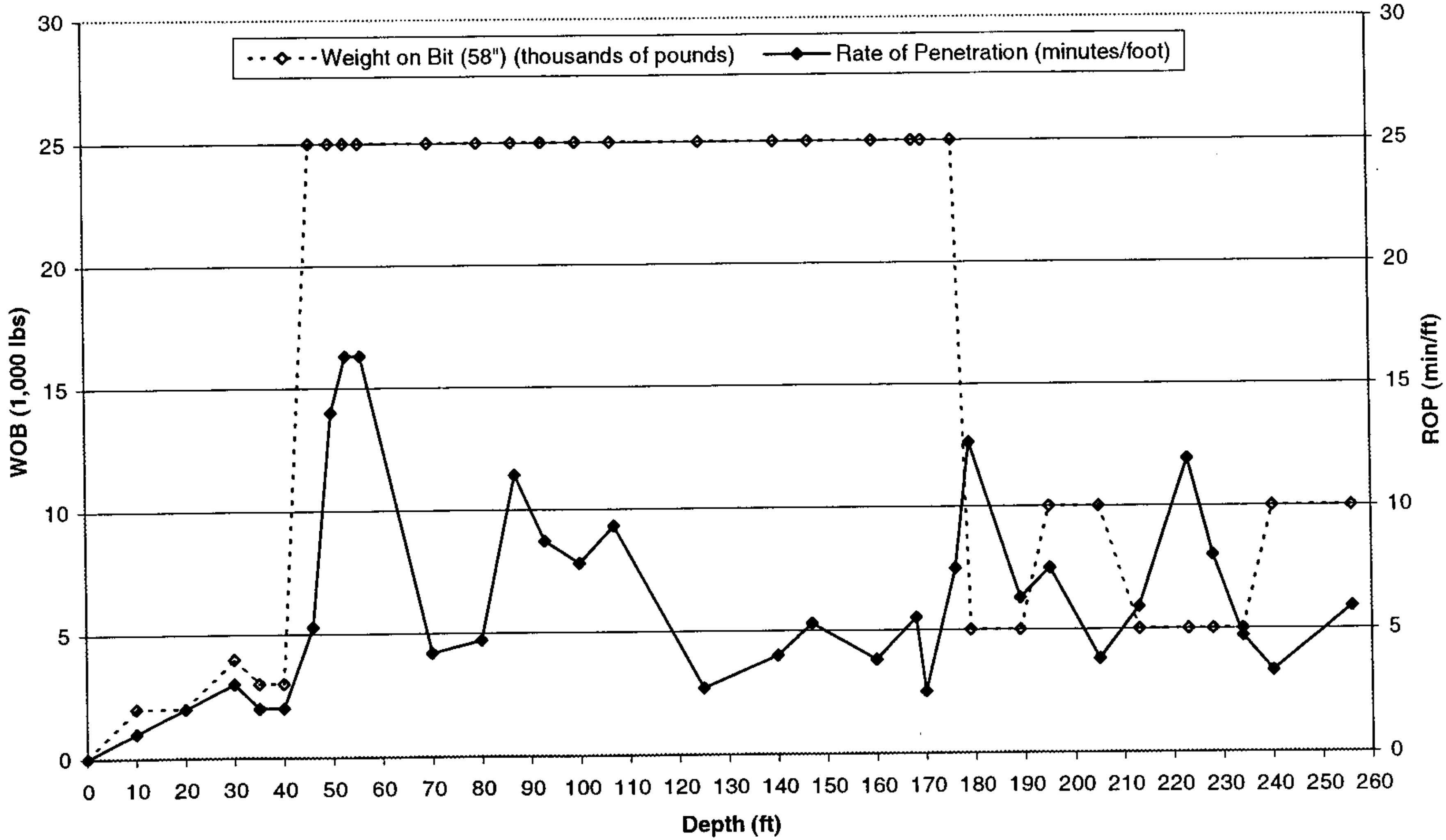
WEIGHT ON BIT AND RATE OF PENETRATION

Cooper City Concentrate Disposal Well IW-1
Weight on Bit / Rate of Penetration
12.25-inch Diameter Pilot Hole 40 to 260 Feet BPL

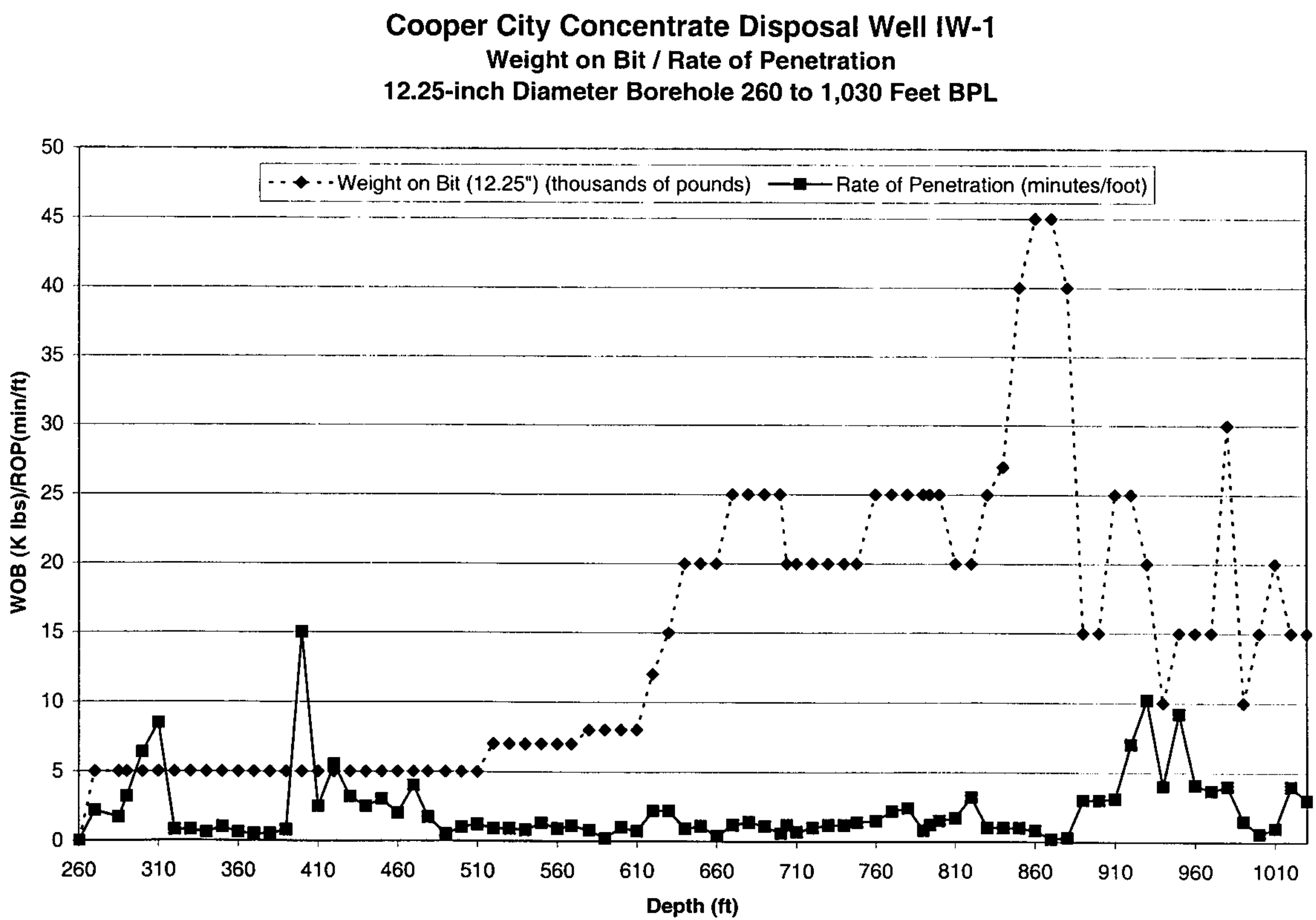


IW1 WOB-ROP 40 to 260 (12.25)

Cooper City Concentrate Disposal Well IW-1
Weight on Bit / Rate of Penetration
58-inch Diameter Borehole 0 to 260 Feet BPL

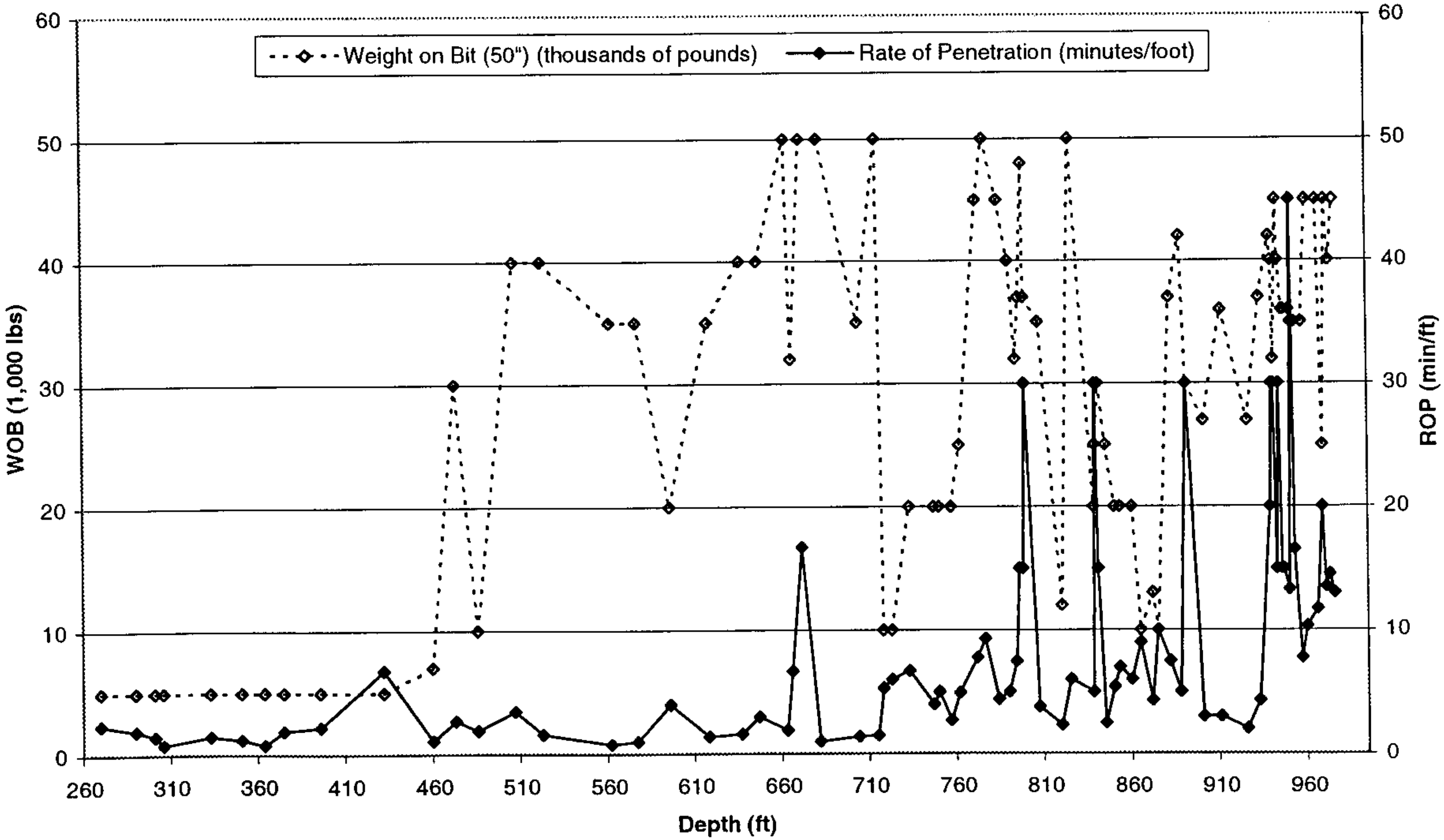


IW1 WOB-ROP 0 to 260 (58)



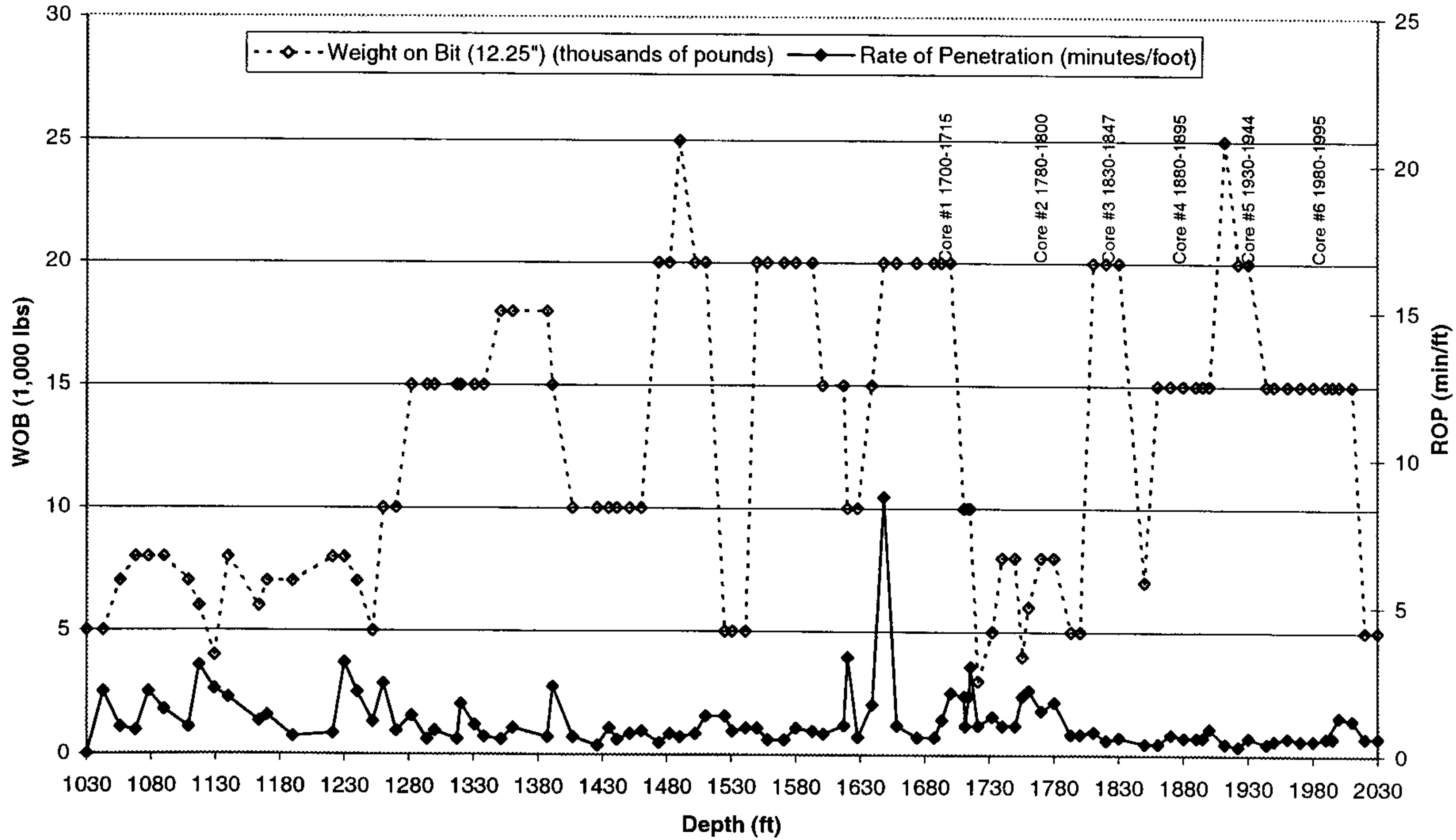
IW1WOB-ROP 260 to 1030 (12.25)

Cooper City Concentrate Disposal Well IW-1
Weight on Bit / Rate of Penetration
50-inch Diameter Borehole 260 to 995 Feet BPL



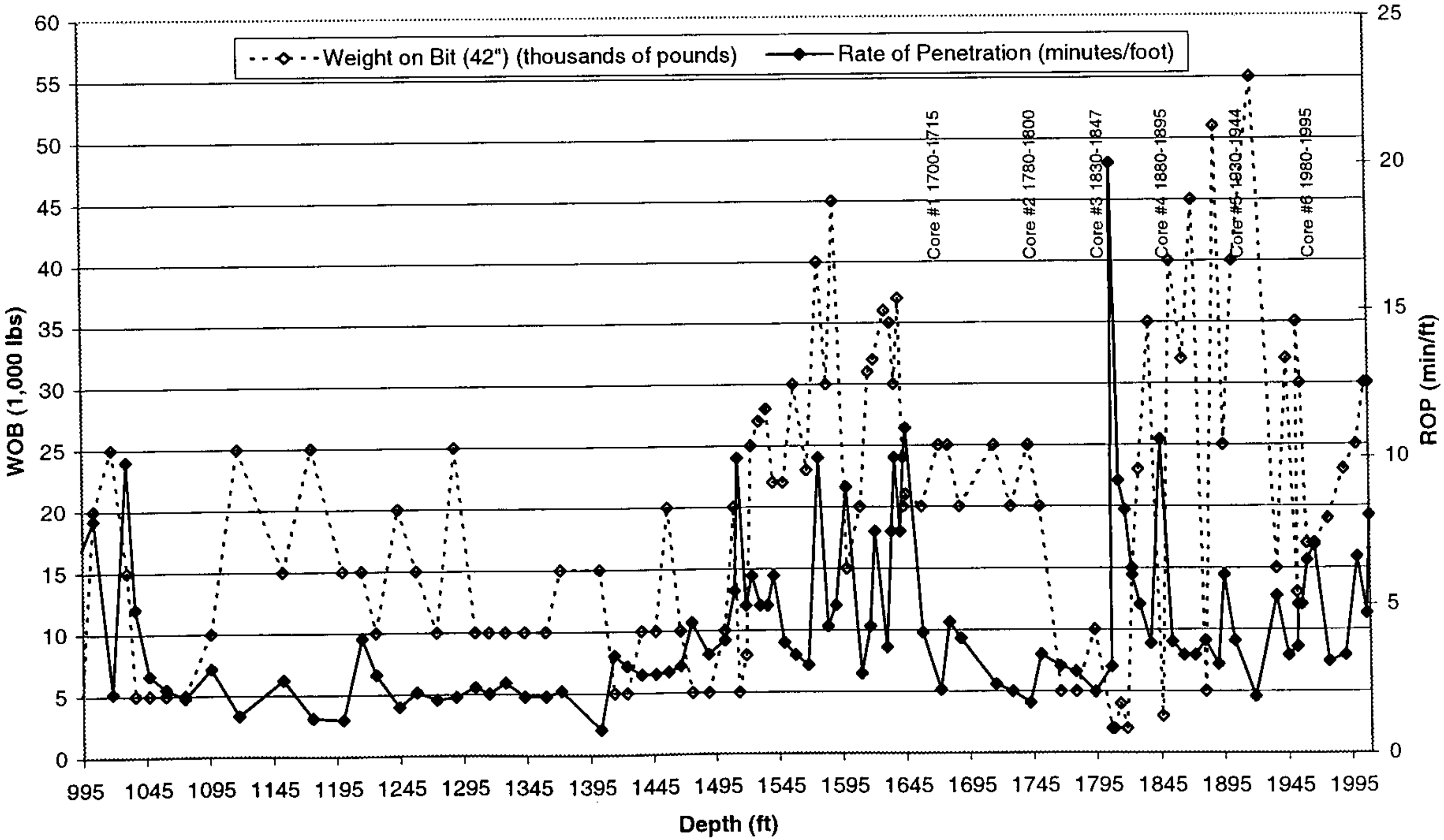
IW1 WOB-ROP 260 to 995 (50)

Cooper City Concentrate Disposal Well IW-1
Weight on Bit / Rate of Penetration
12.25-inch Diameter Pilot Hole 1,030 to 2,030 Feet BPL

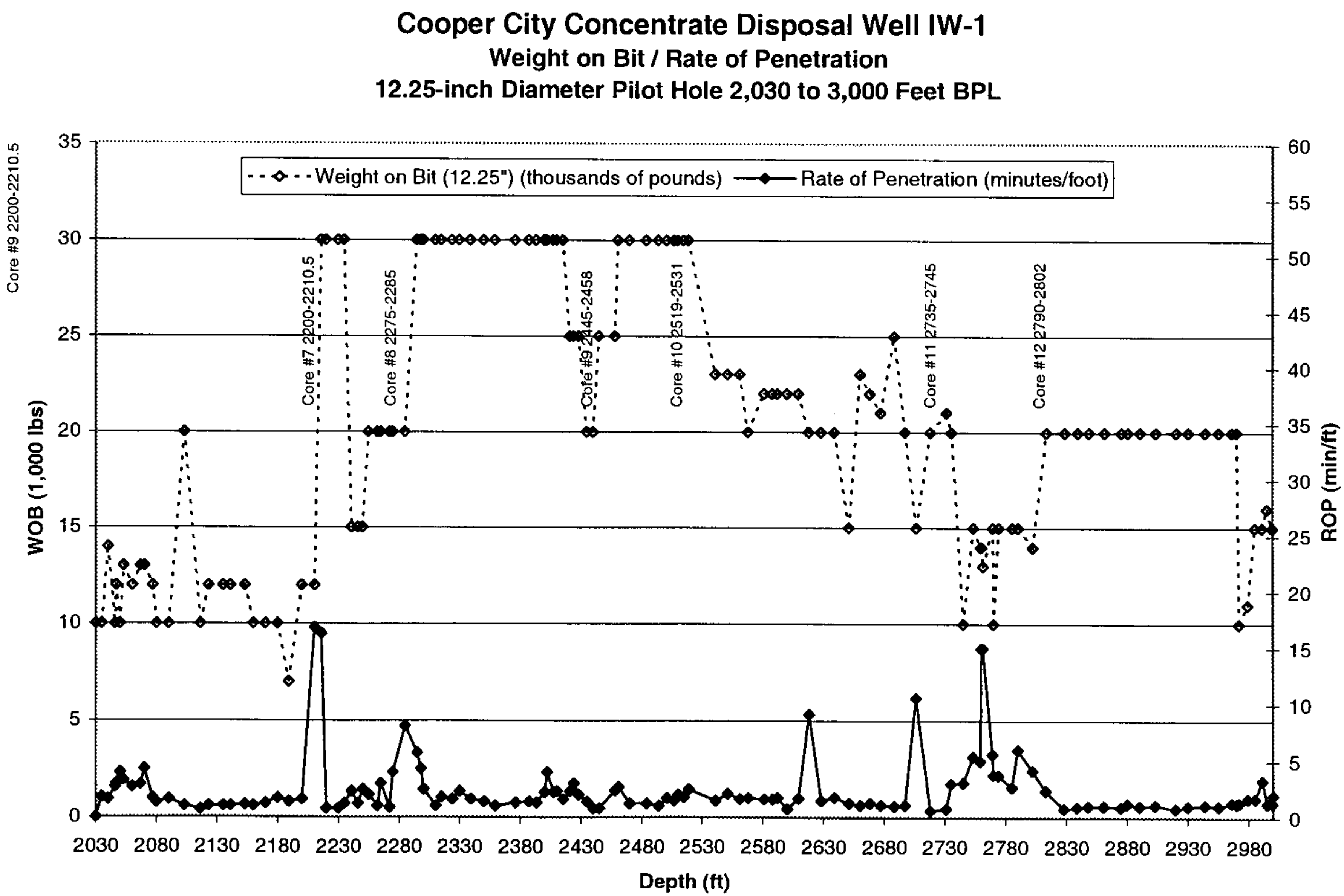


IW1 WOB-ROP 1030 to 2030 (12.25)

Cooper City Concentrate Disposal Well IW-1
Weight on Bit / Rate of Penetration
Nominal 42-inch Diameter Borehole 995 to 2,010 Feet BPL

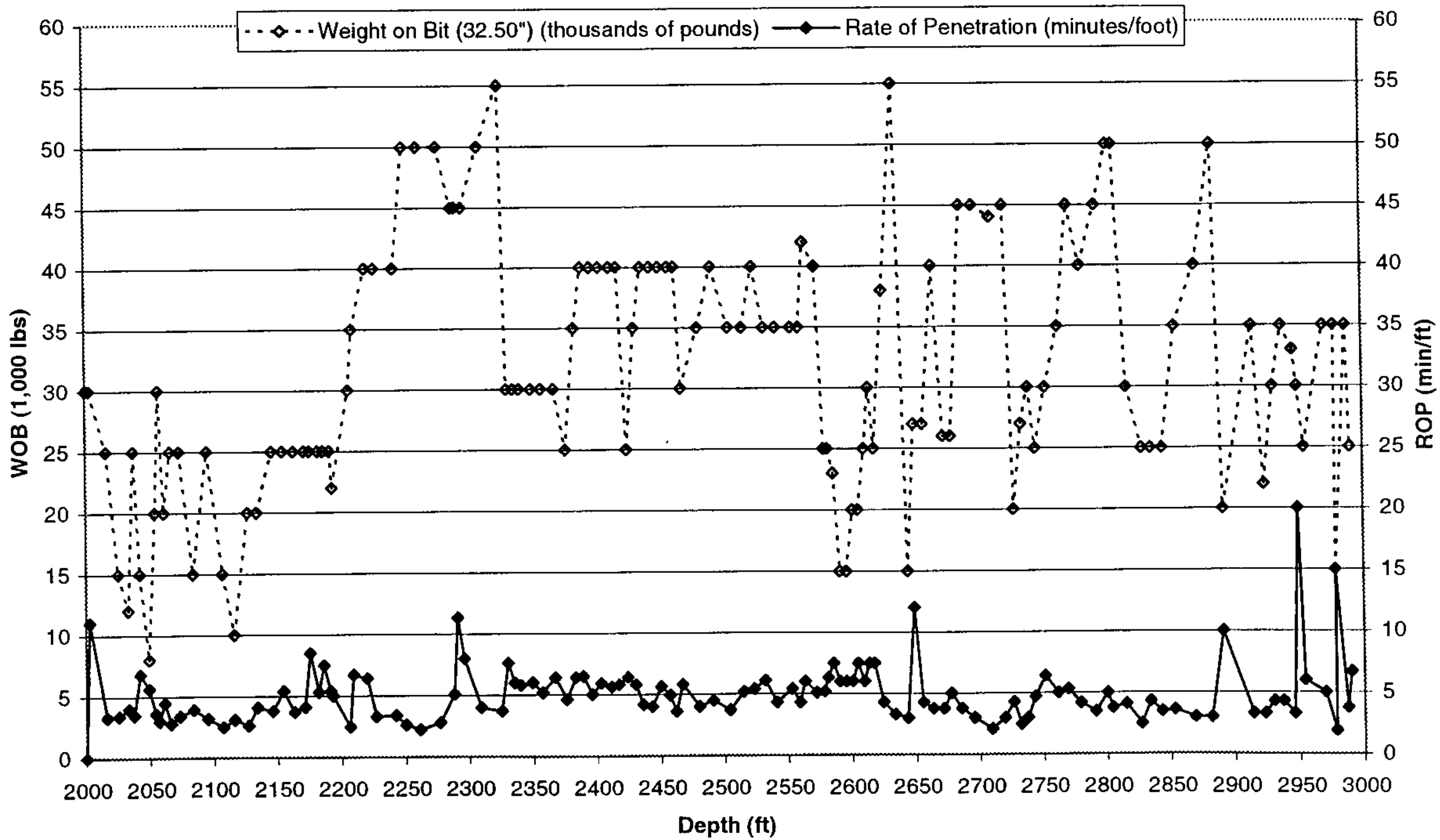


IW1 WOB-ROP 995 to 2010 (40.5)



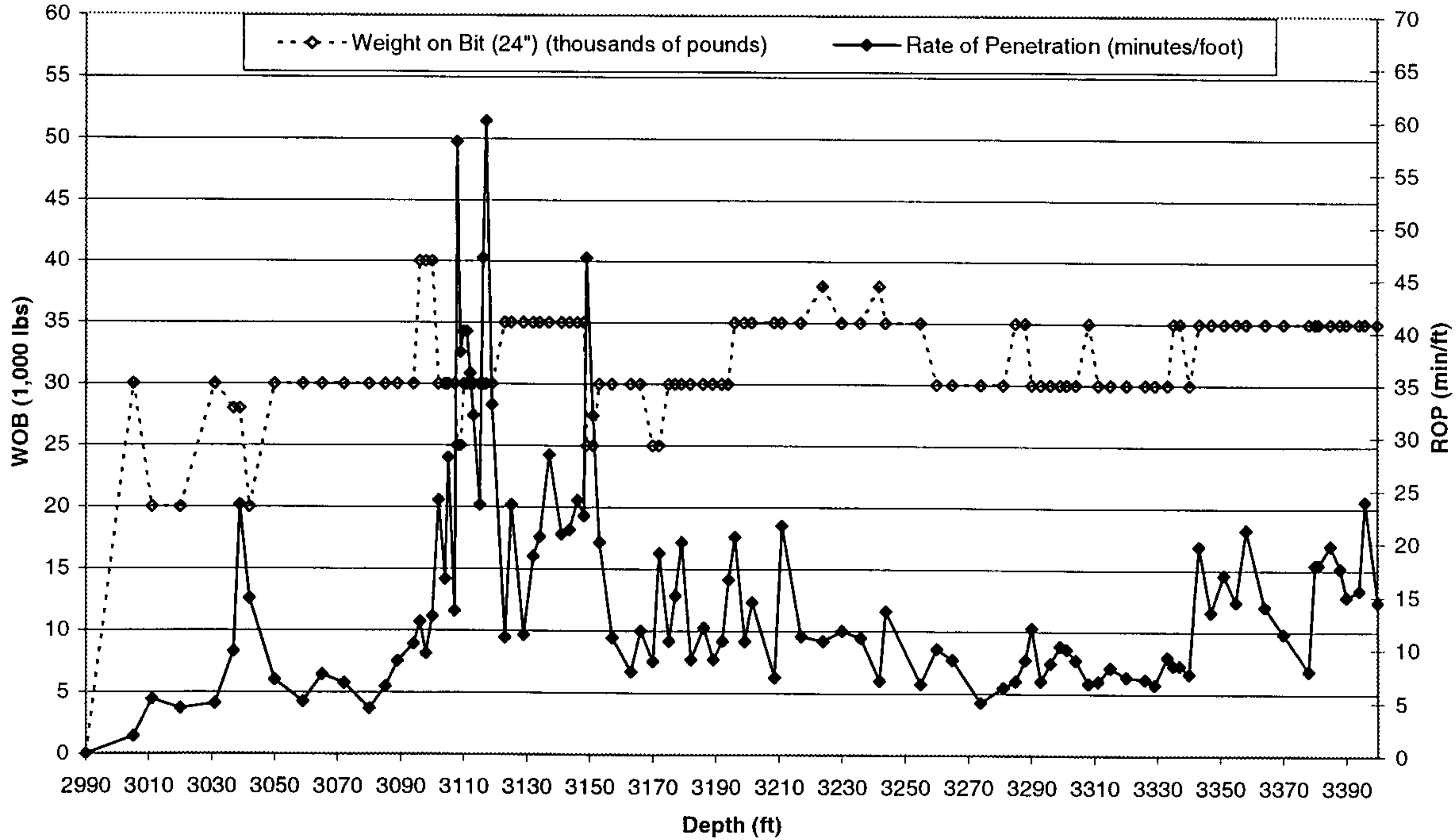
Cooper City Concentrate Disposal Well IW-1
Weight on Bit / Rate of Penetration
12.25-inch Diameter Pilot Hole 2,030 to 3,000 Feet BPL
Weight on Bit (12.25") (thousands of pounds)
Rate of Penetration (minutes/foot)
Core #9 2200-2210.5
Core #7 2200-2210.5
Core #8 2275-2285
Core #9 2445-2458
Core #10 2519-2531
Core #11 2735-2745
Core #12 2790-2802
WOB (1,000 lbs)
ROP (min/ft)
Depth (ft)

Cooper City Concentrate Disposal Well IW-1
Weight on Bit / Rate of Penetration
Nominal 34-inch Diameter Borehole 2,000 to 3,000 Feet BPL



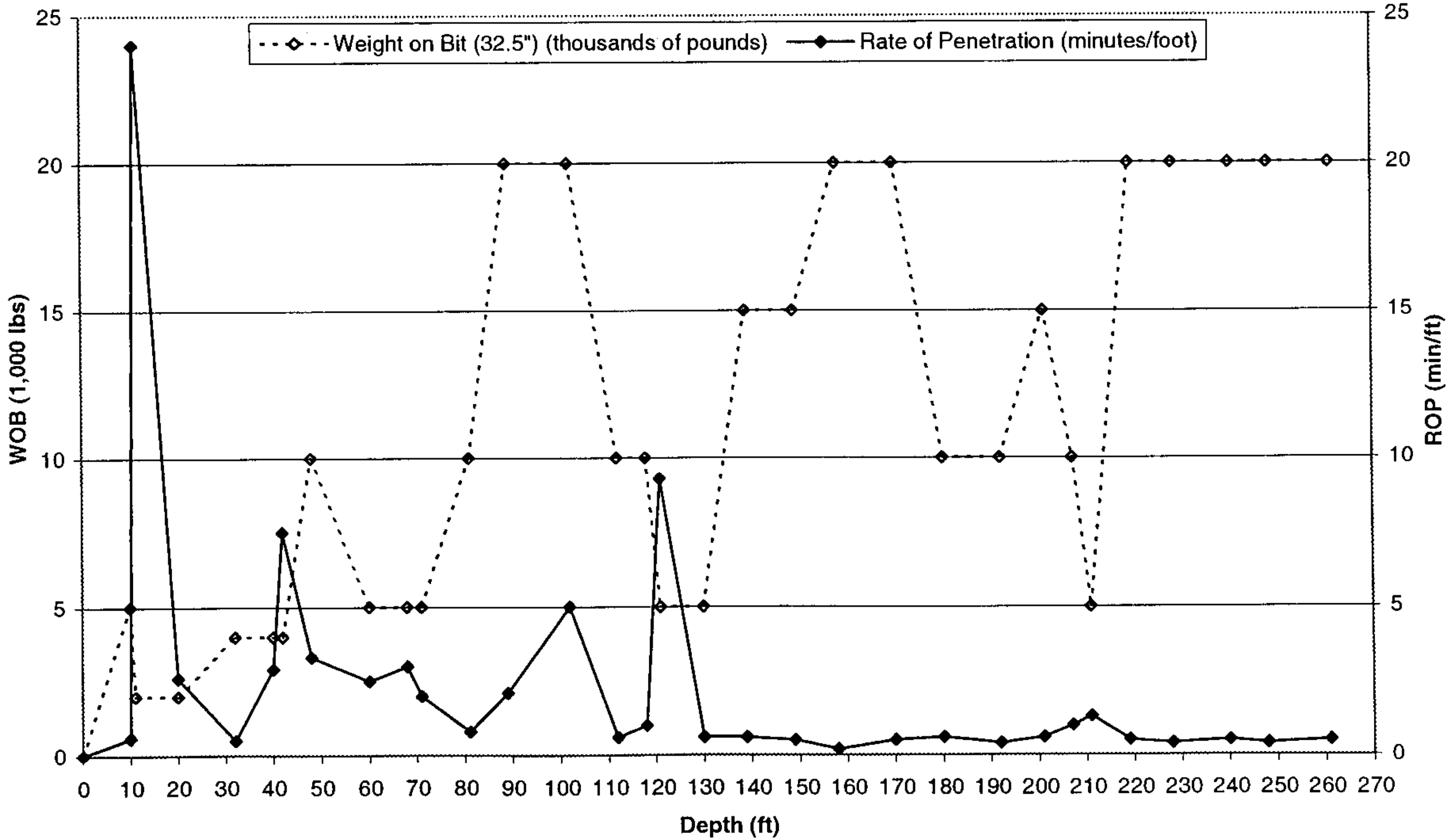
IW1 WOB-ROP 2000 to 3000(32.5)

Cooper City Concentrate Disposal Well IW-1
Weight on Bit / Rate of Penetration
Nominal 24-inch Diameter Open Borehole 2,990 to 3,400 Feet BPL

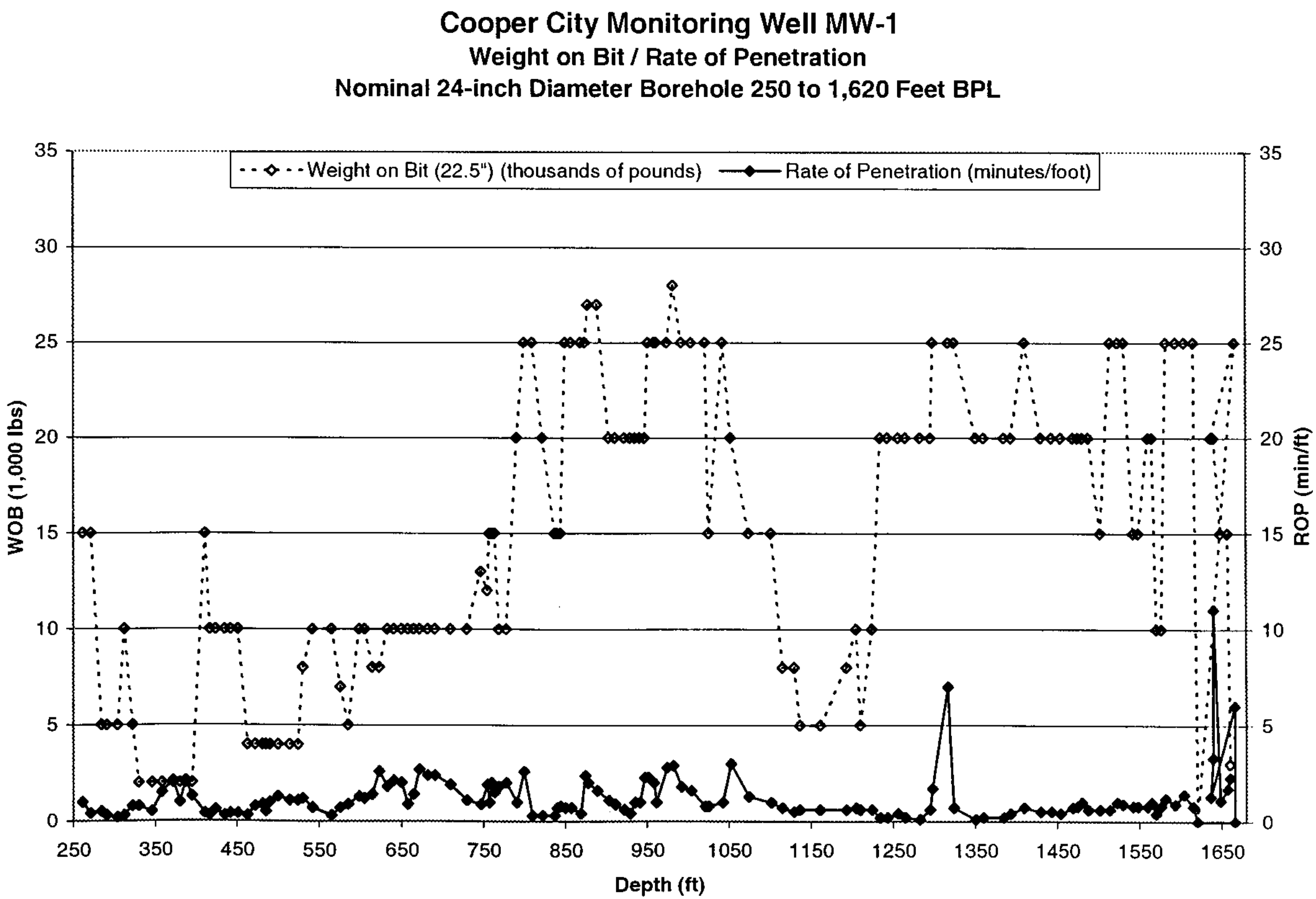


IW1 WOB-ROP 3000 to 3400(22.5)

Cooper City Monitoring Well MW-1
Weight on Bit / Rate of Penetration
Nominal 34-inch Diameter Borehole 0 to 250 Feet BPL

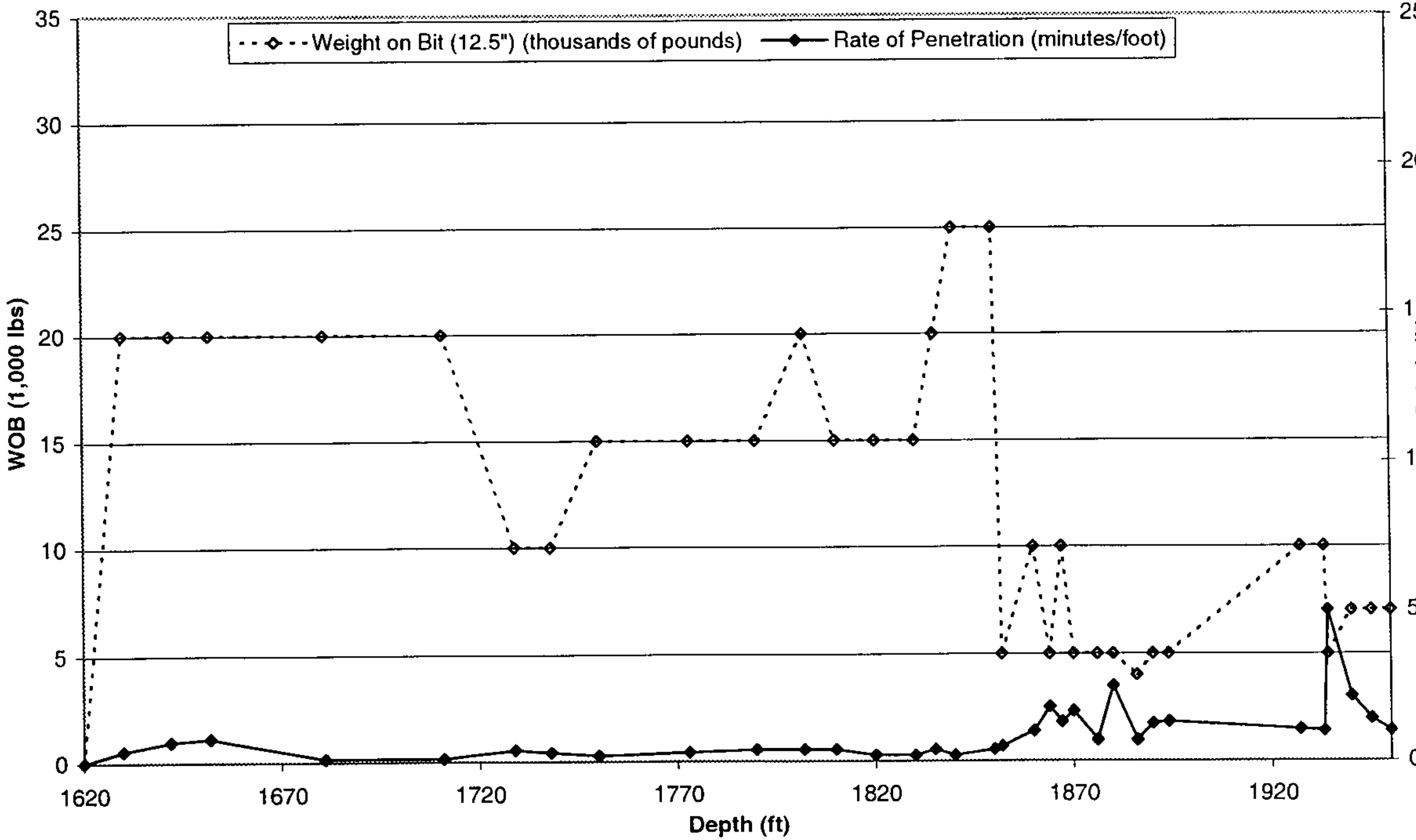


MW1 WOB-ROP 0 to 250 (32.5)



MW1 WOB-ROP 250 to 1660 (22.5)

Cooper City Monitoring Well MW-1
Weight on Bit / Rate of Penetration
12.5-inch Diameter Borehole 1,620 to 1,950 Feet BPL



MW1 WOB-ROP 1620 to 1950 (12.5)

APPENDIX C

INCLINATION SURVEYS

Appendix C - Inclination Survey
Monitoring Well MW-1
City of Cooper City WTP/WWTP

Bit Size (inches)	Inclination (degrees)	Depth (feet bpl)
32.5	.300	90
32.5	.250	180
22.5	.150	270
22.5	.150	360
22.5	.400	450
22.5	.025	540
22.5	.125	630
22.5	.250	720
22.5	.250	810
22.5	.300	900
22.5	.250	990
22.5	.125	1080
22.5	.400	1170
22.5	.200	1260
22.5	.300	1350
22.5	.250	1440
22.5	.275	1530
22.5	.275	1620
12.25	.300	1710
12.25	.200	1800

Appendix C - Inclination Survey
Concentrate Disposal Well IW-1
City of Cooper City WTP/WWTP

Depth (feet bpl)	Inclination (degrees)	Bit Size (inches)
90	.675	12.25
180	.500	12.25
90	.300	58.5
180	.680	58.5
270	.260	12.25
360	.300	12.25
450	.350	12.25
540	.500	12.25
630	.400	12.25
720	.250	12.25
810	.450	12.25
900	.260	12.25
270	.350	50.0
360	.250	50.0
450	.300	50.0
540	.200	50.0
630	.350	50.0
720	.500	50.0
900	.400	50.0
990	.480	12.25
1080	.325	12.25
1170	.250	12.25
1260	.375	12.25
1350	.285	12.25
1440	.400	12.25
1530	.275	12.25
1620	.250	12.25
1710	.300	12.25
1800	.400	12.25
1890	.250	12.25
1980	.460	12.25
990	.350	42.0
1080	.300	42.0
1170	.375	42.0
1260	.460	42.0

Depth (feet bpl)	Inclination (degrees)	Bit Size (inches)
1350	.250	42.0
1440	.260	42.0
1540	.250	42.0
1530	.450	42.0
1620	.250	42.0
1710	.250	42.0
1800	.250	42.0
1890	.300	42.0
2070	.450	12.25
2160	.300	12.25
2250	.300	12.25
2340	.500	12.25
2430	.300	12.25
2520	.500	12.25
2610	.475	12.25
2700	.300	12.25
2790	.375	12.25
2090	.260	34.0
2180	.350	34.0
2270	.250	34.0
2360	.260	34.0
2450	.255	34.0
2540	.250	34.0
2630	.200	34.0
2720	.250	34.0
2810	.275	34.0
2900	.250	34.0
2990	.125	34.0
3080	.200	24.0
3080	.250	24.0
3170	.200	24.0
3260	.400	24.0
3350	.250	24.0

APPENDIX D

GEOLOGIC LOGS

Injection Well

APPENDIX D - GEOLOGIC LOG
CONCENTRATE DISPOSAL WELL (IW-1)

Depth (feet bpl)	Thickness (feet)	Sample Geologic Description
0-20	20	SANDY LIMESTONE - 100% Grayish orange (10YR 7/4) hard, medium grained, micritic, vuggy packstone with fine to medium grained colorless angular quartz sand.
20-70	50	SANDY LIMESTONE AND LIMY SANDSTONE – Sandy Limestone, 70%-50% yellowish gray (5Y 8/1) fine grained to cryptocrystalline, moderately hard wackestone/packstone with some shell fragments. Limy Sandstone, 30%-50% very light gray (N8) fine to medium grained, subangular quartz with trace medium grained phosphorite, moderately cemented with calcite, content increasing with depth.
70-80	10	LIMY SANDSTONE - 100% Yellowish gray (5Y 8/1) fine to coarse grained, subangular quartz with trace medium grained phosphorite, moderately to poorly cemented with calcite.
80-100	20	SANDY LIMESTONE - 100% Yellowish gray (5Y 8/1) medium grained to carbonate mudstone, sparry with tests and colorless medium grained quartz sand and trace medium to fine grained phosphorite. Trace medium gray (N5) Limy Sandstone below 90 feet.
100-150	50	LIMY SANDSTONE, SANDY LIMESTONE AND LIMESTONE – Limy Sandstone, 40% mainly yellowish gray (5Y 8/1) medium grained angular to subangular quartz and trace medium grained subrounded phosphorite, moderately well cemented with calcite. Trace medium gray (N5) medium to coarse-grained subangular quartz with trace medium grained phosphorite and shell fragments, moderately well cemented with calcite. Sandy Limestone, 40% yellowish gray (5Y 8/1) sparry carbonate mudstone with clear medium grained quartz sand. Limestone 20% yellowish gray (5Y 8/1) moderately hard carbonate mudstone to grainstone. Tests at 130 feet.
150-190	40	LIMESTONE AND SANDY LIMESTONE – Limestone, 90% mainly yellowish gray (5Y 8/1) medium grained, soft, packstone/grainstone. Sandy Limestone, 10% yellowish gray (5Y 8/1) sparry carbonate mudstone with clear medium grained quartz sand. Trace light olive gray (5Y 6/1) soft mudstone at 180 feet.

APPENDIX D - GEOLOGIC LOG
CONCENTRATE DISPOSAL WELL (IW-1)

Depth (feet bpl)	Thickness (feet)	Sample Geologic Description
190-200	10	LIMESTONE - Limestone, 100% yellowish gray (5Y 7/2) medium to coarse grained, moderately hard fossiliferous crystalline carbonate to packstone with little medium gray (N5) hard wackestone with clear medium quartz sand.
200-240	40	SANDY CLAY - 100% Dark greenish gray (5GY 4/1) very soft non-plastic, phosphatic with very fine to fine grained clear subangular quartz sand and trace Limestone. Plastic below 220 feet.
240-280	40	SANDY CLAY AND SANDY LIMESTONE – Sandy Clay 80%, dark greenish gray (5GY 4/1) very soft non-plastic, phosphatic with very fine to fine grained clear subangular quartz sand and trace Limestone. Sandy Limestone 20%, grayish orange (10YR 7/4) medium to coarse grained sparry phosphatic packstone.
280-460	180	SANDY CLAY - 100% Dark greenish gray (56Y 4/1) very soft, plastic calcareous with fine grained, clear subangular, quartz sand and trace fine grained phosphorite. Trace very pale orange (10YR 8/2) to light olive gray (5Y 6/1) very sparry fossiliferous packstone 380-400
460-470	10	SANDY CLAY AND SANDY CLAYEY LIMESTONE - Sandy Clay 80%, dark greenish gray (5GY 4/1) very soft, plastic, calcareous with fine grained, clear subangular quartz sand and trace fine grained phosphorite. Sandy Clayey Limestone 20%, light olive gray (5Y 6/1) fine grained, moderately hard sandy mudstone.
470-480	10	SANDY CLAY AND SANDSTONE – Sandy Clay 70%, dark greenish gray (56Y 4/1), very soft, plastic, calcareous with fine grained clear, subangular, quartz sand and trace fine grained phosphorite. Sandstone 30%, very light gray (N8) very fine to fine grained, argillaceous slightly phosphatic, poorly cemented with calcite. Trace white (N9) carbonate mudstone.
480-530	50	CLAYEY SANDSTONE - 100% Pale olive (10Y 6/2) very fine grained quartz poorly cemented with calcite with trace fine grained phosphorite and trace white (N9) micritic Limestone. Clay content increasing with depth.

APPENDIX D - GEOLOGIC LOG
CONCENTRATE DISPOSAL WELL (IW-1)

Depth (feet bpl)	Thickness (feet)	Sample Geologic Description
530-560	30	SANDY CLAY AND CLAYEY SANDSTONE – Sandy Clay 70%, greenish gray (5GY 6/1) very soft, plastic with very fine grained quartz sand and trace fine grained phosphorite. Clayey Sandstone 30%, pale olive (10Y 6/2) very fine grained quartz, poorly cemented with calcite with trace fine grained phosphorite and trace white (N9) micritic limestone.
560-570	10	CLAYEY LIMESTONE AND CLAYEY SANDSTONE – Clayey Limestone 90%, light greenish gray (5GY 8/1) medium to fine grained, soft, partly sparry, slightly phosphatic packstone. Clayey Sandstone 10%, greenish black (5 GY 2/1) fine grained, very soft.
570-640	70	CLAYEY LIMESTONE – 100% Light greenish gray (5GY 8/1) medium to fine grained, soft, partly sparry, slightly phosphatic.
640-660	20	CLAY AND LIMESTONE – Clay 80%-60%, yellowish gray (5Y 7/2) plastic, slightly phosphatic with very fine grained quartz sand. Limestone 20% to 40% yellowish gray (5 Y 8/1) fine to very fine grained, moderately soft pack stone, percentage increasing with depth
660-730	70	CLAY AND LIMESTONE – Clay 70%-60%, yellowish gray (5Y 7/2) plastic, slightly phosphatic with very fine grained quartz sand. Limestone 30% to 40%, yellowish gray (5Y 8/1) fine grained, moderately soft, locally phosphatic, silty, poorly indurated wackestone/mudstone.
730-750	20	LIMESTONE AND CLAY – Limestone 70%, yellowish gray (5Y 7/2) to white (N9) generally medium grained, unconsolidated to locally moderately indurated, locally micritic and sparry packstone/grain stone. Trace Dolomite at 750 feet induration increases with depth. Clay 30%, yellowish gray (5Y 7/2) plastic, slightly phosphatic with very fine grained quartz sand.
750-810	60	CLAY AND LIMESTONE - Clay 90%, yellowish gray (5Y 7/2) soft, plastic. Limestone 10% white (N9) very fine grained to cryptocrystalline, moderately hard, well-indurated locally sparry packstone.

APPENDIX D - GEOLOGIC LOG
CONCENTRATE DISPOSAL WELL (IW-1)

Depth (feet bpl)	Thickness (feet)	Sample Geologic Description
810-890		LIMESTONE AND CLAY – Limestone 60% to 80%, yellowish gray (5Y 7/2) medium grained to cryptocrystalline, poorly to well indurated packstone. Clay 40% to 20% yellowish gray (5Y 7/2) plastic, slightly phosphatic with very fine grained quartz sand
890-940	50	CLAY AND LIMESTONE – Clay 90%, yellowish gray (5Y 7/2) moderately soft, plastic. Limestone 10% yellowish gray (5Y 7/2) medium grained, moderately hard, moderately to well indurated packstone.
940-960	20	SANDY CLAY – 100% Dark greenish gray (5GY 4/1) soft, low plasticity with very fine grained quartz sand and trace fine grained phosphorite. Trace Limestone and lime mud lenses.
960-980	20	CLAY – 100% Greenish gray (5GY 6/1) moderately soft, plastic calcareous, slightly sandy with trace shell fragments at 980 feet.
980-990	10	CLAY AND LIMESTONE - Clay 70%, greenish gray (5GY 6/1) moderately soft, plastic, calcareous, slightly sandy. Limestone 30%, yellowish gray (5Y 8/1) very fine grained moderately hard micritic packstone. Trace coarse grained phosphorite.
990-1000	10	LIMESTONE AND CLAY - Limestone 70%, light olive gray (5Y 6/1) fine grained moderately hard, phosphatic wackestone. Clay 30% greenish gray (5GY 6/1) moderately soft, plastic, calcareous, slightly sandy. Trace dark greenish gray (5 GY 4/1) fine grained soft carbonate mudstone.
1000-1030	30	LIMESTONE – 100% Light olive gray (5Y 6/1) fine to very fine grained partly sparry partly micritic packstone/wackestone with some medium grained phosphorite.

APPENDIX D - GEOLOGIC LOG
CONCENTRATE DISPOSAL WELL (IW-1)

Depth (feet bpl)	Thickness (feet)	Sample Geologic Description
1030-1050	20	LIMESTONE AND CLAY - Limestone, 90% mainly yellowish gray (5Y 8/1), medium grained, moderately hard, sparry packstone with occasional molds and minor amounts of yellowish gray (5Y 8/1) fine grained moderately hard phosphatic grainstone. Clay 10%, medium gray (N5) very stiff, nonplastic, slightly calcareous, phosphatic, percentage decreasing with depth. Trace brownish black (5YR 2/1) hard Chert at 1030.
1050-1070	20	LIMESTONE AND SANDSTONE - Limestone70%, yellowish gray (5Y 8/1), medium grained moderately hard, well-indurated, micritic wackestone. Sandstone 30%, light olive gray (5Y 6/1) very fine grained, well sorted, subangular quartz with trace phosphorite, poorly cemented with calcite.
1070-1080	10	LIMESTONE – 100%; 80% Yellowish gray (5Y 8/1) moderately hard, well indurated, medium grained to cryptocrystalline, occasionally sparry packstone with molds and medium grained brownish black (5Y 2/1) Dolomite inclusions. 20% Medium light gray (N6) moderately hard, occasionally sandy carbonate mudstone with molds. Trace brownish gray (5YR 4/1) hard fossiferous chert.
1080-1120	40	LIMESTONE – 100% Yellowish gray (5Y 8/1) medium grained, moderately soft, poorly indurated packstone. Trace Dolomitic Limestone at 1120.
1120-1130	10	LIMESTONE – 100%; 60% Yellowish gray (5Y 8/1) medium grained, moderately soft, poorly indurated packstone. 40% Grayish orange (10YR 7/4) fine grained, soft wackestone.
1130-1140	10	LIMESTONE – 100%; 70% Pale yellowish brown (10YR 6/2) medium to fine grained, soft, occasionally sparry wackestone. 30% Yellowish gray (5Y 8/1) medium grained, moderately soft, poorly indurated packstone. Trace forams.
1140-1160	20	LIMESTONE – 100% Very pale orange (10YR 8/2) medium grained, moderately soft packstone with tests and trace forams. Trace very light gray (N9) hard carbonate mudstone.

APPENDIX D - GEOLOGIC LOG
CONCENTRATE DISPOSAL WELL (IW-1)

Depth (feet bpl)	Thickness (feet)	Sample Geologic Description
1160-1170	10	LIMESTONE – 100%; 80% Very pale orange (10YR 8/2) medium grained, moderately soft packstone with tests and trace forams. 20% Pale yellowish brown (10YR 6/2) medium grained, soft to moderately hard wackestone.
1170-1200	30	LIMESTONE – 100%; 70% Grayish orange (10YR 7/4) medium grained to cryptocrystalline, moderately hard packstone/carbonate mudstone. 30% Yellowish gray (5Y 8/1) medium grained soft packstone. Trace forams.
1200-1300	100	LIMESTONE – 100%; 60% Moderate yellowish brown (10YR 5/4), to grayish orange (10YR 7/4) medium to fine grained, soft to moderately hard, occasionally sparry, partly micritic grainstone/packstone. 40% Yellowish gray (5Y 8/1) very fine grained, moderately hard to hard packstone to carbonate mudstone.
1300-1370	70	LIMESTONE – 100% Grayish orange (10YR 7/4), medium to fine grained, moderately soft packstone/grainstone. Trace pale yellowish brown (10YR 6/2) hard, occasionally vuggy carbonate mudstone. Trace Dolomitic Limestone 1310, 1370.
1370-1390	20	LIMESTONE – 100%; 70%-90% Very pale orange (10YR 8/2) fine grained, moderately soft packstone. 30%-10% Pale yellowish brown (10YR 6/2) hard carbonate mudstone with occasional vuggs.
1390-1400	10	LIMESTONE – 100% Pale grayish orange (10YR 8/4), medium to fine grain, moderately soft packstone with minor amount of fossiliferous crystalline carbonate.
1400-1430	30	LIMESTONE – 100%; 60% Pale yellowish brown (10YR 6/2) medium to fine grained, moderately soft, partly carbonate mudstone/packstone. 40% Pale grayish orange (10YR 8/4) fine grained to microcrystalline, soft to moderately soft wackestone. Trace forams.

APPENDIX D - GEOLOGIC LOG
CONCENTRATE DISPOSAL WELL (IW-1)

Depth (feet bpl)	Thickness (feet)	Sample Geologic Description
1430-1450	20	LIMESTONE – 100%; 80% Moderate yellowish brown (10YR 5/4) coarse to fine grained, moderately soft grainstone/ packstone. 10% Grayish orange (10YR 7/4) hard, vuggy, slightly dolomitic in part, carbonate mudstone. 10% Yellowish gray (5Y 8/1) medium grained packstone. Trace laminated Limestone and Dolomite. Forams at 1440 feet. Trace Pale yellowish brown (10YR 6/2) fossilifeous grainstone at 1450.
1450-1510	60	LIMESTONE – 100%; 70% Grayish orange (10YR 7/4) fine grained, moderately soft packstone. 20% Light olive gray (5Y 6/1) microcrystalline, moderately soft mudstone. 10% Pale yellowish brown (10YR 6/2) hard, medium grained to micritic, partly slightly dolomitic packstone. Trace forams. Trace to little fossiliferous crystalline carbonate with coarse calcite crystals at 1460 feet.
1510-1590	80	LIMESTONE – 100%; 60% Grayish orange (10YR 7/4) fine to medium grained, moderately soft grainstone. 30% Very pale orange (10YR 8/2) fine grained, moderately hard packstone. 10% Light gray (N7) to medium dark gray (N4) hard cryptocrystalline to microcrystalline carbonate mudstone/wackestone. Trace Dolomitic Limestone at 1550 feet.
1590-1600	10	LIMESTONE – 100%; 50% Very pale orange (10YR 8/2) medium grained to microcrystalline, moderately hard packstone. 30% Pale yellowish brown (10YR 6/2) fine grained to cryptocrystalline, moderately hard, occasionally dolomitic, occasionally vuggy wackestone. 10% Yellowish gray (5Y 8/1) fine grained to cryptocrystalline, hard, partly vuggy packstone. Trace very light gray (N8) medium grained, very soft carbonate mudstone.
1600-1630	30	LIMESTONE – 100%; 60% Very pale orange (10YR 8/2) fine grained, moderately soft to moderately hard, moderately to well indurated packstone. 30% Yellowish gray (5Y 8/1) medium grained moderately soft packstone. 10% Medium gray (N5) to light gray (N6) occasionally mottled, medium grained to microcrystalline, hard, micritic wackestone.

APPENDIX D - GEOLOGIC LOG
CONCENTRATE DISPOSAL WELL (IW-1)

Depth (feet bpl)	Thickness (feet)	Sample Geologic Description
1630-1650	20	LIMESTONE – 100%; 60% Very pale orange (10YR 8/2) fine grained, moderately soft to moderately hard, moderately to well indurated packstone. 30% Pale yellowish brown (10YR 6/2) medium grained, hard, well indurated packstone. 20% Yellowish gray (5Y 8/1) cryptocrystalline to medium grained, hard, micritic packstone. Trace dusky yellowish brown (10YR 2/2) Dolomite and Dolomitic Limestone.
1650-1670	20	LIMESTONE – 100%; 60% Very pale orange (10YR 8/2) fine to medium grained to cryptocrystalline, moderately hard packstone. 20% Pale yellowish brown (10YR 6/2) coarse to fine grained, moderately hard to hard, partly sparry packstone. 10% Light olive gray (5Y 6/1) medium to fine grained very well indurated hard packstone. 10% Light gray (N7) cryptocrystalline hard carbonate mudstone.
1670-1780	110	LIMESTONE – 100%; 60% Very pale orange (10YR 8/2) to pale yellowish brown (10YR 6/2) medium to fine grained, moderately soft, partly vuggy packstone. Trace Dolomitic Limestone at 1710, 1730, and 1750 feet. Trace medium light gray (N6) carbonate mudstone below 1720 feet. Few forams at 1770 feet.
1780-1800	20	CORE #2
1800-1830	30	LIMESTONE – 100%; 70% Mainly very pale orange (10YR 8/2) to pale yellowish brown (10YR 6/2) medium grained, moderately hard, occasionally Dolomitic packstone. 30% Light olive gray (5Y 6/1) to medium light gray (N6) medium grained to cryptocrystalline, hard micritic packstone. Trace to few forams.
1830-1847	17	CORE #3
1847-1880	33	LIMESTONE – 100%; 90% Grayish orange (10YR 7/4) to very pale orange (10YR 8/2) coarse to fine grained, moderately to moderately well indurated, soft, fossilifeous grainstone/packstone with few forams. 10% Medium light gray (N6) medium grained to cryptocrystalline, well indurated hard, partly vuggy wackestone/packstone. Trace Dolomitic Limestone.

APPENDIX D - GEOLOGIC LOG
CONCENTRATE DISPOSAL WELL (IW-1)

Depth (feet bpl)	Thickness (feet)	Sample Geologic Description
1880-1895	15	CORE #4
1895-1930	35	LIMESTONE – 100%; 80% Yellowish gray (5Y 8/1) very pale orange (10YR 8/2) medium to fine grained, moderately soft, fossiliferous wackestone/packstone, wackestone component exhibits moderate vugginess, forams and tests common. 10% Yellowish gray (5Y 8/1) very fine grained to microcrystalline, hard occasionally vuggy wackestone. Rarely with medium to fine grained Dolomite inclusions to 1890. 10% Light olive gray (5Y 6/1) coarse to fine grained, moderately hard, packstone.
1930-1944	14	CORE #5
1944-1970	26	LIMESTONE – 100%; 90% Very pale orange (10YR 8/2) to pale yellowish brown (10YR 8/2) generally medium to fine grained, moderately soft, fossiliferous, packstone with many tests and forams. 10% Grayish orange (10YR 7/4) fine to cryptocrystalline, hard, vuggy wackestone. Trace yellowish gray (5Y 8/1) fine grained, soft, slightly Dolomitic to Dolomitic wackestone at 1960.
1970-1980	10	LIMESTONE – 100%; 90% Very pale orange (10YR 8/2) to pale yellowish brown (10YR 6/2) medium to fine grained, moderately soft, fossilifeous packstone with many forams. 10% Very pale yellowish gray (5Y 9/1) medium to fine grained, well indurated, moderately hard, moderately vuggy packstone.
1980-1995	15	CORE #6
1995-2030	35	LIMESTONE – 100%; 70%-30% Very pale orange (10YR 6/2) to pale yellowish brown (10YR 6/2) medium to fine grained, moderately soft, fossilifeous packstone. Percentage decreasing with depth. Forams common to few, abundance decreasing with depth. 30%-70% Very pale yellowish gray (5Y 9/1) medium to fine grained moderately soft packstone. Percentage increasing with depth. Trace dusky yellowish brown (10YR 2/2) crystalline, hard Dolomite at 2000. Trace Dolomitic Limestone 2010-2030.

APPENDIX D - GEOLOGIC LOG
CONCENTRATE DISPOSAL WELL (IW-1)

Depth (feet bpl)	Thickness (feet)	Sample Geologic Description
2030-2040	10	LIMESTONE – 100% Very pale orange (10YR 8/2) to pale yellowish brown (10YR 6/2) fine grained, moderately soft, fossilifeous packstone with few forams. Trace Dolomitic Limestone.
2040-2050	10	LIMESTONE AND DOLOMITIC LIMESTONE – Limestone, 60% mainly pale yellowish brown (10YR 7/2) to very pale orange (10YR 8/2) medium to fine grained, moderately hard wackestone. Dolomitic Limestone 40% pale brown (5YR 5/2) and dusky brown (5YR 2/2) finely laminated, moderately hard.
2050-2070	20	LIMESTONE AND DOLOMITIC LIMESTONE; – Limestone 90%; 80% very pale orange (10YR 8/2) medium to fine grained, hard, fossiliferous packstone. 20% Light gray (N7) hard, cryptocrystalline, vuggy, carbonate mudstone. Dolomitic Limestone 10%, very pale orange (10YR 8/2) medium grained, moderately hard wackestone with light gray (N7) to medium dark gray (N4) inclusions and mottles common to minor amounts of moderate brown (5YR 3/4) cryptocrystalline Dolomite. Trace light olive gray (5Y 6/1) fine grained, subrounded, well cemented Sandstone.
2070-2080	10	LIMESTONE – 100%; 50% Very pale orange (10YR 8/2) medium to fine grained, moderately hard, fossilifeous packstone. 30% Medium gray (N5) medium grained, hard, vuggy, partly micritic grainstone/packstone. 20% Very pale orange (10YR 8/2) very fine grained to microcrystalline, moderately hard occasionally slightly Dolomitic wackestone.
2080-2100	20	LIMESTONE – 100%; 80% Very pale orange (10YR 8/2) very coarse to fine grained, moderately to very well indurated, moderately soft to hard, partly sparry, fossilifeous packstone to grainstone. 20% Yellowish gray (5Y 8/1) to pale yellowish brown (10YR 6/2) microcrystalline to cryptocrystalline, well-indurated hard vuggy carbonate mudstone. Forams common.

APPENDIX D - GEOLOGIC LOG
CONCENTRATE DISPOSAL WELL (IW-1)

Depth (feet bpl)	Thickness (feet)	Sample Geologic Description
2100-2200	100	LIMESTONE – 100%; 80% Yellowish gray (5Y 8/1) to very pale orange (10YR 8/2) medium grained, poorly to moderately indurated, induration increasing with depth, moderately hard to moderately soft fossiliferous grainstone/packstone. 10% Very pale orange (10YR 8/2) medium grained, moderately soft wackestone. 10% Yellowish gray (5Y 8/1) to pale yellowish brown (10YR 6/2) microcrystalline to cryptocrystalline, well-indurated hard vuggy carbonate mudstone with forams common and few tests. Trace Dolomitic Limestone at 2180, and 2200.
2200-2210.5	10.5	CORE # 7
2210.5-2220	9.5	LIMESTONE AND DOLOMITE – Limestone 70%, very pale orange (10YR 8/2) medium to fine grained, well indurated, moderately hard to moderately soft, fossilifeous packstone. Dolomite 30%, dark yellowish brown (10YR 4/2) microcrystalline, very hard. Trace Dolomitic Limestone.
2220-2230	10	LIMESTONE – 100%; 70% Yellowish gray (5Y 8/1) to very pale orange (10YR 8/2) very fine grained to cryptocrystalline, very weakly vuggy, micritic wackestone. 30% Yellowish gray (5Y 8/1) to very pale orange (10YR 8/2) coarse to medium grained moderately hard, fossiliferous, occasionally micritic grainstone to packstone. Forams common.
2230 -2240	10	LIMESTONE AND DOLOMITIC LIMESTONE – Limestone 70%; 60% Yellowish gray (5Y 8/1) dominantly very fine grained to medium grained, well sorted, moderately soft packstone. 10% Pale yellowish brown (10YR 6/2) cryptocrystalline, hard calcareous mudstone. Dolomite 30% dark yellowish brown (10YR 4/2) microcrystalline, very hard, slightly calcareous. Trace forams.
2240-2270	30	LIMESTONE – 100%; Yellowish gray (5Y 8/1) fine to medium grained, very well indurated, hard, fossiliferous packstone. Trace Dolomitic Limestone and forams.

APPENDIX D - GEOLOGIC LOG
CONCENTRATE DISPOSAL WELL (IW-1)

Depth (feet bpl)	Thickness (feet)	Sample Geologic Description
2270-2275	5	DOLOMITE AND LIMESTONE – Dolomite 80% pale yellowish brown (10YR 6/2) very fine grained, very hard, weakly vuggy. Limestone 20% very coarse to fine grained, hard, fossiliferous, slightly Dolomitic packstone.
2275-2285	10	CORE #8
2285-2290	5	DOLOMITE – 100% Dark yellowish brown (10YR 4/2) to olive black (5Y 2/1) medium grained to cryptocrystalline, very hard.
2290-2300	10	DOLOMITE AND LIMESTONE – Dolomite 60%, dark yellowish brown (10YR 4/2) medium grained to cryptocrystalline, very hard. Limestone 40%, pale yellowish brown (10YR 6/2) medium grained, soft grainstone. Trace Dolomitic Limestone.
2300-2310	10	LIMESTONE – 100% Pale yellowish brown (10YR 6/2) medium to fine grained, moderately soft, fossiliferous, partly slightly Dolomitic packstone. Trace forams.
2310-2320	10	LIMESTONE, DOLOMITIC LIMESTONE AND DOLOMITE – Limestone 70%, pale yellowish brown (10YR 6/2) medium to fine grained, moderately soft, fossiliferous, partly slightly Dolomitic packstone. Dolomitic Limestone 20%, pale yellowish brown (10YR 6/2) cryptocrystalline, moderately hard carbonate mudstone with fine grained dusky yellowish brown (10YR 2/2) euhedral dolomite crystals common. Dolomite 10%, dark yellowish brown (10YR 4/2) to dark yellowish brown (10YR 4/2) medium to fine grained, moderately hard.
2320-2330	10	DOLOMITIC LIMESTONE AND LIMESTONE – Dolomitic Limestone 80%, pale yellowish brown (10YR 6/2) cryptocrystalline hard, weakly sparry carbonate mudstone with medium to fine grained euhedral and anhedral dolomite crystals. Limestone 20%, very pale orange (10YR 8/2) very fine grained to cryptocrystalline, moderately soft to very soft carbonate mudstone to marl; marl component very slightly dolomitic.

APPENDIX D - GEOLOGIC LOG
CONCENTRATE DISPOSAL WELL (IW-1)

Depth (feet bpl)	Thickness (feet)	Sample Geologic Description
2330-2390	60	LIMESTONE – 100%; 80%-100% Pale yellowish brown (10YR 6/2) coarse to medium grained, moderately hard, well indurated, fossiliferous dominantly grainstone to packstone. 20% Light olive gray (5Y 6/1) coarse to medium grained, moderately hard, well-indurated fossiliferous grainstone at 2370.
2390-2420	30	LIMESTONE AND DOLOMITE – Limestone 60%-80%, pale yellowish brown (10YR 6/2) coarse to medium grained moderately hard, well indurated fossiliferous, partly Dolomitic dominantly grainstone to packstone; percentage increases with depth. Dolomite 40%-20%, moderate yellowish brown (10YR 5/4) fine grained, hard, sucrosic, percentage decreases with depth.
2420-2430	10	LIMY DOLOMITE, DOLOMITIC LIMESTONE AND LIMESTONE – Limy Dolomite 60%, grayish orange (10YR 7/4) medium to fine grained, hard with very pale orange (10YR 8/2) carbonate mudstone. Dolomitic Limestone 30%, pale yellowish brown (10YR 6/2) cryptocrystalline, hard, weakly sparry carbonate mudstone with medium to fine grained euhedral and anhedral Dolomite crystals. Limestone 10%, pale yellowish brown (10YR 6/2) coarse to medium grained, moderately hard, well indurated, fossiliferous dominantly grainstone to packstone.
2430-2445	15	LIMESTONE AND DOLOMITE – Limestone 70%; 80% very pale orange (10YR 8/2) coarse to medium grained, moderately hard, fossiliferous, packstone. 20% Yellowish gray (5Y 8/1) very soft fossiliferous wackestone. Matrix consists of carbonate marl. Dolomite 30%, grayish orange (10YR 7/4) medium grained, hard calcareous.
2445-2458	13	CORE #9
2458-2470	12	LIMESTONE AND DOLOMITE – Limestone 70%, very pale orange (10YR 8/2) coarse to fine grained, moderately hard, weakly Dolomitic in part, fossiliferous packstone with trace molds. Dolomite 30%, moderate yellowish brown (10YR 5/4) medium grained, hard.

APPENDIX D - GEOLOGIC LOG
CONCENTRATE DISPOSAL WELL (IW-1)

Depth (feet bpl)	Thickness (feet)	Sample Geologic Description
2470-2490	20	LIMESTONE – 100% Very pale orange (10YR 8/2) coarse to fine grained, moderately hard, partly weakly Dolomitic, fossiliferous packstone with trace molds.
2490-2500	10	LIMESTONE AND LIMY DOLOMITE – Limestone 70%, very pale orange (10YR 8/4) dominantly fine to coarse grained, moderately hard, fossiliferous packstone. Limy Dolomite 30% grayish orange (10 YR 7/4) to pale yellowish brown (10YR 6/2) medium to fine grained, hard to moderately hard with very pale orange (10YR 8/2) carbonate mudstone matrix. Trace to few tests.
2500-2510	10	DOLOMITE AND LIMESTONE – Dolomite 60%, moderate yellowish brown (10YR 5/4) to dark yellowish brown (10YR 4/2) medium grained, hard, sucrosic with few distinct mottles. Limestone 40%, Pale orange (10YR 8/2) medium to fine grained, very well indurated, moderately hard to hard packstone.
2510-2519	9	LIMESTONE AND DOLOMITIC LIMESTONE – Limestone 80%, very pale orange (10YR 8/2) dominantly medium to fine grained with minor amount of coarse grained, well sorted, very well indurated hard packstone with few sparry inclusions. Dolomite 20%, moderate yellowish brown (10YR 5/4) medium to fine grained, hard, sucrosic.
2519-2531	12	CORE #10
2531-2550	19	LIMESTONE – 100% Very pale orange (10YR 8/2) medium to fine grained, very well indurated, hard slightly Dolomitic packstone.
2550-2570	20	DOLOMITIC LIMESTONE AND DOLOMITE – Dolomitic Limestone 80%-90%, pale yellowish brown (10YR 6/2) coarse to medium grained, very well indurated, hard, with fine to cryptocrystalline dark yellowish brown (10YR 4/2) Dolomite. Dolomite 20%-10%, moderate yellowish brown (10YR 5/4) medium to fine grained, hard. Trace forams and test.

APPENDIX D - GEOLOGIC LOG
CONCENTRATE DISPOSAL WELL (IW-1)

Depth (feet bpl)	Thickness (feet)	Sample Geologic Description
2570-2600	30	DOLOMITIC LIMESTONE – 100%, Grayish orange (10YR 7/4) medium to very fine grained, very well indurated, hard to moderately hard pelloidal fossiliferous, packstone slightly to highly Dolomitic with moderate yellowish brown (10YR 5/4) medium grained to cryptocrystalline Dolomite and few tests and forams.
2600 -2630	30	LIMESTONE – 100% Very pale orange (10YR 8/2) coarse to fine grained, moderately hard packstone, very well indurated and hard at 2620. Few forams and trace Dolomitic Limestone. Trace Dolomite at 2610.
2630-2650	20	DOLOMITIC LIMESTONE AND DOLOMITE – Dolomitic Limestone 90%-70%, very pale orange (10YR 8/2) medium to fine grained, hard packstone slightly to moderately dolomitized, with medium to fine grained moderate yellowish brown (10YR 5/4) euhedral dolomite crystals. Dolomite 10%, dark yellowish brown (10YR 4/2) medium to fine grained, moderately hard to very hard, occasionally slightly calcareous.
2650-2735	85	LIMESTONE – Limestone 100%, very pale orange (10YR 8/2) medium to fine grained, well indurated, moderately hard, fossiliferous, occasionally slightly Dolomitic packstone.
2735-2745	10	Core #11
2745-2750	5	LIMESTONE – Limestone 100%; 60% very pale orange (10YR 8/2) dominantly fine to medium grained, very well indurated, moderately hard, fossiliferous, occasionally micritic, rarely slightly Dolomitic wackestone. 30% Light olive gray (5YR 6/1) to pale yellowish brown (10YR 6/2) medium grained hard fossiferous wackestone. 10% Light olive gray (5Y 6/1) coarse to fine grained, hard, fossiliferous packstone.
2750-2760	10	LIMESTONE – 100%; 80% Very pale orange (10YR 8/2) fine to medium grained, well indurated moderately hard packstone. 20% Light olive gray (5Y 6/1) fine to medium grained, hard, slightly fossiliferous wackestone. Trace forams.

APPENDIX D - GEOLOGIC LOG
CONCENTRATE DISPOSAL WELL (IW-1)

Depth (feet bpl)	Thickness (feet)	Sample Geologic Description
2760-2770	10	LIMESTONE – 100%, Medium gray (N5) to medium light gray (N6) dominantly very fine to medium grained, very well indurated, very hard, fossiliferous wackestone. Trace very pale orange (10YR 8/2) Dolomitic Limestone.
2770-2780	10	LIMESTONE – 100%; 70% Medium gray (N5) to light gray (N6) medium to very coarse grained, very well indurated, very hard, fossiliferous wackestone. 30% very pale orange (10YR 8/2) medium to fine grained, very well indurated, moderately hard to hard, fossiliferous grainstone/packstone.
2780-2790	10	LIMESTONE – 60% Very pale orange (10YR 8/2) medium to fine grained, very well indurated, moderately hard to hard, fossiliferous grainstone/packstone. 40% pale yellowish brown (10YR 6/2) fine grained, very well indurated, hard, micritic fossilifeous wackestone with trace tests.
2790-2802	12	CORE # 12
2802-2810	8	LIMESTONE – 100% Very pale orange (10YR 8/2) to pale yellowish brown (10YR 6/2) fine grained, moderately soft, fossilifeous packstone with few forams and trace grayish blue-green (5BG 5/2) firm plastic clay.
2810-2820	10	LIMESTONE – 100% Very pale orange (10YR 8/2) medium light gray (N6) very coarse to medium grained, very well indurated, moderately hard to hard packstone.
2820-2830	10	LIMESTONE – 100%; 80% Very pale orange (10YR 8/2) pale yellowish brown (10YR 6/2) medium to fine grained, well indurated, moderately hard packstone. 20% very pale orange (10YR 8/2) cryptocrystalline, hard carbonate mudstone. Trace Dolomite, moderate yellowish brown (10YR 5/4) fine grained, moderately hard.
2830-2840	10	LIMESTONE – 100% Very pale orange (10YR 8/2) medium grained, moderately hard packstone.

APPENDIX D - GEOLOGIC LOG
CONCENTRATE DISPOSAL WELL (IW-1)

Depth (feet bpl)	Thickness (feet)	Sample Geologic Description
2840-2860	20	LIMESTONE – 100%; 60% Very pale orange (10YR 8/2) medium to fine grained, soft to moderately hard, partly sparry packstone. 40% Very pale orange (10YR 8/2) cryptocrystalline moderately hard, weakly vuggy carbonate mudstone/ boundstone with few very coarse grained fossil casts and molds.
2860-3000	140	LIMESTONE – 100% Very pale orange (10YR 8/2) to moderate yellowish gray (5YR 8/1) at 2940, coarse to fine grained, well indurated, moderately soft to moderately hard packstone/grainstone. Trace carbonate mudstone and tests at 2860 feet, trace carbonate mudstone at 2900 and 2960.
3000-3020	20	LIMESTONE – 100% Yellowish gray (5Y 8/1) to very pale orange (10YR 8/2) medium to fine grained, soft to moderately hard packstone.
3020-3030	10	LIMESTONE AND DOLOMITE – Limestone 70%, yellowish gray (5Y 8/1) to very pale orange (10YR 8/2) medium to fine grained, moderately hard packstone. Dolomite 30%, grayish orange (10YR 7/4) medium grained to cryptocrystalline, hard to very hard, occasionally sucrosic.
3030-3040	10	DOLOMITIE – 100%; 60% Pale yellowish brown (10YR 6/2) cryptocrystalline, very hard. 30% Dark gray (N3) microcrystalline to cryptocrystalline, very hard. 10% Olive gray (5Y 4/1) medium grained, hard, sucrosic.
3040-3070	30	DOLOMITE AND LIMESTONE – Dolomite 80%; 50% Pale yellowish brown cryptocrystalline, very hard. 30% Light olive gray (5Y 6/1) medium to fine grained anhedral and subhedral crystals, hard. 20% Dark gray (N3) microcrystalline to cryptocrystalline, very hard. Trace coarse grained uhedral crystals. Limestone 20%, pale yellowish gray (5Y 9/1) fine grained, moderately soft, partly slightly Dolomitic (euhedral crystals) packstone, percentage decreases with depth.
3070-3080	10	DOLOMITE – 100%; 90% Olive gray (5Y 4/1) to light olive gray (5Y 6/1) medium to fine grained, euhedral and subhedral crystals, hard. 10% Pale yellowish brown (10YR 6/2) cryptocrystalline, hard.

APPENDIX D - GEOLOGIC LOG
CONCENTRATE DISPOSAL WELL (IW-1)

Depth (feet bpl)	Thickness (feet)	Sample Geologic Description
3080-3110	30	DOLOMITE AND LIMESTONE – Dolomite 90% pale yellowish brown (10YR 6/2) to dark yellowish brown (10YR 4/2) dominantly microcrystalline to rarely medium grained, hard. Dark yellowish brown component weakly vuggy, vuggs lined with euhedral rhombs. Limestone 10% pale yellowish gray (5Y 9/1) fine grained, moderately soft, partly slightly Dolomitic (euhedral crystals) packstone.
3110-3120	10	DOLOMITE – 100% Pale yellowish brown (10YR 6/2) cryptocrystalline, very hard.
3120-3130	10	DOLOMITE AND LIMESTONE – Dolomite 90%; 80% Dark yellowish brown, (10YR 4/2) to pale yellowish brown (10YR 6/2) fine grained to cryptocrystalline hard. Pale yellowish brown commonly fractured and healed. 20% Pale yellowish brown (10YR 6/2) to very pale orange (10YR 6/2) Dolomite Breccia, angular to subrounded dominantly light colored Dolomite fragments, slightly calcareous. Limestone 10% pale yellowish gray (5Y 9/1) fine grained, moderately soft, partly slightly Dolomitic (euhedral crystals) packstone.
3130-3150	20	DOLOMITE – 100% Light olive gray (5Y 7/1) to pale yellowish brown (10YR 6/2) cryptocrystalline, hard to very hard. Light olive gray component exhibits occasional fully healed fractures. Pale yellowish brown component exhibits occasional vuggs lined with euhedral rhombs.
3150-3170	20	DOLOMITE – 100%; 70% Dark yellowish brown (10YR 4/2) to dusky yellowish brown (10YR 2/2) dominantly cryptocrystalline to medium grained, hard, sucrosic. 20% Very pale orange (10YR 8/2) cryptocrystalline, very hard. Trace Clay, grayish green (10G 4/2) very soft, glarconitic at 3160 feet. Limestone 10% very pale orange (10YR 8/2) medium grained, soft, pelloidal grainstone/packstone.
3170-3180	10	DOLOMITE – 100%; Pale yellowish brown (10YR 6/2) to moderate yellowish brown (10YR 5/4) microcrystalline to cryptocrystalline, very hard.

APPENDIX D - GEOLOGIC LOG
CONCENTRATE DISPOSAL WELL (IW-1)

Depth (feet bpl)	Thickness (feet)	Sample Geologic Description
3180-3210	30	DOLOMITE AND LIMESTONE – Dolomite 90% dark yellowish brown (10YR 4/2) to cryptocrystalline, occasionally fine grained very hard, with occasional crystal lined vuggs and healed fractures. Limestone 10% yellowish gray (5Y 8/1) medium to very fine grained soft packstone.
3210-3220	10	DOLOMITE – 100%; 80% Pale yellowish brown (10YR 6/2) cryptocrystalline, very hard, with crystal filled fractures and vuggs common. 20% Dark yellowish brown (10YR 4/2) medium grained to cryptocrystalline, very hard.
3220-3270	50	DOLOMITE – 100% Dark yellowish brown (10YR 4/2) to pale yellowish brown (10YR 6/2) cryptocrystalline to rarely medium grained, hard, sucrosic. Trace Limestone, very pale orange (10 YR 8/2) fine grained, moderately soft packstone.
3270-3300	30	DOLOMITE – 100%; 50% Light olive gray (5Y 6/1) cryptocrystalline, hard vuggy and fractured, vuggs and fractures healed or lined with very fine Dolomite crystals to 3300. 50% Dark yellowish brown (10 YR 4/2) very fine to medium grained, hard, sucrosic, weakly vuggy,
3300-3010	10	DOLOMITE – 100%; 60% Pale yellowish brown (10YR 6/2) medium grained to cryptocrystalline, hard, fossiliferous. 40% Dark yellowish brown (10 YR 4/2) very fine grained, hard, partly vuggy.
3310-3320	10	DOLOMITE – 100%; 50% Pale yellowish brown (10YR 6/2) cryptocrystalline, hard, partly fossiliferous. 40% Dark yellowish brown (10YR 4/2) fine grained to cryptocrystalline, hard.
3320-3330	10	DOLOMITE AND DOLOMITE BRECCIA – Dolomite 80%, Pale yellowish brown (10YR 6/2) cryptocrystalline, hard, sucrosic, vuggy in part. 20% Pale yellowish brown (10YR 6/2) coarse to medium grained, subangular, very well indurated, hard.

APPENDIX D - GEOLOGIC LOG
CONCENTRATE DISPOSAL WELL (IW-1)

Depth (feet bpl)	Thickness (feet)	Sample Geologic Description
3330-3360	30	DOLOMITE AND LIMESTONE – Dolomite 90%; 80% olive black (5Y 2/1) to yellowish brown (10YR 5/2) cryptocrystalline, hard. 20% olive gray (5Y 4/1) fine grained, hard. Limestone 10% very pale orange (10YR 8/2) fine grained, moderately soft wackestone.
3360-3400	20	DOLOMITE - 100% Olive gray (5Y 4/1) to dark yellowish brown (10YR 4/2) cryptocrystalline, hard.

Monitor Well

APPENDIX D-GEOLOGIC LOG
MONITORING WELL 1

Depth (feet)	Thickness (feet)	Sample Geologic Description
0-20	20	SANDY LIMESTONE - 100% Grayish orange (10YR 7/4) to pale yellowish brown (10YR 6/2) medium to fine grained, moderately soft packstone with fine to medium grained colorless subangular quartz sand.
20-70	50	SANDY LIMESTONE AND LIMY SANDSTONE – Sandy Limestone 70%, yellowish gray (5Y 8/1) fine grained to cryptocrystalline, hard occasionally sparry wackestone/packstone with some shell fragments and abundant colorless fine to medium grained subangular quartz. Limy Sandstone 30%, yellowish gray (5Y 8/1) fine to medium grained moderately hard subangular quartz with calcite cement and trace medium grained phosphorite.
70-90	20	LIMESTONE - 100% Very pale orange (10YR 8/2) dominantly cryptocrystalline to medium grained, hard, partly fossiliferous carbonate mudstone to packstone with colorless medium to very fine grained subrounded quartz sand, neomorphic calcite and coral tests at 90.
90-100	10	SANDY LIMESTONE - 100%; 80% Pale yellowish brown (10YR 6/2) medium to coarse grained, hard, crystalline carbonate with shell fragments and colorless very fine to medium grained subangular to angular quartz sand. 20% Grayish orange (10YR 7/4) medium to fine grained, sparry fossiliferous packstone with colorless medium to very fine grained subrounded quartz sand.
100-150	50	SANDY LIMESTONE AND LIMESTONE - Sandy Limestone 80%, yellowish gray (5Y 8/1) to pale yellowish brown (10YR 6/2) medium grained, hard packstone with abundant colorless fine grained subangular quartz sand, trace phosphorite, forams and tests. Limestone 20%, yellowish gray (5Y 8/1) sparry carbonate mudstone to grainstone.

APPENDIX D-GEOLOGIC LOG
MONITORING WELL 1

Depth (feet)	Thickness (feet)	Sample Geologic Description
150-160	10	SANDY LIMESTONE, LIMESTONE, AND CLAY - Sandy Limestone 60%, yellowish gray (5Y 8/1) to pale yellowish brown (10YR 6/2) medium grained, hard packstone with abundant colorless fine grained subangular quartz sand, trace phosphorite, forams and tests. Limestone 20%, yellowish gray (5Y 8/1) medium grained to cryptocrystalline, moderately hard to soft, partly fossiliferous packstone to carbonate mudstone. Clay 20%, yellowish gray (5Y 8/1) to light olive gray (5Y 6/1) very soft, nonplastic, calcarious.
160-180	20	SANDY CLAY AND LIMESTONE - Sandy Clay 70%, light olive (5Y 5/2) soft, low plasticity, calcarious with medium to very fine grained subrounded quartz sand and trace phosphorite. Limestone 30%, very light gray, (N8) moderately hard, cryptocrystalline carbonate mudstone.
180-200	20	SANDY CLAY AND LIMESTONE - Sandy Clay 80%, Dark greenish gray (5GY 5/1) soft, slightly phosphatic, plastic, noncalcareous with colorless very fine to medium grained subangular quartz sand. Limestone 20%, yellowish gray (5Y 8/1) microcrystalline to cryptocrystalline moderately hard carbonate mudstone.
200-210	10	LIMESTONE AND CLAY – Limestone 60%, yellowish gray (5Y 8/1) to light olive gray (5Y 8/1) microcrystalline to cryptocrystalline, moderately hard carbonate mudstone with tests. Clay 40%, dark greenish gray (5GY 5/1) soft, slightly phosphatic, plastic, noncalcareous with fine to coarse quartz sand.
210-240	30	SANDY CLAY - 100% Dark greenish gray (5GY 4/1) very soft, plastic phosphatic with very fine to fine-grained clear subangular quartz sand and trace limestone.
240-280	40	SANDY CLAY AND LIMESTONE - Sandy Clay 80%, dark greenish gray (5GY 4/1) very soft, nonplastic, phosphatic with very fine to fine grained clear subangular quartz sand and trace Limestone, plastic below 260. Limestone 20%, grayish orange (10YR 7/4) medium to coarse grained sparry, moderately soft phosphatic packstone.

APPENDIX D-GEOLOGIC LOG
MONITORING WELL 1

Depth (feet)	Thickness (feet)	Sample Geologic Description
280-450	170	SANDY CLAY - Sandy Clay 100% dark greenish gray (5GY 4/1) soft, plastic, calcareous with very fine to fine grained subangular quartz sand and trace fine grained phosphorite. Trace very pale orange (10YR 8/2) to light olive gray (5Y 6/1) sparry, fossiliferous packstone.
450-480	30	SANDY CLAY AND SANDSTONE - Sandy Clay 70%-60%, dark greenish gray (5GY 4/1) soft, plastic, calcareous with very fine to fine grained subangular quartz sand and trace fine grained phosphorite. Sandstone 30%-40%, light olive gray (5Y 6/1) to greenish gray 5GY 4/1) very fine to fine grained, argillaceous, slightly phosphatic, moderately cemented with calcite. Trace white carbonate mudstone at 480.
480-490	10	SANDY CLAY AND SANDY CLAYEY LIMESTONE - Sandy Clay 70%, dark greenish gray (5GY 4/1) very soft, plastic, calcareous with fine to very fine grained colorless subangular quartz sand and trace fine grained phosphorite. Sandy Clayey Limestone 30%, yellowish gray (5Y 7/2) fine grained to cryptocrystalline moderately hard, slightly fossiliferous, packstone with fine grained quartz sand and clay.
500-510	10	SANDY CLAY AND CLAYEY SANDSTONE – Sandy Clay 70%, dark greenish gray (5GY 4/1) very soft, plastic, calcareous with fine to very fine grained colorless subangular quartz sand and trace fine grained phosphorite. Clayey Sandstone 20%, greenish gray (5GY 6/1) fine to very fine grained, soft, very poorly cemented. Sandy Clayey Limestone 10%, yellowish gray (5Y 7/2) fine grained to cryptocrystalline moderately hard, slightly fossiliferous, packstone with fine grained quartz sand and clay.
510-530	20	SANDY CLAY AND CLAYEY SANDSTONE – Sandy Clay 60%, greenish gray (5GY 6/1) very soft, plastic with very fine grained quartz sand and trace fine grained phosphorite. Clayey Sandstone, 40%, light olive gray (5Y 7/1) very fine grained general unconsolidated with abundant clay.
530-540	10	CLAYEY LIMESTONE – 100% Light greenish gray (5GY 8/1) medium to fine grained, soft to moderately soft clayey packstone with some fine grained quartz sand, trace fine grained phosphorite and occasional casts.

APPENDIX D-GEOLOGIC LOG
MONITORING WELL 1

Depth (feet)	Thickness (feet)	Sample Geologic Description
540-560	20	SANDY CLAY AND CLAYEY SANDSTONE – Sandy Clay 70%, greenish gray (5GY 6/1) very soft, plastic with very fine grained quartz sand and trace fine grained phosphorite. Clayey Sandstone 30%, pale olive (10Y 6/2) very fine grained quartz, poorly cemented with trace fine grained phosphorite.
560-580	20	CLAYEY LIMESTONE AND CLAY – Clayey Limestone 60%, yellowish gray (5Y 7/2) to yellowish gray (5Y 8/1) medium to fine grained, soft, slightly phosphatic packstone. Clay 40%, greenish gray (5GY 6/1) moderately firm with some fine grained quartz sand.
580-620	40	CLAY LIMSTONE – 100% yellowish gray (5Y 7/2) medium to fine grained, very soft to soft, slightly phosphatic, occasionally sparry packstone. Trace casts at 600. Clay content increasing with depth.
620-650	30	CLAY AND LIMESTONE – Clay 80%-60%, yellowish gray (5Y 7/2) moderately soft, plastic, slightly phosphatic with very fine grained quartz sand. Limestone 20%-40%, yellowish gray (5Y 8/1) fine to very fine grained, moderately soft packstone, percentage increasing with depth.
650-730	80	CLAY AND LIMESTONE – Clay 80%-60%, yellowish gray (5Y 7/2) soft, nonplastic, very silty with trace phosphorite and very fine grained quartz sand. Limestone 20%-40%, yellowish gray (5Y 8/1) fine grained, moderately soft to hard sparry packstone.
730-750	20	LIMESTONE AND CLAY – Limestone 70%, yellowish gray (5Y 7/2) to white (N9) medium grained, unconsolidated to locally moderately indurated, locally micritic and sparry packstone/grainstone. Clay 30%, yellowish gray (5Y 7/2) plastic, slightly phosphatic with very fine grained quartz sand.
750-790	40	CLAY AND LIMESTONE – Clay 90%, yellowish gray (5Y 7/2) plastic, slightly phosphatic with very fine grained quartz sand. Limestone 10%, white (N9) to yellowish gray (5Y 7/2) fine grained to cryptocrystalline moderately, hard locally sparry packstone.
790-800	10	CLAY – 100% Grayish olive (10Y 4/2) moderately firm, plastic with very fine grained quartz sand, trace phosphorite and white (N9) Limestone.

APPENDIX D-GEOLOGIC LOG
MONITORING WELL 1

Depth (feet)	Thickness (feet)	Sample Geologic Description
800-880	80	LIMESTONE AND CLAY – Limestone 80%, yellowish gray (5Y 7/2) medium grained to cryptocrystalline, poorly to well indurated packstone. Clay 20%, yellowish gray (5Y 7/2) plastic, slightly phosphatic with very fine grained quartz sand.
880-930	50	CLAY AND LIMESTONE – Clay 90%-70%, yellowish gray (5Y 7/2) moderately soft, plastic. Limestone 10%-30%, yellowish gray (5Y 7/2) medium grained, moderately hard, moderately to well indurated packstone.
930-960	30	SANDY CLAY – 100% Dark greenish gray (5 GY 4/1) soft to moderately firm, low plasticity, with very fine grained quartz sand. Trace fine grained phosphorite and Limestone.
960-980	20	CLAY AND LIMESTONE – Clay 70%, dark greenish gray (5 GY 4/1) soft to moderately firm, low plasticity, with very fine grained quartz sand. Limestone 30%, yellowish gray (5Y 7/2) fine to medium grained, soft, poorly to moderately indurated clayey packstone.
990-1030	40	LIMESTONE AND CLAY - Limestone 80%, light olive gray (5Y 6/1) fine grained, moderately hard slightly Dolomitic wackestone with occasional casts. Clay 20%, greenish gray (5GY 6/1) moderately soft, plastic calcareous, slightly sandy.
1030-1050	20	LIMESTONE AND CLAY - Limestone 90%-80%, yellowish gray (5Y 8/1), medium grained, moderately hard, sparry packstone with occasional molds and minor amounts of yellowish gray (5Y 7/2) moderately hard, phosphatic grainstone. Clay 10%, light olive gray (5Y 5/2) nonplastic, slightly sandy, slightly phosphatic.
1050-1060	10	LIMESTONE – 100% Light olive gray (5Y 6/1) medium grained to cryptocrystalline, moderately hard, slightly phosphatic, sparry packstone to carbonate mudstone with occasional molds.
1060-1080	20	LIMESTONE AND SANDSTONE – Limestone 60%, yellowish gray (5Y 8/1) medium grained, moderately hard, well indurated, fossilifeous wackestone/packstone. Sandstone 40%, light olive gray (5Y 5/2) very fine grained, poorly cemented, well sorted, subangular quartz with trace phosphorite.

APPENDIX D-GEOLOGIC LOG
MONITORING WELL 1

Depth (feet)	Thickness (feet)	Sample Geologic Description
1080-1120	40	LIMESTONE – 100% Yellowish gray (5Y 8/1) medium grained, moderately soft fossiliferous, poorly indurated packstone. Forams at 1090.
1120-1130	10	LIMESTONE – 100%; 60% grayish orange (10YR 7/4) fine grained soft wackestone. 40% Yellowish gray (5Y 8/1) medium grained, moderately soft fossiliferous, poorly indurated packstone.
1130-1160	30	LIMESTONE – 100%; 60%-70% Pale yellowish brown (10YR 6/2) medium to fine grained, soft, occasionally sparry wackestone. 40%-30% Yellowish gray (5Y 8/1) medium grained, moderately soft, fossiliferous, poorly indurated packstone. Trace forams.
1160-1190	30	LIMESTONE – 100%; 80% Very pale orange (10YR 8/2) medium grained, moderately soft to very soft packstone with tests and trace forams. 20% Pale yellowish brown (10YR 6/2) medium grained, soft to moderately hard wackestone.
1190-1300	110	LIMESTONE – 100%; 60% Moderate yellowish brown (10YR 5/4) to grayish orange (10YR 7/4) medium to fine grained, soft to moderately hard, occasionally sparry, micritic grainstone/packstone. 40% Yellowish gray (5YR 8/1) very fine grained, moderately hard to hard packstone to carbonate mudstone with trace Dolomitic Limestone. Forams 1190-1220.
1300-1370	70	LIMESTONE – 100% Grayish orange (10YR 7/2), to pale yellowish brown (10YR 6/2) medium to fine grained, moderately soft packstone/grainstone. Trace pale yellowish brown (10YR 6/2) hard occasionally vuggy carbonate mudstone with few to little forams. Abundant forams at 1350, tests at 1370, trace Dolomitic Limestone at 1310, 1370.
1370-1390	20	LIMESTONE – 100%; 70%-90% Very pale orange (10YR 8/2) fine grained, moderately soft packstone. 30%-10% Pale yellowish brown (10YR 6/2) hard, occasionally vuggy carbonate mudstone with few to little forams.
1390-1400	10	LIMESTONE – 100% Pale grayish orange (10YR 8/4) medium grained, moderately soft, occasionally very sparry packstone with forams.

APPENDIX D-GEOLOGIC LOG
MONITORING WELL 1

Depth (feet)	Thickness (feet)	Sample Geologic Description
1400-1430	30	LIMESTONE – 100%; 60% Pale yellowish brown (10YR 6/2) medium to fine grained, moderately soft, partly micritic packstone. 40% Pale grayish orange (10YR 8/4) fine grained to microcrystalline, soft to moderately soft wackestone with trace forams.
1430-1450	20	LIMESTONE – 100%; 80% Moderate yellowish brown (10YR 5/4) coarse to fine grained, moderately soft grainstone/packstone. 10% Grayish orange (10YR 7/4) hard, vuggy, partly slightly dolomitic carbonate mudstone. 10% Yellowish gray (5Y 8/1) medium grained, soft packstone.
1450-1520	70	LIMESTONE – 100%; 70% Grayish orange (10YR 7/4) fine grained, moderately soft packstone. 20% Light olive gray (5Y 6/1) microcrystalline, moderately soft carbonate mudstone. 10% Pale yellowish brown (10YR 6/2) hard, medium grained to microcrystalline, partly slightly Dolomitic packstone with trace forams. Trace Dolomitic Limestone at 1510.
1520-1590	70	LIMESTONE – 100%; 60% Grayish orange (10YR 7/4) fine to medium grained, moderately soft packstone. 30% Very pale orange (10YR 8/2) fine grained, moderately hard packstone. 10% Light gray (N7) to medium light gray (N4) hard microcrystalline carbonate mudstone. Trace Dolomite at 1590.
1590-1600	10	LIMESTONE – 100%; 50% Very pale orange (10YR 8/2) medium grained to microcrystalline, moderately hard, occasionally sparry packstone. 30% Pale yellowish brown (10YR 6/2) fine grained to cryptocrystalline, moderately hard, occasionally dolomitic, occasionally vuggy wackestone. 10% Yellowish gray (5Y 8/1) fine grained to cryptocrystalline, hard partly vuggy packstone. Trace very light gray (N8) medium soft, carbonate mudstone.
1600-1630	30	LIMESTONE – 100%; 60% Very pale orange (10YR 8/2) fine grained, moderately soft to moderately hard, moderately to well indurated packstone. 30% Yellowish gray (5Y 8/1) medium grained moderately soft packstone. 10% Medium gray (N5) to light gray (N6) occasionally mottled, medium grained to microcrystalline, hard, micritic wackestone.

APPENDIX D-GEOLOGIC LOG
MONITORING WELL 1

Depth (feet)	Thickness (feet)	Sample Geologic Description
1630-1650	20	LIMESTONE – 100%; 60% Very pale orange (10YR 8/2) fine grained, moderately soft to moderately hard, moderately to well indurated packstone. 30% Pale yellowish brown (10YR 6/2) medium grained, hard, well indurated packstone. 20% Yellowish gray (5Y 8/1) cryptocrystalline to medium grained, hard, micritic packstone. Trace dusky yellowish brown (10YR 2/2) Dolomite and Dolomitic Limestone.
1650-1670	20	LIMESTONE – 100%; 60% Very pale orange (10YR 8/2) fine to medium grained to cryptocrystalline, moderately hard packstone. 20% Pale yellowish brown (10YR 6/2) coarse to fine grained, moderately hard to hard, partly sparry packstone. 10% Light olive gray (5Y 6/1) medium to fine-grained very well indurated hard packstone. 10% Light gray (N7) cryptocrystalline hard carbonate mudstone.
1670-1800	130	LIMESTONE – 100%; 60% Very pale orange (10YR 8/2) to pale yellowish brown (10YR 6/2) medium to fine grained, moderately soft, partly vuggy packstone. Trace Dolomitic Limestone at 1710, 1730, and 1750 feet. Trace medium light gray (N6) carbonate mudstone below 1720. Few forams at 1770.
1800-1850	50	LIMESTONE – 100%; 70% Mainly very pale orange (10YR 8/2) to pale yellowish brown (10YR 6/2) medium grained, moderately hard, occasionally dolomitic packstone/wackestone. 30% Light olive gray (5Y 6/1) to medium light gray (N6) medium grained to cryptocrystalline, hard micritic packstone. Trace to few forams.

APPENDIX E

CORES

Core Logs

APPENDIX E
CONCENTRATE DISPOSAL WELL #1
GEOLOGIC LOG

CORE # 1

Depth (feet)	Sample Geologic Description
1700 – 1715	No Recovery

APPENDIX E
CONCENTRATE DISPOSAL WELL #1

GEOLOGIC LOG

CORE # 2

Depth (feet)	Sample Geologic Description
1780 – 1780.6	LIMESTONE (100%), very pale orange (10YR 8/2), moderately well indurated, generally massive, fine to medium grained, moderately soft fossilifeous packstone. Irregular lower contact.
1780.6 – 1780.8	LIMESTONE (100%), very pale orange (10YR 8/2) to pale yellowish brown (10YR 6/2), moderately well indurated, horizontally laminated, medium to fine grained, moderately soft, moderately to weakly vuggy with vugs up to 1mm most less than 1mm, packstone. Irregular lower contact.
1780.8 – 1781.7	LIMESTONE (100%), grayish orange (10YR 7/4), moderately well indurated, massive fine to coarse grained, fossilifeous moderately soft packstone.
1781.7 – 1781.8	LIMESTONE (100%), medium light gray (N6), well indurated, massive microcrystalline to cryptocrystalline, hard, vuggy with vugs to 5mm but generally 1mm carbonate mudstone. Sharp irregular lower contact.
1781.8 – 1783.3	LIMESTONE (100%), very pale orange (10YR 8/2), moderately well indurated, generally massive with locally faint bedding features exhibited, medium to fine grained moderately soft, fossilifeous, locally vuggy (1782.0 – 1782.1) (1782.9 – 1783.1) packstone with medium light gray (N6), well indurated, microcrystalline to cryptocrystalline hard lens at 1782.8. Sharp horizontal lower contact.

APPENDIX E
CONCENTRATE DISPOSAL WELL #1

GEOLOGIC LOG

CORE # 2

Depth (feet)	Sample Geologic Description
1783.3 – 1783.5	LIMESTONE (100%), medium light gray (N6), poorly indurated, massive fine to very fine grained soft carbonate mudstone. Irregular lower contact.
1783.5 – 1784.0	LIMESTONE (100%), grayish orange (10YR 7/4), moderately well indurated, massive, fine to coarse grained, moderately soft, fossilifeous packstone with few coarse grained fragments and fossils throughout section. Irregular lower contact.
1784.0 – 1784.2	LIMESTONE (100%), light olive gray (5Y 6/1,) well indurated, massive, microcrystalline to cryptocrystalline, hard, vuggy, with vugs to 5mm but generally 1 to 2 mm carbonate mudstone. Sharp horizontal lower contact.
1784.2 – 1786.7	LIMESTONE (100%), very pale orange (10YR 8/2), moderately well indurated, generally massive with faint bedding features exhibited by slight color variations and weak vugginess in lower .2' of interval, dominantly fine to medium grained with many coarse grained particles throughout section, moderately soft, locally weakly vuggy with vugs up to 4mm at 1786.1. Irregular lower contact.
1786.7– 1787.0	LIMESTONE (100%), medium gray (N5), well indurated, generally massive with faint bedding features exhibited by variations in vugg diameters, fine grained to cryptocrystalline moderately hard packstone with few coarse-grained fossils and fragments throughout section, moderately vuggy with vugs generally greater than 1mm and occasionally 2mm to a maximum diameter of 4mm. Sharp horizontal lower contact.

APPENDIX E
CONCENTRATE DISPOSAL WELL #1

GEOLOGIC LOG

CORE # 2

Depth (feet)	Sample Geologic Description
1787.0 – 1789.3	LIMESTONE (100%), very pale orange (10YR 8/2) to grayish orange (10YR 7/4), moderately well indurated, generally massive with faint bedding features exhibited by variations in grain size, grain sorting and weakly vuggy intervals. Dominantly fine to medium grained with intervals from 1787.6 to 1788.1 coarse grained to fine grained, moderately soft fossilifeous packstone, moderately vuggy from 1787 to 1787.6 with vuggs generally 1mm to 2mm in diameter.

CONCENTRATE DISPOSAL WELL #1

GEOLOGIC LOG

CORE # 3

Depth (feet)	Sample Geologic Description
1830 – 1833.4	LIMESTONE (100%), grayish orange (10YR 7/4), in upper portion of unit grading to very pale orange (10 YR 8/2), at base of unit, moderately indurated massive fine to coarse grained, fossilifeous moderately soft to soft with hardness decreasing with depth, weakly to locally moderately vuggy with large vuggs. (5 mm to 15 mm) from 1832 to 1832.5. Sharp horizontal lower contact.
1833.4 – 1833.8	LIMESTONE (100%), very light gray (N8) to yellowish gray (5Y 8/1), well indurated massive medium grained to dominantly cryptocrystalline with few pale yellowish brown (10YR 6/2), carbonate mudstone lenses up to 10mm thick, hard vuggy fossilifeous wackestone. Gradational lower contact.
1833.8 – 1835.4	LIMESTONE (100%), yellowish gray (5Y 8/1) to very pale orange (10YR 8/2), moderately indurated massive fine to coarse grained soft fossilifeous packstone/wackestone. Sharp horizontal lower contact.
1835.4 – 1835.8	LIMESTONE (100%), light gray (N7) to very light gray (N8), massive cryptocrystalline hard vuggy carbonate mudstone with many very pale orange (10YR 8/2) medium to fine grained packstone lenses. Irregular lower contact.
1835.8 – 1837.9	LIMESTONE (100%), yellowish gray (10Y 8/1), moderately indurated massive very coarse to fine grained soft fossilifeous wackestone. Sharp horizontal lower contact.
1837.9 - 1838.6	LIMESTONE (100%), medium gray (N6), well indurated generally massive microcrystalline hard carbonate mudstone. Yellowish gray (5Y 8/1) moderately hard cryptocrystalline carbonate mudstone lenses common to dominant in lower half of unit. Irregular lower contact.
1838.6 - 1840.9	LIMESTONE (100%) yellowish gray (5Y 8/1), well indurated medium grained to cryptocrystalline moderately hard vuggy wackestone with trace pebble sized clasts and few pale yellowish brown (10YR 6/2) very soft carbonate mudstone lenses

CONCENTRATE DISPOSAL WELL #1

GEOLOGIC LOG

CORE # 4

Depth (feet)	Sample Geologic Description
1880 – 1881.4	LIMESTONE (100%), very pale orange (10YR 8/2), moderately indurated, massive, very fine to coarse grained well sorted with grain size increasing with depth, soft fossiliferious wackestone grading with depth to packstone. Sharp horizontal lower contact.
1881.4 – 1881.7	LIMESTONE (100%), medium light gray (N6), microcrystalline to cryptocrystalline, hard, moderately vuggy with vuggs averaging 2mm to 4mm carbonate Mudstone. Sharp horizontal lower contact.
1831.7 – 1833.4	LIMESTONE (100%), very pale orange (10YR 8/2), well indurated, fine grained to cryptocrystalline, moderately hard to moderately soft with many vuggs from 1881.7 to 1882 and from 1882.9 to 1883.4. Unit dominantly carbonate mudstone grading to wackestone and back to carbonate mudstone with depth. Irregular horizontal lower contact.
1883.4 – 1883.6	LIMESTONE (100%), medium gray (N6), massive, very fine grained to cryptocrystalline hard weakly vuggy carbonate mudstone.
1883.6 – 1885.2	LIMESTONE (100%), light gray (N7) grading to very pale orange (10YR 8/2), with depth, fine grained grading to coarse-grained soft fossilifeous weakly vuggy wackestone.

CONCENTRATE DISPOSAL WELL #1

GEOLOGIC LOG

CORE # 5

Depth (feet)	Sample Geologic Description
1930 – 1931.4	LIMESTONE (100%), grayish orange (10YR 7/4), moderately indurated, massive medium to fine grain soft fossilifeous packstone. Irregular lower contact.
1831 – 1931.4	LIMESTONE (100%), yellowish gray (5Y 8/1), well indurated, faint bedding exhibited by slight variations in color, fine grained to microcrystalline, moderately soft calcareous mudstone. Irregular lower contact.
1931.4 – 1932.2	LIMESTONE (100%), very pale orange (10YR 8/2), very well indurated, massive, coarse grained to dominantly cryptocrystalline, hard, fossilifeous, highly vuggy with vuggs averaging 1mm in diameter, packstone.

CONCENTRATE DISPOSAL WELL #1

GEOLOGIC LOG

CORE # 6

Depth (feet)	Sample Geologic Description
1980.0 – 1981.5	LIMESTONE (100%), pale yellowish gray (5Y 9/1), moderately indurated, massive, medium grained, soft, fossilifeous wackestone. Gradational lower contact.
1981.5 – 1981.7	LIMESTONE (100%), light gray (N7), well indurated, massive, medium grained, moderately soft, fossilifeous wackestone with pale yellowish gray (5Y 9/1), wackestone inclusions common. Sharp horizontal lower contact.
1981.7 – 1982.0	LIMESTONE (100%), pale yellowish gray (5Y 9/1), moderately indurated, massive, medium grained to cryptocrystalline, soft, fossilifeous, moderately vuggy carbonate mudstone.
1982.0 – 1983.0	LIMESTONE (100%), yellowish gray (5Y 8/1), moderately indurated, massive, very coarse to medium grained, soft, highly fossilifeous, weakly to moderately vuggy packstone.

CONCENTRATE DISPOSAL WELL #1

GEOLOGIC LOG

CORE # 7

Depth (feet)	Sample Geologic Description
2200 – 2204	No Recovery.
2204.2 – 2204.6	LIMESTONE (100%), medium dark gray (N5) massive, very fine grained to microcrystalling, hard carbonate mudstone. Indistinct lower contact.
2204.2 – 2204.6	LIMESTONE (100%), very pale orange (10YR 8/2) massive, well indurated coarse to medium grained, moderately soft, fossiliferous, moderately porous packstone with few forams. Sharp wavy horizontal lower contact.
2204.6 – 2204.9	LIMESTONE (100%), medium light gray (N6) massive, well indurated, moderately hard wackestone, gradational contact with lower unit.
2204.9 – 2206.7	LIMESTONE (100%), very pale orange (10YR 8/2) massive, well indurated, moderately soft, medium to fine grained, fossilifeous packstone with few forams. Irregular lower contact.
2206.7 – 2206.9	LIMESTONE 100%; 70%, pale yellowish brown (10YR 6/2) massive, fine to very fine grained, moderately hard, well indurated packstone. 30%, very light gray (N8) cryptocrystalline hard, weakly vuggy carbonate mudstone occurring as pebble sized up to 10mm to very coarse grained, subangular fragments. Fragments are moderately well sorted and decreasing in size with depth. Sharp horizontal lower contact.
2206.9 – 2207.9	LIMESTONE (100%), yellowish gray (5Y 8/1) generally massive, well indurated dominantly fine to medium grained, moderately soft, fossilifeous packstone/wackestone. Upper .1 foot of interval is moderately vuggy. Irregular lower contact.

CONCENTRATE DISPOSAL WELL #1

GEOLOGIC LOG

CORE # 7

Depth (feet)	Sample Geologic Description
2207.9 – 2209.9	DOLOMITE (100%), medium light gray (N6) in upper portion of interval grading to medium dark gray (N4) with depth. Generally massive, cryptocrystalline, very hard with yellowish gray (5Y 8/1) angular Dolomite fragments 1mm to 4mm across common. Upper .3 feet of section exhibiting moderate yellowish brown (10YR 5/4) cryptocrystalline, hard Dolomite lenses to 10mm with many medium sized yellowish gray (5Y 8/1) Dolomite fragments. Section is vuggy with elongated vuggs generally 1mm in diameter. Solution cavities present in upper .6 feet of segment oriented along vertical axis, 10-20mm wide, vertical fracture apparent along solution cavities. Lower .8 feet to .9 feet of segment exhibits solution cavities approximately 20mm to 30 mm in diameter lined with fine sized crystals. Lower contact gradational and laminated into Limestone in bottom .2 feet of section.
2209.2– 2209.5	LIMESTONE (100%), very pale orange (10YR 8/2) medium to fine grained, moderately soft, well indurated packstone.
2209.5– 2210.5	DOLOMITE (100%), dark yellowish brown (10YR 4/2) massive, fine grained to dominantly cryptocrystalline, very hard, weakly vuggy.

CONCENTRATE DISPOSAL WELL #1

GEOLOGIC LOG

CORE # 8

Depth (feet)	Sample Geologic Description
2275 – 2275.3	DOLOMITE – (100%) pale yellowish brown (10YR 6/2) massive, medium to fine grained, moderately hard, slightly calcareous. Gradational lower contact.
2275.3 – 2275.6	DOLOMITE – (100%) dark yellowish brown (10YR 4/2) massive, cryptocrystalline very hard with few pebbles sized dusky yellowish brown (10YR 2/2) inclusions through section. Sharp horizontal lower contact.
2275.6 – 2276.2	DOLOMITE – (100%) light olive gray (5Y 6/1) massive cryptocrystalline, very hard, weakly vuggy with vuggs generally 1mm to 2mm in diameter. Indistinct lower contact.
2276.2 – 2276.9	DOLOMITE – (100%) light olive gray (5Y 6/1) to moderate yellowish brown (10YR 5/4) massive medium grained to cryptocrystalline, very hard moderately vuggy. Irregular lower contact.
2276.9 – 2277.3	LIMESTONE (100%) very pale orange (10YR 8/2) massive, very fine-grained moderately soft packstone.
2277.3 – 2279.4	DOLOMITIC LIMESTONE – (100%) very pale orange (10YR 8/2) to pale yellowish brown (10YR 6/2) laminated with laminatious dominantly from less than 1mm to 10mm distinguished to amayimuyos exhibited by variation in color and dolomite content, cryptocrystalline moderately soft carbonate mudstone with fine to very fine grained euhedral dolomite crystals. Highly dolomitic between 2278.1 and 2278.2 with pebble sized limestone inclusion. Gradational lower contact through bottom .3 feet section.
2279.4 – 2280.9	DOLOMITE – (100%) dark yellowish brown (10YR 4/2) generally massive with weak bedding structures (fine laminations) exhibited by minor variation in color. Microcrystalline to cryptocrystalline, very hard, weakly to locally moderately vuggy with vuggs dominantly ≈1mm in diameter to 5mm in diameter. Sharp horizontal lower contact.

CONCENTRATE DISPOSAL WELL #1

GEOLOGIC LOG

CORE # 8

Depth (feet)	Sample Geologic Description
2280.7 – 2281.1	DOLOMITIC LIMESTONE – (100%) yellowish gray (5Y 8/1) with fine light olive gray (5YR 6/1) dolomitic laminations less than 1mm thick common in upper .1 foot of section and decreasing with depth. Dominantly cryptocrystalline to very fine-grained moderately soft carbonate mudstone with few to common fine grained euhedral dolomite crystals. Gradational contact through lower .2 feet of section.
2281.1– 2283.5	DOLOMITE – (100%) light olive gray (5YR 6/1) to dark yellowish brown (10YR 4/2) generally massive with occasional bedding features. Microcrystalline to cryptocrystalline hard to very hard. Section exhibits occasional bedding features distinguished by variations in color and occurrence of vuggs at 2281. 8 to 2281.9 feet. Two high angle fully heald fractures located from 2281.9 to 2282.2 feet very thin slightly calcareous bed (10mm to 15mm) with fully healed horizontal fracture at 2282.2 to 2282.3 section is generally weakly vuggy with vuggs dominantly 1mm to 5mm indiameter moderately vuggy between 2282.3 to 2282.5. Lower .3 feet of section exhibits few vuggs 15 to 20mm in diameter and lined with fine grained dolomite crystals. Irregular lower contact.
2283.5– 2285	DOLOMITE – (100%) dark gray (N3) to dark yellowish brown (10YR 4/2) massive, dark gray component is cryptocrystalline with dark yellowish brown component fine grained to cryptocrystalline and occurring as lenses from 5mm to 60mm thick. Section is very weakly vuggy in top of section with sparse vuggs approximately 1mm to 2mm in diameter grading to moderately vuggy with depth.

CONCENTRATE DISPOSAL WELL #1

GEOLOGIC LOG

CORE # 9

Depth (feet)	Sample Geologic Description
2445 – 2448.5	No Recovery.
2248.5 – 2451.9	LIMESTONE - (100%), very pale orange (10YR 8/2) massive, coarse to fine-grained, well indurated, moderately soft, fossiliferous packstone with few grayish orange (10YR 7/4) moderately hard dolomitic limestone lenses up to 10mm thick scattered through section. Irregular lower contact.
2451.9 – 2452.1	LIMY DOLOMITE – (100%) pale yellowish brown (10YR 6/2) to yellowish gray (5YR 8/1) massive fine grained to cryptocrystalline fossiliferous. Sharp horizontal lower contact.
2452.1 – 2453.8	DOLOMITE – (100%) moderately yellowish brown (10YR 6/2) to pale yellowish brown (10YR 5/4) massive, microcrystalline, very hard. Top .3 feet of segment moderately fossiliferous and slightly calcareous. Section is weakly vuggy with vuggs generally less than 1mm to 2mm in diameter and rarely to 10mm in diameter. Gradational contact with through lower .4 feet of segment.
2453.8 – 2458	LIMESTONE – (100%) yellowish gray (5Y 8/1) generally massive with slightly dolomitic laminations occasionally scattered throughout section. Dominantly very fine to medium grained. Moderately hard very well indurated weakly fossiliferous, very weakly vuggy packstone. Lower .3 feet of segment contains significant amount of white (N9) cryptocrystalline very soft chalky carbonate mudstone (marl).

CONCENTRATE DISPOSAL WELL #1

GEOLOGIC LOG

CORE # 10

Depth (feet)	Sample Geologic Description
2519.0 – 2521.6	LIMESTONE - (100%), very pale orange (10YR 8/2) massive very well indurated moderately hard, dominantly fine to medium grained moderately vuggy packstone with few fossils to pebble size in top .5 feet of section. Vuggs generally 5mm in diameter to weakly vuggy below 2519.5 feet with vuggs generally less than 1mm in diameter, rarely to a maximum of 5mm in diameter. Indistinct lower contact.
2521.6 – 2521.9	LIMESTONE - (100%), yellowish gray (5Y 8/1) massive, medium to coarse grained well indurated, moderately hard, weakly vuggy packstone with vuggs generally less than 1mm in diameter. Sharp horizontal lower contact.
2521.9 – 2524.5	LIMESTONE - (100%), very pale orange (10YR 8/2) massive, dominantly fine to coarse grained, well indurated, moderately hard to hard, weakly vuggy fossiliferous packstone/wackestone with vuggs generally 1mm to 2mm in diameter. Gradational contact through lower .1 foot.
2524.5 – 2525.5	LIMESTONE - (100%), yellowish gray (5Y 8/1) massive, well-indurated, medium grained moderately hard, fossiliferous, weakly vuggy packstone/wackestone with vuggs generally greater than 1mm in diameter. Gradational contact through lower .1 foot.
2525.5 – 2529.7	LIMESTONE - (100%), very pale orange (10YR 8/2) massive, medium grained well to very well-indurated moderately soft to moderately hard weakly vuggy with vuggs generally 5mm to 10mm in diameter in upper .6 feet of segment to weakly vuggy with vuggs generally 1mm to 2mm in diameter weakly to moderately fossiliferous packstone.

CONCENTRATE DISPOSAL WELL #1

GEOLOGIC LOG

CORE # 11

Depth (feet)	Sample Geologic Description
2735 – 2739	No recovery.
2739.0 – 2740.0	LIMESTONE (100%), very pale orange (10YR 8/2) massive medium to fine grained very well indurated, moderately hard weakly fossiliferous packstone. Gradational contact through bottom .3 feet of section.
2740.0 – 2740.4	LIMESTONE (100%), yellowish gray (5Y 8/1) massive very well indurated moderately soft to moderately hard very fine-grained packstone/wackestone. Indistinct lower contact.
2740.4 – 2742.1	LIMESTONE (100%), yellowish gray (5Y 8/1) massive, fine to medium grained, very well indurated, moderately soft weakly fossiliferous packstone. Gradational contact through bottom .3 feet of section.
2742.1 – 2744.7	LIMESTONE (100%), light olive gray (5Y 6/1) to pale yellowish brown (10YR 6/2) massive cryptocrystalline, to medium grained very well indurated, very hard, very weakly vuggy carbonate mudstone grading to wackestone with depth. Pale yellowish brown component occurring as lenses 5mm to 15mm thick. Yellowish gray (5Y 8/1) fine grained soft lens filling soution cavity at 2743 feet.

CONCENTRATE DISPOSAL WELL #1

GEOLOGIC LOG

CORE # 12

Depth (feet)	Sample Geologic Description
2790 – 2792.5	No recovery.
2792.5 – 2793.1	LIMESTONE (100%), dominantly yellowish gray (5Y 8/1) very fine grained, very well indurated, moderately soft packstone with lenses of very pale orange (10YR 8/2) medium grained, moderately soft packstone common. Lenses are up to 15mm thick in upper section, decreasing in thickness and occurrence with depth. Thin lamination of dark yellowish brown (10YR 4/2) cryptocrystalline carbonate mudstone at 2792.7 feet. Sharp horizontal lower contact.
2793.1 – 2793.6	LIMESTONE (100%), yellowish gray (5Y 8/1) to light gray (N8) massive, cryptocrystalline, very well indurated, very hard carbonate mudstone with vertical burrows approximately 5mm in diameter up to 90 mm long lined with anhedral and euhedral calcite crystals in upper .3 feet of segment. Irregular lower contact.
2793.6 – 2793.8	LIMESTONE (100%), very light gray (N8) massive, cryptocrystalline very well indurated very hard carbonate mudstone with lenses of and fractures fully healed with pale yellowish brown (10YR 6/2) very fine grained, very soft packstone and limestone breccia. Irregular lower contact.
2793.8 – 2794.2	LIMESTONE (100%), medium dark gray (N4) to dark gray (N3) massive cryptocrystalline, very well indurated, very hard micritic carbonate mudstone with few burrows generally 3mm in diameter to 10 mm in diameter. Burrows partially filled with yellowish gray (5Y 8/1) fine-grained soft wackestone. Irregular lower contact.
2794.2 – 2795.2	LIMESTONE (100%), yellowish gray (5Y 8/1) massive, fine to very coarse grained, moderately well sorted with grain size generally increasing with depth moderately soft to moderately hard moderately vuggy with vuggs less than 1mm to 2mm in diameter, packstone. Dark gray (N3) cryptocrystalline, hard lenses to 20mm thick and light olive gray (Y 6/1) very fine grained, very soft, with few fine grained anhedral and subhedral dolomite crystals. Gradation lower contact through lower .3 feet of section.

CONCENTRATE DISPOSAL WELL #1

GEOLOGIC LOG

CORE # 12

Depth (feet)	Sample Geologic Description
2795.2 – 2796.6	LIMESTONE (100%), medium light gray (5Y 8/1) to very pale orange (10YR 8/2) very fine to fine-grained very well indurated, moderately soft wackestone. Few dark gray (N3) cryptocrystalline, hard lenses at 2795.4 feet. Scour and fill structure at 2795.7 feet. Few shell fragments and fossils at 2796.0 feet. Fully healed horizontal fracture at 2796.4 feet.
2796.6 – 2796.8	LIMESTONE AND DOLOMITE – Limestone (60%), medium gray (N5) massive cryptocrystalline, very well indurated very hard moderately vuggy carbonate mudstone. Dolomite (40%), light gray (5Y 6/1) to yellowish gray (5Y 8/1) massive cryptocrystalline very hard. Indistinct lower contact.
2796.8 – 2797.0	LIMESTONE (100%), medium light gray (N6) to medium gray (N5) massive, fine grained, friable phosphatic wackestone. Indistinct lower contact.
2797.0 – 2797.6	LIMESTONE (100%), medium gray (N5) to very pale orange (10YR 8/2), massive, medium grained, very well indurated, moderately hard, vuggy wackestone with vuggs 1mm to 5mm in diameter. Gradational contact through lower .2 feet of section.
2796.6 – 2800.0	LIMESTONE (100%), very pale orange (10YR 8/2) massive, medium to fine grained, very well indurated, moderately soft packstone. Sharp horizontal lower contact.
2800.0 – 2801.1	LIMESTONE (100%), medium light gray (N6) to light gray (N7) generally massive, medium grained to cryptocrystalline, very well indurated, locally moderately vuggy packstone to carbonate mudstone. Gradational contact through lower .2 feet of section.

CONCENTRATE DISPOSAL WELL #1

GEOLOGIC LOG

CORE # 12

Depth (feet)	Sample Geologic Description
2801.1 – 2801.7	LIMESTONE (100%), yellowish gray (5Y 8/1) fine grained, very well indurated, hard, weakly vuggy with vuggs generally 1mm-5mm in diameter, trace 10mm diameter, wackestone grading to packstone with depth.

Core Analysis

Ardaman & Associates, Inc.

Geotechnical, Environmental and
Materials Consultants

RECEIVED MAY 2001

May 11, 2001
File Number 01-049

Youngquist Brothers, Inc.
15465 Pine Ridge Road
Fort Myers, Florida 33908

Attention: Mr. Edward McCullers

Subject: Laboratory Testing, Rock Core Specimens, Cooper City Concentrate Disposal Injection Well IW-1

Gentlemen:

As requested, permeability, unconfined compression and specific gravity tests have been completed on twenty rock core samples provided for testing by your firm from the Cooper City Concentrate Disposal Injection Well IW-1. The permeability tests were performed in general accordance with ASTM Standard D 5084 "Measurement of Hydraulic Conductivity of Saturated Porous Materials Using a Flexible-Wall Permeameter" using the constant-head method (Method A) and the falling-head with increasing tailwater level method (Method C). The unconfined compression test was performed in general accordance with ASTM Standard D 2938 "Unconfined Compressive Strength of Intact Rock Core Specimens". The specific gravity was determined in general accordance with ASTM Standard D 854 "Specific Gravity of Soils".

Permeability Tests

The permeability test results are presented in Table 1. The vertical permeability tests were performed first on specimens maintained at the as-received diameter (except for three irregular shaped cores) and cut to lengths of 6.3 to 11.6 cm. After completing the vertical permeability tests, horizontal permeability test specimens were obtained by coring 3.2 to 5.0 cm diameter cylinders from the vertical specimens. The horizontal specimens were trimmed to lengths of 2.9 to 7.9 cm to provide flat, parallel ends. Since the vertical permeability test specimens were cored upon completion of testing to obtain horizontal permeability test specimens, the final moisture contents of the vertical test specimens were not measured. The dry densities and degrees of saturation of the vertical permeability test specimens, therefore, were estimated using final moisture contents from the corresponding horizontal permeability test specimens.

The vertical permeability test specimens were air-dried, deaired under vacuum, and then saturated with deaired tap water from the bottom upward while still under vacuum. After testing, the vertical specimens were maintained submerged in water until cored for the horizontal specimens and retested for measurement of horizontal hydraulic conductivity. Each specimen was mounted in a triaxial-type permeameter and encased within a latex membrane. The specimens were confined using an average isotropic effective confining stress of 30 lb/in^2 and permeated with deaired tap water under a back-pressure of 70 or 160 lb/in^2. Satisfactory saturation was verified by a B-factor equal to or greater than 95 percent, or a B-factor that remained relatively constant for two consecutive increments of applied cell pressure. The inflow to and outflow from each specimen were monitored with time, and the hydraulic conductivity was calculated for each recorded flow increment. The tests were continued until steady-state flow conditions were obtained, as evidenced by an outflow/inflow ratio between 0.75 and 1.25, and until stable values of hydraulic conductivity were measured.

The final degree of saturation was calculated upon completion of testing using the final dry mass, moisture content and volume, and the measured specific gravity. Although some of the calculated final degrees of saturation are low (i.e. less than 95%), the B-factors indicate satisfactory saturation. The calculated final degrees of saturation are potentially affected by occluded voids within the specimens, surface irregularities, and the use of final moisture contents for the vertical permeability specimens from the corresponding horizontal permeability specimens.

Specific Gravity Tests

The specific gravity of each sample was determined on a representative approximately 100 gram specimen ground to pass the U.S. Standard No. 40 sieve. The specific gravity measured on each sample is presented in Table 1.

Total Porosity

The total porosity, n, of each permeability test specimen was calculated using the measured dry density, γ_d, and measured specific gravity, G_s, from the equation: $n = 1 - [\gamma_d/(G_s)(\gamma_w)]$ where γ_w = unit weight of water. The calculated total porosities are presented in Table 1.

Unconfined Compression Tests

Sufficient core length was provided to perform unconfined compression tests on only one of the samples. The specimen was cored to a diameter of 3.3 cm and trimmed to a length of 6.9 cm to provide a length to diameter ratio of approximately 2, and then capped with sulfur capping compound. The specimen was loaded at a constant rate of axial deformation of 0.013 cm/minute. The specimen failed in 4.9 minutes in accordance with ASTM Standard D 2938 criteria of between 2 and 15 minutes. The unconfined compressive strength and Young's modulus determined from the test are summarized in Table 2. The stress-strain curve is presented in Figure 1.

If you have any questions or require additional testing services, please contact us.

Very truly yours,
ARDAMAN & ASSOCIATES, INC.

Shawkat Ali

Shawkat Ali, Ph.D., P.E.
Project Engineer

Thomas S. Ingra

Thomas S. Ingra, P.E.
Senior Project Engineer
Florida Registration No. 31987

Youngquist Brothers, Inc.
File Number 01-049
May 11, 2001

Table 1

PERMEABILITY TEST RESULTS
COOPER CITY CONCENTRATE DISPOSAL INJECTION WELL IW-1

Core No.	Core Depth Interval (feet)	D-5084 Test Method*	Test Specimen Orientation	G_s	Initial Conditions: Length (cm)	Initial Conditions: Diameter (cm)	Initial Conditions: w_c (%)	Initial Conditions: γ_d (lb/ft^3)	Initial Conditions: n	$\bar{\sigma}_c$ (lb/in^2)	u_b (lb/in^2)	B Factor (%)	Average Hydraulic Gradient	Final Conditions: w_c (%)	Final Conditions: γ_d (lb/ft^3)	Final Conditions: S (%)	Hydraulic Conductivity k_{20} (cm/sec)
7	2205.7 - 2206.2	C	Vertical	2.72	8.24	9.58	22.9	101.5	0.40	30	70	80**	2	24.4 †	101.5	99	2.7×10^{-4}
		C	Horizontal		7.20	5.02	22.1	101.2	0.40	30	70	84**	3	24.4	101.2	98	4.3×10^{-4}
	2207.2 - 2207.7	C	Vertical	2.72	10.54	9.65	22.8	104.4	0.39	30	70	93**	2	22.8 †	104.4	99	2.8×10^{-4}
		C	Horizontal		7.19	5.01	22.6	103.7	0.39	30	70	87**	3	22.8	103.7	97	3.2×10^{-4}
	2210.2 - 2210.5	A	Vertical	2.86	6.25	5.04	2.1	168.7	0.05	30	160	82**	65	2.0 †	168.7	100	8.2×10^{-6}
		A	Horizontal		3.20	3.29	1.5	168.7	0.05	30	160	74**	450	2.0	168.7	100	2.0×10^{-10}
8	2276.2 - 2276.8	A	Vertical	2.86	11.60	10.10	3.4	161.0	0.10	30	160	95	74	3.5 †	161.0	93	1.7×10^{-9}
		A	Horizontal		7.63	5.02	3.3	161.4	0.10	30	160	97	89	3.5	161.4	95	3.9×10^{-10}
	2277.3 - 2277.8	A	Vertical	2.76	10.28	10.03	9.4	133.0	0.23	30	160	95	24	10.1 †	133.0	95	5.5×10^{-7}
		A	Horizontal		7.86	5.03	10.1	134.5	0.22	30	160	100	26	10.1	134.5	100	1.1×10^{-6}
	2279.4 - 2279.8	A	Vertical	2.82	8.50	10.01	5.4	151.6	0.14	30	160	94**	88	5.4 †	151.6	95	1.0×10^{-7}
		A	Horizontal		6.95	5.03	5.4	152.6	0.13	30	160	100	30	5.4	152.6	100	2.3×10^{-7}
	2281.2 - 2281.8	A	Vertical	2.87	11.65	10.02	3.1	162.7	0.09	30	160	96	57	3.5	162.7	100	8.2×10^{-8}
9	2450.2 - 2450.5 (A)	C	Vertical	2.74	2.25	3.17	16.0	117.6	0.31	30	70	77**	8	16.2	117.6	98	9.9×10^{-5}
	2450.2 - 2450.5 (B)	C	Vertical	2.74	2.65	3.24	13.6	121.5	0.29	30	70	81**	7	13.7	121.5	93	2.9×10^{-5}
	2452.8 - 2453.6	A	Vertical	2.85	9.61	10.07	5.1	154.1	0.13	30	160	91**	26	5.2 †	154.1	97	1.0×10^{-5}
		A	Horizontal		7.65	5.03	5.2	154.4	0.13	30	160	92**	37	5.2	154.4	98	1.4×10^{-5}
	2454.0 - 2454.4	A	Vertical	2.74	7.27	9.97	8.9	134.5	0.21	30	160	87**	33	9.2 †	134.5	93	5.8×10^{-7}
		A	Horizontal		7.76	5.03	9.0	134.8	0.21	30	160	95	47	9.2	134.8	94	8.9×10^{-7}
	2456.0 - 2456.4	A	Vertical	2.77	8.35	4.99	12.1	129.4	0.25	30	160	92**	33	12.1 †	129.4	99	1.7×10^{-5}
		A	Horizontal		2.90	3.22	11.7	127.4	0.26	30	160	93**	42	12.1	127.4	94	1.3×10^{-5}

Youngquist Brothers, Inc.
File Number 01-049
May 11, 2001

Table 1 (Continued)

PERMEABILITY TEST RESULTS
COOPER CITY CONCENTRATE DISPOSAL INJECTION WELL IW-1

Core No.	Core Depth Interval (feet)	D-5084 Test Method*	Test Specimen Orientation	G_s	Initial Conditions					$\bar{\sigma}_c$ (lb/in^2)	u_b (lb/in^2)	B Factor (%)	Average Hydraulic Gradient	Final Conditions			Hydraulic Conductivity k_{20} (cm/sec)
					Length (cm)	Diameter (cm)	w_c (%)	γ_d (lb/ft^3)	n					w_c (%)	γ_d (lb/ft^3)	S (%)	
10	2520.2 - 2520.7	A	Vertical	2.75	9.68	9.93	5.9	139.5	0.19	30	160	95	10	8.0 †	139.5	95	1.4×10^{-4}
		C	Horizontal		7.74	5.02	8.0	140.9	0.18	30	70	87**	2	8.0	140.9	100	1.5×10^{-4}
	2525.6 - 2526.3	C	Vertical	2.75	10.16	9.97	16.2	116.1	0.32	30	70	94**	2	16.4 †	116.1	95	2.8×10^{-4}
		A	Horizontal		6.62	5.03	15.7	116.2	0.32	30	70	88**	5	16.4	116.2	95	1.6×10^{-3}
	2528.3 - 2528.9	C	Vertical	2.77	10.10	9.95	13.2	119.9	0.31	30	70	90**	2	15.1 †	119.9	95	1.5×10^{-4}
		C	Horizontal		7.10	5.01	14.8	120.7	0.30	30	70	76**	3	15.1	120.7	97	1.9×10^{-4}
	2529.4 - 2529.9	A	Vertical	2.73	7.78	9.88	9.9	122.9	0.28	30	160	95	48	13.5 †	122.9	95	1.2×10^{-4}
		C	Horizontal		7.34	5.02	12.3	123.6	0.27	30	70	69**	3	13.5	123.6	97	1.8×10^{-4}
11	2740.7 - 2741.1	A	Vertical	2.76	7.38	9.79	15.7	115.2	0.33	30	160	95	18	17.2 †	115.2	96	2.9×10^{-4}
		C	Horizontal		7.12	5.02	16.5	115.1	0.33	30	70	71**	3	17.2	115.1	95	3.0×10^{-4}
	2743.6 - 2744.1	A	Vertical	2.76	7.10	10.02	6.4	146.3	0.15	30	160	96	9	6.4 †	146.3	99	2.1×10^{-5}
		A	Horizontal		7.63	5.04	6.3	145.8	0.15	30	160	93**	16	6.4	145.8	97	3.6×10^{-7}
12	2795.9 - 2796.6	C	Vertical	2.76	9.59	10.03	21.4	101.9	0.41	30	70	94**	2	23.8 †	101.9	95	8.2×10^{-5}
		C	Horizontal		6.92	5.02	23.8	103.6	0.40	30	70	59**	2	23.8	103.6	99	9.4×10^{-5}
	2799.3 - 2800.0	C	Vertical	2.75	11.36	9.98	25.4	99.8	0.42	30	70	94**	2	25.4 †	99.8	97	7.9×10^{-4}
		C	Horizontal		6.89	5.02	24.9	100.1	0.42	30	70	76**	3	25.4	100.1	98	1.2×10^{-3}
	2801.2 - 2801.7	C	Vertical	2.76	9.16	10.06	9.0	134.5	0.22	30	70	88**	2	9.5 †	134.5	93	4.1×10^{-4}
		A	Horizontal		7.17	5.04	9.5	134.8	0.22	30	160	97	24	9.5	134.8	94	3.5×10^{-4}

Where: w_c = Moisture content; γ_d = Dry density; G_s = Specific gravity; n = Total Porosity; $\bar{\sigma}_c$ = Average isotropic effective confining stress; u_b = Back-pressure; and S = Calculated degree of saturation using measured specific gravity.

* Method A=Constant-head test; Method C = Falling-head test with increasing tailwater level.

** B-Factor remained relatively constant for two consecutive increments of applied cell pressure.

† Vertical permeability test specimen was cored upon completion of testing to obtain horizontal permeability test specimen. The final moisture content of the vertical test specimen was not measured, and was assumed to be the same as the horizontal permeability test specimen.

Youngquist Brothers, Inc.
File Number 01-049
May 11, 2001

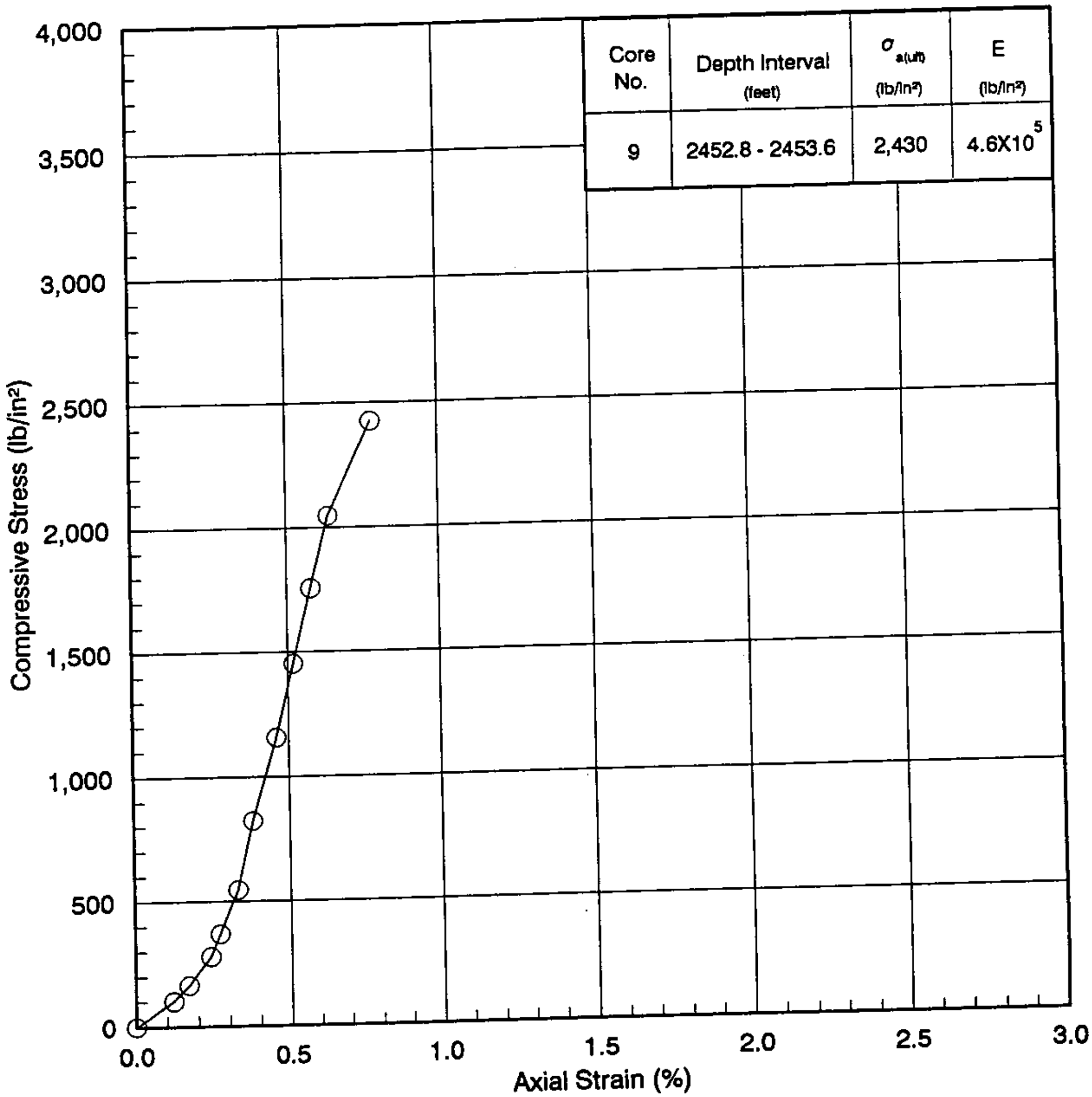
Table 2

UNCONFINED COMPRESSION TEST RESULTS
COOPER CITY CONCENTRATE DISPOSAL INJECTION WELL IW-1

Core No.	Core Depth Interval (feet)	Specimen Dimensions			w_c (%)	γ_d (lb/ft^3)	Loading Rate (cm/min)	t_f (min)	Unconfined Compressive Strength, σ_a(ult) (lb/in^2)		Young's Modulus E(lb/in^2)**
		Length L (cm)	Diameter D (cm)	L/D					Measured	Corrected*	
9	2452.8 - 2453.6	6.93	3.26	2.13	0.1	151.4	0.013	4.9	2,430	2,440	4.6×10^5

Where: w_c = Moisture content; γ_d = Dry density; and t_f = Time to failure.

* Unconfined compressive strength corrected to L/D ratio of 2 in accordance with ASTM Standard D 2938-86.
** Young's modulus calculated from slope of the straight-line portion of the stress-strain curve.



Core No.	Depth Interval (feet)	$\sigma_{a(ult)}$ (lb/in²)	E (lb/in²)
9	2452.8 - 2453.6	2,430	$4.6X10^5$

UNCONFINED COMPRESSION TEST

Ardaman & Associates, Inc.
Geotechnical, Environmental and Materials Consultants

COOPER CITY CONCENTRATE DISPOSAL INJECTION WELL IW-1

YOUNGQUIST BROTHERS, INC.

DRAWN BY: SA	CHECKED BY: SA	DATE: 05-10-01
FILE NO.: 01-049	APPROVED BY: M	FIGURE: 1

Core Lab
PETROLEUM SERVICES

Petroleum Services
6316 Windfern
Houston, Texas 77040 USA
Tel: 713-328-2673
Fax: 713-328-2170
www.corelab.com

FINAL REPORT
OF
ELECTRICAL PROPERTIES STUDY

Performed for:

Youngquist Brothers, Incorporated

Cooper City #1 Well

Florida

Core Laboratories File No.: HOU 010417

June 20, 2001

CLB
NYSE

Core Lab
PETROLEUM SERVICES

PETROLEUM SERVICES

June 30, 2001

Youngquist Brothers, Incorporated
15465 Pine Ridge Road
Fort Myers, Fl. 33908

Attention: Clay Ferguson

Subject: Formation Electrical Properties Study
Company: Youngquist Brothers, Incorporated
Well: Cooper City #1 Well
Location: Florida

Dear Sir:

Presented in the following Final Report are the results of the electrical properties study performed on five core samples from the above referenced well. Formation Electrical Properties data are reported in this document.

Should there be any questions, or if I may be of further assistance, please do not hesitate to contact me personally at (713) 328-2409 or at the address below.

Sincerely,

Paul R. Martin
Petrophysics Supervisor
Core Laboratories - Houston

ELECTRICAL PROPERTIES

Five core plugs from Cooper City #1 Well, Florida were provided by Youngquist Brothers, Incorporated for formation electrical properties testing. The plugs were pressure saturated with a synthetic brine composition and inserted into resistivity cells at 800 psi confining pressure.

Resistivities were measured until stable on both the brine(Rw) and the brine saturated core plugs(Ro). The stable values were used to calculate the formation factors for each sample. These measurements were conducted at room temperature .

$$F = Ro / Rw$$

Following formation factor determination, a ceramic porous plate was inserted on the production face of the plugs. Humidified air was used to step desaturate the plugs at six pressures. Resistivities and water saturations were monitored during the desaturation process. The water saturations and resistivities were used to calculate the saturation exponent values.

Upon completion of the ambient electrical properties measurements, the plugs were removed from their core holders, weighed, cleaned, dried confirming the final water saturations.

Formation factors and porosities from the five plugs were used to calculate a composite cementation exponent,m. These values are tabulated in the formation resistivity tables attached to this document. Cementation exponent data is also graphically displayed on the formation resistivity factor chart, also attached to the document.

Temperature normalized core resistivities (Rt and Ro) using Arp's Equation were used to calculate the resistivity index for the core plugs. These indices and the brine saturation fraction from the desaturation point were input for the calculation of saturation exponent, n. Saturation exponent values are displayed in the formation factor and resistivity index tables for each sample tested. These values are graphically displayed for each plug tested.

RESULTS AND DISCUSSION

The results from the electrical properties testing are displayed on the attached tables and plots. The results obtained in this study indicate a composite m of 2.1. A composite n of 1.74 was determined from the confined data. These results are also displayed in the attached tables and charts.

FORMATION RESISTIVITY FACTOR

2-Electrodes, 1000 Hertz

Company: Youngquist Brothers Inc.
Well: Cooper City #1
Location: Florida
File: HOU-010417

Saturant, ppm:	28,000
Confining Stress, psi:	800
Brine Resistivity, ohm-m @25°C:	0.3941
Porosity Exponent (m) [Composite]:	2.10
Intercept (a):	1.00

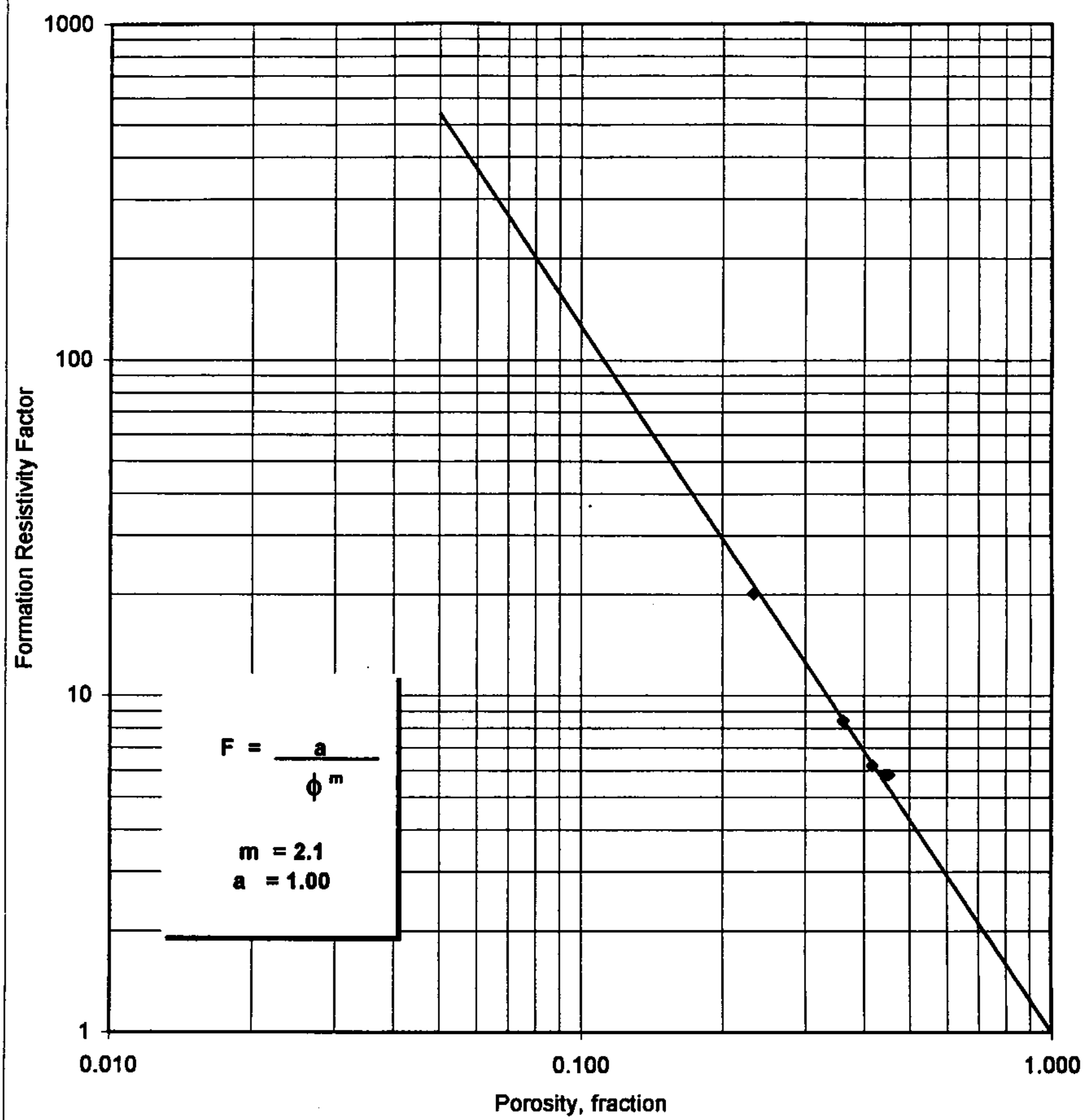
Sample Number	Depth, feet	Grain Density gm/cc	Klinkenberg Permeability md	Porosity, fraction	Formation Factor, (Apparent)		
					Fa	Ro, ohm-m	m
1	1831.90	2.71	4970	0.361	8.40	3.31	2.09
2	1834.30	2.71	5250	0.444	5.82	2.29	2.17
3	1843.65	2.71	2330	0.451	5.80	2.29	2.21
4	1845.50	2.71	1450	0.417	6.19	2.44	2.08
5	1846.50	2.70	3840	0.233	20.12	7.93	2.06

Core Laboratories

FORMATION RESISTIVITY FACTOR

2-Electrodes, 1000 Hertz

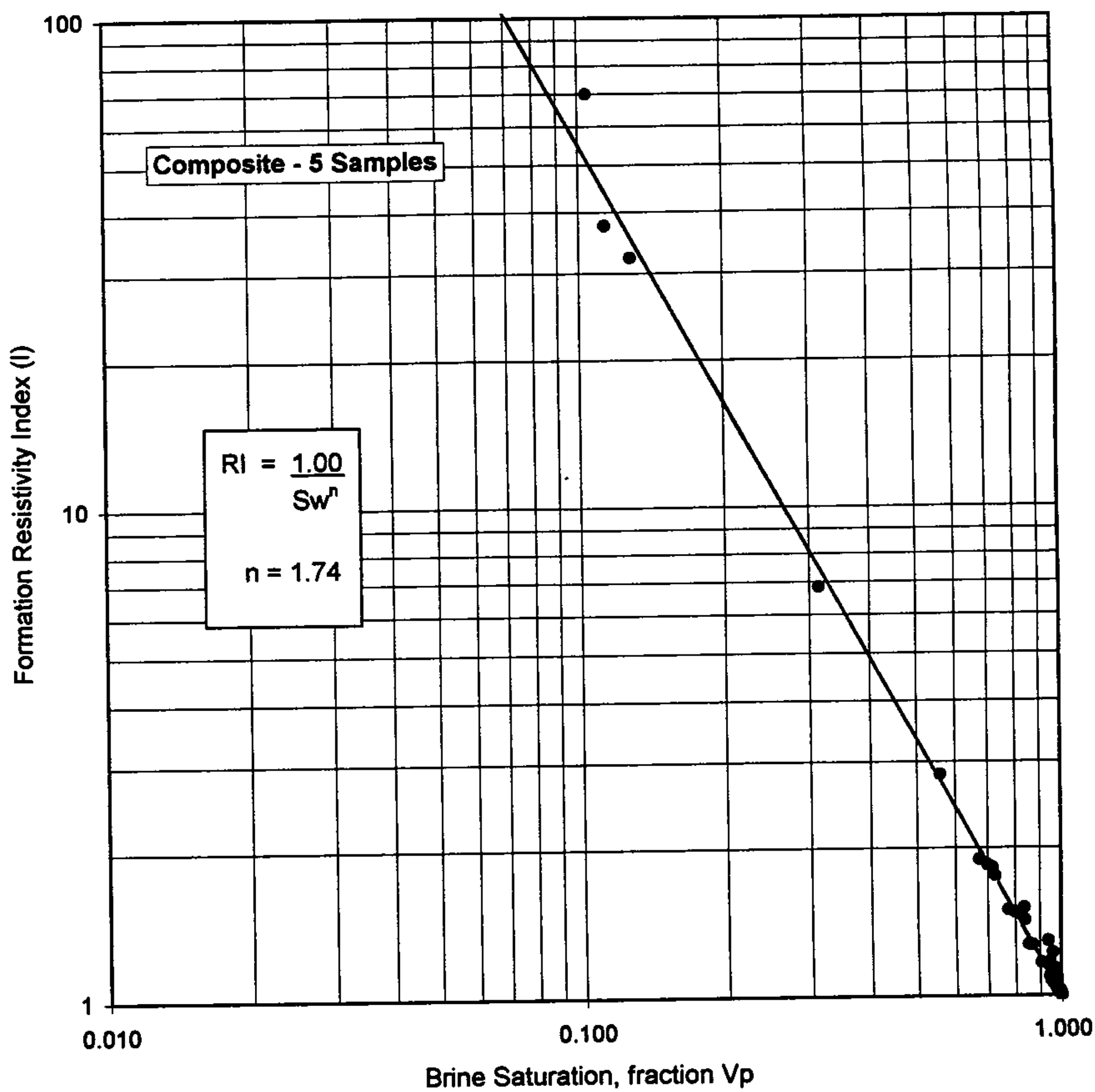
Company:	Youngquist Brothers Inc.	Saturant, ppm:	28000
Well:	Cooper City #1	Confining Stress, psi:	800
Location:	Florida	Brine Resistivity, ohm-m @25°C:	0.3941
File:	HOU-010417	Porosity Exponent (m) [Composite]:	2.1
		Intercept (a):	1.00



RESISTIVITY INDEX
2-Electrodes, 1000 Hertz

Company: Youngquist Brothers Inc.
Well: Cooper City #1
Location: Florida
File: HOU-010417

Saturant, ppm: 28,000
Confining Stress, psi: 800
Brine Resistivity, ohm-m @25°C: 0.3941



Core Laboratories

RESISTIVITY INDEX

2-Electrodes, 1000 Hertz

Company: Youngquist Brothers Inc.
Well: Cooper City #1
Location: Florida
File: HOU-010417

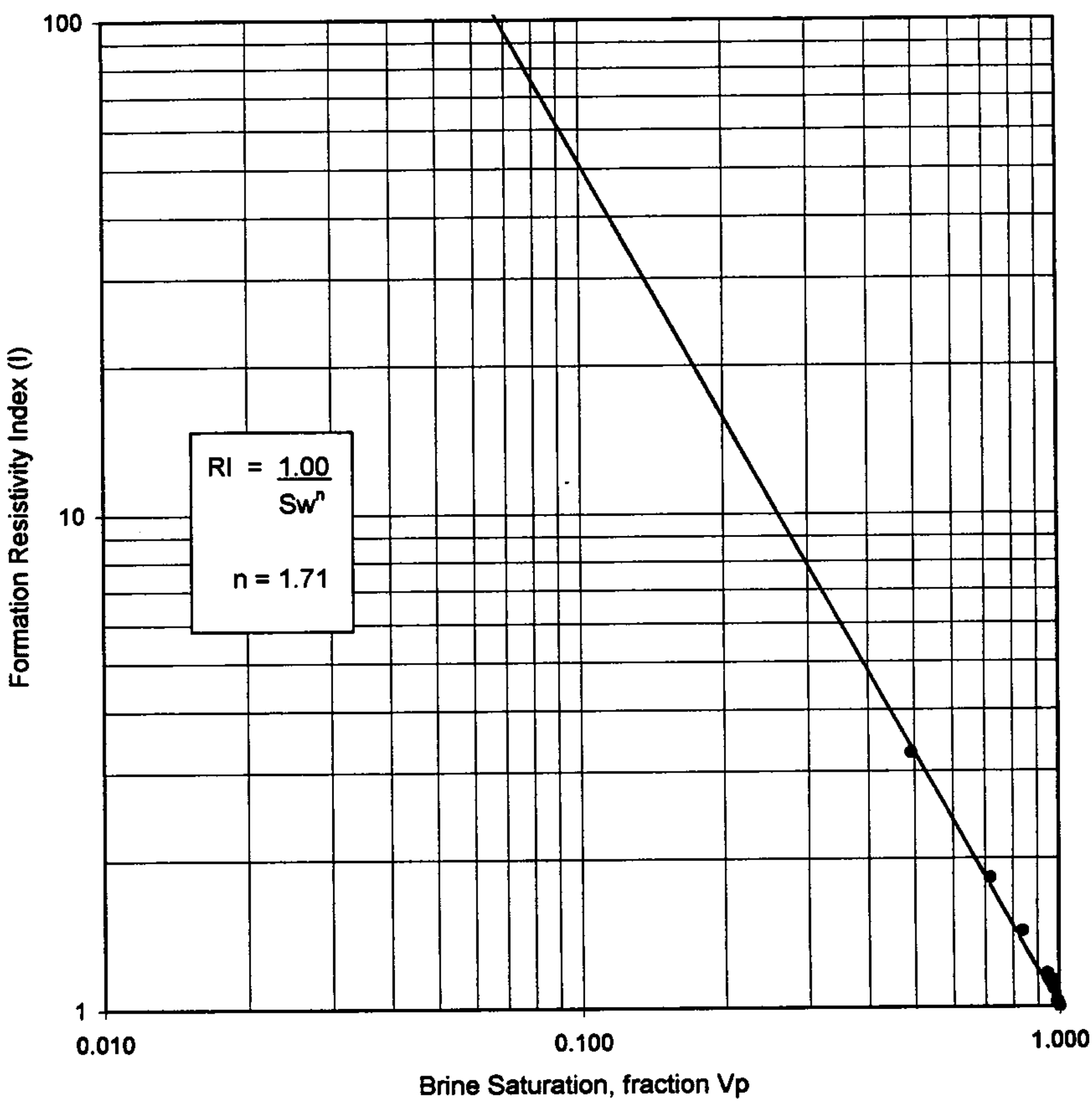
Sample number	1
Depth, feet	1831.90
Porosity, fraction:	0.361
Klinkenberg Permeability, md:	4970
Grain Density, gm/cc:	2.71
Saturant, ppm:	28,000
Net Confining Stress net, psi:	800
Brine Resistivity, ohm-m @ 25°C:	0.3941
Porosity Exponent (m) Composite:	2.10
Y- Intercept (a):	1.00

Formation Factor		Porosity Exponent	Brine Saturation	Resistivity Index	Saturation Exponent
Ro	F	m	fraction Vp	RI	n
3.31	8.40	2.09	1.000	1.00	1.71
			0.997	1.01	
			0.993	1.03	
			0.989	1.02	
			0.973	1.09	
			0.962	1.14	
			0.945	1.17	
			0.838	1.42	
			0.717	1.82	
			0.491	3.26	

RESISTIVITY INDEX

2-Electrodes, 1000 Hertz

Company:	Youngquist Brothers Inc.	Sample Number	1
Well:	Cooper City #1	Depth, feet	1,831.90
Location:	Florida	Porosity, fraction:	0.361
File:	HOU-010417	Klinkenberg Permeability, md:	4970



Core Laboratories

RESISTIVITY INDEX
2-Electrodes, 1000 Hertz

Company: Youngquist Brothers Inc.
Well: Cooper City #1
Location: Florida
File: HOU-010417

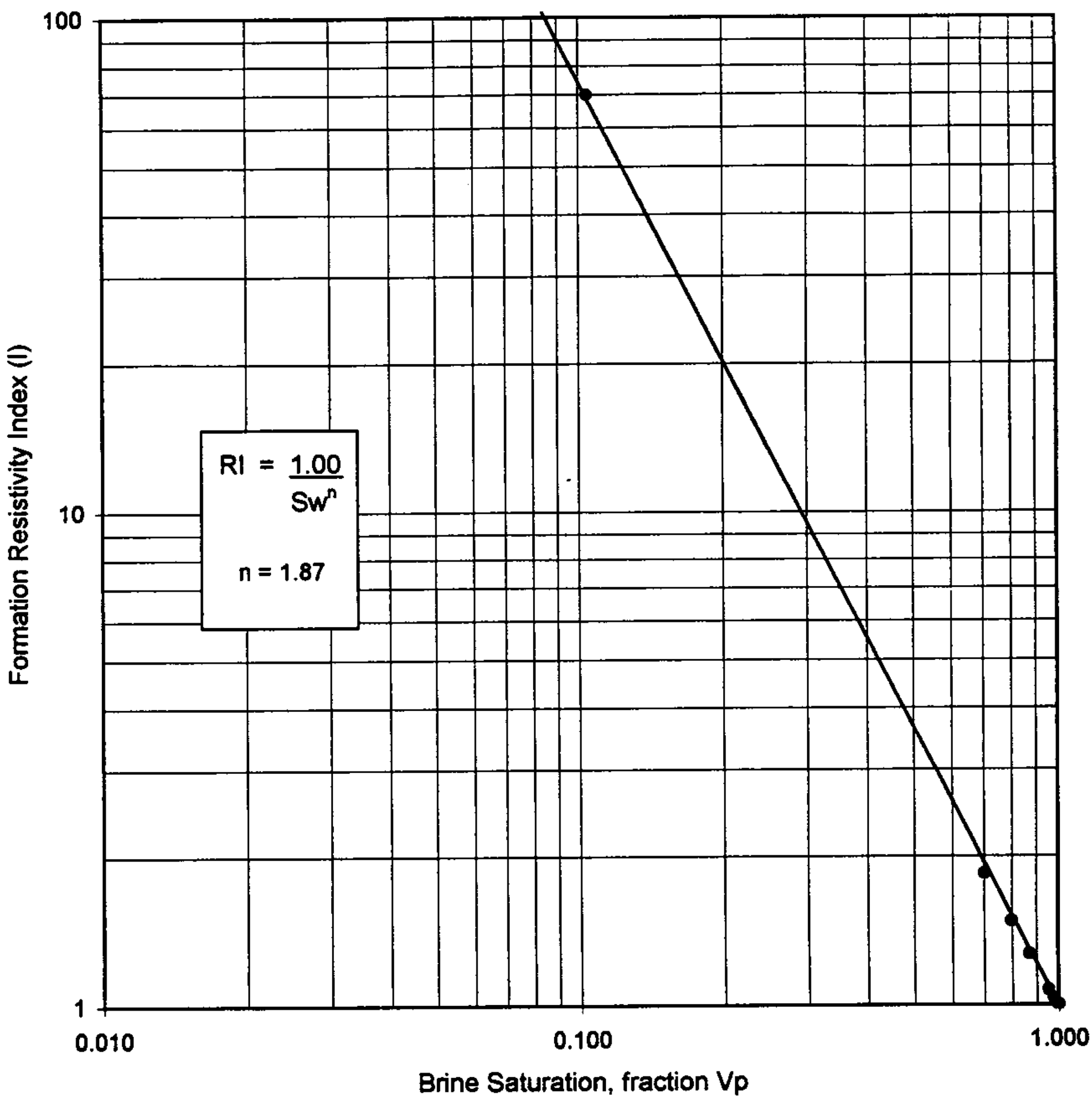
Sample number	2
Depth, feet	1834.30
Porosity, fraction:	0.444
Klinkenberg Permeability, md:	5250
Grain Density, gm/cc:	2.71
Saturant, ppm:	28,000
Net Confining Stress net, psi:	800
Brine Resistivity, ohm-m @ 25°C:	0.3941
Porosity Exponent (m) Composite:	2.10
Y- Intercept (a):	1.00

Formation Factor		Porosity Exponent	Brine Saturation	Resistivity Index	Saturation Exponent
Ro	F	m	fraction Vp	RI	n
2.29	5.82	2.17	1.000	1.00	1.87
			0.995	1.00	
			0.975	1.03	
			0.953	1.07	
			0.870	1.26	
			0.799	1.47	
			0.700	1.84	
			0.104	69.75	

RESISTIVITY INDEX

2-Electrodes, 1000 Hertz

Company:	Youngquist Brothers Inc.	Sample Number	2
Well:	Cooper City #1	Depth, feet	1,834.30
Location:	Florida	Porosity, fraction:	0.444
File:	HOU-010417	Klinkenberg Permeability, md:	5250



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RESISTIVITY INDEX
2-Electrodes, 1000 Hertz

Company: Youngquist Brothers Inc.
Well: Cooper City #1
Location: Florida
File: HOU-010417

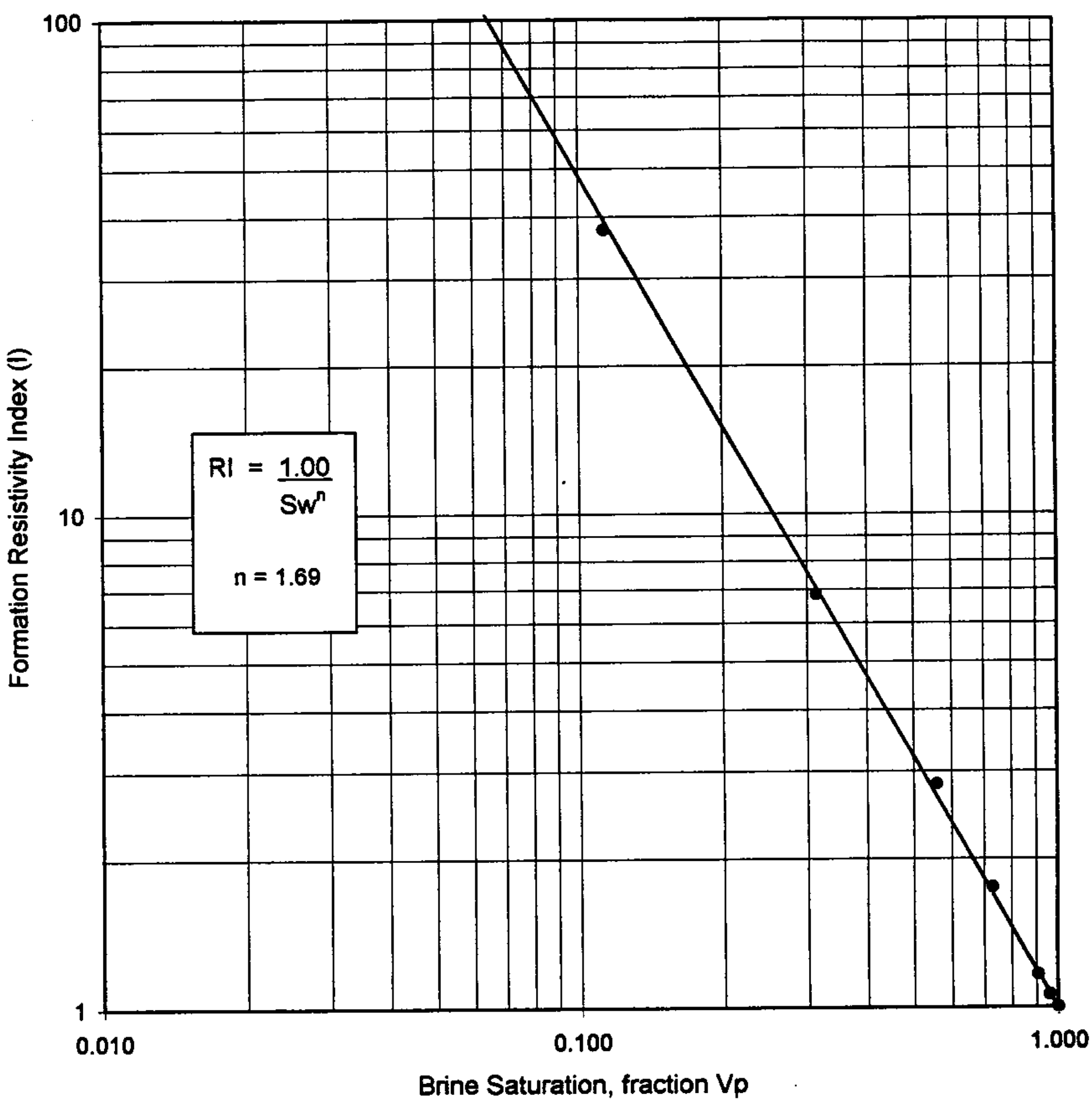
Sample number	3
Depth, feet	1843.65
Porosity, fraction:	0.451
Klinkenberg Permeability, md:	2330
Grain Density, gm/cc:	2.71
Saturant, ppm:	28,000
Net Confining Stress net, psi:	800
Brine Resistivity, ohm-m @ 25°C:	0.3941
Porosity Exponent (m) Composite:	2.10
Y- Intercept (a):	1.00

Formation Factor		Porosity Exponent	Brine Saturation	Resistivity Index	Saturation Exponent
Ro	F	m	fraction Vp	RI	n
2.29	5.80	2.21	1.000	1.00	1.69
			0.996	1.00	
			0.959	1.06	
			0.910	1.16	
			0.729	1.75	
			0.559	2.82	
			0.314	6.82	
			0.113	37.53	

RESISTIVITY INDEX

2-Electrodes, 1000 Hertz

Company:	Youngquist Brothers Inc.	Sample Number	3
Well:	Cooper City #1	Depth, feet	1,843.65
Location:	Florida	Porosity, fraction:	0.451
File:	HOU-010417	Klinkenberg Permeability, md:	2330



RESISTIVITY INDEX
2-Electrodes, 1000 Hertz

Company: Youngquist Brothers Inc.
Well: Cooper City #1
Location: Florida
File: HOU-010417

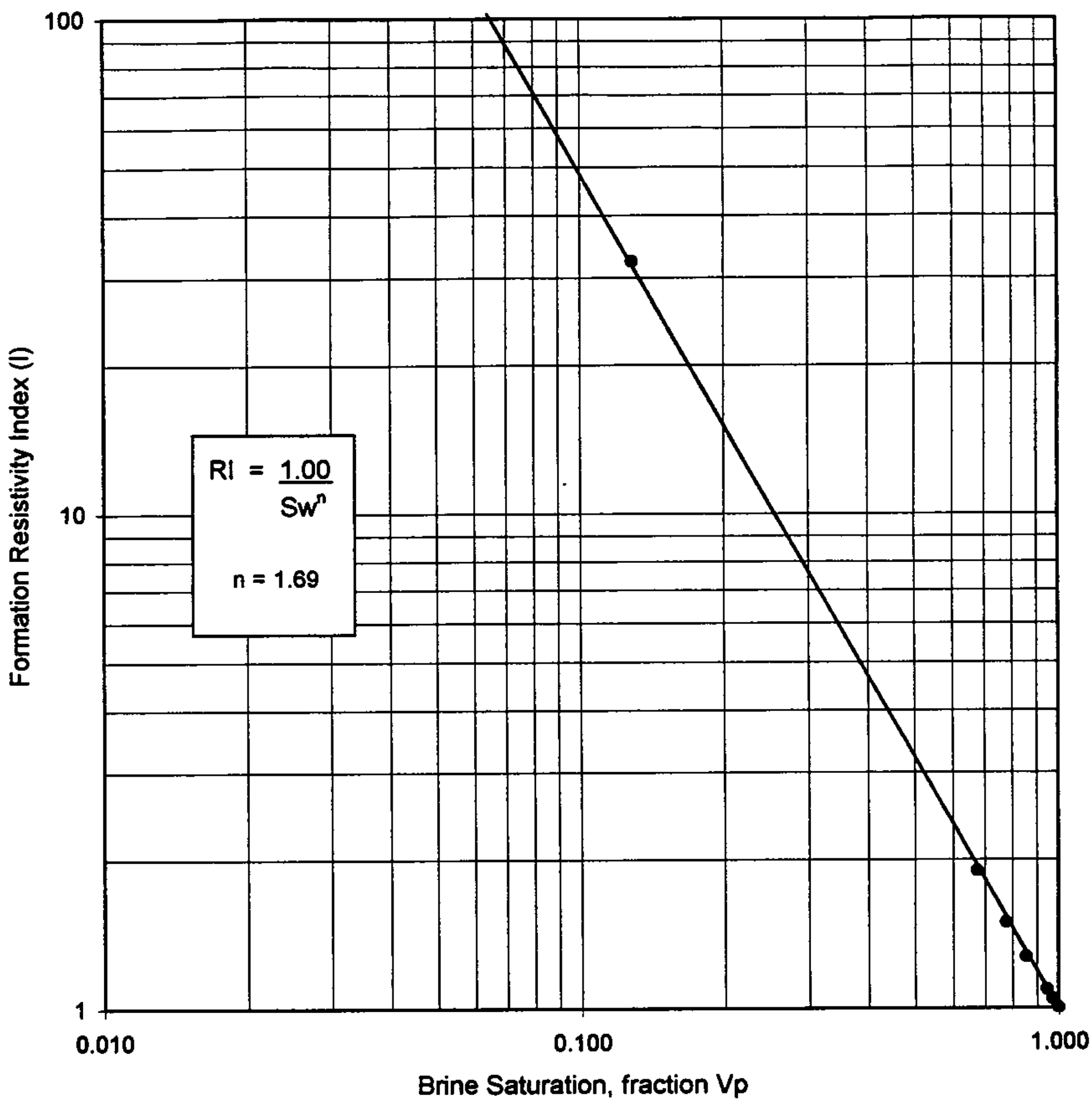
Sample number	4
Depth, feet	1845.50
Porosity, fraction:	0.417
Klinkenberg Permeability, md:	1450
Grain Density, gm/cc:	2.71
Saturant, ppm:	28,000
Net Confining Stress net, psi:	800
Brine Resistivity, ohm-m @ 25°C:	0.3941
Porosity Exponent (m) Composite:	2.10
Y- Intercept (a):	1.00

Formation Factor		Porosity Exponent	Brine Saturation	Resistivity Index	Saturation Exponent
Ro	F	m	fraction Vp	RI	n
2.44	6.19	2.08	1.000	1.00	1.69
			0.994	1.00	
			0.970	1.04	
			0.944	1.09	
			0.854	1.27	
			0.776	1.49	
			0.673	1.89	
			0.128	32.25	

RESISTIVITY INDEX

2-Electrodes, 1000 Hertz

Company:	Youngquist Brothers Inc.	Sample Number	4
Well:	Cooper City #1	Depth, feet	1,845.50
Location:	Florida	Porosity, fraction:	0.417
File:	HOU-010417	Klinkenberg Permeability, md:	1450



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RESISTIVITY INDEX
2-Electrodes, 1000 Hertz

Company: Youngquist Brothers Inc.
Well: Cooper City #1
Location: Florida
File: HOU-010417

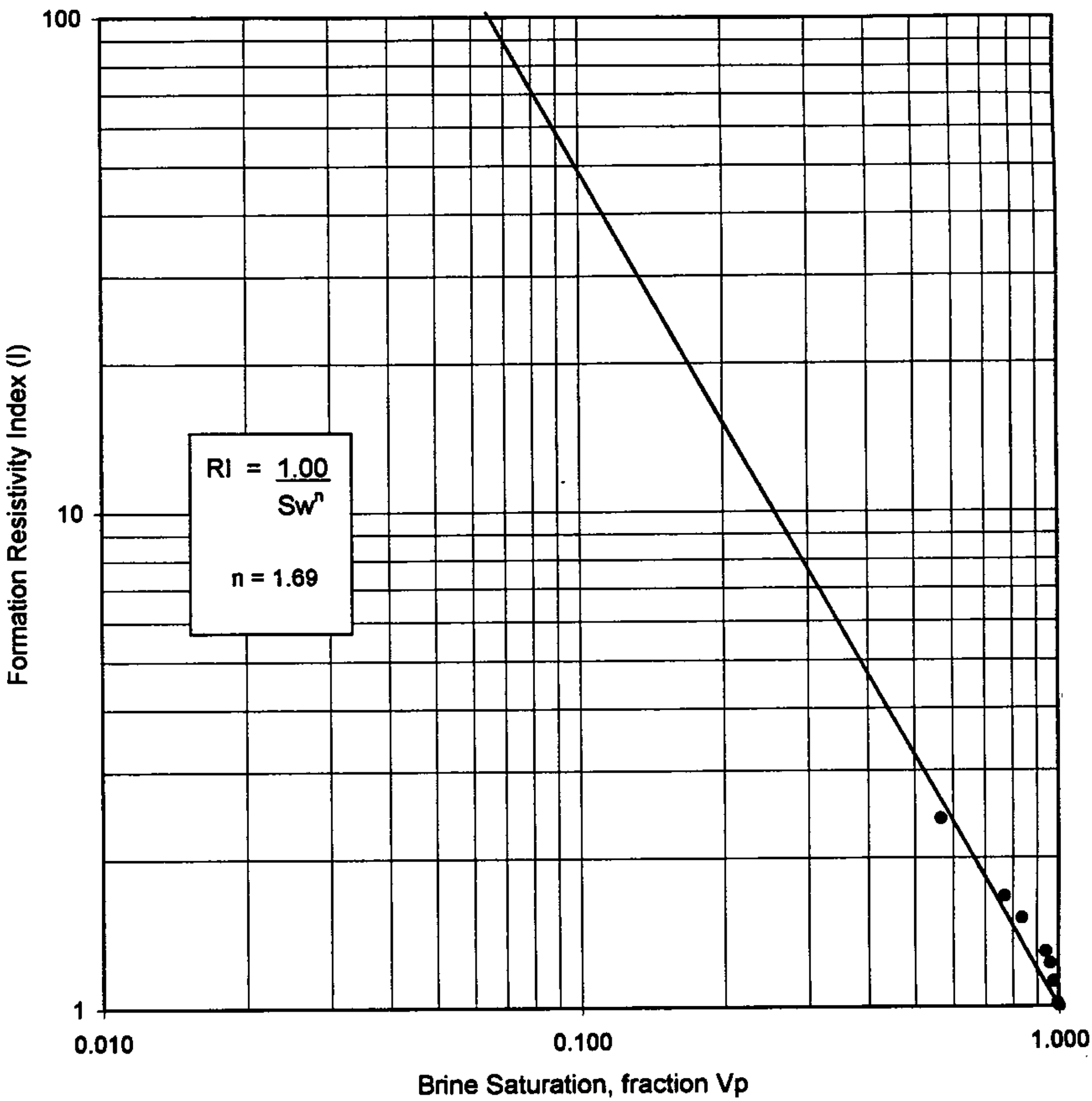
Sample number	5
Depth, feet	1846.50
Porosity, fraction:	0.233
Klinkenberg Permeability, md:	3840
Grain Density, gm/cc:	2.70
Saturant, ppm:	28,000
Net Confining Stress net, psi:	800
Brine Resistivity, ohm-m @ 25°C:	0.3941
Porosity Exponent (m) Composite:	2.10
Y- Intercept (a):	1.00

Formation Factor		Porosity Exponent	Brine Saturation	Resistivity Index	Saturation Exponent
Ro	F	m	fraction Vp	RI	n
7.93	20.12	2.06	1.000	1.000	1.69
			0.996	1.010	
			0.992	1.017	
			0.975	1.120	
			0.960	1.218	
			0.939	1.287	
			0.836	1.505	
			0.768	1.664	
			0.565	2.393	

Core Laboratories

RESISTIVITY INDEX
2-Electrodes, 1000 Hertz

Company:	Youngquist Brothers Inc.	Sample Number	5
Well:	Cooper City #1	Depth, feet	1,846.50
Location:	Florida	Porosity, fraction:	0.233
File:	HOU-010417	Klinkenberg Permeability, md:	3840



Core Laboratories

APPENDIX F

GEOPHYSICAL LOGS

Geophysical Log Index

Appendix F – Geophysical Logs
Geophysical Log Index
City of Cooper City WTP/WTP

Well	Log	Date	Interval (feet bpl)	Diameter (inches)
IW1	X-Y Caliper / Gamma ray	Dec-4-00	surface – 260	12 ¼
IW1	Dual Induction LL3 / SP	Dec-4-00	surface – 260	12 ¼
IW1	X-Y Caliper / Gamma ray	Dec-6-00	surface – 260	58 ½
IW1	Cement Top log	Dec-7-00	surface – 250	58 ½
IW1	X-Y Caliper / Gamma ray	Dec-9-00	250 – 1027	58 ½
IW1	Dual Induction LL3 / SP	Dec-9-00	250 – 1027	58 ½
IW1	X-Y Caliper / Gamma ray	Dec-20-00	250 – 995	48 ½
IW1	Cement Top log	Dec-21-00	surface – 995	48 ½
IW1	X-Y Caliper / Gamma ray	Jan-4-01	985 – 2029	12 ¼
IW1	Dual Induction LL3 / SP	Jan-4-01	985 – 2029	12 ¼
IW1	Borehole Compensated Sonic / VDL	Jan-4-01	985 – 2029	12 ¼
IW1	Borehole Televiewer	Jan-4-01	985 - 2029	12 ¼
IW1	Fluid Conductivity / Temperature	Jan-15-01	1000 – 2022	12 ¼
IW1	Flowmeter	Jan-15-01	995 – 2005	12 ¼
IW1	X-Y Caliper / Gamma ray	Jan-25-01	985 – 2010	40 ½
IW1	Cement Top log	Jan-30-01	surface – 2000	40 ½
IW1	X-Y Caliper / Gamma ray	Feb-8-01	2000 – 3000	12 ¼
IW1	Dual Induction LL3 / SP Borehole	Feb-8-01	2000 – 3000	12 ¼
IW1	Compensated Sonic / VDL	Feb-8-01	2000 – 3000	12 ¼
IW1	Borehole Televiewer	Feb-19-01	2000 - 3000	12 ¼
IW1	Fluid Conductivity / Temperature	Feb-20-01	2000 – 2982	12 ¼
IW1	Flowmeter	Feb-20-01	2000 – 2982	12 ¼
IW1	X-Y Caliper / Gamma ray	Mar-06-01	2000 – 3410	32 ½
IW1	High Temperature	Mar-06-01	2000 – 3410	32 ½
IW1	Cement Top log	Mar-16-01	2000 – 3410	22 ½
IW1	Cement Bond log	Mar-23-01	2000 – 3410	22 ½
IW1	X-Y Caliper/Gamma Ray	May-29-01	2900 – 3410	22 ½
IW1	Compensated Sonic/VDL	May-29-01	2900 – 3410	22 ½
IW1	Dual Induction LL3/SP	May-29-01	2900 – 3410	22 ½
IW1	Fluid Conductivity/Temp	May-29-01	2900 – 3410	22 ½
IW1	Flowmeter	May-30-01	2900 – 3410	22 ½
IW1	High Resolution Temp	June-01-01	0 – 3410	
IW1	Radioactive Tracer Survey	June-01-01	0 – 3410	

Appendix F-Geophysical Logs
Log Index

Well	Log	Date	Interval (feet bpl)	Diameter (inches)
MW1	X-Y Caliper / Gamma ray	Apr-10-01	surface – 261	32 ½
MW1	Dual Induction LL3 / SP	Apr-10-01	surface – 261	32 ½
MW1	Cement Top log	Apr-11-01	surface – 240	32 ½
MW1	X-Y Caliper / Gamma ray	Apr-14-01	251 – 1850	22 ½
MW1	Dual Induction LL3 / SP	Apr-14-01	251 – 1850	22 ½
MW1	Borehole Compensated Sonic / VDL	Apr-14-01	251 – 1850	22 ½
MW1	Fluid Conductivity/Temperature	Apr-14-01	251 – 1850	22 ½
MW1	Cement Top log	Apr-21-01	surface – 1650	22 ½
MW1	X-Y Caliper / Gamma ray	Apr-24-01	surface – 1950	12 ¼
MW1	Dual Induction LL3 / SP Borehole	Apr-24-01	surface – 1950	12 ¼
MW1	Cement Bond log	Apr-24-01	surface – 1670	12 ¼
MW1	Cement Top log	May-4-01	surface – 1900	6 5/8
MW1	Cement Bond log	May-29	1595 - 1915	6 5/8

Flow Meter Analysis

FLOWMETER ANALYSIS

COOPER CITY
CONCENTRATE DISPOSAL WELL
IW#1

On January 15, 2001 a packer was set @ approximately 1000' to evaluate the open hole flow using a dynamic flow rate of 650 GPM. The following plots were generated from logging data collected by the flowmeter tool.

Figure 1 is a quick look interpretation comparing the static down pass to the dynamic down pass. It shows a very gradual separation between the static and dynamic passes above 1970, indicating flow above this depth, with virtually no flow present below 1970'.

Figure 2 is the percent flow analysis of the dynamic pass. It reaffirms the quick look presentation and shows a linear increase in flow extending from 1970' up to 1150'. The only deviation from this pattern is in the 100' interval between 1650' and 1750'. The reduction in flow during this interval is most likely due to the increased flow volume caused by the washout shown on the caliper curve.
An even more prominent washout is observed from 1075'-1200'. The apparent decrease in flow above 1150' can be attributed to this change in borehole volume.
Roughly 50% of the total flow is being produced below a depth of 1400'.
An additional 25% of flow is achieved between 1100' and 1400'. The remaining 25% of flow appears to be developed between 1000' and 1100'.

Figure 3 is the total flow analysis of the dynamic pass. It is the similar to the percent flow graph except that it is expressed in gpm.

Cooper City IW

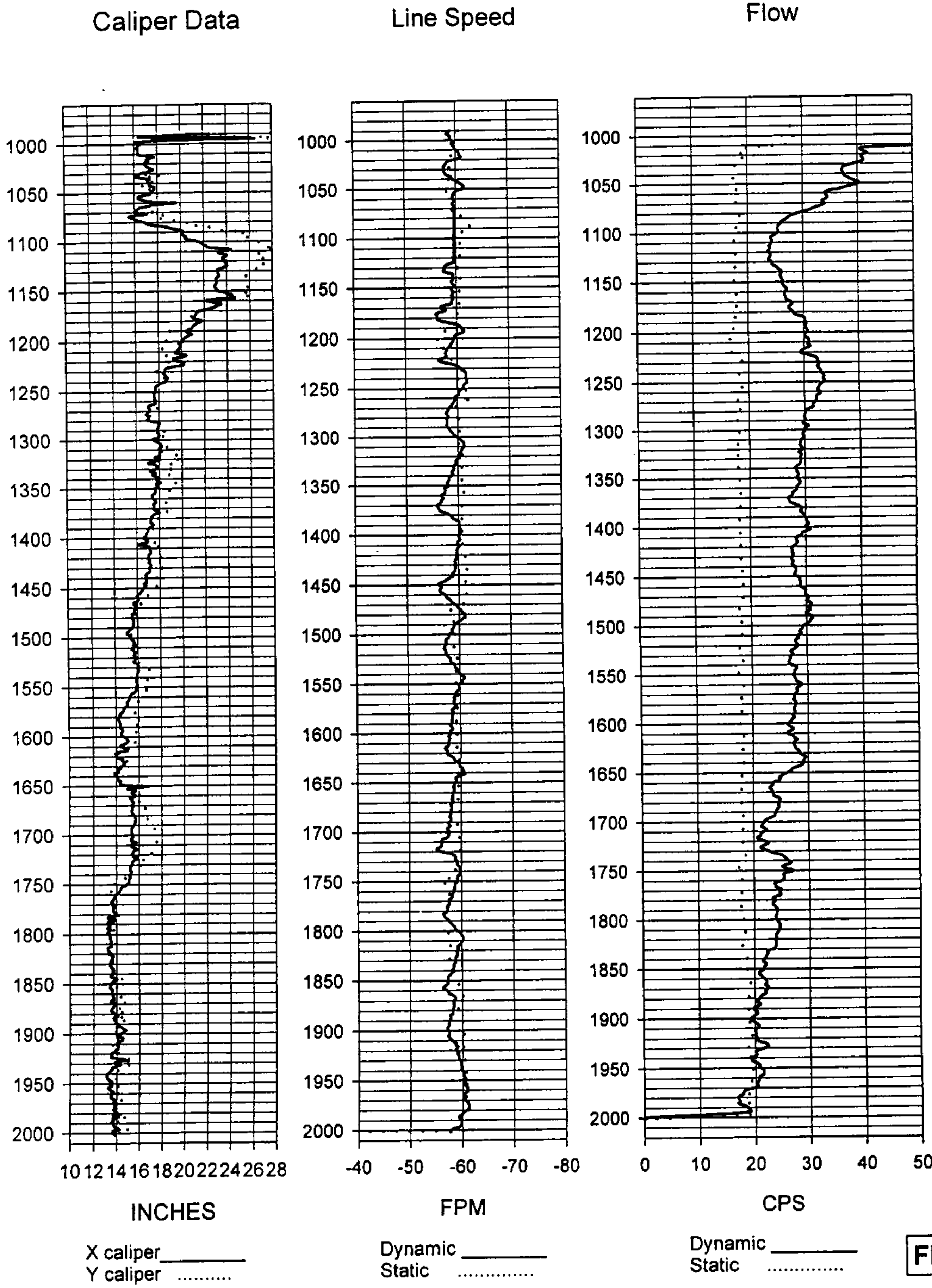


FIG 1

Cooper City IW

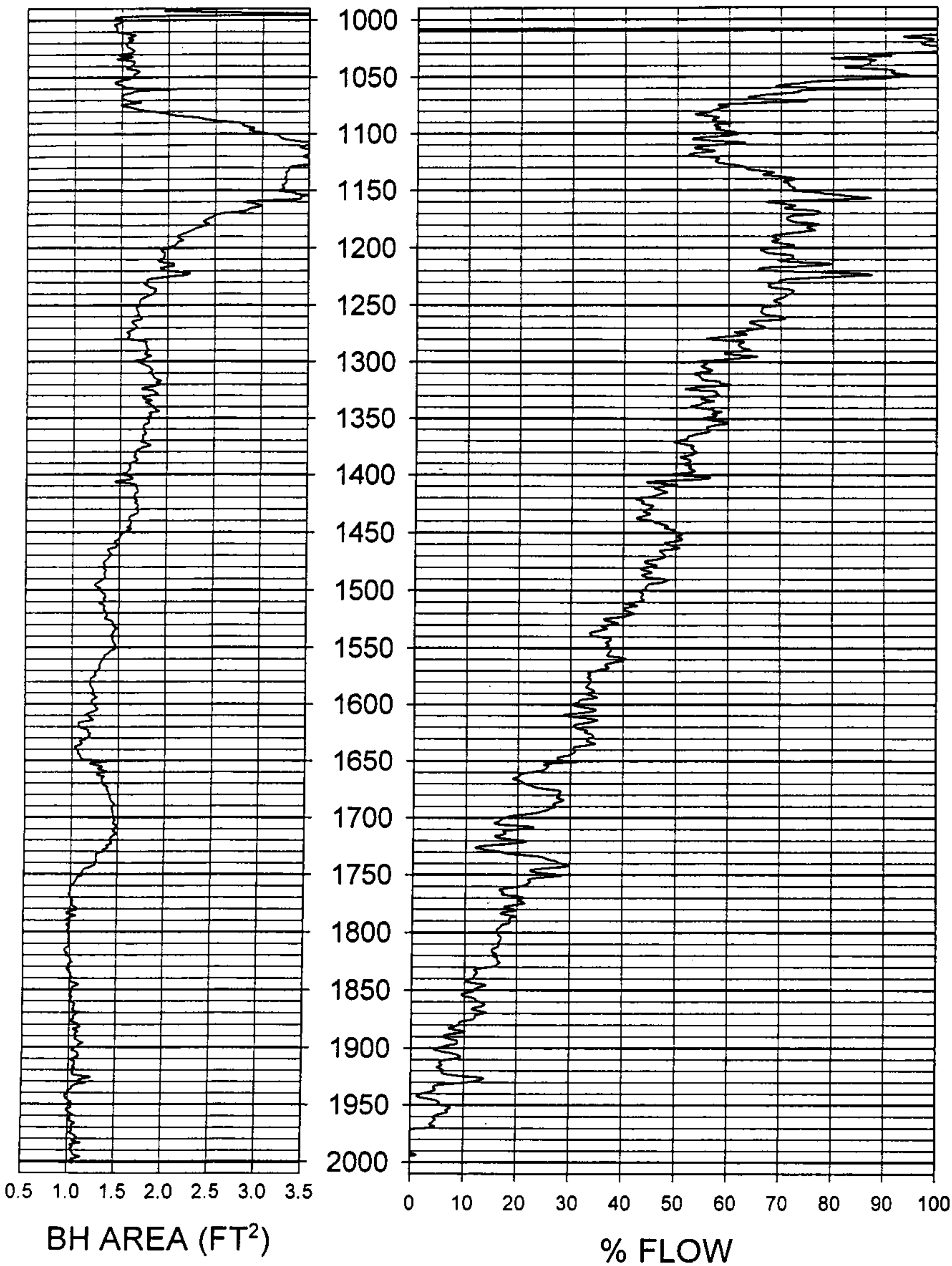


FIG 2

Cooper City IW

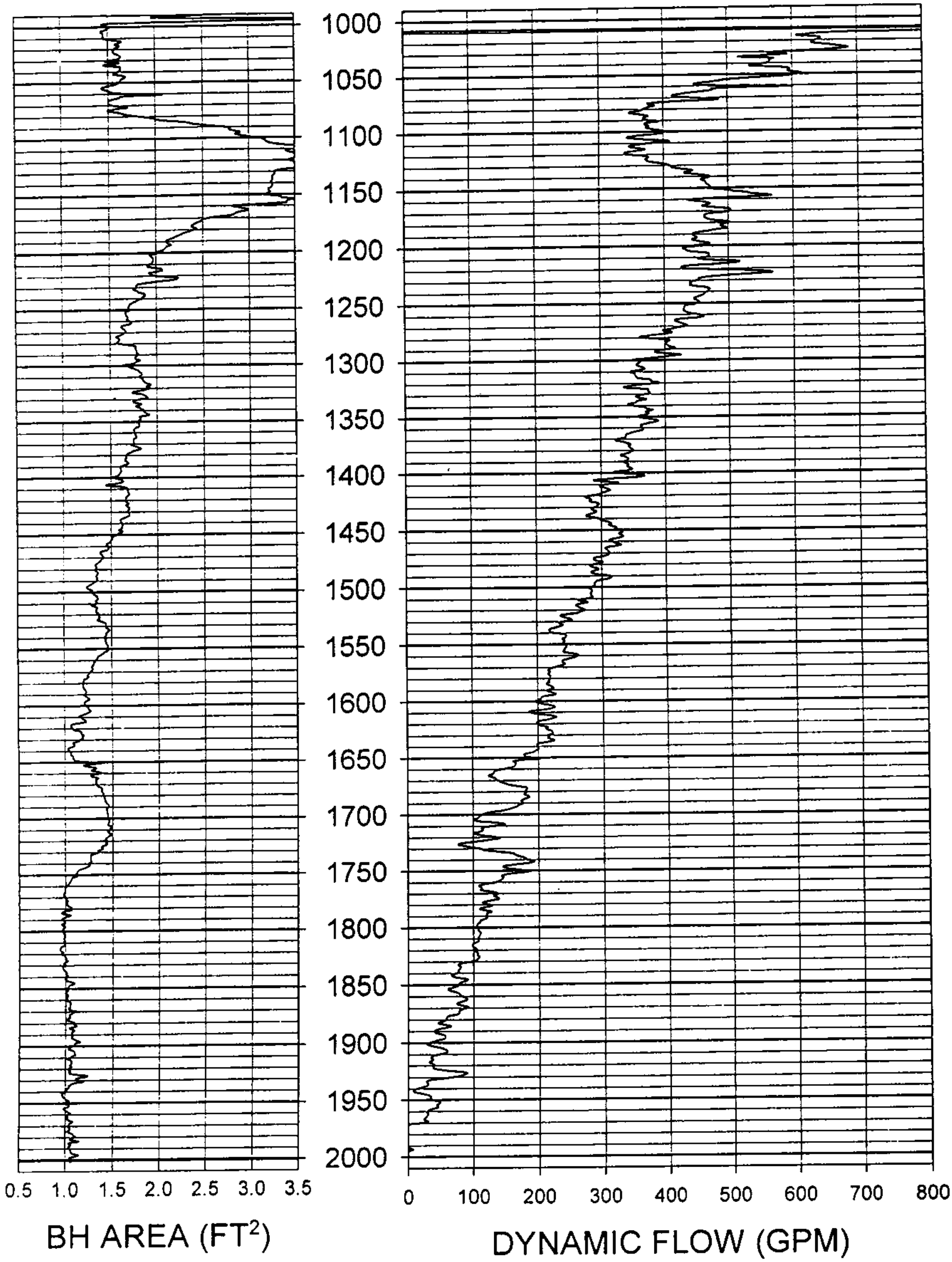
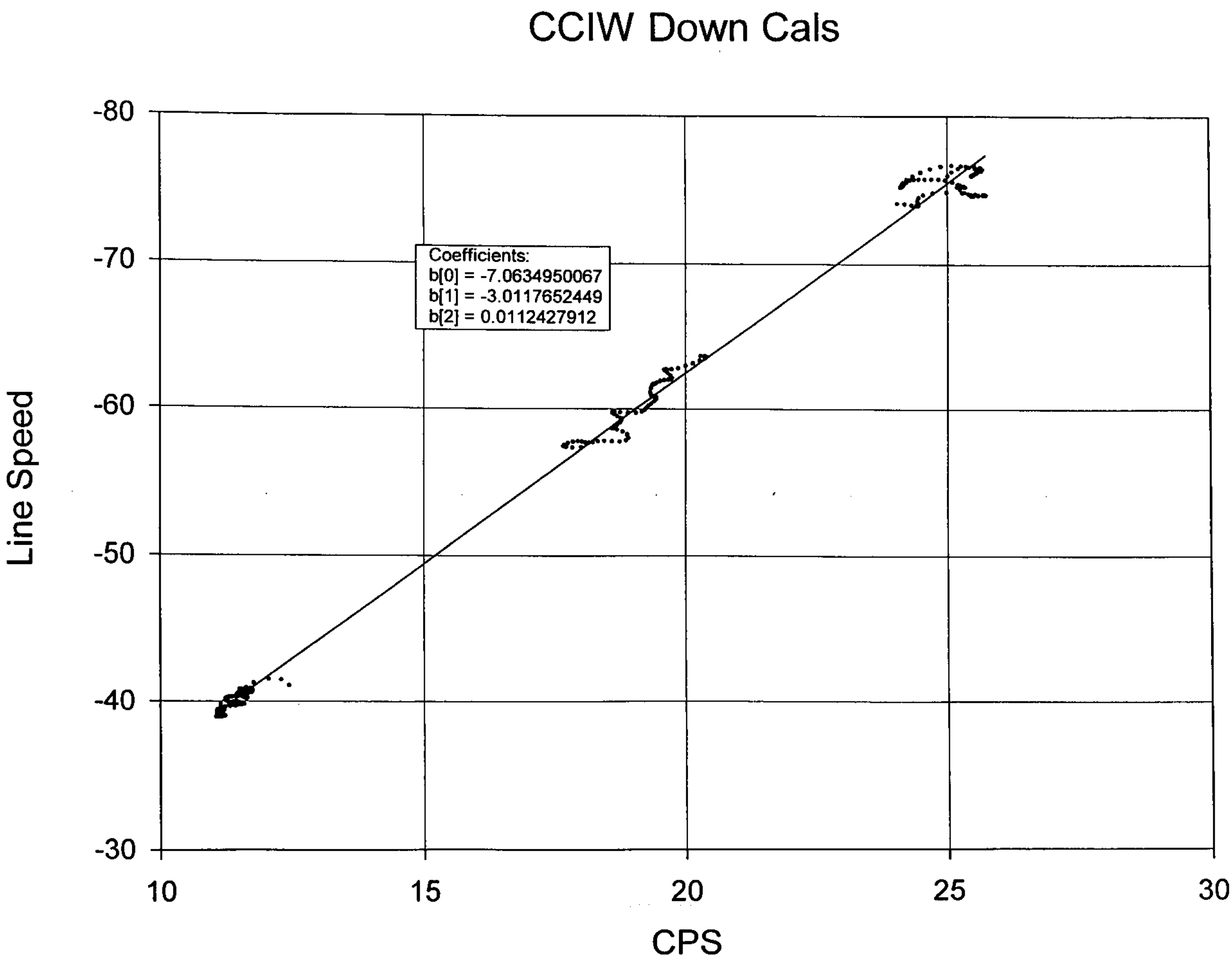


FIG 3


CCIW Down Cals
Coefficients:
b[0] = -7.0634950067
b[1] = -3.0117652449
b[2] = 0.0112427912
Line Speed
-80
-70
-60
-50
-40
-30
10
15
20
25
30
CPS

Geophysical Logging Quality Control

LOGGING TOOLS

CALIBRATION THEORY
AND PRACTICE

CALIBRATION

Few logging tools give a response immediately useful in formation evaluation. Logging tools generally exert some disturbance on the formation (pass electric current through it, bombard it with sub-atomic particles, etc.). The tools' detectors measure this disturbance after it has passed through the formation. This measurement may be made in counts per second, it is referred to as the raw measurement. Such responses are of limited interest to a geoscientist.

Calibration links this raw measurement to a useful formation property. All calibrations work on the same principle. A tool is placed in environments (usually two) of known physical property and the tool's responses in these environments are measured. An arithmetic relation (usually a straight line) between these points is constructed and used to convert actual measurements to calibrated values. For example, by recording the X-Y Caliper Tool's response (pulses per second, ***raw measurement***) to rings of known size (inches, ***calibrated measurement***); we can derive an equation that will allow measurement of an unknown hole diameter.

The Primary Standard for all logging tools is dependent on the physical property it has been designed to measure. This Primary Standard may be one of the following:

- API standard test pits, such as those found at the University of Houston.
- A test fixture from the tool manufacturer.
- Part of the tool's electronic circuitry.

Each following Tool Section describes the primary standard adopted by Florida Geophysical Logging.

Manufacturing plants and operations bases use Secondary Standards when needed as it is impractical to calibrate, and re-calibrate, each tool in some primary standards such as the Houston API pits. These secondary calibrators are carefully referenced directly to the primary standard.

Some examples of these secondary Standards are :

- The Natural Gamma Ray jig
- The Compensated Neutron water tank
- The Aluminum and Magnesium blocks for density calibrations

FLORIDA
GEOPHYSICAL LOGGING, INC.
15465 Pine Ridge Road - Fort Myers, Florida (941) 489-0044 Fax (941) 489-4545

CALIBRATION TECHNIQUE

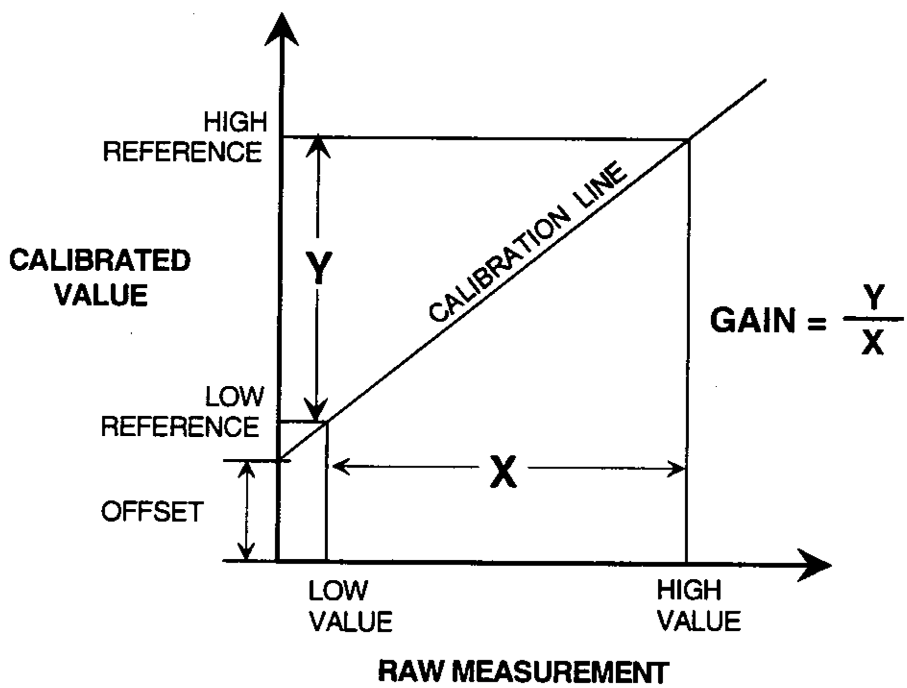
Some tools such as the X-Y Caliper Tool and the Fluid Resistivity Tool use multiple straight line segments to compute calibrated values. These tools use a modified version of the technique described below where a 2 point calibration scheme is described. The Flowmeter Tool is calibrated over 3 points and the data is fit to a quadratic equation.

We express a tool's linear response by:

$$y = mx + b$$

where y = calibrated response of the tool
m = slope or gain of the tool
x = raw value from tool
b = intercept or offset

This linear relationship between raw or measured values and calibrated values is shown
below :



$$Gain = \frac{High\,Cal - Low\,Cal}{High\,Meas - Low\,Meas} \qquad (A)$$

$$Offset\ or\ Intercept = Low\,Cal - (Gain \times Low\,Meas) \qquad (B)$$

VERIFICATION

A verification confirms that the tool response and calibration are still valid. It does not modify the relation between tool response and physical property measurement (i.e., the calibration).

Any verification method has to be fast, accurate, precise and rugged. They are normally done on the catwalk or drill floor, and take rig time.

DUAL INDUCTION TOOL (DIT)

The shop calibration of the Dual Induction Tool (DIT) involves placing the tool in a zero conductivity medium. This is accomplished by elevating the tool on tall wooden stands away from any metal or electrical fields (overhead or underground power lines). The height of the stands depends on ground conductivity which in turn is related to ground moisture content. A distance of 3 meters above the ground will normally remove any ground effect from the measurement. The tool zero conductivity signal is recorded for both deep and medium. Next a calibration loop of known conductivity is placed over the deep and medium sensor. The value of the loop is designed to represent a 500 mmho formation. This provides the "High Cal" value. Field verification is done to verify tool response in between master calibrations.

BOREHOLE COMPENSATED SONIC LOG (BHC)

The primary calibration for the BHC involves centralizing the tool in a section of water-filled steel casing and mechanically adjusting the spacers within the tool until the 4 individual transmitter to receiver pairs read the correct transit time for the 5 foot and 3 foot spacings. This procedure is done when the tool is built or whenever major repairs are performed on the transmitter/receiver section. Normal quality control procedures for all Compensated Sonic Logs requires logging the value of Delta T in the casing either on the way in the hole, or immediately after the logging run. This is an excellent verification that the entire system is functioning properly. Sometimes, this casing check is difficult in pipe that is well bonded. If possible, the logging engineer finds a section of "free pipe" to record the casing check.

X-Y CALIPER TOOL (XYT)

The calibration of this tool is done by opening the caliper arms into two or more rings of known inside diameter, the smaller ring serves as the low calibrate value, the large ring is the high calibrate value. The gain and offset are calculated using the technique presented in the introduction. The size of the caliper rings used in the calibration and verification are selected based on the hole size that is being logged. Several size rings are available.

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High Resolution Temperature Tool (HRT)

The shop calibration of the HRT uses two water baths of different temperatures. The low temperature bath is chosen to be 32°F because when logging a Deep Injection Well we often see borehole temperature in the 40° range. The high temperature bath is normally between 150°F and 212°F. The gain and offset are calculated using the technique presented in the introduction. All the tools Florida Geophysical Logging uses have fast response RTD sensors. The HRT is an extremely stable tool and requires calibration only after major repairs or component replacement. Because of the linearity of the sensor a single point verification made in the field will instantly tell if the tool is still in calibration and capable of recording accurate temperature. This verification is done in a fluid that has reached temperature equilibrium.

Fluid Conductivity Temperature Tool (FCT)

The shop calibration of the fluid conductivity measurement involves placing the tool in a series of different salt solutions. The solutions are allowed to reach temperature and salinity equilibrium and are then measured with a precision digital conductivity meter. The tool is placed in each of the solutions and a multi-point calibration is made between tool output in pulses and fluid conductivity. The FCT is an extremely stable tool and requires calibration only after major repairs or component replacement. A single point verification made in the field instantly tells if the tool is in calibration and capable of recording accurate fluid conductivity. This verification is generally done with a water sample obtained from the well.

For calibration of the temperature tool see HRT section.

Gamma Ray Tool (GRT)

The primary calibration standard for all gamma ray tools is the API Gamma Ray Test Pit at the University of Houston. The API standard defines the difference between two radioactive formations as 200 Gamma Ray API units. After primary calibration, the tool is removed and moved to a distance away from the pit. A background reading in air is recorded. Next, a small radioactive source is placed at a fixed distance from the detector of the tool. By subtracting the background reading from the response to the radioactive source, a value in API units is assigned to the calibrator or Jig. This Jig is used to calibrate other tools of similar design without taking it to the API test well.

FLOWMETER TOOL (FMT)

Quantitative analysis of flowmeter measurements requires calibration of the probe. Since the probe is a mechanical system utilizing components that are subject to wear (e.g. bearings) it must be calibrated before every use. Calibration is done by moving the tool at a known velocity through a static fluid column and measuring the number of pulses or counts output from the tool. It is important to calibrate the tool in the same diameter hole that the measurements will be made[1]. Two different velocities are required to establish a calibration line. Florida Geophysical Logging uses three principal velocities (50, 70 and 100 fpm) to establish a calibration line. A second order linear fit of the calibration data is performed. By mathematically fitting a curve through the calibration data points it is possible to "back calculate" an unknown velocity if the number of counts are known. The equation is of the form :

$$V_{fm} = b_0 + (b_1 \times counts) + (b_2 \times counts^2) \qquad (3)$$

where b_0, b_1, and b_2 are the coeficients determined by the linear curve fit routine.

Counts represent the raw signal from the flowmeter tool

[1] *Application Of The Borehole Flowmeter Method To Measure Spatially Variable Hydraulic Conductivity At The MADE Site - Kenneth R. Rehfeldt, Illinois State Water Survey*

APPENDIX G

VIDEO SURVEY

Video Survey Log

Appendix G Video Survey
Concentrate Disposal Well IW1

Interval (feet bpl)	Observations Concentrate Disposal Well IW1
2058 - 2157	**Light colored Limestone:** Generally massive, poorly to moderately vuggy, percentage of vuggs generally increasing with depth. Thin horizontal laminations 2058-2062. Thin darker vuggy bed at 2072. Mudstone lenses at 2099. Minor washouts at 2106. Mudstone lenses at 2119. Wavy laminations at 2121. Minor washout at 2135.
2157 – 2160	**Dark to light colored Limestone:** Horizontally laminated to thinly bedded, no fractures caverns or vuggs.
2160 – 2206	**Generally massive light colored Limestone:** Moderately vuggy at 2163 and 2167. Vuggy from 2185 to 2193. Dark laminations at 2199 and 2201.
2206 - 2211	**Dark vuggy Dolomite**
2211 – 2234	**Light colored dominantly massive Limestone**: No fractures or caverns. Dark thin bed at 2216. Dark lamination with angular breccia at 2218. Vuggy at 2220 and from 2224 to 2226. Lamination at 2231.
2234 - 2236	**Dark gray laminated Dolomitic Limestone:** No caverns, fractures or vuggs??? Orange thin Limestone bed at 2235.
2236 - 2272	**Light colored dominantly massive Limestone**: No fractures or caverns. Vuggy at 2265 and 2265, Dolomitic at 2260.
2272 – 2296	**Dark colored Dolomite with interbedded Limestone:** Dark vuggy Dolomite with shallow caverns 2289 to 2293. Thinly laminated from 2280 to 2289. Laminated Dolomite and Limestone at 2293 and 2295. Vuggy at 2295. Laminated Dolomite and Limestone 2295 to 2296.
2296 - 2323	**Light colored dominantly massive Limestone**: No fractures, caverns or vuggs. Thin coarser grained beds at 2993. Laminations at 2305. Dark colored inclusions at 2310.
2323 - 2330	**Dark colored dominantly massive Limestone:** Vuggy and fossiliferous with lenses grading 2323 to 2327. Coarser grained, fossiliferous and occasionally thinly bedded 2327 to 2323.
2330 – 2370	**Dark colored Dolomitic Limestone with interbedded Limestone**: Occasional shallow washouts. No fractures or caverns. Vuggy at 2330 and 2333. Abundant fossils at 2337.

Interval (feet bpl)	Observations Concentrate Disposal Well IW1
2370 - 2399	**Light colored massive Limestone:** Moderately vuggy to vuggy with shallow caverns at 2370 and 2377. Vuggy with shallow washouts 2390 to 2397.
2399 – 2419	**Bedded Dolomite and Limestone:** Massive gray to light brown massive vuggy Dolomite, no fractures 2399 to 2402. Massive light colored Limestone, no fractures vuggs or caverns, few minor washouts with occasional dolomite laminations 2402 to 2417. Light brown to dark gray massive Dolomite, no fractures, few shallow caverns, irregular lower contact 2417 to 2419.
2419 - 2450	**Light colored massive Limestone:** No fractures, occasional minor washouts, few to common dark dolomite lenses, moderately vuggy at 2443. Sharp horizontal lower contact.
2450 - 2451	**Light brown Limy Dolomite:** No vuggs, fractures or caverns, Gradational contact with lower unit.
2451 - 2458	**Light colored massive Limestone:** No fractures, vuggs or caverns, occasional minor washouts. Sharp horizontal contact with lower unit.
2458 – 2461	**Dark gray Dolomite with light colored Limestone:** No fractures, vuggs or caverns, occasional minor washouts.
2461 - 2498	**Light colored massive Limestone:** No fractures or caverns, locally weakly to moderately vuggy, occasional minor washouts.
2498 - 2500	**Light colored massive Limestone:** No fractures, vuggs or caverns, with dark Dolomite lenses common.
2500 - 2507	**Dark brown to gray massive Dolomite:** No fractures, vuggy, locally moderately cavernous with shallow caverns and washouts. Gradational laminated contact with lower unit.
2507 - 2605	**Light colored dominantly massive Limestone**: No fractures or caverns, generally weakly vuggy. Dolomite lenses common from 2507 to 2510. Thin Dolomitic bed at 2518. Moderately vuggy with shallow washouts at 2540. Thin Dolomite or Dolomitic Limestone bed at 2543. Moderately vuggy with shallow washouts from 2543 to 2550. Dark Dolomite lenses common from 2552 to 2555. Moderately vuggy from2557 to 2566. Very well indurated from 2566 to 2591. Shallow washout at 2591. Laminations of very coarse material at 2593.
2605 – 2611	**Dark colored massive Dolomitic Limestone:** with Dolomite lenses common.

Interval (feet bpl)	Observations Concentrate Disposal Well IW1
2611 - 2701	**Light colored dominantly massive Limestone**: No fractures, generally very weakly vuggy. Moderately vuggy from 2622 to 2627. Thin bed of dark Dolomite at 2632. Slightly to moderately vuggy from 2637 to 2643. Minor washouts from 2643 to 2652. Moderately vuggy from 2664 to 2668. Metal imbedded in sidewall at 2683.

Video Survey

(Video Tapes Are Boxed Separately With Geophysical logs)

Appendix G Video Survey
Dual-Zone Monitoring Well MW1

Interval (feet bpl)	Observations Upper Monitoring Zone MW1
1660 - 1710	**Light colored generally massive Limestone:** Generally medium grained. Dominantly well indurated. No vuggs, fractures or caverns. Dark bed with mudstone lenses at 1666. Coarser grained material with mudstone lenses at 1672. Dark lamination at 1681. Dark laminations at 1697. Thin dolomitic bed at 1709. View partially obscured by drilling filter cake.

Interval (feet bpl)	Observations Lower Monitoring Zone MW1
1900 – 1945	**Light colored generally massive Limestone:** Dominantly well indurated. Thin dark mudstone bed at 1914. Light laminations at 1917. Minor low angle fracture at 1920. Dark colored laminations at 1933

APPENDIX H

PACKER PUMPING TEST DATA AND GRAPHS

IW-1 Straddle Packer Test

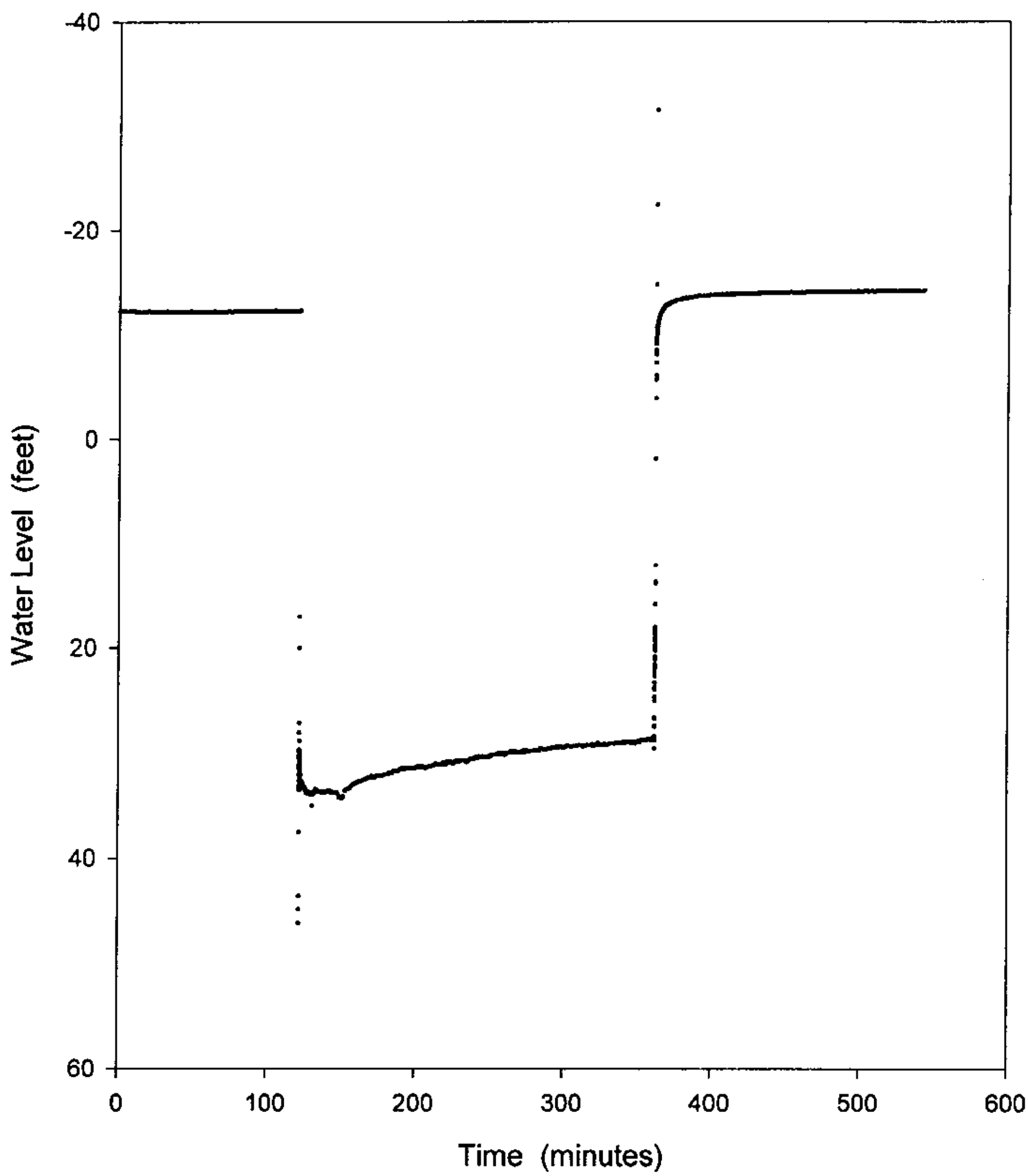
1,660 – 1,710

COOPER CITY

IW 1

1660 - 1710

BACKGROUND, DRAWDOWN AND RECOVERY DATA

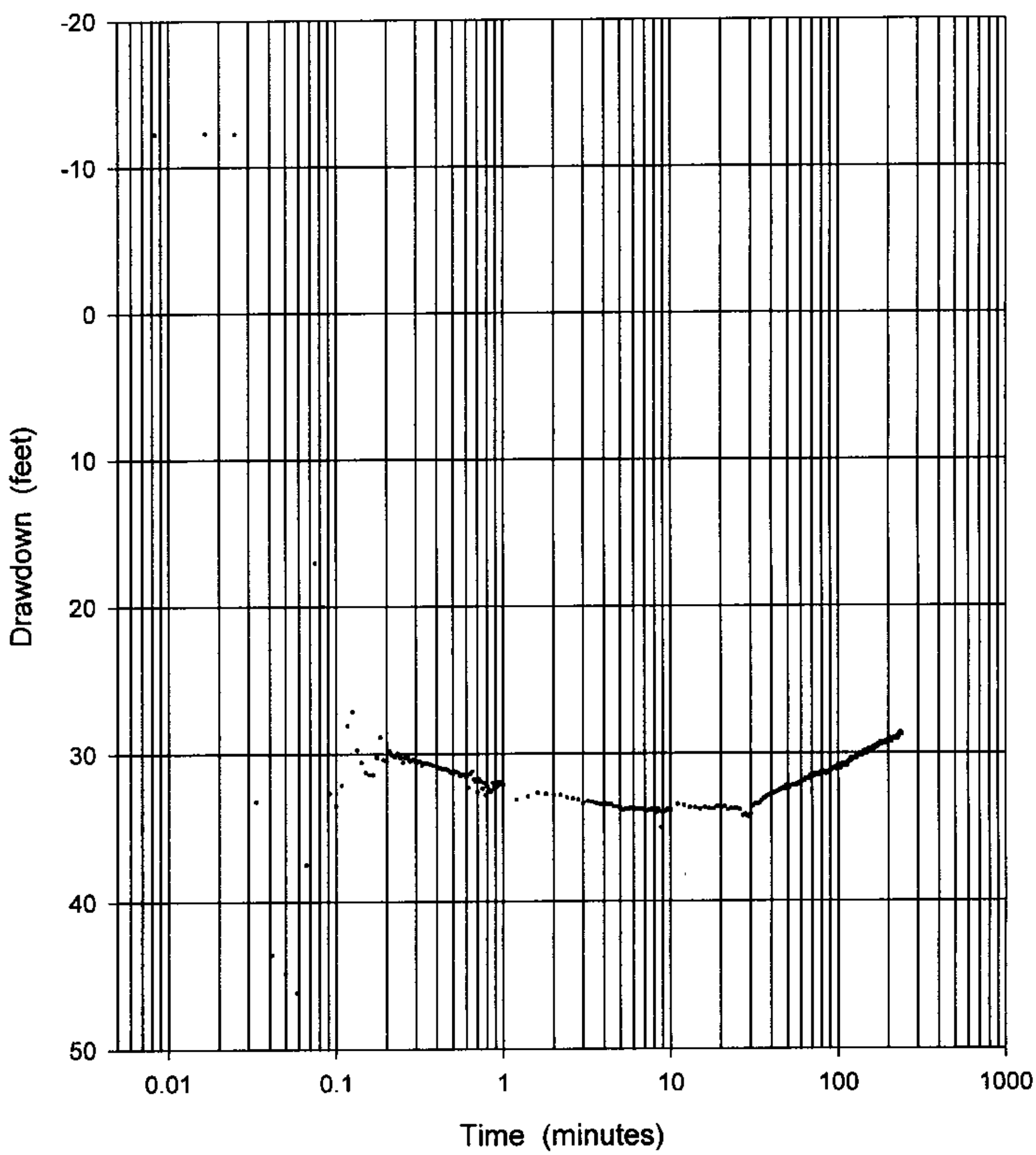


COOPER CITY

IW1

1660 - 1710

DRAWDOWN

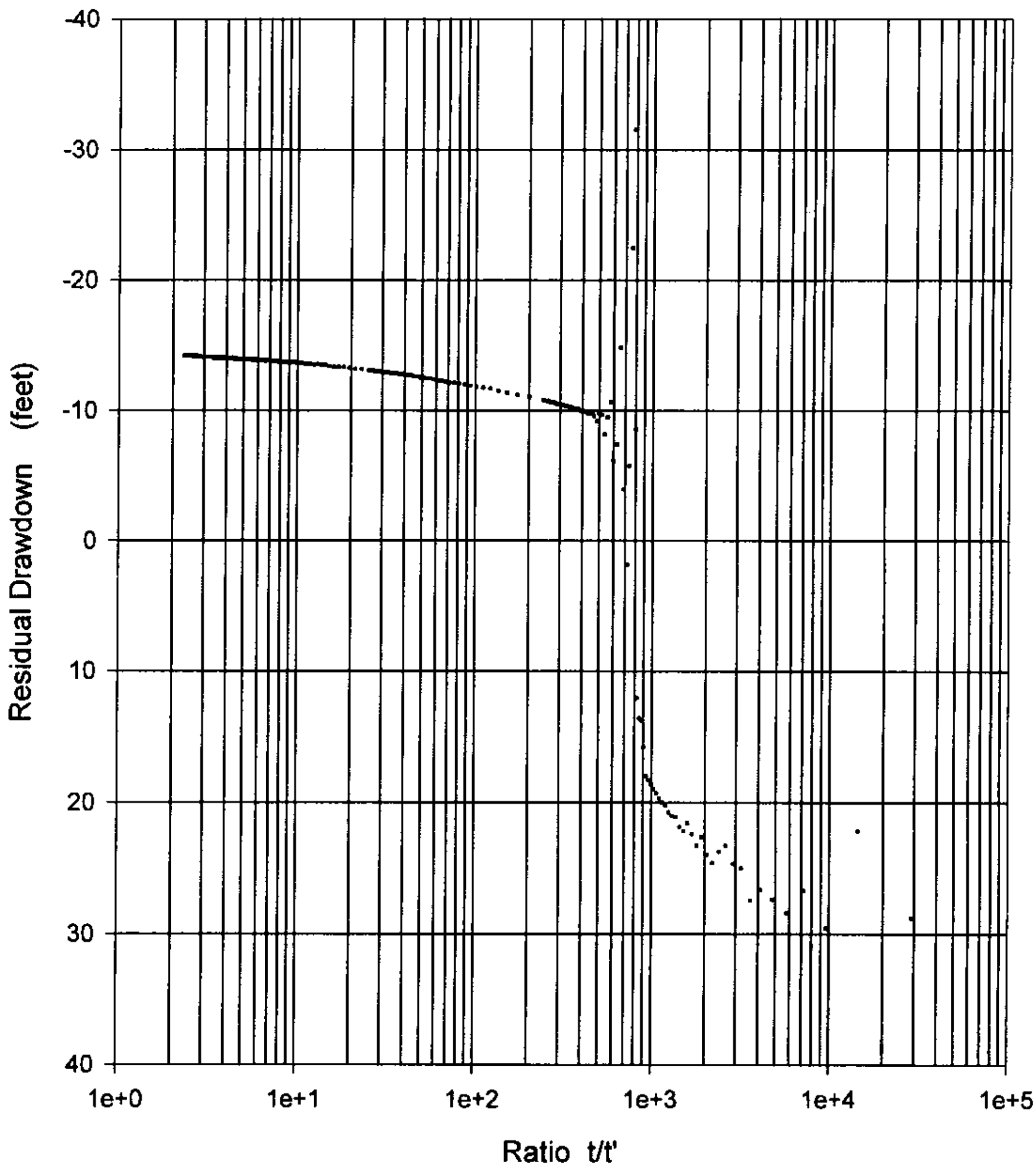


COOPER CITY

IW1

1660 - 1710

RESIDUAL DRAWDOWN



COOPER CITY IW1
1660 - 1710
BACKGROUND DATA

TIME	WATER LEVEL	TIME	WATER LEVEL	TIME	WATER LEVEL	TIME	WATER LEVEL
0	-12.253	0.75	-12.253	15	-12.175	80	-12.253
0.0083	-12.253	0.7666	-12.253	16	-12.175	81	-12.253
0.0166	-12.253	0.7833	-12.253	17	-12.175	82	-12.253
0.025	-12.253	0.8	-12.253	18	-12.175	83	-12.253
0.0333	-12.253	0.8166	-12.253	19	-12.253	84	-12.253
0.0416	-12.253	0.8333	-12.253	20	-12.253	85	-12.253
0.05	-12.253	0.85	-12.253	21	-12.175	86	-12.253
0.0583	-12.253	0.8666	-12.253	22	-12.175	87	-12.253
0.0666	-12.253	0.8833	-12.253	23	-12.175	88	-12.253
0.075	-12.253	0.9	-12.253	24	-12.175	89	-12.253
0.0833	-12.253	0.9166	-12.253	25	-12.175	90	-12.253
0.0916	-12.253	0.9333	-12.253	26	-12.175	91	-12.253
0.1	-12.253	0.95	-12.253	27	-12.175	92	-12.253
0.1083	-12.253	0.9666	-12.253	28	-12.175	93	-12.253
0.1166	-12.253	0.9833	-12.253	29	-12.175	94	-12.253
0.125	-12.253	1	-12.253	30	-12.175	95	-12.253
0.1333	-12.253	1.2	-12.253	31	-12.175	96	-12.253
0.1416	-12.253	1.4	-12.253	32	-12.253	97	-12.253
0.15	-12.253	1.6	-12.253	33	-12.175	98	-12.253
0.1583	-12.253	1.8	-12.253	34	-12.175	99	-12.253
0.1666	-12.253	2	-12.253	35	-12.175	100	-12.253
0.175	-12.253	2.2	-12.253	36	-12.175	101	-12.253
0.1833	-12.253	2.4	-12.253	37	-12.175	102	-12.253
0.1916	-12.253	2.6	-12.253	38	-12.175	103	-12.253
0.2	-12.253	2.8	-12.253	39	-12.175	104	-12.253
0.2083	-12.253	3	-12.253	40	-12.175	105	-12.331
0.2166	-12.253	3.2	-12.253	41	-12.175	106	-12.253
0.225	-12.253	3.4	-12.253	42	-12.175	107	-12.253
0.2333	-12.253	3.6	-12.253	43	-12.175	108	-12.253
0.2416	-12.253	3.8	-12.253	44	-12.175	109	-12.253
0.25	-12.253	4	-12.253	45	-12.175	110	-12.253
0.2583	-12.253	4.2	-12.253	46	-12.175	111	-12.253
0.2666	-12.253	4.4	-12.253	47	-12.175	112	-12.253
0.275	-12.253	4.6	-12.253	48	-12.253	113	-12.253
0.2833	-12.253	4.8	-12.253	49	-12.175	114	-12.253
0.2916	-12.253	5	-12.253	50	-12.175	115	-12.253
0.3	-12.253	5.2	-12.253	51	-12.175	116	-12.253
0.3083	-12.253	5.4	-12.253	52	-12.175	117	-12.253
0.3166	-12.253	5.6	-12.253	53	-12.175	118	-12.253
0.325	-12.253	5.8	-12.253	54	-12.175	119	-12.253
0.3333	-12.253	6	-12.253	55	-12.175	120	-12.253
0.35	-12.253	6.2	-12.253	56	-12.175	121	-12.253
0.3666	-12.253	6.4	-12.253	57	-12.175	122	-12.253
0.3833	-12.253	6.6	-12.253	58	-12.175	122	-12.253
0.4	-12.253	6.8	-12.253	59	-12.175		
0.4166	-12.253	7	-12.253	60	-12.175		
0.4333	-12.253	7.2	-12.253	61	-12.175		
0.45	-12.253	7.4	-12.253	62	-12.175		
0.4666	-12.253	7.6	-12.253	63	-12.175		
0.4833	-12.253	7.8	-12.253	64	-12.253		
0.5	-12.253	8	-12.253	65	-12.175		
0.5166	-12.253	8.2	-12.253	66	-12.175		
0.5333	-12.253	8.4	-12.253	67	-12.175		
0.55	-12.253	8.6	-12.253	68	-12.175		
0.5666	-12.253	8.8	-12.253	69	-12.175		
0.5833	-12.253	9	-12.253	70	-12.175		
0.6	-12.253	9.2	-12.253	71	-12.175		
0.6166	-12.253	9.4	-12.253	72	-12.175		
0.6333	-12.253	9.6	-12.253	73	-12.253		
0.65	-12.253	9.8	-12.253	74	-12.253		
0.6666	-12.253	10	-12.253	75	-12.175		
0.6833	-12.253	11	-12.175	76	-12.175		
0.7	-12.253	12	-12.175	77	-12.253		
0.7166	-12.253	13	-12.175	78	-12.253		
0.7333	-12.253	14	-12.175	79	-12.253		

COOPER CITY IW1
1660 - 1710
DRAWDOWN DATA

TIME	WATER LEVEL	TIME	WATER LEVEL	TIME	WATER LEVEL	TIME	WATER LEVEL	TIME	WATER LEVEL
0	-12.253	0.75	32.359	15	33.762	80	31.346	145	29.866
0.0083	-12.253	0.7666	31.97	16	33.684	81	31.268	146	29.866
0.0166	-12.331	0.7833	32.827	17	33.762	82	31.346	147	29.944
0.025	-12.253	0.8	32.204	18	33.762	83	31.268	148	30.022
0.0333	33.217	0.8166	32.437	19	33.606	84	31.346	149	29.944
0.0416	43.578	0.8333	32.593	20	33.684	85	31.424	150	29.944
0.05	44.824	0.85	32.515	21	33.606	86	31.346	151	29.788
0.0583	46.148	0.8666	31.97	22	33.84	87	31.346	152	29.944
0.0666	37.502	0.8833	32.204	23	33.762	88	31.268	153	29.71
0.075	17.004	0.9	32.282	24	33.762	89	31.268	154	29.866
0.0833	19.966	0.9166	32.204	25	33.762	90	31.191	155	29.866
0.0916	32.671	0.9333	31.97	26	33.84	91	31.191	156	29.788
0.1	33.528	0.95	31.892	27	34.23	92	31.035	157	29.788
0.1083	32.126	0.9666	31.97	28	34.152	93	31.035	158	29.788
0.1166	28.073	0.9833	32.126	29	34.307	94	31.113	159	29.71
0.125	27.138	1	32.126	30	34.152	95	31.113	160	29.788
0.1333	29.71	1.2	33.139	31	33.606	96	31.113	161	29.788
0.1416	30.567	1.4	32.905	32	33.45	97	30.957	162	29.788
0.15	31.268	1.6	32.671	33	33.45	98	30.957	163	29.554
0.1583	31.424	1.8	32.749	34	33.372	99	31.113	164	29.632
0.1666	31.424	2	32.827	35	33.217	100	30.801	165	29.632
0.175	30.255	2.2	32.827	36	33.061	101	30.879	166	29.71
0.1833	28.853	2.4	32.983	37	32.983	102	30.879	167	29.632
0.1916	30.411	2.6	33.061	38	32.905	103	30.879	168	29.632
0.2	30.489	2.8	33.139	39	32.827	104	31.035	169	29.554
0.2083	29.788	3	33.372	40	32.749	105	30.879	170	29.632
0.2166	30.1	3.2	33.217	41	32.749	106	30.723	171	29.476
0.225	30.177	3.4	33.294	42	32.671	107	30.879	172	29.476
0.2333	29.944	3.6	33.372	43	32.593	108	30.801	173	29.554
0.2416	30.255	3.8	33.45	44	32.593	109	30.723	174	29.398
0.25	30.567	4	33.372	45	32.515	110	30.723	175	29.476
0.2583	30.255	4.2	33.45	46	32.437	111	30.723	176	29.398
0.2666	30.255	4.4	33.45	47	32.359	112	30.723	177	29.398
0.275	30.489	4.6	33.606	48	32.437	113	30.879	178	29.476
0.2833	30.411	4.8	33.606	49	32.204	114	30.801	179	29.476
0.2916	30.411	5	33.684	50	32.359	115	30.645	180	29.398
0.3	30.645	5.2	33.84	51	32.359	116	30.567	181	29.242
0.3083	30.489	5.4	33.762	52	32.204	117	30.567	182	29.32
0.3166	30.489	5.6	33.762	53	32.204	118	30.567	183	29.32
0.325	30.801	5.8	33.684	54	32.204	119	30.411	184	29.398
0.3333	30.645	6	33.762	55	32.204	120	30.489	185	29.32
0.35	30.645	6.2	33.762	56	32.204	121	30.333	186	29.32
0.3666	30.723	6.4	33.762	57	32.126	122	30.411	187	29.32
0.3833	30.801	6.6	33.762	58	32.048	123	30.333	188	29.242
0.4	30.879	6.8	33.762	59	32.048	124	30.333	189	29.242
0.4166	30.957	7	33.84	60	32.048	125	30.411	190	29.242
0.4333	31.035	7.2	33.918	61	31.892	126	30.411	191	29.242
0.45	31.035	7.4	33.84	62	31.892	127	30.333	192	29.398
0.4666	31.113	7.6	33.84	63	31.892	128	30.333	193	29.32
0.4833	31.268	7.8	33.762	64	31.736	129	30.333	194	29.242
0.5	31.268	8	33.84	65	31.736	130	30.177	195	29.242
0.5166	31.191	8.2	33.996	66	31.736	131	30.177	196	29.242
0.5333	31.268	8.4	33.762	67	31.736	132	30.177	197	29.242
0.55	31.502	8.6	33.918	68	31.58	133	30.177	198	29.164
0.5666	31.424	8.8	35.009	69	31.502	134	30.1	199	29.32
0.5833	31.424	9	33.996	70	31.502	135	30.022	200	29.242
0.6	31.58	9.2	33.918	71	31.58	136	30.1	201	29.164
0.6166	32.282	9.4	33.84	72	31.424	137	30.022	202	29.009
0.6333	31.346	9.6	33.762	73	31.502	138	30.177	203	29.242
0.65	31.191	9.8	33.84	74	31.502	139	30.177	204	29.242
0.6666	31.736	10	33.84	75	31.424	140	30.022	205	29.164
0.6833	31.892	11	33.45	76	31.424	141	30.022	206	29.164
0.7	32.593	12	33.528	77	31.502	142	30.022	207	29.164
0.7166	31.736	13	33.684	78	31.502	143	29.866	208	29.242
0.7333	31.892	14	33.684	79	31.346	144	29.944	209	29.164

COOPER CITY IW1
1660 - 1710
DRAWDOWN DATA

TIME	WATER LEVEL
210	29.086
211	29.086
212	29.086
213	29.086
214	29.009
215	29.086
216	29.009
217	29.009
218	29.009
219	28.931
220	29.009
221	28.931
222	28.931
223	28.931
224	29.009
225	28.931
226	28.931
227	29.086
228	28.931
229	28.853
230	28.931
231	28.775
232	28.775
233	28.697
234	28.775
235	28.697
236	28.619
237	28.697
238	28.619
239	28.775
240	28.697

COOPER CITY IW1
1660 - 1710
RECOVERY DATA

TIME	WATER LEVEL	TIME	WATER LEVEL	TIME	WATER LEVEL	TIME	WATER LEVEL	TIME	WATER LEVEL
0	28.697	0.75	-10.38	15	-13.346	80	-14.049	145	-14.205
0.0083	28.775	0.7666	-10.458	16	-13.346	81	-14.049	146	-14.205
0.0166	22.149	0.7833	-10.458	17	-13.424	82	-14.049	147	-14.127
0.025	29.554	0.8	-10.536	18	-13.502	83	-14.049	148	-14.205
0.0333	26.67	0.8166	-10.536	19	-13.502	84	-14.049	149	-14.205
0.0416	28.385	0.8333	-10.536	20	-13.58	85	-14.049	150	-14.205
0.05	27.372	0.85	-10.614	21	-13.502	86	-14.049	151	-14.205
0.0583	26.592	0.8666	-10.614	22	-13.58	87	-14.049	152	-14.205
0.0666	27.45	0.8833	-10.692	23	-13.58	88	-14.049	153	-14.205
0.075	24.956	0.9	-10.692	24	-13.58	89	-14.049	154	-14.205
0.0833	24.644	0.9166	-10.692	25	-13.658	90	-14.049	155	-14.205
0.0916	23.241	0.9333	-10.77	26	-13.658	91	-14.127	156	-14.205
0.1	23.708	0.95	-10.77	27	-13.658	92	-14.049	157	-14.205
0.1083	24.566	0.9666	-10.77	28	-13.736	93	-14.049	158	-14.205
0.1166	23.942	0.9833	-10.77	29	-13.736	94	-14.049	159	-14.205
0.125	22.617	1	-10.848	30	-13.736	95	-14.049	160	-14.205
0.1333	23.241	1.2	-11.082	31	-13.736	96	-14.049	161	-14.205
0.1416	22.383	1.4	-11.238	32	-13.736	97	-14.049	162	-14.205
0.15	21.526	1.6	-11.394	33	-13.736	98	-14.127	163	-14.205
0.1583	22.149	1.8	-11.55	34	-13.736	99	-14.049	164	-14.205
0.1666	21.838	2	-11.707	35	-13.736	100	-14.049	165	-14.205
0.175	21.058	2.2	-11.785	36	-13.815	101	-14.127	166	-14.205
0.1833	20.98	2.4	-11.863	37	-13.815	102	-14.127	167	-14.205
0.1916	20.746	2.6	-11.941	38	-13.815	103	-14.127	168	-14.205
0.2	20.2	2.8	-12.019	39	-13.815	104	-14.127	169	-14.205
0.2083	19.966	3	-12.097	40	-13.815	105	-14.127	170	-14.205
0.2166	19.655	3.2	-12.175	41	-13.893	106	-14.127	171	-14.205
0.225	19.265	3.4	-12.175	42	-13.893	107	-14.127	172	-14.205
0.2333	18.953	3.6	-12.253	43	-13.815	108	-14.127	173	-14.205
0.2416	18.563	3.8	-12.331	44	-13.893	109	-14.127	174	-14.205
0.25	18.251	4	-12.331	45	-13.893	110	-14.127	175	-14.205
0.2583	17.939	4.2	-12.409	46	-13.893	111	-14.127	176	-14.205
0.2666	15.756	4.4	-12.487	47	-13.893	112	-14.127	177	-14.205
0.275	13.729	4.6	-12.487	48	-13.893	113	-14.127	178	-14.205
0.2833	13.573	4.8	-12.565	49	-13.893	114	-14.127	179	-14.205
0.2916	12.013	5	-12.565	50	-13.893	115	-14.127	180	-14.205
0.3	-8.584	5.2	-12.643	51	-13.971	116	-14.127	181	-14.283
0.3083	-31.544	5.4	-12.643	52	-13.893	117	-14.127		
0.3166	-22.482	5.6	-12.722	53	-13.893	118	-14.127		
0.325	-5.774	5.8	-12.722	54	-13.971	119	-14.127		
0.3333	1.794	6	-12.722	55	-13.971	120	-14.127		
0.35	-3.979	6.2	-12.8	56	-13.971	121	-14.127		
0.3666	-14.829	6.4	-12.8	57	-13.971	122	-14.127		
0.3833	-7.413	6.6	-12.8	58	-13.971	123	-14.127		
0.4	-6.165	6.8	-12.878	59	-13.971	124	-14.127		
0.4166	-10.692	7	-12.878	60	-13.971	125	-14.127		
0.4333	-9.521	7.2	-12.878	61	-13.971	126	-14.127		
0.45	-8.194	7.4	-12.878	62	-13.971	127	-14.127		
0.4666	-9.677	7.6	-12.956	63	-13.971	128	-14.127		
0.4833	-9.833	7.8	-12.956	64	-13.971	129	-14.127		
0.5	-9.209	8	-12.956	65	-13.971	130	-14.127		
0.5166	-9.599	8.2	-12.956	66	-13.971	131	-14.205		
0.5333	-9.911	8.4	-13.034	67	-13.971	132	-14.127		
0.55	-9.755	8.6	-13.034	68	-13.971	133	-14.127		
0.5666	-9.833	8.8	-13.034	69	-14.049	134	-14.127		
0.5833	-9.989	9	-13.034	70	-13.971	135	-14.127		
0.6	-9.989	9.2	-13.034	71	-14.049	136	-14.205		
0.6166	-9.989	9.4	-13.112	72	-14.049	137	-14.127		
0.6333	-10.145	9.6	-13.112	73	-14.049	138	-14.127		
0.65	-10.145	9.8	-13.112	74	-14.049	139	-14.127		
0.6666	-10.145	10	-13.112	75	-14.049	140	-14.205		
0.6833	-10.223	11	-13.19	76	-14.049	141	-14.205		
0.7	-10.301	12	-13.19	77	-14.049	142	-14.205		
0.7166	-10.301	13	-13.268	78	-14.049	143	-14.127		
0.7333	-10.38	14	-13.346	79	-14.049	144	-14.205		

IW-1 Straddle Packer Test

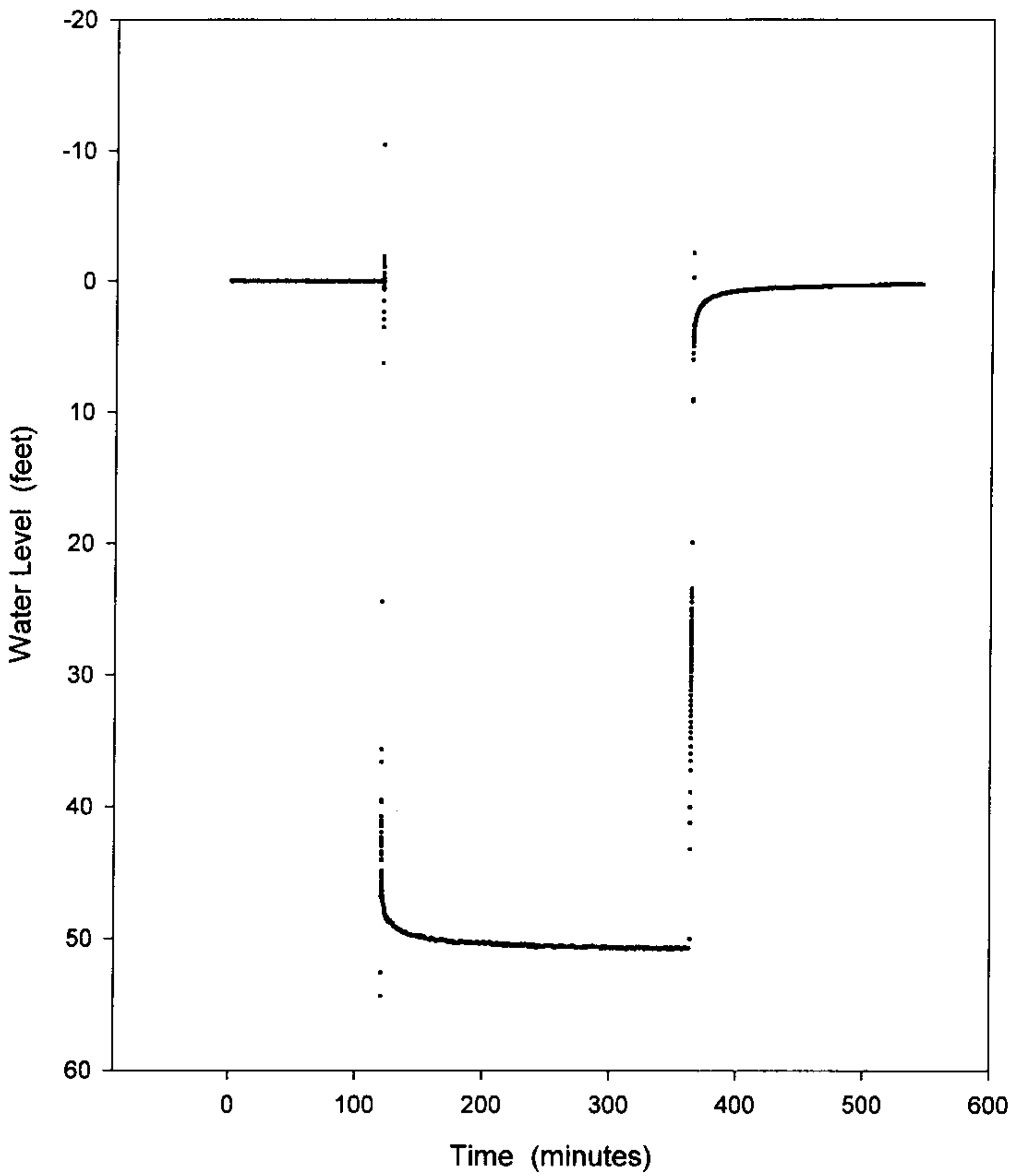
1,763 – 1,779

COOPER CITY

IW1

1763 - 1779

BACKGROUND, DRAWDOWN AND RECOVERY

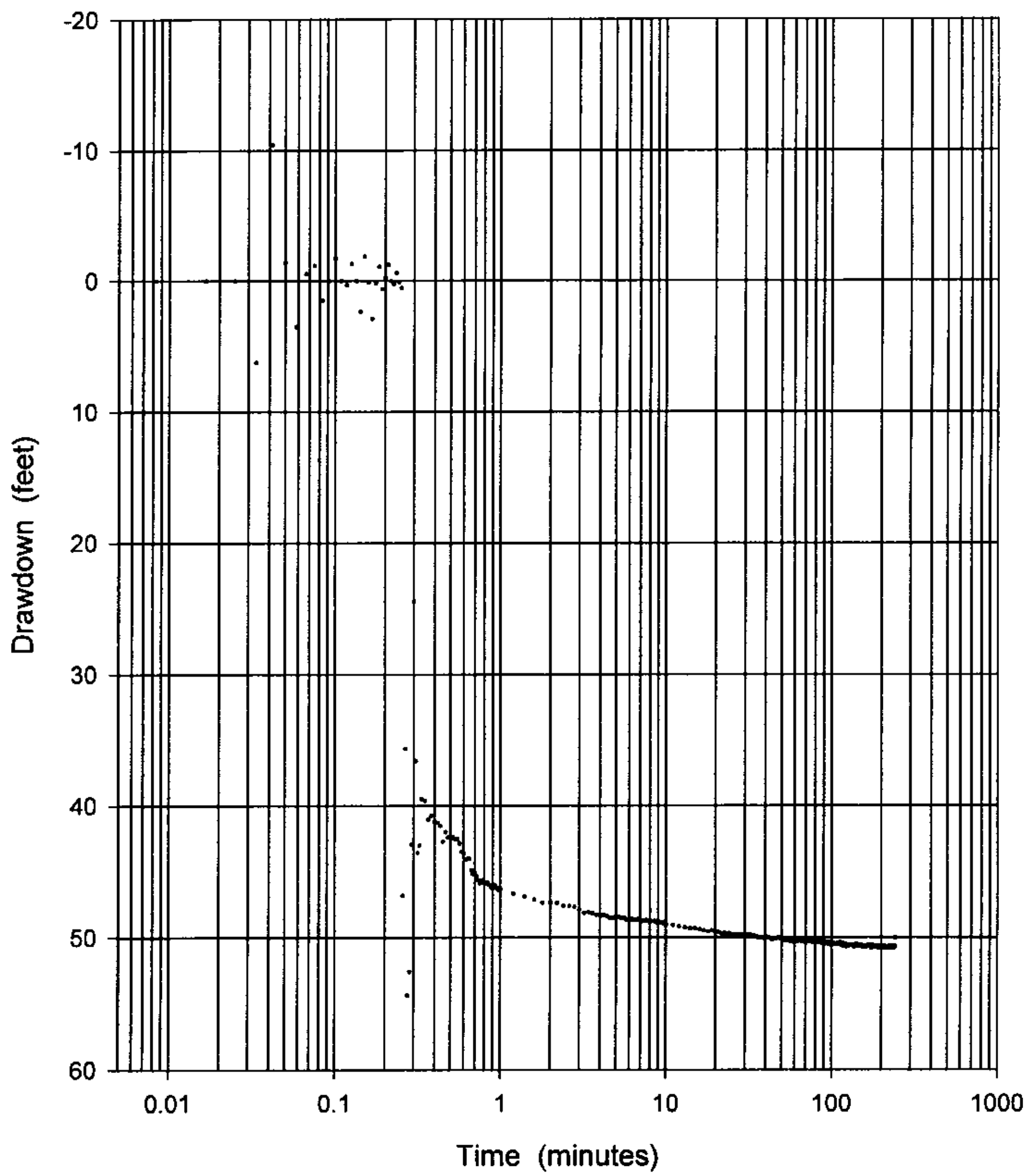


COOPER CITY

IW1

1763 - 1779

DRAWDOWN

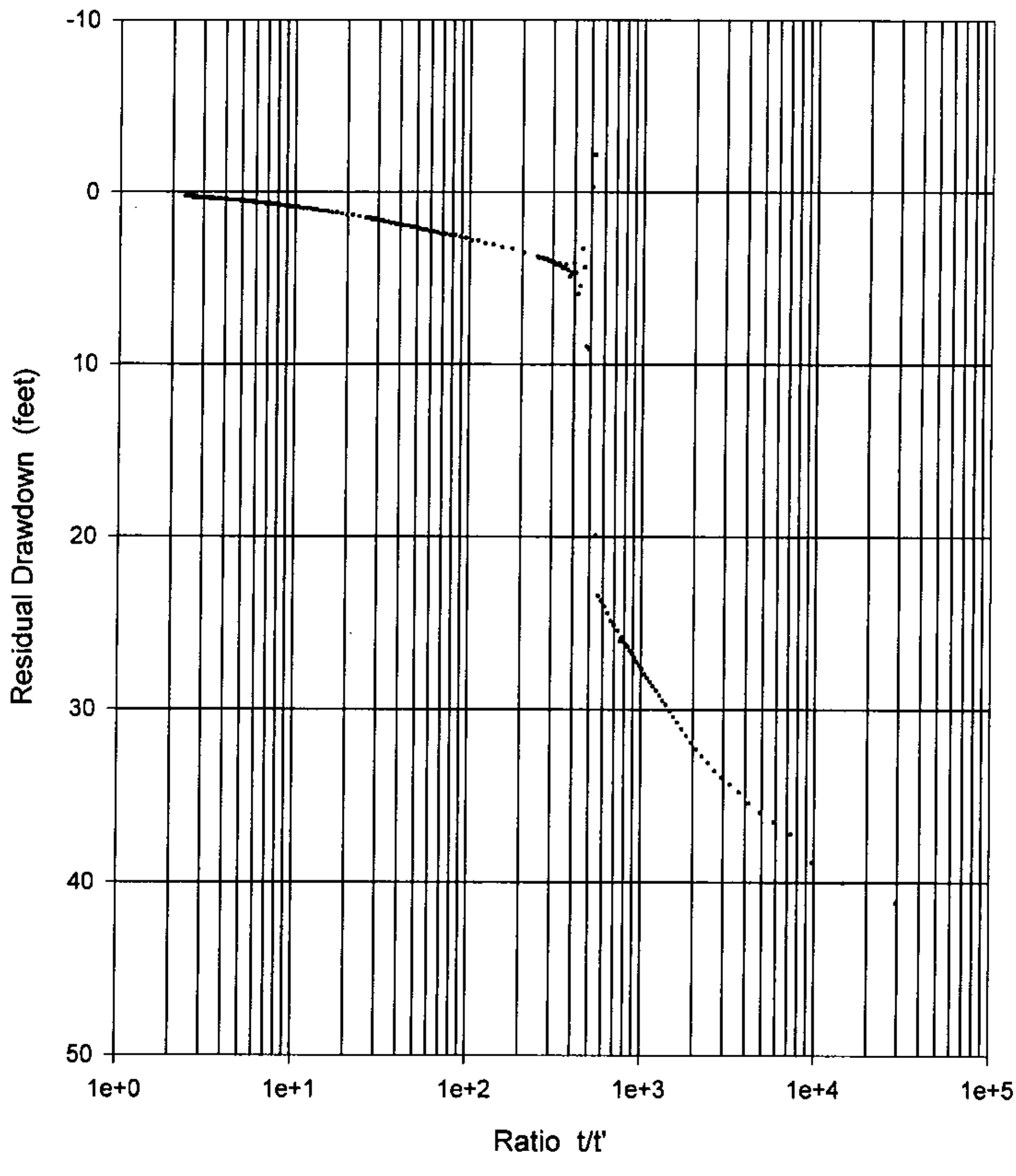


COOPER CITY

IW1

1763 - 1779

RESIDUAL DRAWDOWN vs t/t'



COOPER CITY
1763 - 1779
BACKGROUND DATA

TIME	WATER LEVEL	TIME	WATER LEVEL	TIME	WATER LEVEL	TIME	WATER LEVEL
0.0083	0	0.7666	0	16	0	81	0
0.0166	0	0.7833	0	17	0	82	0
0.025	0	0.8	0	18	0	83	0
0.0333	0	0.8166	0	19	0	84	0
0.0416	0	0.8333	0	20	0	85	0
0.05	0	0.85	0	21	0	86	0
0.0583	0	0.8666	0	22	0	87	0
0.0666	0	0.8833	0	23	0	88	0
0.075	0	0.9	0	24	0	89	0
0.0833	0	0.9166	0	25	0	90	0
0.0916	0	0.9333	0	26	0	91	0
0.1	0	0.95	0	27	0	92	0
0.1083	0	0.9666	0	28	0	93	0
0.1166	0	0.9833	0	29	0	94	0
0.125	0	1	-0.078	30	0	95	0
0.1333	0	1.2	-0.078	31	0	96	0
0.1416	0	1.4	-0.078	32	0	97	0
0.15	0	1.6	-0.078	33	0	98	0
0.1583	0	1.8	0	34	0	99	0
0.1666	0	2	0	35	0	100	0
0.175	0	2.2	0	36	0	101	0
0.1833	0	2.4	-0.078	37	0	102	0
0.1916	0	2.6	0	38	0	103	0
0.2	0	2.8	-0.078	39	0	104	0
0.2083	-0.078	3	0	40	0	105	0
0.2166	0	3.2	0	41	0	106	0
0.225	-0.078	3.4	-0.078	42	0	107	0
0.2333	-0.078	3.6	-0.078	43	0	108	0
0.2416	0	3.8	0	44	0	109	0
0.25	0	4	0	45	0	110	0
0.2583	0	4.2	-0.078	46	0	111	0
0.2666	-0.078	4.4	-0.078	47	0	112	0
0.275	-0.078	4.6	0	48	0	113	0
0.2833	0	4.8	-0.078	49	0	114	0
0.2916	0	5	0	50	0	115	0
0.3	0	5.2	0	51	0	116	0
0.3083	0	5.4	0	52	0	117	0
0.3166	0	5.6	-0.078	53	0	118	0
0.325	-0.078	5.8	0	54	0	119	0
0.3333	0	6	0	55	0	120	0
0.35	0	6.2	0	56	0		
0.3666	0	6.4	-0.078	57	0		
0.3833	0	6.6	0	58	0		
0.4	0	6.8	0	59	0		
0.4166	0	7	0	60	0		
0.4333	0	7.2	0	61	0		
0.45	0	7.4	0	62	0		
0.4666	0	7.6	0	63	0		
0.4833	0	7.8	0	64	0		
0.5	0	8	0	65	0		
0.5166	-0.078	8.2	0	66	0		
0.5333	0	8.4	-0.078	67	0		
0.55	0	8.6	-0.078	68	0		
0.5666	-0.078	8.8	-0.078	69	0		
0.5833	0	9	0	70	0		
0.6	0	9.2	0	71	0		
0.6166	-0.078	9.4	0	72	0		
0.6333	0	9.6	0	73	0		
0.65	0	9.8	0	74	0		
0.6666	0	10	0	75	0		
0.6833	0	11	0	76	0		
0.7	0	12	0	77	0		
0.7166	0	13	0	78	0		
0.7333	0	14	0	79	0		
0.75	0	15	0	80	0		

COOPER CITY
IW1
1763 - 1779
DRAWDOWN DATA

TIME	WATER LEVEL	TIME	WATER LEVEL	TIME	WATER LEVEL	TIME	WATER LEVEL	TIME	WATER LEVEL
0	0	0.75	45.865	15	49.293	80	50.306	145	50.618
0.0083	0	0.7666	45.709	16	49.371	81	50.228	146	50.618
0.0166	0	0.7833	45.631	17	49.449	82	50.384	147	50.618
0.025	0	0.8	45.787	18	49.527	83	50.384	148	50.618
0.0333	6.245	0.8166	45.865	19	49.449	84	50.306	149	50.618
0.0416	-10.464	0.8333	45.787	20	49.527	85	50.306	150	50.54
0.05	-1.405	0.85	45.943	21	49.605	86	50.228	151	50.618
0.0583	3.513	0.8666	46.021	22	49.683	87	50.384	152	50.54
0.0666	-0.546	0.8833	46.176	23	49.683	88	50.306	153	50.618
0.075	-1.171	0.9	46.021	24	49.683	89	50.462	154	50.696
0.0833	1.483	0.9166	46.176	25	49.761	90	50.384	155	50.696
0.0916	0	0.9333	46.021	26	49.761	91	50.462	156	50.618
0.1	-1.717	0.95	46.176	27	49.761	92	50.306	157	50.618
0.1083	0	0.9666	46.332	28	49.761	93	50.462	158	50.618
0.1166	0.312	0.9833	46.41	29	49.839	94	50.462	159	50.696
0.125	-1.327	1	46.332	30	49.761	95	50.384	160	50.618
0.1333	0	1.2	46.644	31	49.917	96	50.384	161	50.618
0.1416	2.342	1.4	46.878	32	49.761	97	50.54	162	50.696
0.15	-1.873	1.6	47.111	33	49.917	98	50.384	163	50.618
0.1583	0.078	1.8	47.345	34	49.839	99	50.54	164	50.618
0.1666	2.888	2	47.345	35	49.917	100	50.462	165	50.618
0.175	0.156	2.2	47.345	36	49.994	101	50.384	166	50.618
0.1833	-1.093	2.4	47.579	37	49.994	102	50.462	167	50.54
0.1916	0.624	2.6	47.579	38	49.994	103	50.462	168	50.618
0.2	-0.234	2.8	47.657	39	50.072	104	50.54	169	50.618
0.2083	-1.249	3	47.891	40	49.917	105	50.462	170	50.618
0.2166	0	3.2	48.124	41	49.994	106	50.462	171	50.618
0.225	0.234	3.4	48.047	42	49.994	107	50.462	172	50.618
0.2333	-0.624	3.6	48.124	43	50.072	108	50.54	173	50.618
0.2416	0.078	3.8	48.28	44	50.15	109	50.462	174	50.774
0.25	0.546	4	48.28	45	50.072	110	50.462	175	50.618
0.2583	46.8	4.2	48.28	46	50.072	111	50.384	176	50.696
0.2666	35.654	4.4	48.358	47	50.072	112	50.54	177	50.54
0.275	54.357	4.6	48.514	48	49.994	113	50.462	178	50.696
0.2833	52.565	4.8	48.514	49	50.072	114	50.384	179	50.618
0.2916	42.903	5	48.358	50	50.072	115	50.462	180	50.618
0.3	24.425	5.2	48.436	51	50.072	116	50.462	181	50.696
0.3083	36.59	5.4	48.514	52	50.15	117	50.618	182	50.696
0.3166	43.527	5.6	48.514	53	50.228	118	50.462	183	50.696
0.325	42.981	5.8	48.67	54	50.228	119	50.462	184	50.696
0.3333	39.474	6	48.67	55	50.15	120	50.618	185	50.618
0.35	39.63	6.2	48.592	56	50.15	121	50.462	186	50.696
0.3666	41.033	6.4	48.67	57	50.306	122	50.54	187	50.696
0.3833	40.721	6.6	48.67	58	50.228	123	50.696	188	50.696
0.4	41.189	6.8	48.592	59	50.306	124	50.54	189	50.618
0.4166	41.267	7	48.67	60	50.306	125	50.54	190	50.696
0.4333	41.5	7.2	48.748	61	50.306	126	50.54	191	50.696
0.45	42.669	7.4	48.748	62	50.306	127	50.618	192	50.696
0.4666	41.968	7.6	48.67	63	50.15	128	50.618	193	50.774
0.4833	42.358	7.8	48.748	64	50.228	129	50.54	194	50.774
0.5	42.436	8	48.748	65	50.228	130	50.54	195	50.618
0.5166	42.358	8.2	48.748	66	50.228	131	50.54	196	50.618
0.5333	42.514	8.4	48.748	67	50.306	132	50.54	197	50.696
0.55	42.514	8.6	48.748	68	50.306	133	50.54	198	50.618
0.5666	42.825	8.8	48.826	69	50.228	134	50.54	199	50.696
0.5833	43.449	9	48.826	70	50.306	135	50.54	200	50.774
0.6	43.605	9.2	48.826	71	50.228	136	50.54	201	50.696
0.6166	44.072	9.4	48.826	72	50.306	137	50.696	202	50.618
0.6333	43.994	9.6	48.904	73	50.306	138	50.618	203	50.618
0.65	43.994	9.8	48.826	74	50.306	139	50.618	204	50.696
0.6666	44.852	10	48.982	75	50.306	140	50.618	205	50.618
0.6833	45.163	11	49.059	76	50.228	141	50.54	206	50.618
0.7	45.085	12	49.137	77	50.306	142	50.462	207	50.618
0.7166	45.319	13	49.215	78	50.384	143	50.618	208	50.774
0.7333	45.631	14	49.293	79	50.306	144	50.54	209	50.696

COOPER CITY
IW1
1763 - 1779
DRAWDOWN DATA

TIME	WATER LEVEL
210	50.618
211	50.696
212	50.696
213	50.696
214	50.696
215	50.774
216	50.774
217	50.696
218	50.696
219	50.774
220	50.696
221	50.774
222	50.696
223	50.696
224	50.696
225	50.618
226	50.774
227	50.696
228	50.774
229	50.618
230	50.696
231	50.774
232	50.696
233	50.696
234	50.618
235	50.696
236	50.696
237	50.774
238	50.774
239	50.696
240	50.618
241	50.696
242	50.696
243	50.696
244	49.994

COOPER CITY
IW1
1763 - 1779
RECOVERY DATA

TIME	WATER LEVEL	TIME	WATER LEVEL	TIME	WATER LEVEL	TIME	WATER LEVEL	TIME	WATER LEVEL
0	43.215	0.75	4.137	15	1.171	80	0.39	145	0.312
0.0083	41.189	0.7666	4.215	16	1.171	81	0.39	146	0.312
0.0166	40.019	0.7833	4.215	17	1.093	82	0.39	147	0.234
0.025	38.85	0.8	4.137	18	1.093	83	0.39	148	0.312
0.0333	37.213	0.8166	4.059	19	1.093	84	0.39	149	0.312
0.0416	36.512	0.8333	4.059	20	1.014	85	0.39	150	0.234
0.05	35.966	0.85	3.981	21	1.014	86	0.39	151	0.234
0.0583	35.42	0.8666	3.981	22	0.936	87	0.39	152	0.234
0.0666	34.796	0.8833	3.903	23	0.936	88	0.39	153	0.312
0.075	34.329	0.9	3.903	24	0.936	89	0.39	154	0.312
0.0833	33.939	0.9166	3.903	25	0.936	90	0.39	155	0.234
0.0916	33.549	0.9333	3.825	26	0.858	91	0.39	156	0.234
0.1	33.081	0.95	3.825	27	0.858	92	0.39	157	0.234
0.1083	32.691	0.9666	3.825	28	0.858	93	0.39	158	0.234
0.1166	32.301	0.9833	3.825	29	0.858	94	0.39	159	0.234
0.125	31.912	1	3.747	30	0.78	95	0.39	160	0.234
0.1333	31.522	1.2	3.513	31	0.78	96	0.39	161	0.234
0.1416	31.132	1.4	3.278	32	0.78	97	0.39	162	0.234
0.15	30.742	1.6	3.2	33	0.78	98	0.39	163	0.234
0.1583	30.43	1.8	3.044	34	0.78	99	0.39	164	0.234
0.1666	30.118	2	2.966	35	0.702	100	0.39	165	0.234
0.175	29.728	2.2	2.81	36	0.702	101	0.39	166	0.234
0.1833	29.494	2.4	2.81	37	0.702	102	0.39	167	0.234
0.1916	29.182	2.6	2.654	38	0.702	103	0.312	168	0.234
0.2	28.87	2.8	2.576	39	0.702	104	0.312	169	0.234
0.2083	28.637	3	2.498	40	0.624	105	0.312	170	0.234
0.2166	28.403	3.2	2.498	41	0.624	106	0.39	171	0.234
0.225	28.169	3.4	2.42	42	0.702	107	0.312	172	0.234
0.2333	27.935	3.6	2.42	43	0.624	108	0.39	173	0.234
0.2416	27.623	3.8	2.342	44	0.624	109	0.312	174	0.234
0.25	27.467	4	2.264	45	0.624	110	0.312	175	0.234
0.2583	27.233	4.2	2.264	46	0.624	111	0.312	176	0.234
0.2666	26.999	4.4	2.186	47	0.624	112	0.312	177	0.234
0.275	26.765	4.6	2.186	48	0.624	113	0.312	178	0.234
0.2833	26.609	4.8	2.107	49	0.624	114	0.312	179	0.234
0.2916	26.375	5	2.029	50	0.546	115	0.312	180	0.234
0.3	26.219	5.2	2.029	51	0.624	116	0.312	181	0.234
0.3083	26.063	5.4	2.029	52	0.546	117	0.312		
0.3166	25.829	5.6	1.951	53	0.546	118	0.312		
0.325	26.063	5.8	1.951	54	0.546	119	0.312		
0.3333	25.439	6	1.951	55	0.546	120	0.312		
0.35	25.127	6.2	1.873	56	0.546	121	0.312		
0.3666	24.893	6.4	1.873	57	0.546	122	0.312		
0.3833	24.425	6.6	1.873	58	0.546	123	0.312		
0.4	24.035	6.8	1.795	59	0.546	124	0.312		
0.4166	23.723	7	1.795	60	0.468	125	0.312		
0.4333	23.411	7.2	1.795	61	0.468	126	0.312		
0.45	19.901	7.4	1.717	62	0.546	127	0.312		
0.4666	-2.186	7.6	1.717	63	0.468	128	0.312		
0.4833	-0.312	7.8	1.717	64	0.468	129	0.312		
0.5	9.133	8	1.639	65	0.468	130	0.312		
0.5166	8.977	8.2	1.639	66	0.468	131	0.312		
0.5333	4.371	8.4	1.639	67	0.468	132	0.312		
0.55	3.278	8.6	1.561	68	0.468	133	0.312		
0.5666	5.464	8.8	1.561	69	0.468	134	0.312		
0.5833	5.933	9	1.561	70	0.468	135	0.312		
0.6	4.684	9.2	1.561	71	0.468	136	0.312		
0.6166	4.137	9.4	1.483	72	0.468	137	0.312		
0.6333	4.684	9.6	1.483	73	0.468	138	0.312		
0.65	4.918	9.8	1.483	74	0.468	139	0.312		
0.6666	4.528	10	1.483	75	0.468	140	0.312		
0.6833	4.215	11	1.405	76	0.468	141	0.234		
0.7	4.371	12	1.327	77	0.468	142	0.312		
0.7166	4.449	13	1.327	78	0.468	143	0.312		
0.7333	4.293	14	1.249	79	0.468	144	0.312		

IW-1 Straddle Packer Test

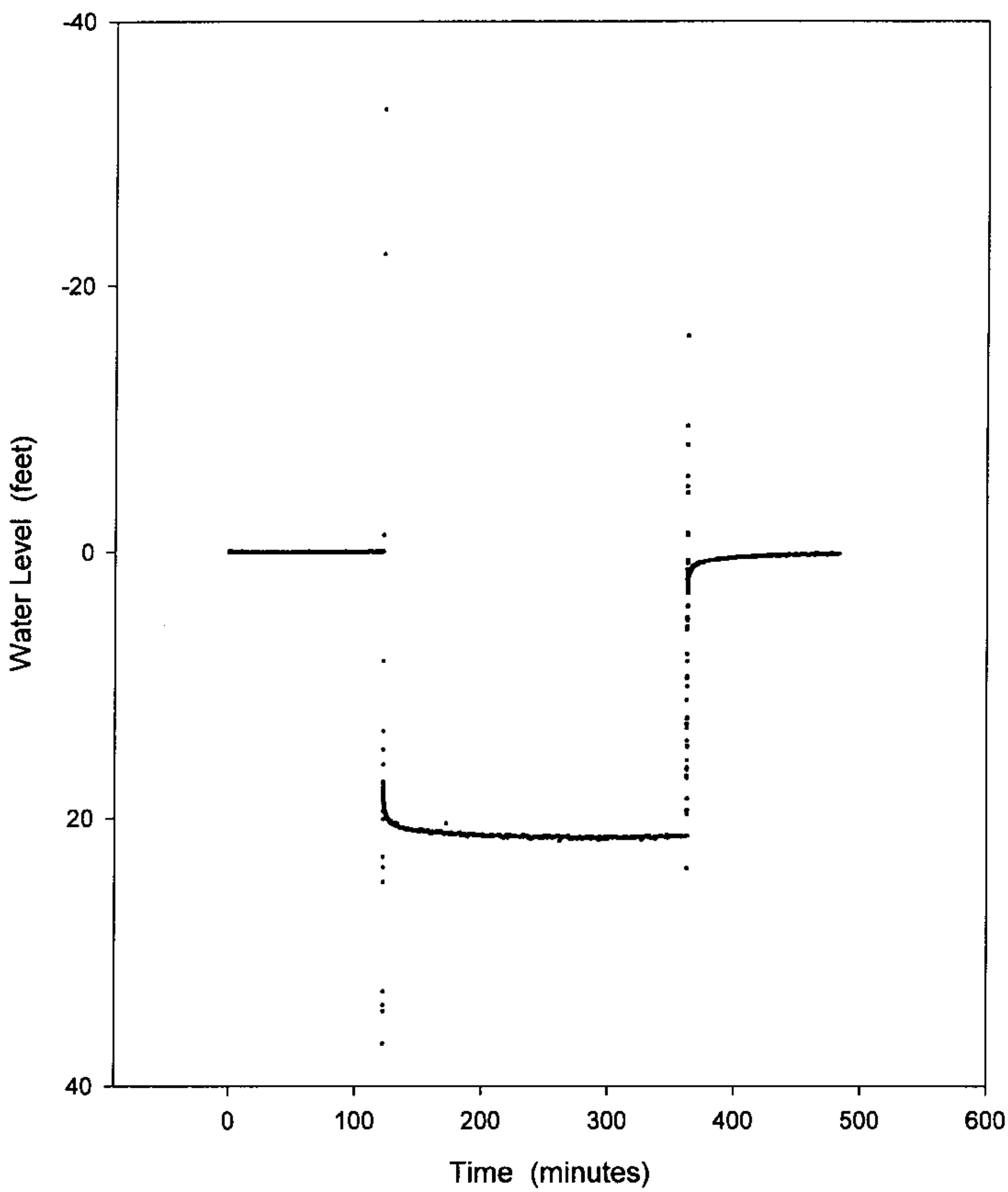
1,800 – 1,850

COOPER CITY

IW1

1800 - 1850

BACKGROUND, DRAWDOWN AND RECOVERY

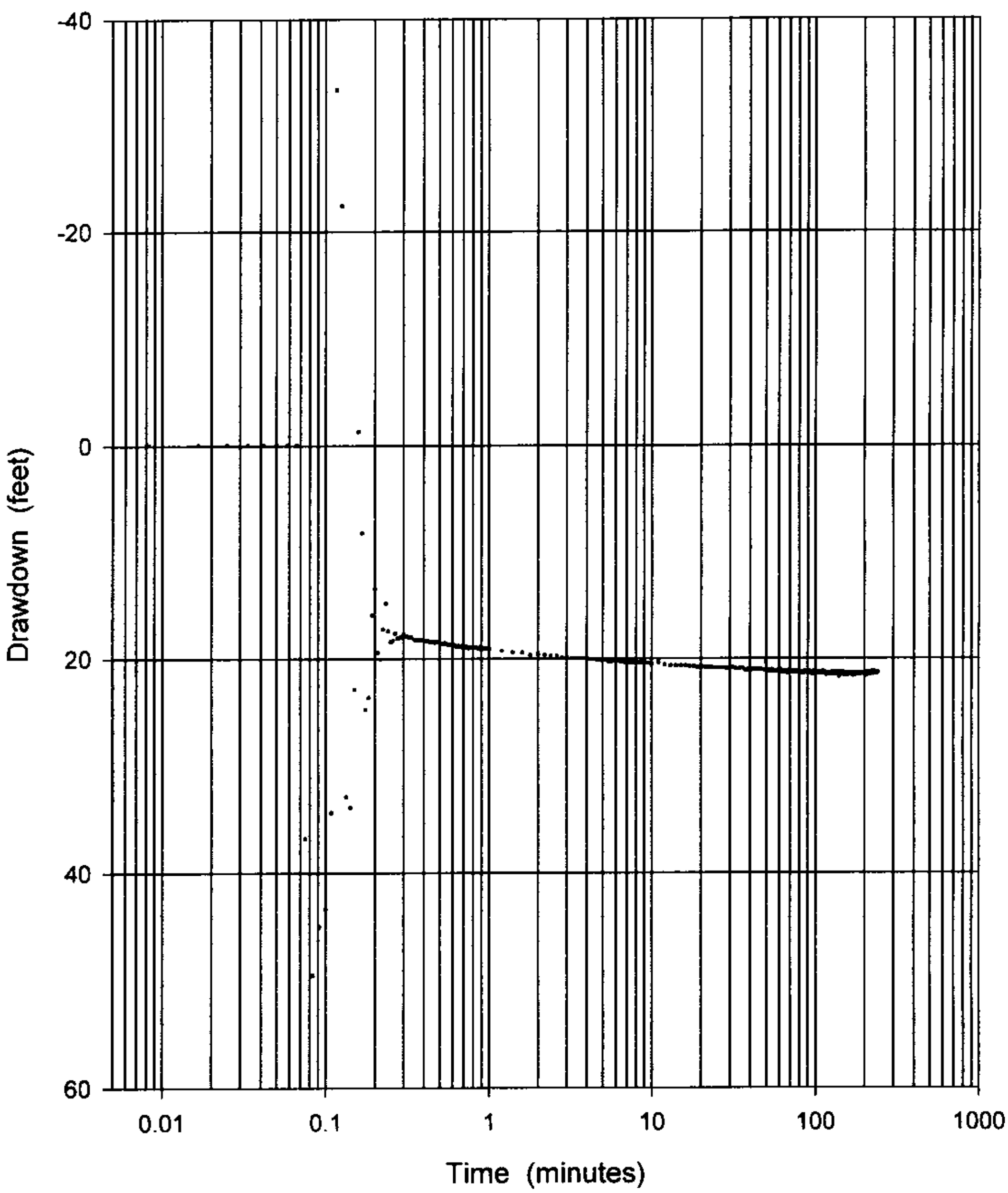


COOPER CITY

IW1

1800 - 1850

DRAWDOWN DATA

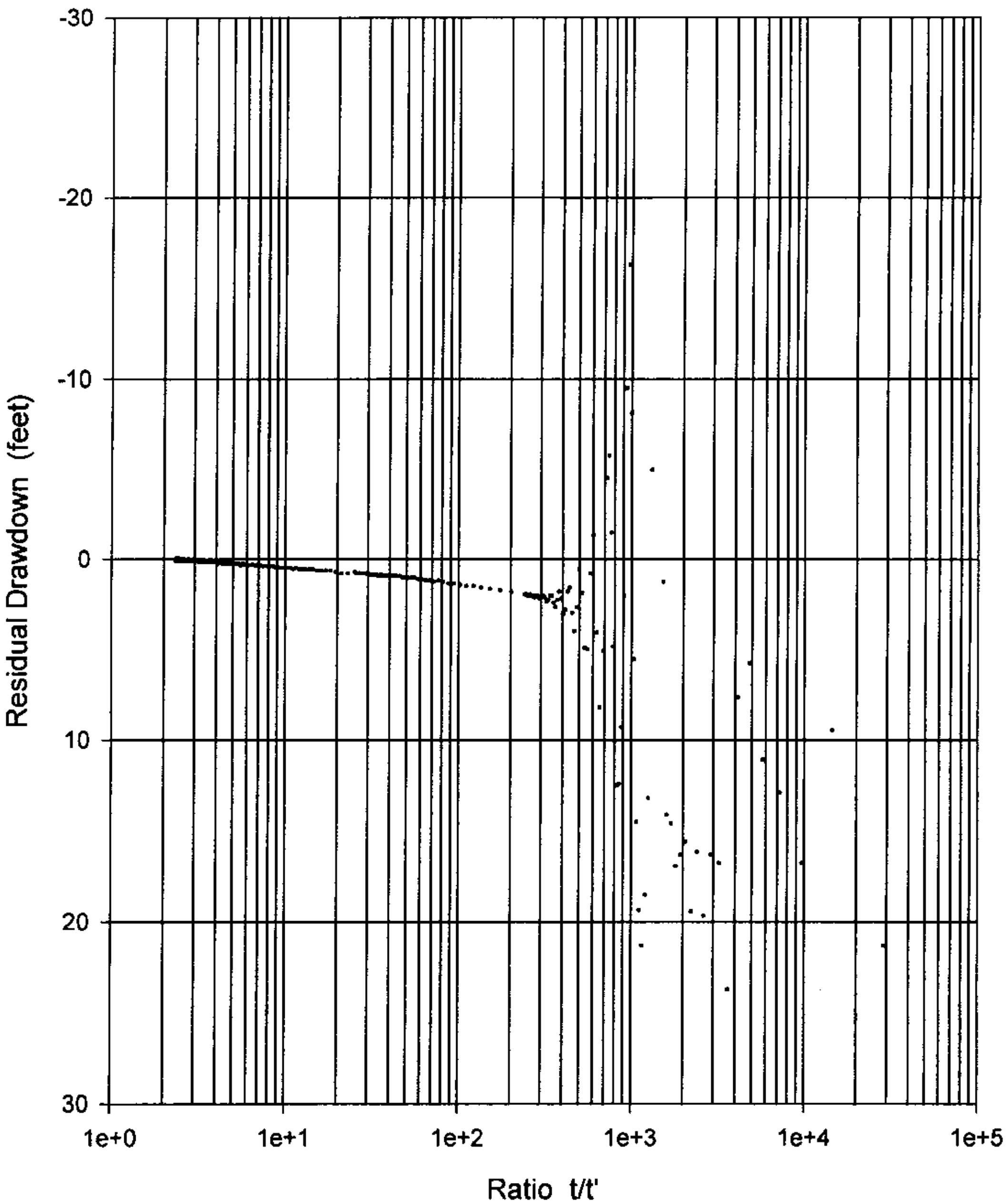


COOPER CITY

IW1

1800 - 1850

RESIDUAL DRAWDOWN vs t/t'



COPPER CITY
IW1
1800 - 1850
BACKGROUND DATA

TIME	WATER LEVEL	TIME	WATER LEVEL	TIME	WATER LEVEL	TIME	WATER LEVEL
0	0	0.75	-0.078	15	0	80	0
0.0083	0	0.7666	0	16	0	81	0
0.0166	0	0.7833	0	17	0	82	0
0.025	-0.078	0.8	0	18	0	83	0
0.0333	0	0.8166	0	19	0	84	0
0.0416	0	0.8333	0	20	0	85	0
0.05	0	0.85	0	21	0	86	0
0.0583	0	0.8666	0	22	0	87	0
0.0666	0	0.8833	0	23	0	88	0
0.075	0	0.9	0	24	0	89	0
0.0833	0	0.9166	0	25	0	90	0
0.0916	0	0.9333	0	26	0	91	0
0.1	0	0.95	0	27	0	92	-0.078
0.1083	0	0.9666	0	28	0	93	0
0.1166	0	0.9833	0	29	0	94	0
0.125	-0.078	1	0	30	0	95	0
0.1333	0	1.2	0	31	0	96	0
0.1416	0	1.4	0	32	0	97	0
0.15	-0.078	1.6	0	33	0	98	0
0.1583	-0.078	1.8	0	34	0	99	0
0.1666	0	2	0	35	0	100	0
0.175	0	2.2	-0.078	36	0	101	0
0.1833	0	2.4	0	37	0	102	0
0.1916	0	2.6	0	38	0	103	0
0.2	0	2.8	0	39	0	104	0
0.2083	0	3	0	40	0	105	0
0.2166	-0.078	3.2	0	41	0	106	0
0.225	0	3.4	0	42	0	107	0
0.2333	0	3.6	0	43	0	108	0
0.2416	0	3.8	0	44	0	109	0
0.25	0	4	0	45	0	110	-0.078
0.2583	0	4.2	0	46	0	111	-0.078
0.2666	0	4.4	0	47	0	112	-0.078
0.275	0	4.6	0	48	0	113	-0.078
0.2833	-0.078	4.8	0	49	0	114	0
0.2916	0	5	0	50	0	115	0
0.3	0	5.2	0	51	0	116	-0.078
0.3083	-0.078	5.4	0	52	0	117	-0.078
0.3166	0	5.6	0	53	0	118	0
0.325	0	5.8	0	54	0	119	-0.078
0.3333	-0.078	6	0	55	0	120	0
0.35	0	6.2	0	56	0	121	-0.078
0.3666	0	6.4	0	57	0	122	-0.078
0.3833	0	6.6	0	58	0		
0.4	0	6.8	0	59	0		
0.4166	0	7	0	60	0		
0.4333	0	7.2	0	61	0		
0.45	0	7.4	0	62	0		
0.4666	0	7.6	0	63	-0.078		
0.4833	0	7.8	0	64	0		
0.5	0	8	0	65	0		
0.5166	0	8.2	0	66	0		
0.5333	0	8.4	0	67	0		
0.55	0	8.6	0	68	0		
0.5666	0	8.8	0	69	0		
0.5833	0	9	0	70	0		
0.6	0	9.2	0	71	0		
0.6166	0	9.4	0	72	0		
0.6333	0	9.6	-0.078	73	0		
0.65	-0.078	9.8	0	74	0		
0.6666	0	10	0	75	0		
0.6833	0	11	0	76	0		
0.7	0	12	0	77	0		
0.7166	0	13	0	78	0		
0.7333	0	14	0	79	0		

COOPER CITY
IW1
1800 - 1850
DRAWDOWN DATA

TIME	WATER LEVEL	TIME	WATER LEVEL	TIME	WATER LEVEL	TIME	WATER LEVEL	TIME	WATER LEVEL
0	-0.078	0.75	19.031	15	20.668	80	21.37	145	21.37
0.0083	-0.078	0.7666	18.953	16	20.668	81	21.292	146	21.37
0.0166	-0.078	0.7833	18.953	17	20.746	82	21.292	147	21.292
0.025	-0.078	0.8	18.953	18	20.746	83	21.292	148	21.526
0.0333	-0.078	0.8166	18.953	19	20.824	84	21.37	149	21.448
0.0416	-0.078	0.8333	18.953	20	20.746	85	21.37	150	21.526
0.05	-0.078	0.85	19.031	21	20.824	86	21.214	151	21.448
0.0583	-0.078	0.8666	19.109	22	20.824	87	21.292	152	21.448
0.0666	-0.078	0.8833	18.953	23	20.824	88	21.292	153	21.448
0.075	36.801	0.9	19.109	24	20.902	89	21.292	154	21.526
0.0833	49.496	0.9166	19.031	25	20.902	90	21.292	155	21.448
0.0916	44.98	0.9333	19.031	26	20.902	91	21.292	156	21.37
0.1	43.344	0.95	19.031	27	20.902	92	21.214	157	21.448
0.1083	34.385	0.9666	19.031	28	20.902	93	21.292	158	21.526
0.1166	-33.341	0.9833	19.109	29	20.98	94	21.37	159	21.448
0.125	-22.404	1	19.109	30	20.824	95	21.448	160	21.448
0.1333	32.905	1.2	19.265	31	20.824	96	21.448	161	21.37
0.1416	33.918	1.4	19.421	32	20.902	97	21.37	162	21.37
0.15	22.851	1.6	19.421	33	20.98	98	21.214	163	21.448
0.1583	-1.326	1.8	19.655	34	20.98	99	21.448	164	21.37
0.1666	8.191	2	19.577	35	20.902	100	21.214	165	21.526
0.175	24.722	2.2	19.655	36	20.902	101	21.292	166	21.37
0.1833	23.63	2.4	19.733	37	21.058	102	21.292	167	21.448
0.1916	15.912	2.6	19.733	38	21.136	103	21.37	168	21.448
0.2	13.417	2.8	19.888	39	20.98	104	21.292	169	21.448
0.2083	19.421	3	19.811	40	21.058	105	21.292	170	21.448
0.2166	20.044	3.2	19.966	41	21.058	106	21.37	171	21.604
0.225	17.238	3.4	19.966	42	20.98	107	21.37	172	21.37
0.2333	14.82	3.6	19.966	43	21.058	108	21.37	173	21.448
0.2416	17.394	3.8	19.966	44	20.98	109	21.37	174	21.526
0.25	18.407	4	19.966	45	21.058	110	21.37	175	21.526
0.2583	18.329	4.2	20.044	46	20.98	111	21.214	176	21.37
0.2666	17.627	4.4	20.044	47	21.058	112	21.37	177	21.448
0.275	18.095	4.6	20.122	48	21.058	113	21.292	178	21.526
0.2833	18.017	4.8	20.122	49	21.136	114	21.292	179	21.37
0.2916	17.939	5	20.122	50	20.356	115	21.448	180	21.37
0.3	17.705	5.2	20.122	51	21.058	116	21.37	181	21.37
0.3083	17.861	5.4	20.278	52	21.136	117	21.526	182	21.448
0.3166	17.939	5.6	20.278	53	21.214	118	21.448	183	21.37
0.325	18.017	5.8	20.2	54	21.058	119	21.448	184	21.37
0.3333	18.017	6	20.278	55	21.136	120	21.37	185	21.37
0.35	18.251	6.2	20.2	56	21.214	121	21.37	186	21.448
0.3666	18.251	6.4	20.278	57	21.214	122	21.37	187	21.448
0.3833	18.251	6.6	20.278	58	21.136	123	21.37	188	21.448
0.4	18.329	6.8	20.356	59	21.136	124	21.448	189	21.448
0.4166	18.329	7	20.356	60	21.136	125	21.37	190	21.448
0.4333	18.407	7.2	20.356	61	21.058	126	21.448	191	21.37
0.45	18.407	7.4	20.356	62	21.292	127	21.448	192	21.448
0.4666	18.485	7.6	20.356	63	21.292	128	21.292	193	21.37
0.4833	18.407	7.8	20.356	64	21.136	129	21.37	194	21.448
0.5	18.485	8	20.356	65	21.214	130	21.448	195	21.448
0.5166	18.641	8.2	20.434	66	21.214	131	21.292	196	21.448
0.5333	18.563	8.4	20.434	67	21.37	132	21.292	197	21.37
0.55	18.641	8.6	20.356	68	21.214	133	21.37	198	21.37
0.5666	18.719	8.8	20.434	69	21.136	134	21.448	199	21.448
0.5833	18.719	9	20.356	70	21.214	135	21.37	200	21.448
0.6	18.641	9.2	20.434	71	21.136	136	21.37	201	21.37
0.6166	18.719	9.4	20.434	72	21.214	137	21.37	202	21.37
0.6333	18.875	9.6	20.434	73	21.292	138	21.292	203	21.37
0.65	18.797	9.8	20.512	74	21.214	139	21.292	204	21.37
0.6666	18.875	10	20.512	75	21.292	140	21.682	205	21.604
0.6833	18.797	11	20.356	76	21.292	141	21.37	206	21.448
0.7	19.031	12	20.59	77	21.214	142	21.448	207	21.37
0.7166	18.875	13	20.668	78	21.292	143	21.37	208	21.37
0.7333	18.875	14	20.668	79	21.214	144	21.37	209	21.292

COOPER CITY
IW1
1800 - 1850
DRAWDOWN DATA

TIME	WATER LEVEL
210	21.37
211	21.292
212	21.448
213	21.448
214	21.448
215	21.37
216	21.526
217	21.37
218	21.37
219	21.37
220	21.292
221	21.292
222	21.37
223	21.37
224	21.37
225	21.214
226	21.448
227	21.292
228	21.37
229	21.37
230	21.292
231	21.292
232	21.37
233	21.292
234	21.292
235	21.292
236	21.37
237	21.292
238	21.37
239	21.37
240	21.292
241	21.292

COPPER CITY
IW1
1800 - 1850
RECOVERY

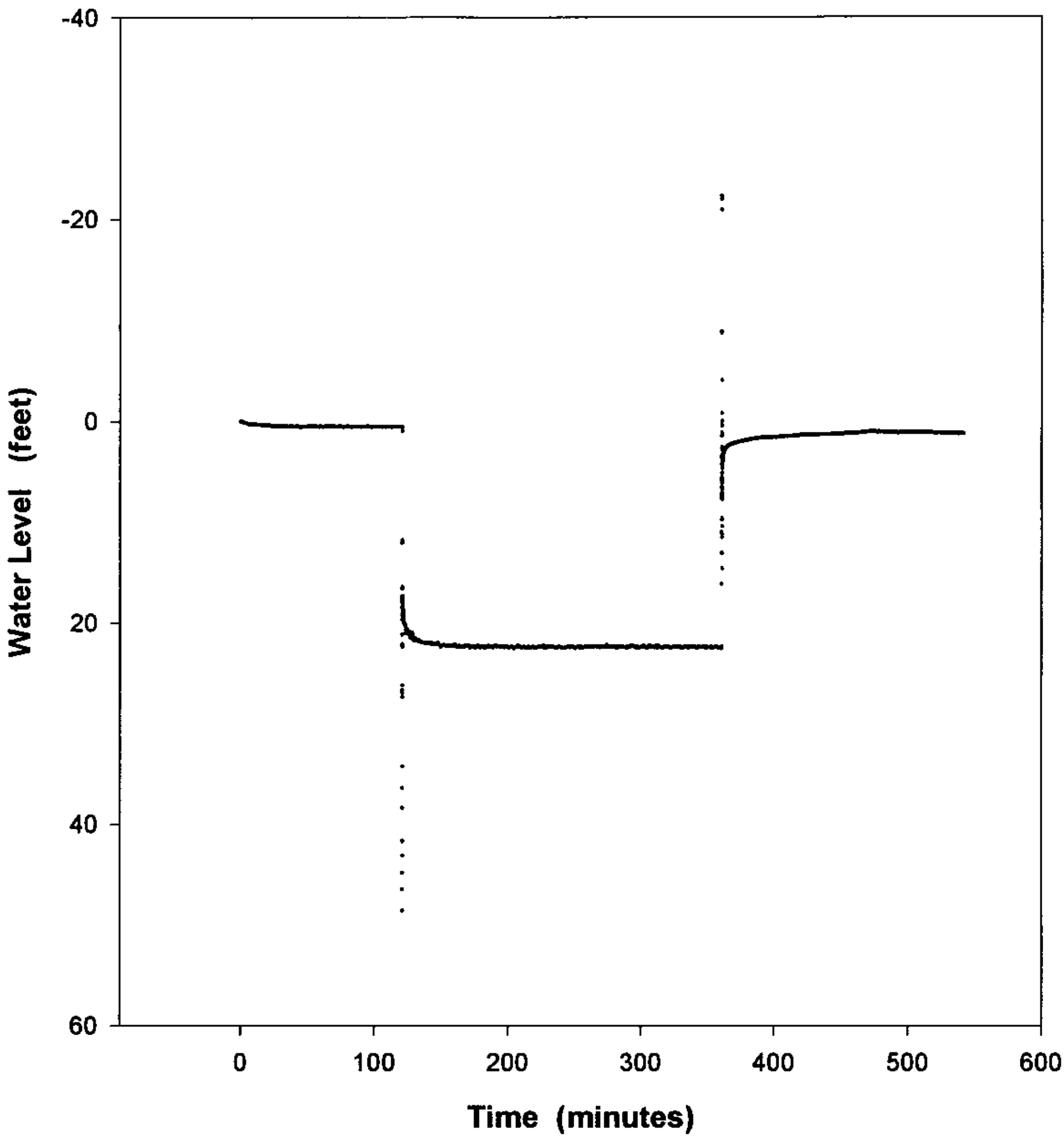
TIME	WATER LEVEL	TIME	WATER LEVEL	TIME	WATER LEVEL	TIME	WATER LEVEL	TIME	WATER LEVEL
0	21.292	0.75	2.34	15	0.624	80	0.078	145	0.078
0.0083	21.292	0.7666	2.106	16	0.624	81	0.156	146	0.078
0.0166	9.439	0.7833	2.028	17	0.624	82	0.156	147	0
0.025	16.77	0.8	2.106	18	0.546	83	0.156	148	0
0.0333	12.871	0.8166	2.184	19	0.546	84	0.156	149	0
0.0416	11.077	0.8333	2.106	20	0.546	85	0.156	150	0.078
0.05	5.773	0.85	2.028	21	0.546	86	0.078	151	0
0.0583	7.645	0.8666	2.028	22	0.546	87	0.156	152	0
0.0666	23.708	0.8833	2.106	23	0.468	88	0.156	153	0
0.075	16.77	0.9	2.028	24	0.546	89	0.156	154	0
0.0833	16.302	0.9166	2.028	25	0.468	90	0.078	155	0.078
0.0916	19.655	0.9333	1.95	26	0.468	91	0.078	156	0.078
0.1	16.146	0.95	2.028	27	0.468	92	0.078	157	0.078
0.1083	19.421	0.9666	2.028	28	0.468	93	0.078	158	0
0.1166	15.6	0.9833	1.95	29	0.468	94	0.156	159	0
0.125	16.302	1	1.95	30	0.468	95	0.156	160	0.078
0.1333	16.926	1.2	1.794	31	0.468	96	0.156	161	0
0.1416	14.586	1.4	1.716	32	0.39	97	0.156	162	0.078
0.15	14.118	1.6	1.638	33	0.39	98	0.078	163	0.078
0.1583	1.248	1.8	1.56	34	0.39	99	0.078	164	0
0.1666	-37.013	2	1.482	35	0.39	100	0.156	165	0
0.175	-39.671	2.2	1.482	36	0.39	101	0.156	166	0
0.1833	-4.994	2.4	1.404	37	0.39	102	0	167	0
0.1916	13.183	2.6	1.326	38	0.39	103	0.078	168	0.078
0.2	18.485	2.8	1.326	39	0.312	104	0.078	169	0.078
0.2083	21.292	3	1.248	40	0.312	105	0.078	170	-0.078
0.2166	19.343	3.2	1.17	41	0.312	106	0.078	171	0
0.225	14.508	3.4	1.248	42	0.312	107	0.078	172	0
0.2333	5.539	3.6	1.17	43	0.312	108	0.078	173	0.078
0.2416	-8.116	3.8	1.17	44	0.312	109	0.078	174	0.078
0.25	-16.313	4	1.092	45	0.312	110	0.156	175	0
0.2583	-9.521	4.2	1.092	46	0.312	111	0.156	176	0
0.2666	2.028	4.4	1.014	47	0.312	112	0.078	177	-0.078
0.275	9.283	4.6	1.014	48	0.312	113	0.078	178	0
0.2833	12.403	4.8	1.014	49	0.312	114	0	179	0.078
0.2916	12.481	5	1.014	50	0.312	115	0.078		
0.3	10.063	5.2	1.014	51	0.234	116	0.078		
0.3083	4.837	5.4	0.936	52	0.234	117	0.078		
0.3166	-1.482	5.6	0.936	53	0.312	118	0.078		
0.325	-5.774	5.8	0.936	54	0.312	119	0.078		
0.3333	-4.526	6	0.936	55	0.234	120	0.078		
0.35	5.071	6.2	0.936	56	0.234	121	0.078		
0.3666	8.191	6.4	0.936	57	0.234	122	0.078		
0.3833	4.057	6.6	0.936	58	0.234	123	0.078		
0.4	-1.326	6.8	0.936	59	0.234	124	0.078		
0.4166	0.78	7	0.858	60	0.234	125	0		
0.4333	4.993	7.2	0.936	61	0.234	126	0.078		
0.45	4.915	7.4	0.858	62	0.234	127	0.078		
0.4666	1.872	7.6	0.858	63	0.234	128	0.078		
0.4833	0.546	7.8	0.858	64	0.156	129	0.078		
0.5	2.652	8	0.858	65	0.234	130	0		
0.5166	3.979	8.2	0.858	66	0.234	131	0.078		
0.5333	2.964	8.4	0.78	67	0.156	132	0		
0.55	1.56	8.6	0.78	68	0.156	133	0.078		
0.5666	1.794	8.8	0.78	69	0.156	134	0.078		
0.5833	2.808	9	0.78	70	0.234	135	0.078		
0.6	3.042	9.2	0.78	71	0.156	136	0		
0.6166	2.184	9.4	0.78	72	0.156	137	0		
0.6333	1.794	9.6	0.78	73	0.234	138	0.078		
0.65	2.262	9.8	0.78	74	0.156	139	0.078		
0.6666	2.652	10	0.702	75	0.156	140	0		
0.6833	2.418	11	0.78	76	0.156	141	0		
0.7	2.028	12	0.78	77	0.156	142	0.078		
0.7166	2.028	13	0.702	78	0.234	143	0.078		
0.7333	2.262	14	0.624	79	0.156	144	0.078		

MW-1 Single Packer Test

1,900 – 1,950

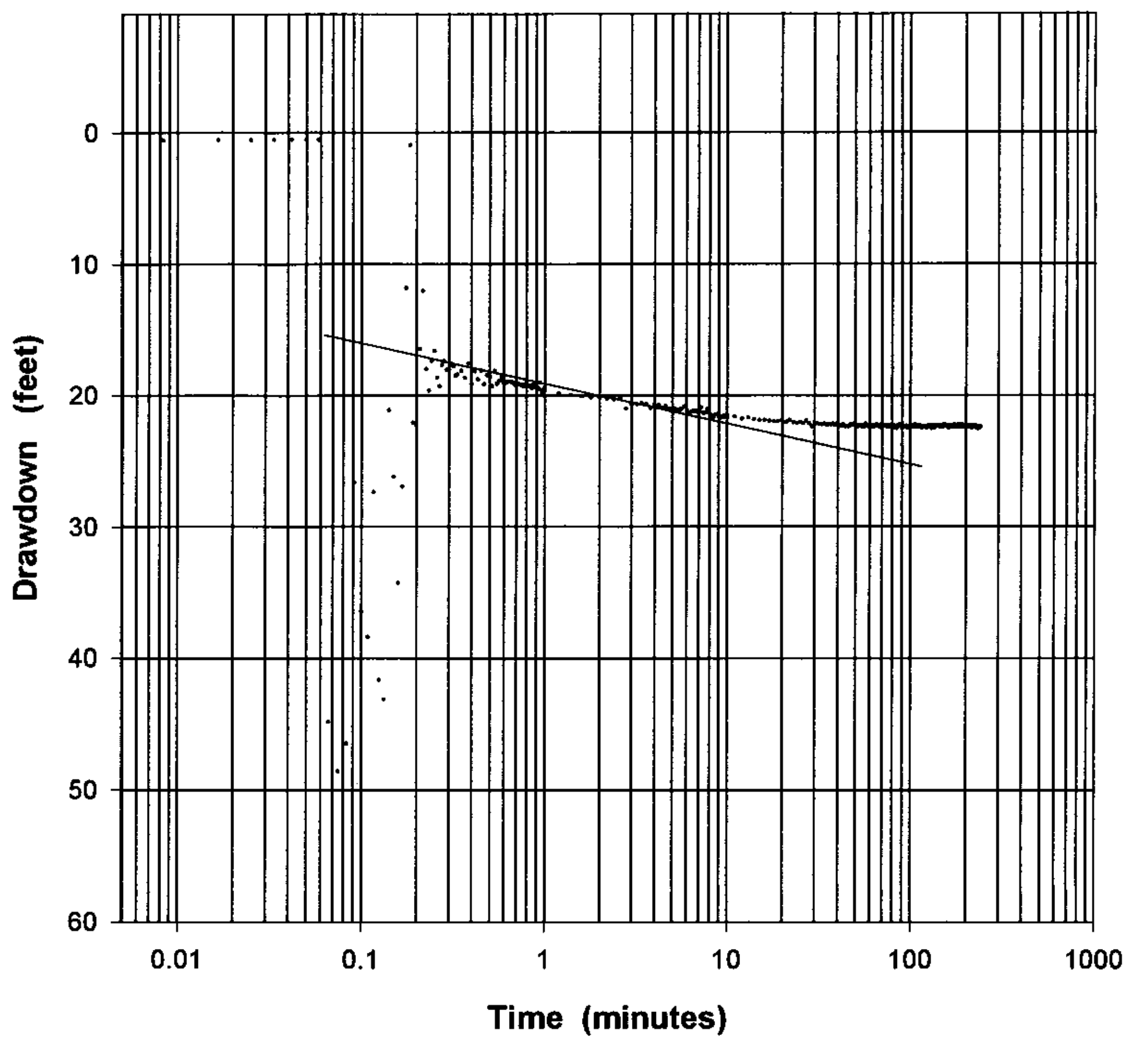
Cooper City
MW1
1900 - 1950

BACKGROUND, DRAWDOWN AND RECOVERY



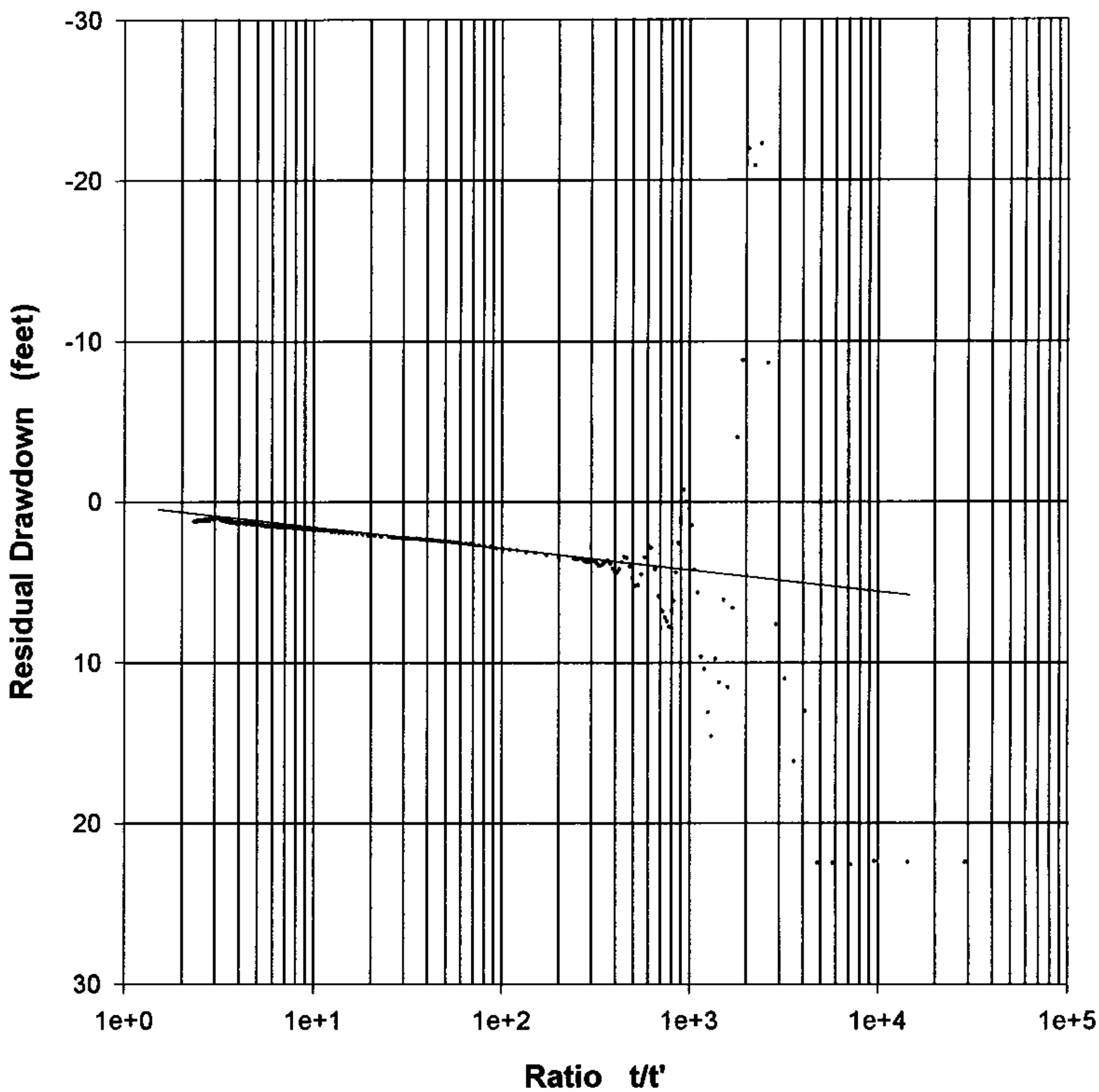
Cooper City
MW1
1900 - 1950

DRAWDOWN



Cooper City
MW1
1900 - 1950

RESIDUAL DRAWDOWN VS t/t'



Cooper City
MW1
1900 - 1950
RECOVERY DATA

Time	Water Level	Time	Water Level	Time	Water Level	Time	Water Level	Time	Water Level
0	22.438	0.75	3.708	15	1.996	80	1.362	145	1.141
0.0083	22.438	0.7666	3.645	16	1.965	81	1.362	146	1.141
0.0166	22.375	0.7833	3.645	17	1.933	82	1.331	147	1.141
0.025	22.565	0.8	3.676	18	1.933	83	1.331	148	1.141
0.0333	22.501	0.8166	3.74	19	1.87	84	1.299	149	1.141
0.0416	22.47	0.8333	3.74	20	1.87	85	1.299	150	1.172
0.05	13.058	0.85	3.708	21	1.806	86	1.299	151	1.141
0.0583	16.195	0.8666	3.645	22	1.806	87	1.299	152	1.141
0.0666	11.029	0.8833	3.581	23	1.774	88	1.267	153	1.141
0.075	7.638	0.9	3.549	24	1.774	89	1.267	154	1.141
0.0833	-8.653	0.9166	3.549	25	1.743	90	1.299	155	1.141
0.0916	-22.253	0.9333	3.581	26	1.743	91	1.267	156	1.141
0.1	-20.89	0.95	3.581	27	1.711	92	1.236	157	1.141
0.1083	-21.936	0.9666	3.581	28	1.711	93	1.236	158	1.172
0.1166	-8.811	0.9833	3.549	29	1.679	94	1.236	159	1.172
0.125	-3.993	1	3.518	30	1.679	95	1.236	160	1.204
0.1333	6.624	1.2	3.328	31	1.648	96	1.204	161	1.204
0.1416	11.568	1.4	3.201	32	1.648	97	1.204	162	1.172
0.15	6.117	1.6	3.169	33	1.648	98	1.204	163	1.172
0.1583	11.251	1.8	3.042	34	1.648	99	1.204	164	1.172
0.1666	9.793	2	3.011	35	1.616	100	1.204	165	1.204
0.175	14.642	2.2	2.947	36	1.616	101	1.172	166	1.204
0.1833	13.153	2.4	2.916	37	1.616	102	1.204	167	1.204
0.1916	10.427	2.6	2.82	38	1.616	103	1.172	168	1.204
0.2	9.666	2.8	2.789	39	1.584	104	1.172	169	1.204
0.2083	5.673	3	2.725	40	1.584	105	1.141	170	1.236
0.2166	4.247	3.2	2.694	41	1.616	106	1.109	171	1.204
0.225	1.489	3.4	2.662	42	1.584	107	1.077	172	1.204
0.2333	0.475	3.6	2.63	43	1.584	108	1.077	173	1.204
0.2416	0.031	3.8	2.599	44	1.553	109	1.077	174	1.236
0.25	-0.729	4	2.567	45	1.553	110	1.045	175	1.236
0.2583	1.172	4.2	2.535	46	1.521	111	1.014	176	1.236
0.2666	2.599	4.4	2.503	47	1.521	112	1.014	177	1.267
0.275	4.405	4.6	2.503	48	1.521	113	1.014	178	1.236
0.2833	6.18	4.8	2.472	49	1.521	114	1.014	179	1.236
0.2916	6.814	5	2.472	50	1.521	115	1.045	180	1.236
0.3	7.796	5.2	2.44	51	1.521	116	1.045	181	1.267
0.3083	7.448	5.4	2.408	52	1.521	117	1.077		
0.3166	7.194	5.6	2.408	53	1.489	118	1.045		
0.325	6.814	5.8	2.408	54	1.489	119	1.077		
0.3333	5.895	6	2.377	55	1.458	120	1.045		
0.35	4.183	6.2	2.377	56	1.458	121	1.077		
0.3666	2.884	6.4	2.377	57	1.458	122	1.109		
0.3833	2.662	6.6	2.345	58	1.426	123	1.077		
0.4	3.486	6.8	2.313	59	1.426	124	1.077		
0.4166	4.532	7	2.345	60	1.394	125	1.077		
0.4333	5.198	7.2	2.313	61	1.394	126	1.077		
0.45	5.229	7.4	2.313	62	1.394	127	1.077		
0.4666	4.754	7.6	2.313	63	1.362	128	1.077		
0.4833	4.025	7.8	2.282	64	1.394	129	1.077		
0.5	3.518	8	2.282	65	1.362	130	1.077		
0.5166	3.454	8.2	2.282	66	1.362	131	1.077		
0.5333	3.771	8.4	2.25	67	1.362	132	1.204		
0.55	4.183	8.6	2.25	68	1.362	133	1.141		
0.5666	4.405	8.8	2.25	69	1.362	134	1.109		
0.5833	4.374	9	2.25	70	1.394	135	1.109		
0.6	4.152	9.2	2.218	71	1.362	136	1.109		
0.6166	3.866	9.4	2.218	72	1.331	137	1.141		
0.6333	3.676	9.6	2.218	73	1.331	138	1.141		
0.65	3.676	9.8	2.187	74	1.331	139	1.109		
0.6666	3.803	10	2.187	75	1.331	140	1.172		
0.6833	3.93	11	2.155	76	1.331	141	1.141		
0.7	3.993	12	2.123	77	1.331	142	1.172		
0.7166	3.961	13	2.06	78	1.331	143	1.141		
0.7333	3.835	14	2.028	79	1.331	144	1.141		

Cooper City
MW1
1900 - 1950
DRAWDOWN DATA

Time	WaterLevel	Time	WaterLevel	Time	WaterLevel	Time	WaterLevel
0	0.57	0.75	19.206	15	21.931	80	22.406
0.0083	0.57	0.7666	19.301	16	21.931	81	22.438
0.0166	0.57	0.7833	19.174	17	21.994	82	22.375
0.025	0.57	0.8	19.237	18	22.026	83	22.406
0.0333	0.538	0.8166	19.301	19	22.026	84	22.533
0.0416	0.538	0.8333	19.301	20	21.931	85	22.406
0.05	0.538	0.85	19.459	21	22.089	86	22.406
0.0583	0.538	0.8666	19.206	22	21.931	87	22.279
0.0666	44.839	0.8833	19.332	23	22.121	88	22.311
0.075	48.578	0.9	19.427	24	22.153	89	22.406
0.0833	46.455	0.9166	19.396	25	22.089	90	22.438
0.0916	26.684	0.9333	19.522	26	22.153	91	22.375
0.1	36.412	0.95	19.047	27	21.963	92	22.406
0.1083	38.408	0.9666	19.776	28	22.184	93	22.47
0.1166	27.381	0.9833	19.586	29	22.406	94	22.438
0.125	41.671	1	19.427	30	22.248	95	22.375
0.1333	-43.116	1.2	19.839	31	22.184	96	22.501
0.1416	-21.175	1.4	19.966	32	22.248	97	22.438
0.15	26.241	1.6	20.061	33	22.248	98	22.375
0.1583	34.257	1.8	20.188	34	22.216	99	22.406
0.1666	26.969	2	20.125	35	22.311	100	22.47
0.175	11.822	2.2	20.251	36	22.248	101	22.438
0.1833	0.95	2.4	20.315	37	22.248	102	22.438
0.1916	22.121	2.6	20.188	38	22.216	103	22.375
0.2	22.375	2.8	21.044	39	22.311	104	22.375
0.2083	16.448	3	20.727	40	22.153	105	22.375
0.2166	12.043	3.2	20.695	41	22.343	106	22.279
0.225	18.001	3.4	20.632	42	22.375	107	22.47
0.2333	19.649	3.6	20.695	43	22.279	108	22.47
0.2416	17.368	3.8	20.98	44	22.406	109	22.343
0.25	16.607	4	20.758	45	22.375	110	22.375
0.2583	18.635	4.2	20.79	46	22.406	111	22.311
0.2666	19.301	4.4	21.012	47	22.279	112	22.343
0.275	17.684	4.6	20.885	48	22.311	113	22.343
0.2833	17.368	4.8	21.075	49	22.216	114	22.438
0.2916	18.033	5	21.075	50	22.248	115	22.47
0.3	18.001	5.2	21.075	51	22.47	116	22.501
0.3083	17.558	5.4	21.17	52	22.343	117	22.406
0.3166	17.78	5.6	21.075	53	22.343	118	22.406
0.325	18.508	5.8	20.917	54	22.311	119	22.406
0.3333	18.382	6	21.17	55	22.438	120	22.438
0.35	18.128	6.2	21.456	56	22.406	121	22.47
0.3666	18.667	6.4	21.265	57	22.216	122	22.501
0.3833	17.558	6.6	21.234	58	22.406	123	22.438
0.4	19.111	6.8	21.234	59	22.406	124	22.438
0.4166	18.16	7	21.329	60	22.311	125	22.311
0.4333	18.762	7.2	20.98	61	22.343	126	22.438
0.45	18.128	7.4	21.392	62	22.47	127	22.343
0.4666	19.142	7.6	21.36	63	22.375	128	22.375
0.4833	18.445	7.8	21.075	64	22.406	129	22.438
0.5	18.54	8	21.424	65	22.279	130	22.533
0.5166	19.301	8.2	21.551	66	22.375	131	22.406
0.5333	18.128	8.4	21.741	67	22.343	132	22.375
0.55	19.111	8.6	21.487	68	22.438	133	22.438
0.5666	18.889	8.8	21.487	69	22.311	134	22.311
0.5833	18.667	9	21.614	70	22.279	135	22.501
0.6	19.047	9.2	21.772	71	22.343	136	22.438
0.6166	19.015	9.4	21.614	72	22.311	137	22.406
0.6333	18.952	9.6	21.709	73	22.343	138	22.375
0.65	18.952	9.8	21.551	74	22.406	139	22.375
0.6666	18.984	10	21.614	75	22.311	140	22.311
0.6833	19.174	11	21.646	76	22.343	141	22.375
0.7	19.079	12	21.804	77	22.438	142	22.311
0.7166	19.142	13	21.741	78	22.343	143	22.343
0.7333	19.174	14	21.868	79	22.406	144	22.406

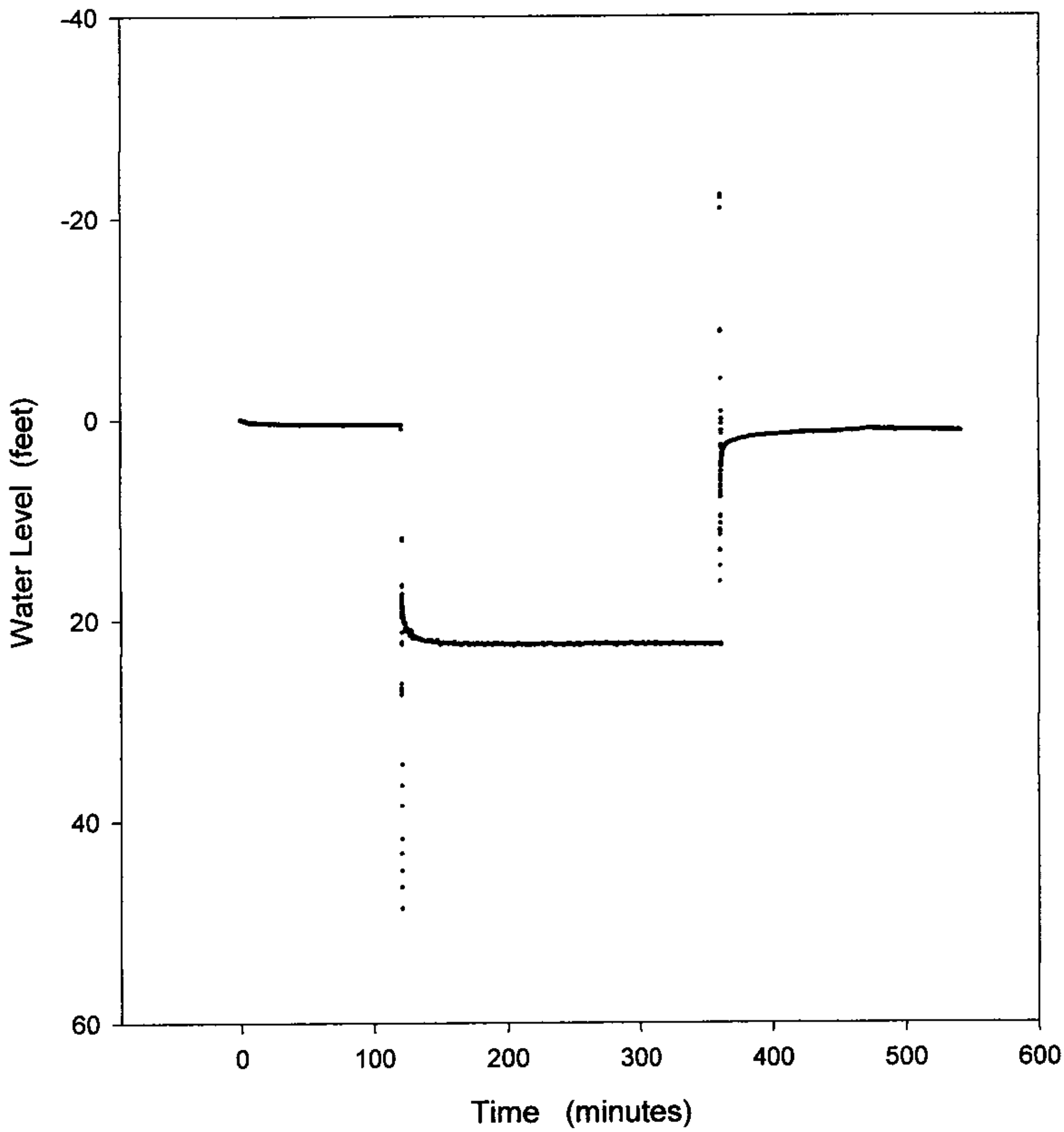
Cooper City
MW1
1900 - 1950
DRAWDOWN DATA

Time	WaterLevel	Time	WaterLevel
145	22.311	210	22.47
146	22.311	211	22.47
147	22.375	212	22.406
148	22.375	213	22.343
149	22.438	214	22.406
150	22.311	215	22.501
151	22.406	216	22.406
152	22.311	217	22.406
153	22.343	218	22.375
154	22.216	219	22.375
155	22.375	220	22.375
156	22.343	221	22.47
157	22.343	222	22.47
158	22.343	223	22.375
159	22.343	224	22.438
160	22.438	225	22.438
161	22.375	226	22.406
162	22.501	227	22.375
163	22.311	228	22.501
164	22.343	229	22.406
165	22.375	230	22.438
166	22.343	231	22.438
167	22.438	232	22.406
168	22.438	233	22.565
169	22.375	234	22.47
170	22.438	235	22.406
171	22.406	236	22.406
172	22.279	237	22.438
173	22.279	238	22.47
174	22.311	239	22.47
175	22.406	240	22.438
176	22.47		
177	22.375		
178	22.47		
179	22.406		
180	22.343		
181	22.343		
182	22.279		
183	22.438		
184	22.47		
185	22.406		
186	22.279		
187	22.375		
188	22.406		
189	22.375		
190	22.438		
191	22.279		
192	22.47		
193	22.311		
194	22.406		
195	22.47		
196	22.47		
197	22.343		
198	22.375		
199	22.375		
200	22.375		
201	22.438		
202	22.47		
203	22.438		
204	22.343		
205	22.343		
206	22.438		
207	22.375		
208	22.438		
209	22.406		

Cooper City
MW1
1900 - 1950
BACKGROUND DATA

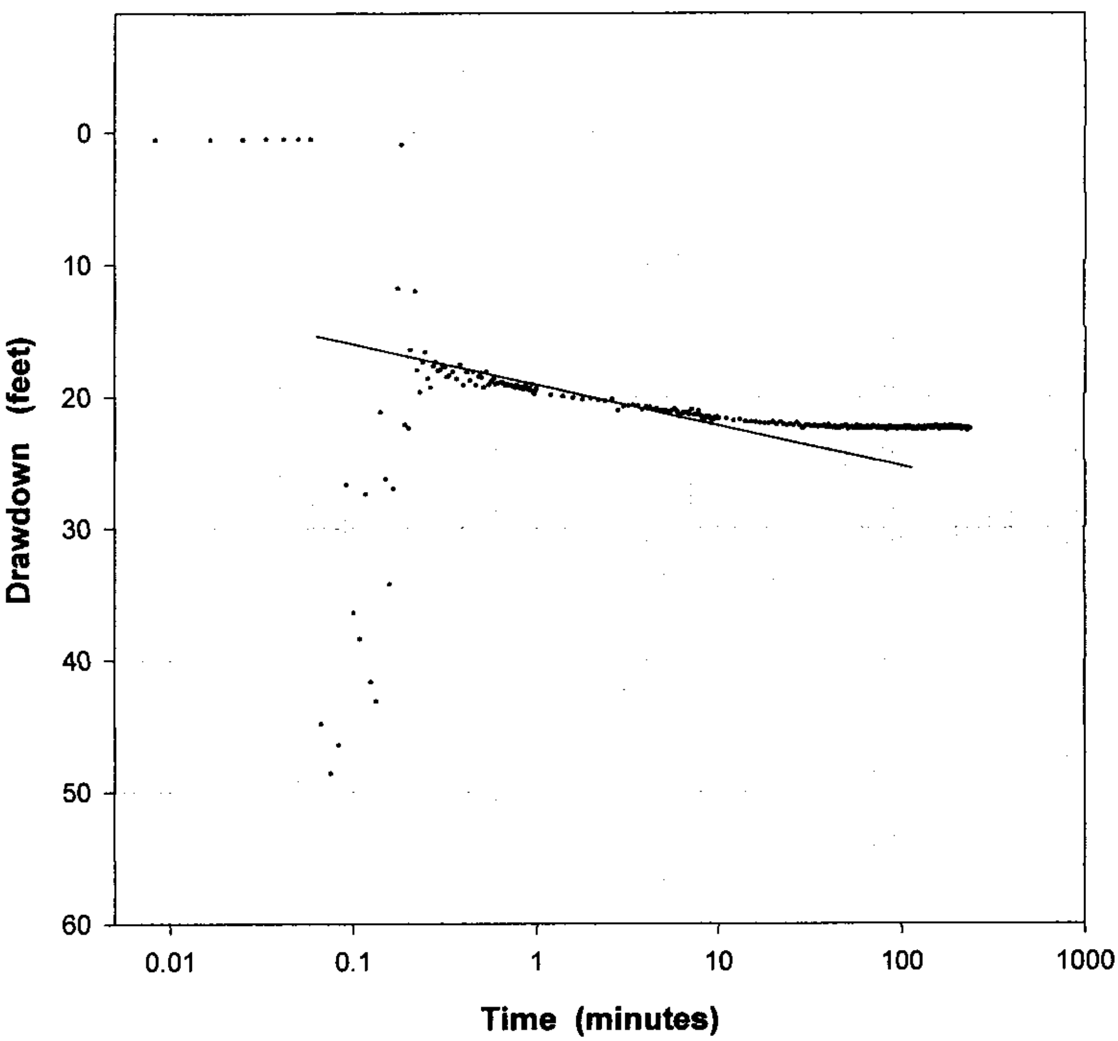
Time	Water Level	Time	Water Level	Time	Water Level	Time	Water Level
0	0	0.75	0.095	15	0.348	80	0.507
0.0083	0	0.7666	0.095	16	0.348	81	0.538
0.0166	0.031	0.7833	0.063	17	0.38	82	0.538
0.025	0.031	0.8	0.063	18	0.38	83	0.538
0.0333	0.031	0.8166	0.063	19	0.38	84	0.538
0.0416	0.031	0.8333	0.063	20	0.38	85	0.538
0.05	0.031	0.85	0.095	21	0.38	86	0.538
0.0583	0.031	0.8666	0.063	22	0.412	87	0.538
0.0666	0.031	0.8833	0.095	23	0.412	88	0.538
0.075	0.031	0.9	0.063	24	0.412	89	0.538
0.0833	0.031	0.9166	0.095	25	0.412	90	0.57
0.0916	0.031	0.9333	0.095	26	0.412	91	0.538
0.1	0.031	0.95	0.063	27	0.412	92	0.538
0.1083	0.031	0.9666	0.063	28	0.443	93	0.538
0.1166	0.031	0.9833	0.095	29	0.443	94	0.538
0.125	0	1	0.063	30	0.443	95	0.507
0.1333	0.031	1.2	0.063	31	0.475	96	0.538
0.1416	0.031	1.4	0.063	32	0.475	97	0.538
0.15	0	1.6	0.063	33	0.475	98	0.538
0.1583	0.031	1.8	0.063	34	0.475	99	0.538
0.1666	0.031	2	0.095	35	0.475	100	0.538
0.175	0.031	2.2	0.095	36	0.507	101	0.538
0.1833	0.031	2.4	0.095	37	0.475	102	0.538
0.1916	0.031	2.6	0.126	38	0.475	103	0.538
0.2	0.031	2.8	0.126	39	0.475	104	0.57
0.2083	0.031	3	0.126	40	0.507	105	0.538
0.2166	0.031	3.2	0.158	41	0.507	106	0.57
0.225	0.031	3.4	0.158	42	0.475	107	0.57
0.2333	0.031	3.6	0.158	43	0.507	108	0.538
0.2416	0.031	3.8	0.126	44	0.507	109	0.538
0.25	0.031	4	0.158	45	0.538	110	0.538
0.2583	0.031	4.2	0.19	46	0.507	111	0.538
0.2666	0.031	4.4	0.19	47	0.507	112	0.538
0.275	0.031	4.6	0.19	48	0.507	113	0.538
0.2833	0.031	4.8	0.221	49	0.507	114	0.538
0.2916	0.063	5	0.221	50	0.507	115	0.538
0.3	0.063	5.2	0.221	51	0.507	116	0.57
0.3083	0.063	5.4	0.253	52	0.507	117	0.57
0.3166	0.063	5.6	0.253	53	0.507	118	0.57
0.325	0.031	5.8	0.253	54	0.507	119	0.57
0.3333	0.063	6	0.253	55	0.475	120	0.57
0.35	0.031	6.2	0.253	56	0.507	121	0.57
0.3666	0.063	6.4	0.285	57	0.507		
0.3833	0.063	6.6	0.316	58	0.507		
0.4	0.063	6.8	0.316	59	0.538		
0.4166	0.063	7	0.316	60	0.507		
0.4333	0.063	7.2	0.316	61	0.538		
0.45	0.063	7.4	0.316	62	0.538		
0.4666	0.063	7.6	0.316	63	0.507		
0.4833	0.063	7.8	0.316	64	0.507		
0.5	0.063	8	0.316	65	0.507		
0.5166	0.063	8.2	0.316	66	0.507		
0.5333	0.063	8.4	0.316	67	0.507		
0.55	0.063	8.6	0.316	68	0.507		
0.5666	0.063	8.8	0.316	69	0.507		
0.5833	0.063	9	0.316	70	0.507		
0.6	0.095	9.2	0.316	71	0.538		
0.6166	0.095	9.4	0.316	72	0.538		
0.6333	0.095	9.6	0.348	73	0.507		
0.65	0.095	9.8	0.348	74	0.538		
0.6666	0.095	10	0.348	75	0.507		
0.6833	0.063	11	0.316	76	0.538		
0.7	0.095	12	0.316	77	0.538		
0.7166	0.095	13	0.348	78	0.538		
0.7333	0.063	14	0.348	79	0.538		

COOPER CITY
MW1
1900 - 1950
BACKGROUND, DRAWDOWN AND RECOVERY DATA



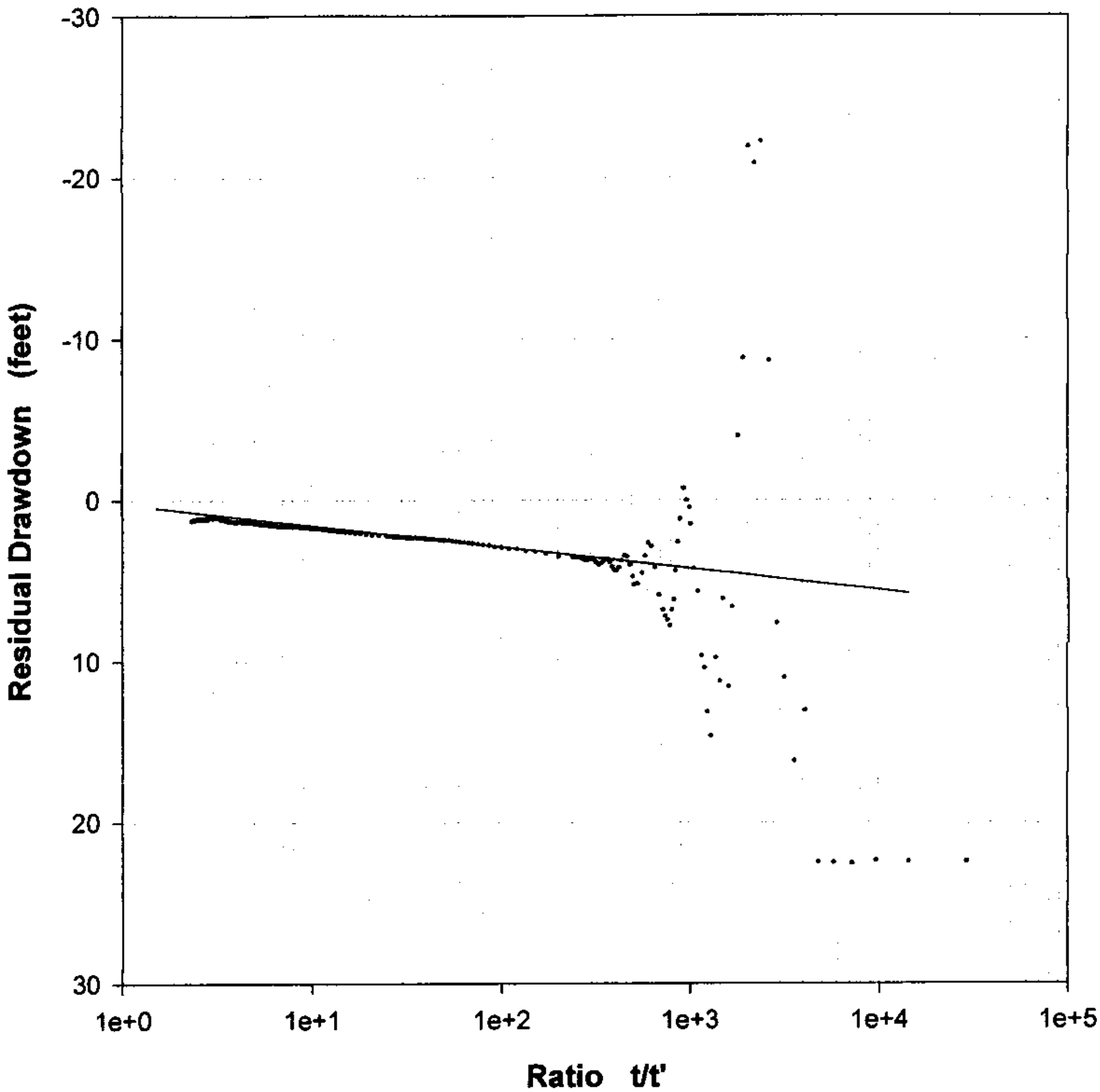
Cooper City
MW1
1900 - 1950

DRAWDOWN



Cooper City
MW1
1900 - 1950

RESIDUAL DRAWDOWN VS t/t'



IW-1 Straddle Packer Test

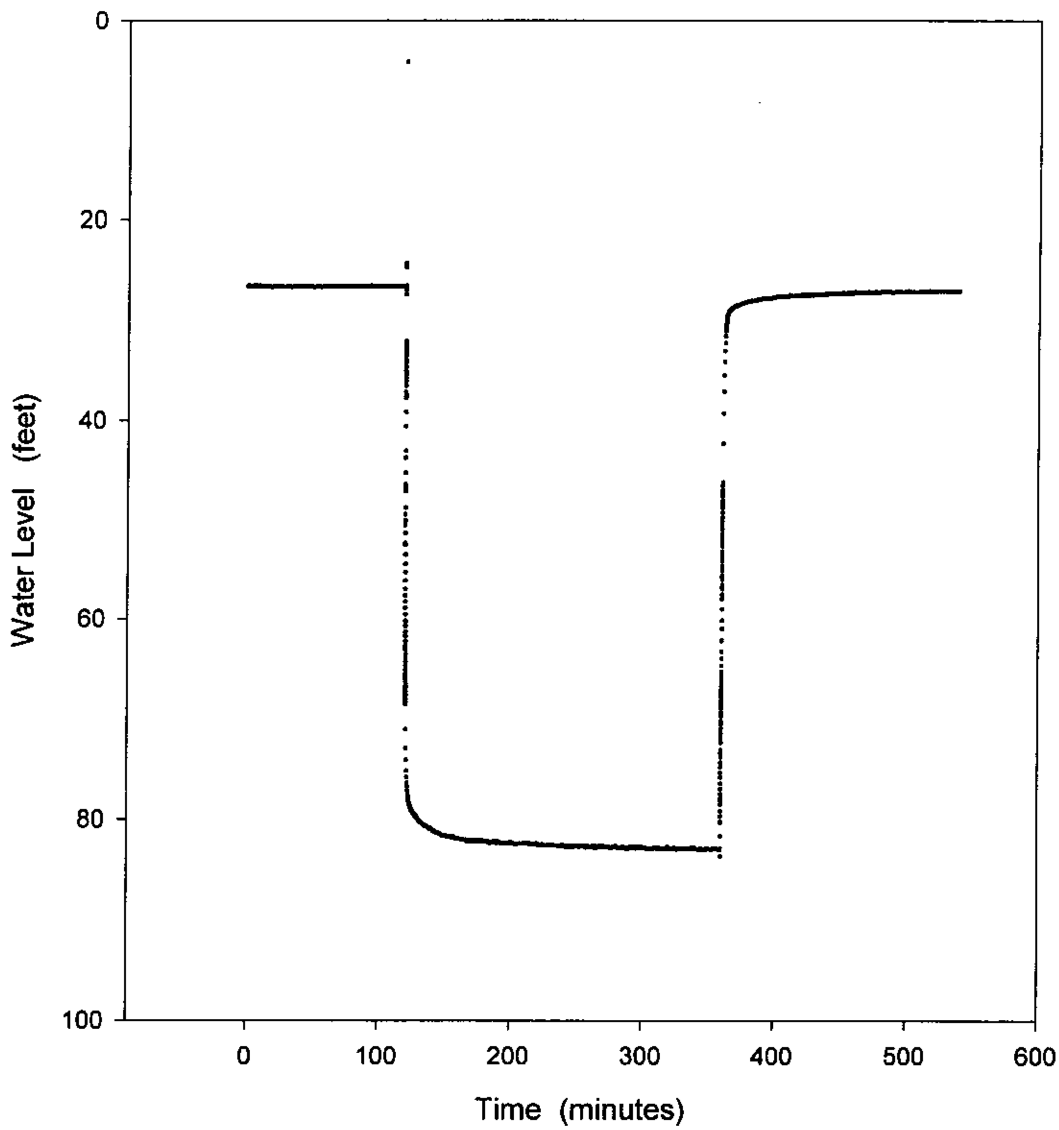
1,950 – 1,966

COOPER CITY

IW 1

1950 - 1966

BACKGROUND, DRAWDOWN AND RECOVERY DATA

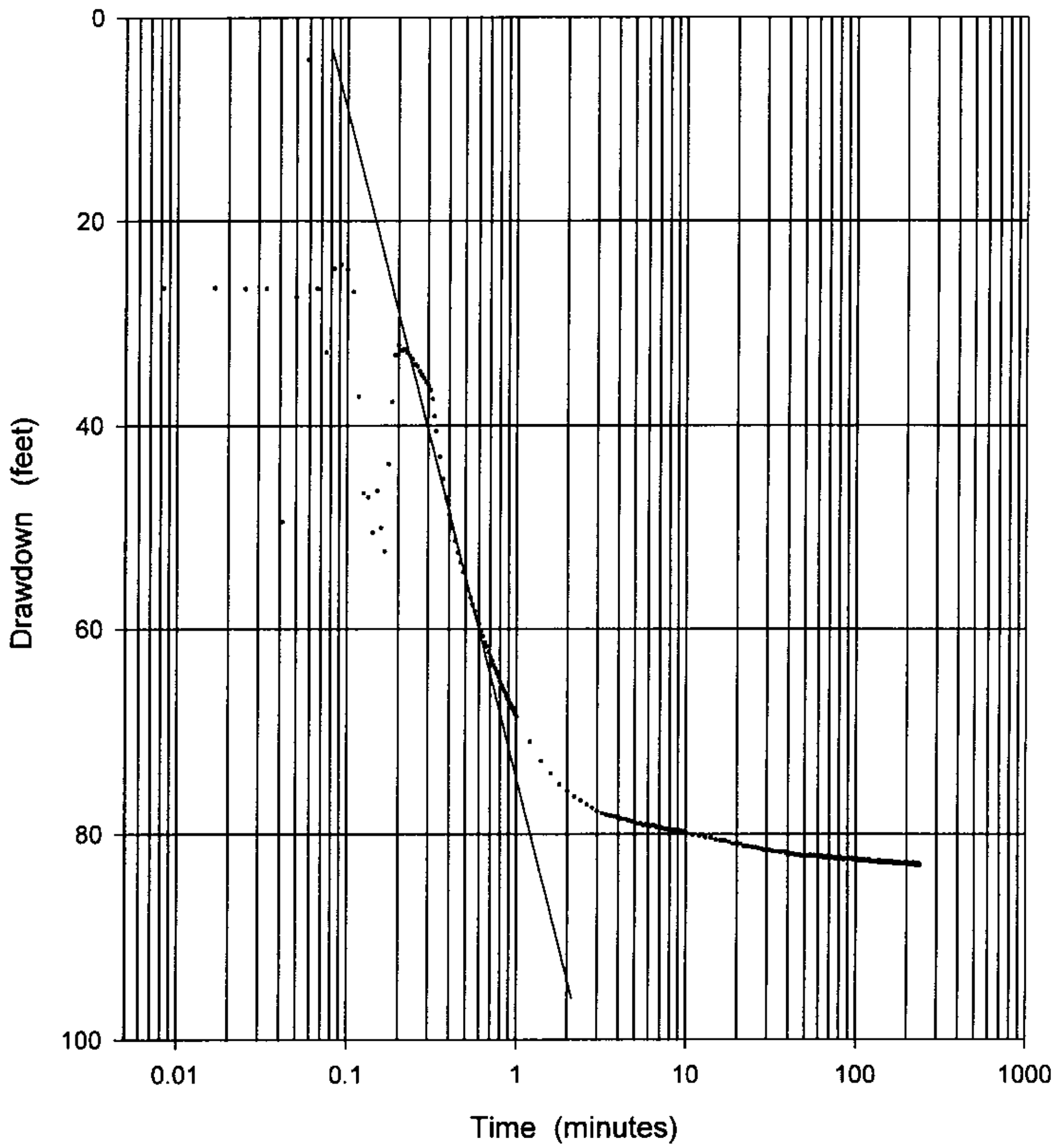


COOPER CITY

IW 1

1950 - 1966

DRAWDOWN

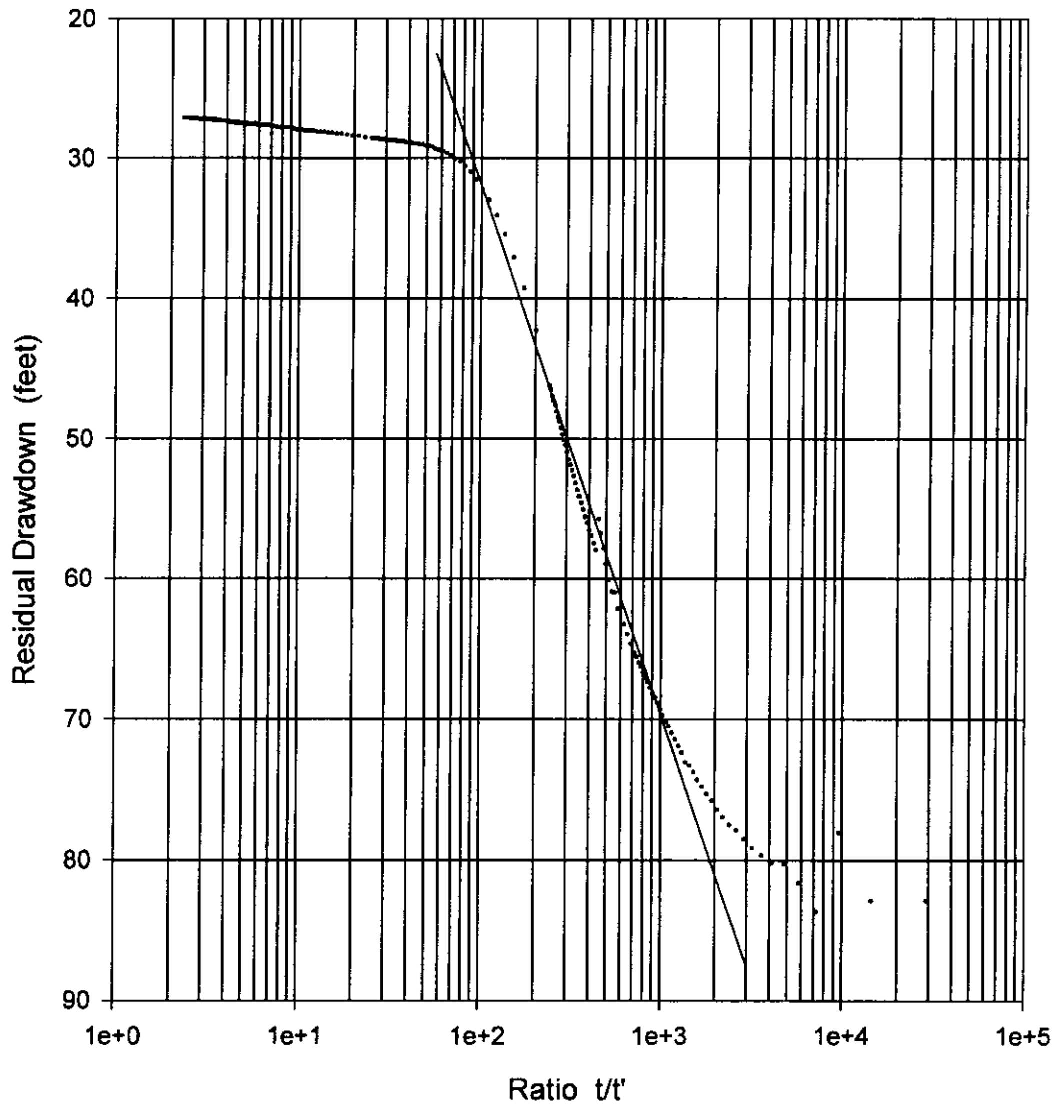


COOPER CITY

IW 1

1950 - 1966

RESIDUAL DRAWDOWN vs t/t'



COOPER CITY IW1
1950-1966
DRAWDOWN DATA

TIME	WATER LEVEL	TIME	WATER LEVEL	TIME	WATER LEVEL	TIME	WATER LEVEL	TIME	WATER LEVEL
0	26.606	0.75	63.852	15	80.509	80	82.298	145	82.609
0.0083	26.528	0.7666	64.242	16	80.586	81	82.22	146	82.765
0.0166	26.528	0.7833	64.631	17	80.586	82	82.298	147	82.765
0.025	26.606	0.8	65.098	18	80.742	83	82.376	148	82.609
0.0333	26.606	0.8166	65.487	19	80.898	84	82.376	149	82.687
0.0416	49.444	0.8333	65.799	20	80.82	85	82.454	150	82.687
0.05	27.386	0.85	66.11	21	80.898	86	82.376	151	82.609
0.0583	4.137	0.8666	66.422	22	81.131	87	82.376	152	82.687
0.0666	26.606	0.8833	66.733	23	81.131	88	82.376	153	82.687
0.075	32.766	0.9	66.966	24	81.209	89	82.376	154	82.687
0.0833	24.656	0.9166	67.278	25	81.287	90	82.376	155	82.687
0.0916	24.266	0.9333	67.511	26	81.287	91	82.298	156	82.765
0.1	24.734	0.95	67.745	27	81.364	92	82.376	157	82.765
0.1083	26.918	0.9666	67.979	28	81.442	93	82.376	158	82.765
0.1166	37.131	0.9833	68.29	29	81.52	94	82.376	159	82.687
0.125	46.639	1	68.523	30	81.52	95	82.298	160	82.687
0.1333	47.029	1.2	71.014	31	81.52	96	82.454	161	82.609
0.1416	50.534	1.4	72.882	32	81.598	97	82.454	162	82.765
0.15	46.405	1.6	74.05	33	81.676	98	82.376	163	82.765
0.1583	50.067	1.8	75.139	34	81.676	99	82.376	164	82.765
0.1666	52.326	2	75.762	35	81.676	100	82.376	165	82.765
0.175	43.756	2.2	76.307	36	81.753	101	82.376	166	82.687
0.1833	37.677	2.4	76.696	37	81.676	102	82.531	167	82.765
0.1916	33.078	2.6	77.085	38	81.676	103	82.531	168	82.843
0.2	32.064	2.8	77.396	39	81.831	104	82.454	169	82.843
0.2083	32.61	3	77.707	40	81.909	105	82.454	170	82.765
0.2166	32.454	3.2	77.941	41	81.831	106	82.531	171	82.843
0.225	32.844	3.4	78.096	42	81.909	107	82.531	172	82.687
0.2333	33.156	3.6	78.174	43	81.909	108	82.531	173	82.765
0.2416	33.467	3.8	78.252	44	81.987	109	82.531	174	82.765
0.25	33.935	4	78.33	45	81.987	110	82.531	175	82.687
0.2583	34.169	4.2	78.486	46	81.987	111	82.531	176	82.843
0.2666	34.637	4.4	78.486	47	81.987	112	82.454	177	82.765
0.275	35.027	4.6	78.641	48	82.142	113	82.531	178	82.687
0.2833	35.338	4.8	78.719	49	82.142	114	82.531	179	82.765
0.2916	35.728	5	78.797	50	82.065	115	82.531	180	82.687
0.3	36.04	5.2	78.952	51	82.065	116	82.531	181	82.765
0.3083	36.508	5.4	78.875	52	82.142	117	82.609	182	82.765
0.3166	37.365	5.6	79.108	53	82.065	118	82.609	183	82.765
0.325	39.08	5.8	79.03	54	81.987	119	82.531	184	82.843
0.3333	40.561	6	79.108	55	82.065	120	82.454	185	82.843
0.35	43.055	6.2	79.186	56	82.142	121	82.609	186	82.843
0.3666	45.236	6.4	79.108	57	82.065	122	82.609	187	82.843
0.3833	47.106	6.6	79.186	58	82.065	123	82.687	188	82.843
0.4	48.743	6.8	79.341	59	82.142	124	82.609	189	82.843
0.4166	50.067	7	79.341	60	82.065	125	82.687	190	82.765
0.4333	51.313	7.2	79.341	61	82.142	126	82.609	191	82.765
0.45	52.482	7.4	79.419	62	82.142	127	82.609	192	82.843
0.4666	53.495	7.6	79.497	63	82.22	128	82.687	193	82.765
0.4833	54.429	7.8	79.497	64	82.142	129	82.609	194	82.843
0.5	55.286	8	79.497	65	82.298	130	82.609	195	82.843
0.5166	56.143	8.2	79.575	66	82.298	131	82.609	196	82.843
0.5333	56.922	8.4	79.575	67	82.22	132	82.609	197	82.843
0.55	57.623	8.6	79.575	68	82.142	133	82.687	198	82.843
0.5666	58.246	8.8	79.653	69	82.22	134	82.609	199	82.843
0.5833	58.869	9	79.73	70	82.298	135	82.609	200	82.687
0.6	59.492	9.2	79.653	71	82.142	136	82.609	201	82.843
0.6166	60.193	9.4	79.73	72	82.22	137	82.531	202	82.92
0.6333	60.66	9.6	79.73	73	82.298	138	82.765	203	82.843
0.65	61.283	9.8	79.808	74	82.298	139	82.609	204	82.843
0.6666	61.672	10	79.808	75	82.298	140	82.609	205	82.765
0.6833	62.217	11	80.042	76	82.376	141	82.687	206	82.92
0.7	62.684	12	80.12	77	82.298	142	82.687	207	82.92
0.7166	63.074	13	80.275	78	82.298	143	82.609	208	82.843
0.7333	63.541	14	80.353	79	82.376	144	82.765	209	82.843

COOPER CITY IW1
1950-1966
DRAWDOWN DATA

TIME	WATER LEVEL
210	82.843
211	82.843
212	82.843
213	82.92
214	82.92
215	82.843
216	82.843
217	82.92
218	82.765
219	82.843
220	82.765
221	82.843
222	82.92
223	82.92
224	82.92
225	82.843
226	82.998
227	82.92
228	82.998
229	82.843
230	82.843
231	82.92
232	82.92
233	82.92
234	82.843
235	82.92
236	82.843
237	82.843
238	82.92
239	82.92
240	82.998

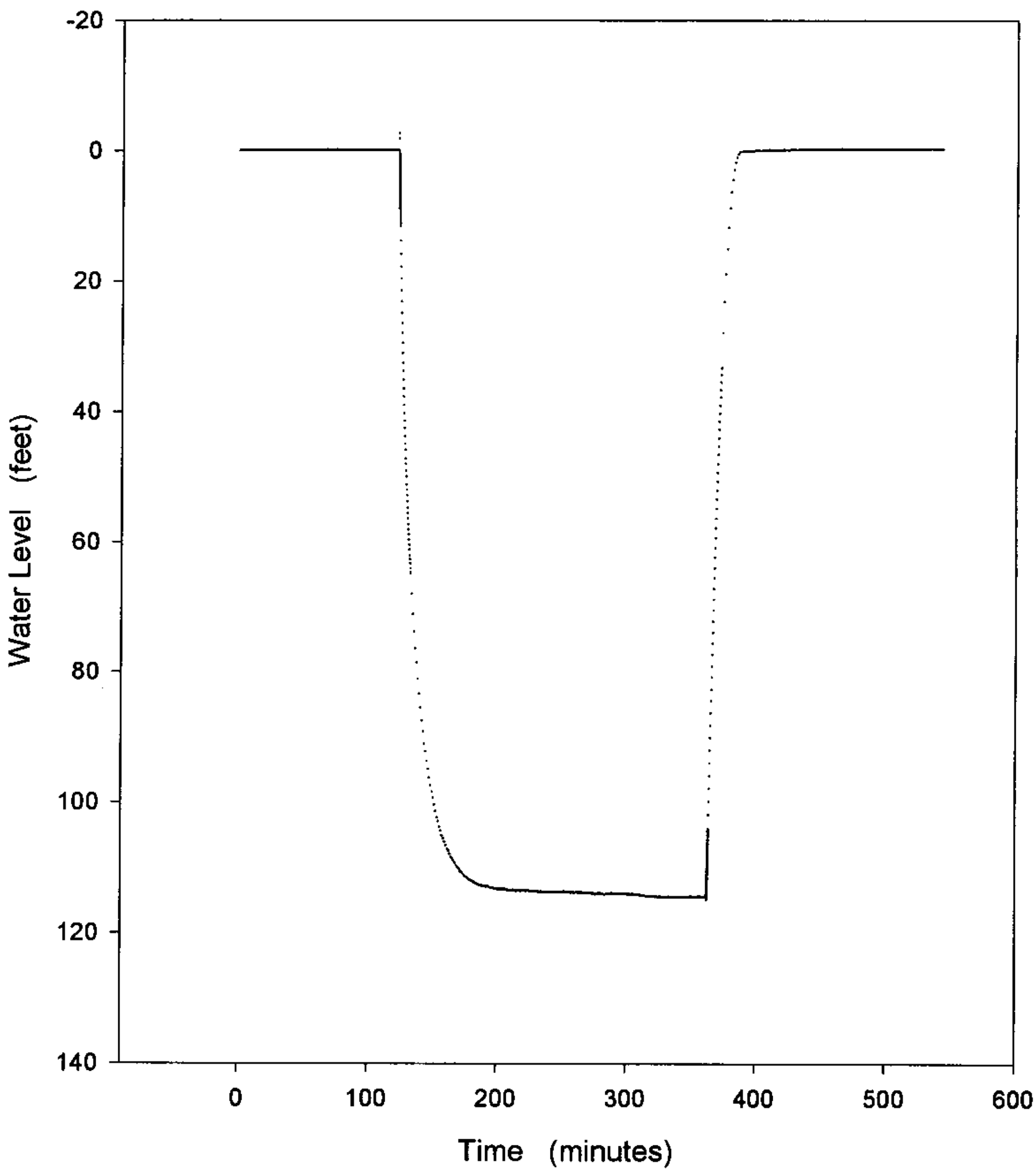
COOPER CITY IW1
1950-1966
RECOVERY DATA

TIME	WATER LEVEL	TIME	WATER LEVEL	TIME	WATER LEVEL	TIME	WATER LEVEL	TIME	WATER LEVEL
0	82.92	0.75	52.248	15	28.244	80	27.308	145	27.152
0.0083	82.843	0.7666	51.859	16	28.244	81	27.308	146	27.152
0.0166	82.843	0.7833	51.469	17	28.166	82	27.308	147	27.152
0.025	78.019	0.8	50.924	18	28.166	83	27.308	148	27.152
0.0333	83.621	0.8166	50.457	19	28.088	84	27.308	149	27.152
0.0416	81.598	0.8333	50.067	20	28.088	85	27.308	150	27.074
0.05	80.275	0.85	49.677	21	28.088	86	27.308	151	27.152
0.0583	80.197	0.8666	49.21	22	28.01	87	27.308	152	27.152
0.0666	79.653	0.8833	48.743	23	28.01	88	27.308	153	27.152
0.075	79.108	0.9	48.431	24	28.01	89	27.308	154	27.074
0.0833	78.486	0.9166	48.041	25	28.01	90	27.308	155	27.152
0.0916	77.863	0.9333	47.574	26	27.932	91	27.23	156	27.074
0.1	77.474	0.95	47.262	27	27.932	92	27.308	157	27.074
0.1083	76.929	0.9666	46.951	28	27.932	93	27.308	158	27.074
0.1166	76.384	0.9833	46.483	29	27.854	94	27.308	159	27.074
0.125	75.762	1	46.171	30	27.776	95	27.23	160	27.074
0.1333	75.295	1.2	42.275	31	27.776	96	27.308	161	27.074
0.1416	74.75	1.4	39.236	32	27.776	97	27.23	162	27.074
0.15	74.283	1.6	37.053	33	27.776	98	27.23	163	27.074
0.1583	73.738	1.8	35.416	34	27.776	99	27.308	164	27.074
0.1666	73.272	2	34.091	35	27.776	100	27.152	165	27.074
0.175	73.038	2.2	33	36	27.776	101	27.23	166	27.074
0.1833	72.338	2.4	32.22	37	27.776	102	27.23	167	27.074
0.1916	71.871	2.6	31.518	38	27.698	103	27.23	168	27.074
0.2	71.404	2.8	30.973	39	27.698	104	27.23	169	27.074
0.2083	70.936	3	30.583	40	27.698	105	27.23	170	27.074
0.2166	70.469	3.2	30.271	41	27.62	106	27.23	171	27.074
0.225	70.158	3.4	30.037	42	27.62	107	27.23	172	27.074
0.2333	69.691	3.6	29.803	43	27.62	108	27.23	173	27.074
0.2416	69.302	3.8	29.647	44	27.62	109	27.23	174	27.074
0.25	68.835	4	29.491	45	27.62	110	27.152	175	27.074
0.2583	68.446	4.2	29.413	46	27.62	111	27.23	176	27.074
0.2666	68.134	4.4	29.335	47	27.62	112	27.23	177	27.074
0.275	67.745	4.6	29.179	48	27.62	113	27.23	178	27.074
0.2833	67.356	4.8	29.101	49	27.62	114	27.23	179	27.074
0.2916	67.044	5	29.101	50	27.542	115	27.23	180	27.074
0.3	66.655	5.2	29.023	51	27.464	116	27.152		
0.3083	66.266	5.4	29.023	52	27.542	117	27.23		
0.3166	65.954	5.6	28.945	53	27.542	118	27.23		
0.325	65.565	5.8	28.945	54	27.542	119	27.23		
0.3333	65.254	6	28.867	55	27.542	120	27.152		
0.35	64.631	6.2	28.867	56	27.542	121	27.152		
0.3666	63.93	6.4	28.867	57	27.464	122	27.152		
0.3833	63.229	6.6	28.789	58	27.542	123	27.152		
0.4	62.061	6.8	28.789	59	27.464	124	27.152		
0.4166	62.139	7	28.789	60	27.464	125	27.152		
0.4333	60.971	7.2	28.789	61	27.464	126	27.152		
0.45	60.893	7.4	28.711	62	27.464	127	27.152		
0.4666	60.115	7.6	28.711	63	27.464	128	27.152		
0.4833	58.947	7.8	28.711	64	27.464	129	27.23		
0.5	57.856	8	28.711	65	27.464	130	27.152		
0.5166	56.766	8.2	28.711	66	27.464	131	27.152		
0.5333	55.753	8.4	28.633	67	27.386	132	27.152		
0.55	57.934	8.6	28.633	68	27.386	133	27.152		
0.5666	57.467	8.8	28.633	69	27.464	134	27.152		
0.5833	56.922	9	28.633	70	27.386	135	27.152		
0.6	56.532	9.2	28.555	71	27.386	136	27.152		
0.6166	55.987	9.4	28.555	72	27.386	137	27.152		
0.6333	55.598	9.6	28.555	73	27.386	138	27.152		
0.65	55.052	9.8	28.555	74	27.386	139	27.152		
0.6666	54.585	10	28.555	75	27.386	140	27.074		
0.6833	54.118	11	28.478	76	27.386	141	27.074		
0.7	53.65	12	28.4	77	27.386	142	27.152		
0.7166	53.183	13	28.4	78	27.308	143	27.152		
0.7333	52.638	14	28.322	79	27.386	144	27.152		

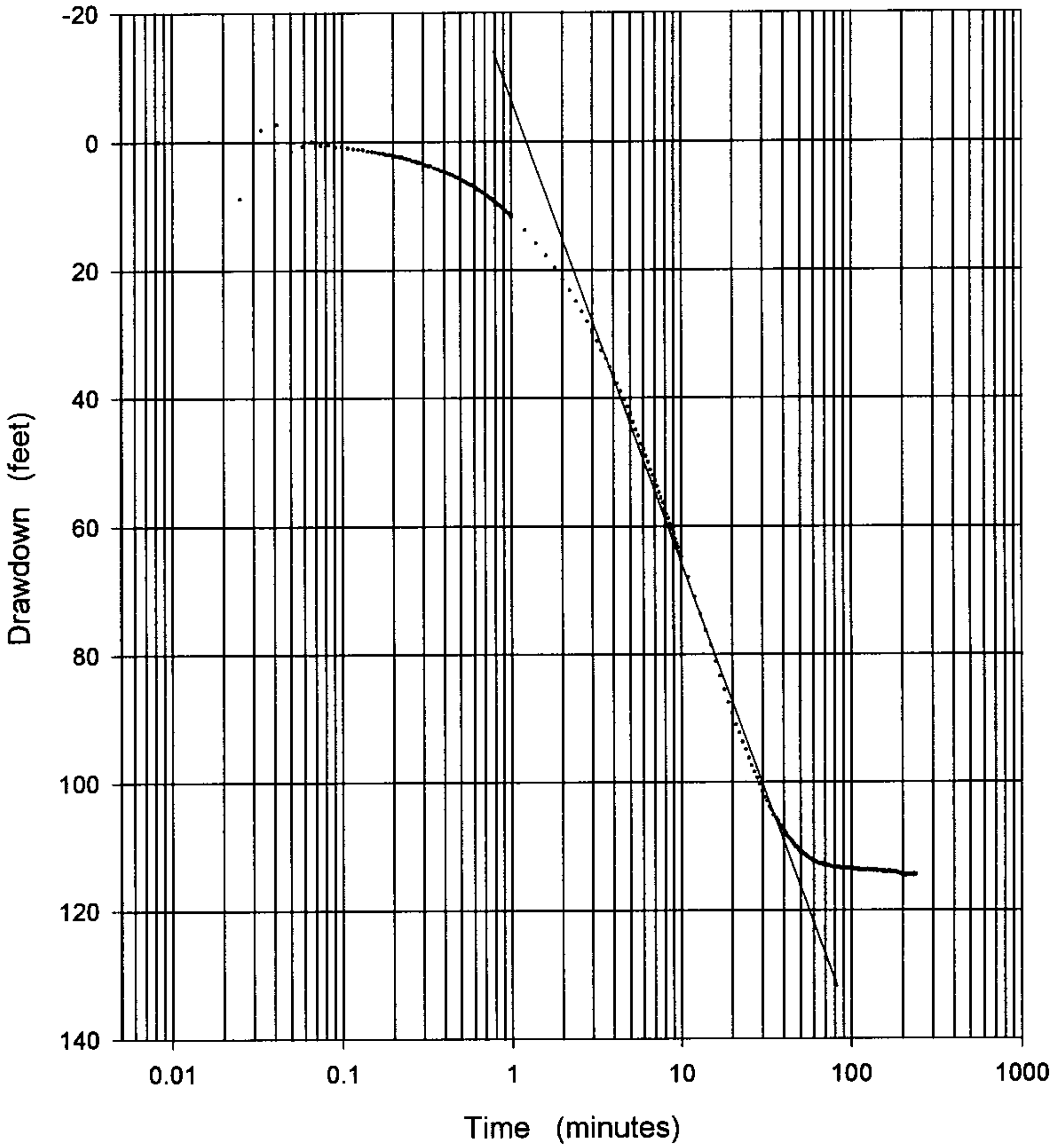
IW-1 Straddle Packer Test

2,269 – 2,285

COOPER CITY
IW 1
2269 - 2285
BACKGROUND, DRAWDOWN AND RECOVERY

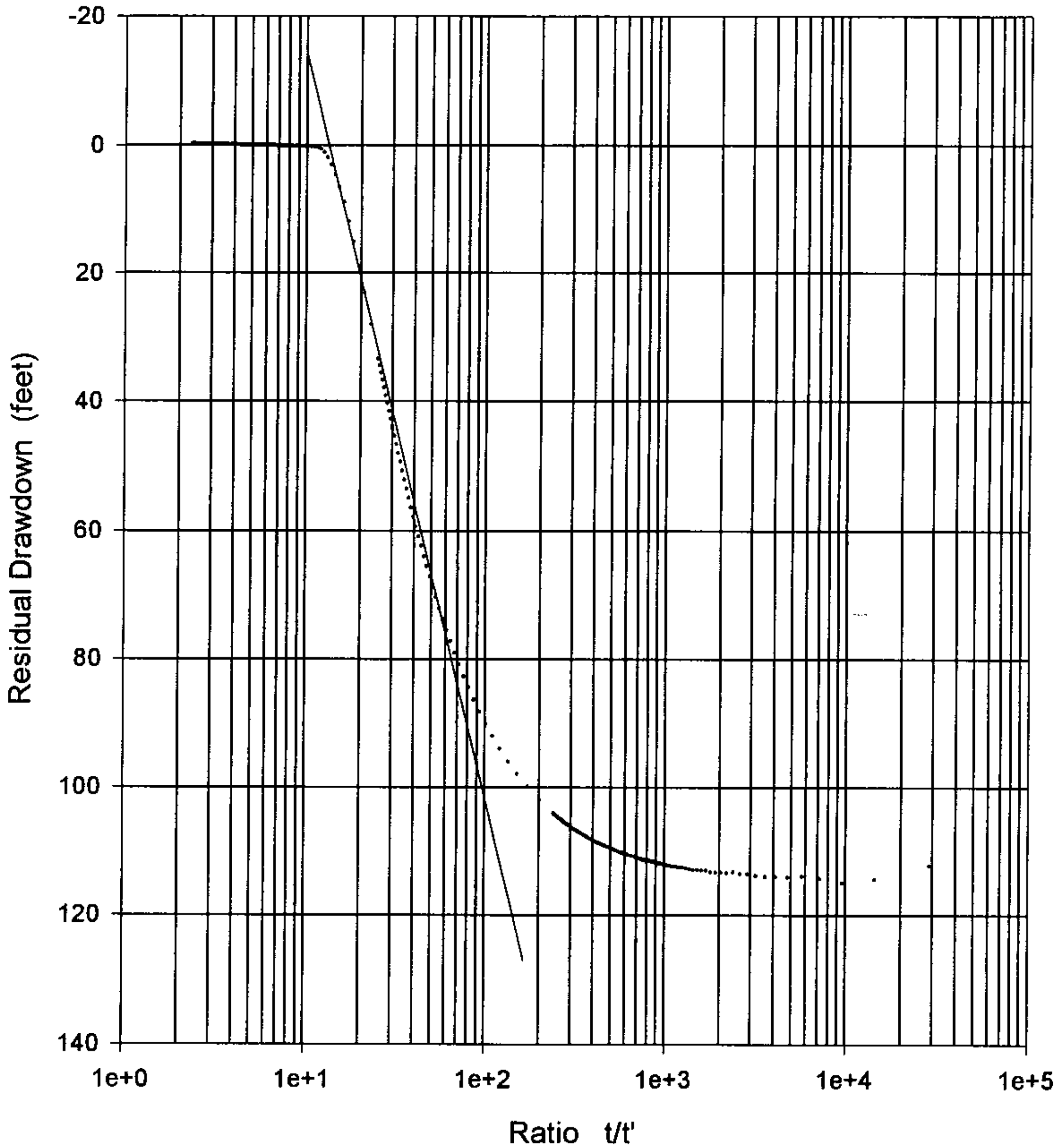


COOPER CITY
IW 1
2269 - 2285
DRAWDOWN



Cooper - Jacob Non-Equilibrim Analysis

COOPER CITY
IW 1
2269 - 2285
RESIDUAL DRAWDOWN VS t/t'



COOPER CITY
IW 1
2269 - 2285
BACKGROUND DATA

Time	Water Level	Time	Water Level	Time	Water Level	Time	Water Level
0	0	0.75	0	15	-0.031	80	-0.063
0.0083	0	0.7666	0	16	-0.031	81	-0.063
0.0166	0	0.7833	0	17	-0.031	82	-0.095
0.025	0	0.8	0	18	-0.031	83	-0.095
0.0333	0	0.8166	0	19	-0.031	84	-0.095
0.0416	0	0.8333	0	20	-0.031	85	-0.095
0.05	0	0.85	0	21	-0.063	86	-0.095
0.0583	0	0.8666	0	22	-0.063	87	-0.095
0.0666	0	0.8833	0	23	-0.031	88	-0.095
0.075	0	0.9	0	24	-0.063	89	-0.095
0.0833	0	0.9166	0	25	-0.063	90	-0.095
0.0916	0	0.9333	0	26	-0.063	91	-0.095
0.1	0	0.95	0	27	-0.063	92	-0.095
0.1083	0	0.9666	0	28	-0.063	93	-0.063
0.1166	0	0.9833	0	29	-0.063	94	-0.095
0.125	0	1	0	30	-0.063	95	-0.095
0.1333	0	1.2	0	31	-0.063	96	-0.095
0.1416	0	1.4	0	32	-0.063	97	-0.095
0.15	0	1.6	0	33	-0.031	98	-0.095
0.1583	0	1.8	0	34	-0.031	99	-0.095
0.1666	0	2	0	35	-0.063	100	-0.095
0.175	0	2.2	0	36	-0.063	101	-0.095
0.1833	0	2.4	0	37	-0.063	102	-0.095
0.1916	0	2.6	0	38	-0.063	103	-0.095
0.2	0	2.8	0	39	-0.063	104	-0.095
0.2083	0	3	0	40	-0.063	105	-0.095
0.2166	0	3.2	0	41	-0.063	106	-0.095
0.225	0	3.4	0	42	-0.063	107	-0.095
0.2333	0	3.6	0	43	-0.063	108	-0.095
0.2416	0	3.8	0	44	-0.063	109	-0.095
0.25	0	4	0	45	-0.063	110	-0.063
0.2583	0	4.2	0	46	-0.031	111	-0.095
0.2666	0	4.4	0	47	-0.063	112	-0.095
0.275	0	4.6	0	48	-0.063	113	-0.095
0.2833	0	4.8	0	49	-0.063	114	-0.095
0.2916	0	5	0	50	-0.063	115	-0.095
0.3	0	5.2	0	51	-0.063	116	-0.095
0.3083	0	5.4	0	52	-0.063	117	-0.095
0.3166	0	5.6	0	53	-0.063	118	-0.095
0.325	0	5.8	0	54	-0.063	119	-0.095
0.3333	0	6	0	55	-0.063	120	-0.095
0.35	0	6.2	0	56	-0.063	121	-0.095
0.3666	0	6.4	0	57	-0.063	122	-0.063
0.3833	0	6.6	0	58	-0.063	123	-0.063
0.4	0	6.8	0	59	-0.063		
0.4166	0	7	0	60	-0.063		
0.4333	0	7.2	0	61	-0.063		
0.45	0	7.4	0	62	-0.063		
0.4666	0	7.6	0	63	-0.063		
0.4833	0	7.8	0	64	-0.063		
0.5	0	8	0	65	-0.063		
0.5166	0	8.2	0	66	-0.063		
0.5333	0	8.4	0	67	-0.095		
0.55	0	8.6	0	68	-0.095		
0.5666	0	8.8	0	69	-0.063		
0.5833	0	9	0	70	-0.063		
0.6	0	9.2	0	71	-0.063		
0.6166	0	9.4	0	72	-0.063		
0.6333	0	9.6	0	73	-0.095		
0.65	0	9.8	0	74	-0.095		
0.6666	0	10	0	75	-0.095		
0.6833	0	11	-0.031	76	-0.095		
0.7	0	12	-0.031	77	-0.095		
0.7166	0	13	-0.031	78	-0.095		
0.7333	0	14	0	79	-0.095		

COOPER CITY
IW 1
2269 - 2285
DRAWDOWN DATA

Time	Water Level	Time	Water Level	Time	Water Level	Time	Water Level
0	-0.063	0.75	8.875	15	78.624	80	113.396
0.0083	-0.063	0.7666	8.938	16	81.122	81	113.396
0.0166	-0.063	0.7833	9.255	17	83.431	82	113.333
0.025	8.875	0.8	9.35	18	85.581	83	113.396
0.0333	-1.902	0.8166	9.636	19	87.573	84	113.333
0.0416	-2.726	0.8333	9.826	20	89.249	85	113.491
0.05	1.458	0.85	9.953	21	91.083	86	113.491
0.0583	0.634	0.8666	10.206	22	92.284	87	113.554
0.0666	0	0.8833	10.365	23	93.739	88	113.554
0.075	0.507	0.9	10.555	24	94.972	89	113.554
0.0833	0.412	0.9166	10.745	25	96.299	90	113.491
0.0916	0.792	0.9333	10.967	26	97.469	91	113.554
0.1	0.729	0.95	11.125	27	98.48	92	113.586
0.1083	0.951	0.9666	11.189	28	99.397	93	113.618
0.1166	1.077	0.9833	11.569	29	100.408	94	113.523
0.125	1.141	1	11.537	30	101.451	95	113.554
0.1333	1.236	1.2	13.851	31	102.4	96	113.618
0.1416	1.489	1.4	15.879	32	103	97	113.554
0.15	1.553	1.6	17.812	33	103.853	98	113.586
0.1583	1.616	1.8	19.586	34	104.422	99	113.554
0.1666	1.775	2	21.455	35	105.149	100	113.618
0.175	1.838	2.2	23.134	36	105.623	101	113.523
0.1833	1.997	2.4	24.908	37	106.097	102	113.554
0.1916	2.028	2.6	26.461	38	106.698	103	113.649
0.2	2.187	2.8	28.013	39	107.172	104	113.618
0.2083	2.25	3	29.533	40	107.519	105	113.681
0.2166	2.345	3.2	31.117	41	107.993	106	113.712
0.225	2.377	3.4	32.605	42	108.467	107	113.649
0.2333	2.599	3.6	33.841	43	108.752	108	113.712
0.2416	2.694	3.8	35.234	44	109.068	109	113.712
0.25	2.757	4	36.532	45	109.384	110	113.712
0.2583	3.011	4.2	37.767	46	109.763	111	113.807
0.2666	3.043	4.4	39.034	47	110.079	112	113.712
0.275	3.17	4.6	40.301	48	110.237	113	113.776
0.2833	3.265	4.8	41.409	49	110.616	114	113.839
0.2916	3.328	5	42.549	50	110.774	115	113.839
0.3	3.423	5.2	43.784	51	110.932	116	113.87
0.3083	3.613	5.4	44.955	52	111.216	117	113.839
0.3166	3.74	5.6	45.905	53	111.374	118	113.87
0.325	3.804	5.8	47.203	54	111.501	119	113.807
0.3333	3.804	6	48.026	55	111.722	120	113.87
0.35	4.121	6.2	49.071	56	111.848	121	113.839
0.3666	4.279	6.4	49.957	57	112.006	122	113.839
0.3833	4.564	6.6	51.191	58	112.101	123	113.807
0.4	4.628	6.8	52.014	59	112.259	124	113.776
0.4166	4.881	7	52.901	60	112.291	125	113.712
0.4333	5.072	7.2	53.787	61	112.48	126	113.807
0.45	5.262	7.4	54.736	62	112.512	127	113.776
0.4666	5.515	7.6	55.623	63	112.701	128	113.807
0.4833	5.642	7.8	56.351	64	112.733	129	113.807
0.5	5.896	8	57.3	65	112.796	130	113.744
0.5166	6.086	8.2	58.123	66	112.796	131	113.776
0.5333	6.244	8.4	58.819	67	112.922	132	113.744
0.55	6.498	8.6	59.674	68	112.859	133	113.839
0.5666	6.688	8.8	60.465	69	112.986	134	113.776
0.5833	6.783	9	61.193	70	112.922	135	113.902
0.6	6.973	9.2	62.079	71	113.017	136	113.839
0.6166	7.163	9.4	62.711	72	113.144	137	113.839
0.6333	7.544	9.6	63.344	73	113.144	138	113.902
0.65	7.671	9.8	64.104	74	113.144	139	113.87
0.6666	7.861	10	64.768	75	113.207	140	113.839
0.6833	7.988	11	67.995	76	113.27	141	113.902
0.7	8.273	12	71.096	77	113.333	142	113.902
0.7166	8.463	13	73.785	78	113.396	143	113.839
0.7333	8.621	14	76.315	79	113.365	144	113.933

COOPER CITY
IW 1
2269 - 2285
DRAWDOWN DATA

Time	Water Level	Time	Water Level
145	113.902	210	114.565
146	113.902	211	114.534
147	113.933	212	114.565
148	113.933	213	114.565
149	113.965	214	114.565
150	113.933	215	114.597
151	113.997	216	114.534
152	113.965	217	114.597
153	113.997	218	114.565
154	114.155	219	114.565
155	114.06	220	114.565
156	114.028	221	114.629
157	113.997	222	114.502
158	114.028	223	114.565
159	114.06	224	114.565
160	114.123	225	114.565
161	114.155	226	114.534
162	114.123	227	114.534
163	114.123	228	114.565
164	114.06	229	114.565
165	114.06	230	114.565
166	114.06	231	114.534
167	113.997	232	114.629
168	114.06	233	114.565
169	114.028	234	114.439
170	114.091	235	114.565
171	114.06	236	114.502
172	114.028	237	114.502
173	114.06	238	114.502
174	114.06	239	114.534
175	114.091	240	114.534
176	114.091		
177	114.06		
178	114.028		
179	114.155		
180	114.06		
181	114.155		
182	114.123		
183	114.091		
184	114.218		
185	114.186		
186	114.218		
187	114.186		
188	114.218		
189	114.281		
190	114.313		
191	114.313		
192	114.376		
193	114.407		
194	114.407		
195	114.439		
196	114.471		
197	114.439		
198	114.471		
199	114.407		
200	114.502		
201	114.471		
202	114.534		
203	114.565		
204	114.502		
205	114.534		
206	114.534		
207	114.534		
208	114.629		
209	114.565		

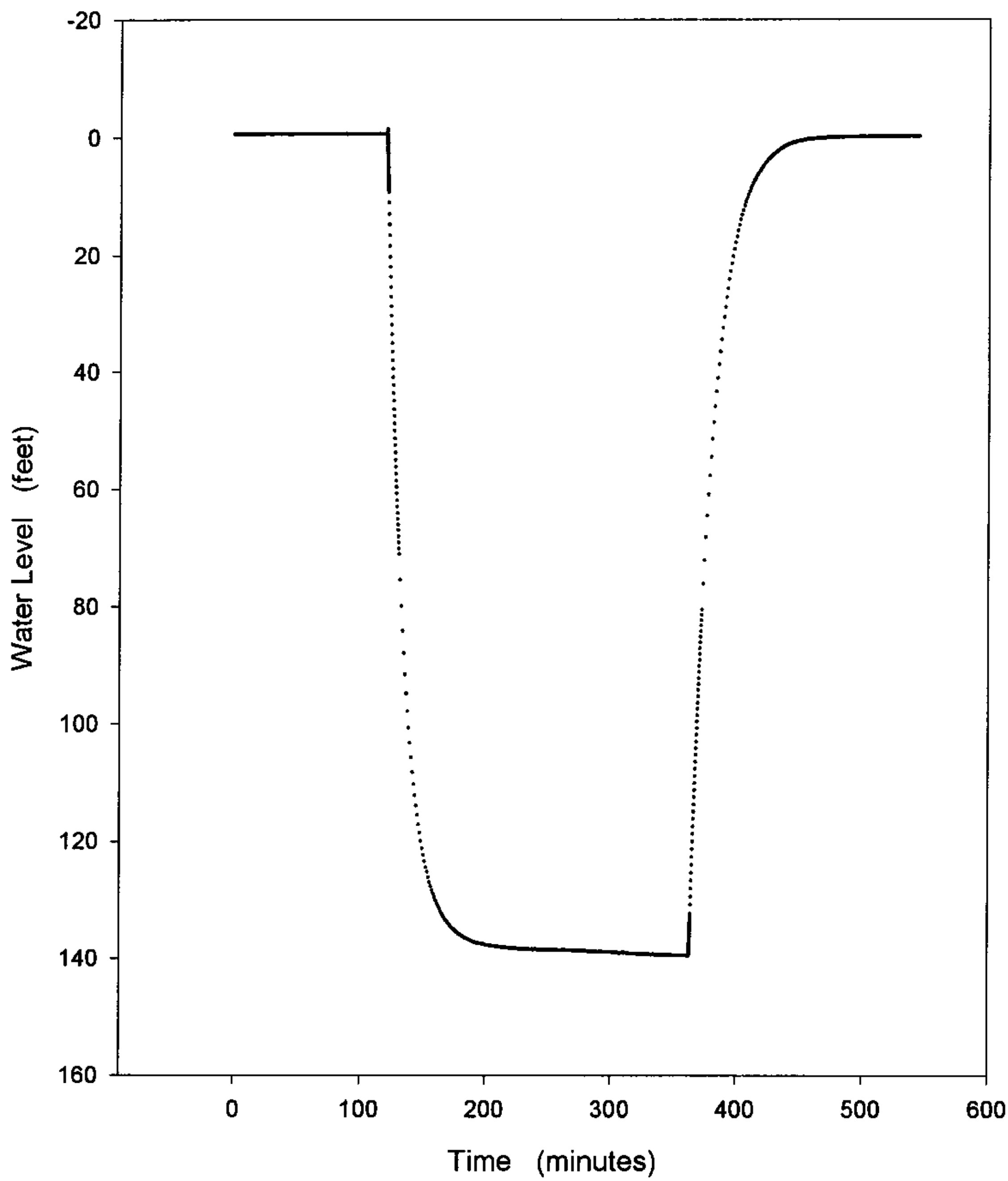
COOPER CITY
IW 1
2269 - 2285
RECOVERY DATA

Time	Water Level	Time	Water Level	Time	Water Level	Time	Water Level	Time	Water Level
0	114.502	0.75	106.634	15	11.886	80	-0.126	145	-0.19
0.0083	112.227	0.7666	106.508	16	8.938	81	-0.126	146	-0.19
0.0166	114.344	0.7833	106.35	17	6.498	82	-0.095	147	-0.221
0.025	114.913	0.8	106.129	18	4.596	83	-0.126	148	-0.221
0.0333	114.186	0.8166	105.908	19	3.043	84	-0.095	149	-0.221
0.0416	113.839	0.8333	105.781	20	1.933	85	-0.095	150	-0.221
0.05	114.028	0.85	105.623	21	1.141	86	-0.126	151	-0.221
0.0583	113.933	0.8666	105.465	22	0.602	87	-0.126	152	-0.19
0.0666	113.933	0.8833	105.244	23	0.348	88	-0.126	153	-0.19
0.075	113.807	0.9	105.086	24	0.253	89	-0.126	154	-0.221
0.0833	113.523	0.9166	104.928	25	0.221	90	-0.095	155	-0.221
0.0916	113.523	0.9333	104.77	26	0.19	91	-0.126	156	-0.221
0.1	113.144	0.95	104.58	27	0.19	92	-0.126	157	-0.221
0.1083	113.365	0.9666	104.391	28	0.19	93	-0.126	158	-0.221
0.1166	113.27	0.9833	104.264	29	0.158	94	-0.126	159	-0.221
0.125	113.238	1	104.043	30	0.158	95	-0.158	160	-0.221
0.1333	113.238	1.2	101.989	31	0.126	96	-0.126	161	-0.19
0.1416	112.954	1.4	99.934	32	0.158	97	-0.126	162	-0.19
0.15	112.922	1.6	97.943	33	0.126	98	-0.158	163	-0.221
0.1583	112.891	1.8	96.015	34	0.095	99	-0.126	164	-0.221
0.1666	112.891	2	94.023	35	0.095	100	-0.126	165	-0.221
0.175	112.733	2.2	92.063	36	0.063	101	-0.158	166	-0.221
0.1833	112.543	2.4	90.135	37	0.095	102	-0.19	167	-0.221
0.1916	112.48	2.6	88.237	38	0.063	103	-0.158	168	-0.221
0.2	112.48	2.8	86.372	39	0.095	104	-0.158	169	-0.221
0.2083	112.322	3	84.475	40	0.095	105	-0.158	170	-0.221
0.2166	112.259	3.2	82.735	41	0.063	106	-0.158	171	-0.253
0.225	112.196	3.4	80.869	42	0.031	107	-0.158	172	-0.253
0.2333	112.101	3.6	79.098	43	0.031	108	-0.158	173	-0.19
0.2416	111.975	3.8	77.327	44	0.031	109	-0.158	174	-0.221
0.25	111.88	4	75.619	45	0.031	110	-0.158	175	-0.221
0.2583	111.785	4.2	73.911	46	0	111	-0.158	176	-0.221
0.2666	111.69	4.4	72.203	47	0	112	-0.126	177	-0.221
0.275	111.595	4.6	70.495	48	0	113	-0.158	178	-0.253
0.2833	111.532	4.8	68.881	49	0	114	-0.158	179	-0.221
0.2916	111.374	5	67.236	50	0	115	-0.158	180	-0.19
0.3	111.374	5.2	65.591	51	0	116	-0.19		
0.3083	111.248	5.4	64.04	52	-0.031	117	-0.19		
0.3166	111.248	5.6	62.427	53	-0.031	118	-0.158		
0.325	111.09	5.8	60.908	54	0	119	-0.19		
0.3333	111.027	6	59.389	55	-0.031	120	-0.19		
0.35	110.774	6.2	57.87	56	-0.031	121	-0.19		
0.3666	110.648	6.4	56.414	57	-0.031	122	-0.126		
0.3833	110.49	6.6	54.926	58	-0.031	123	-0.19		
0.4	110.268	6.8	53.502	59	-0.063	124	-0.19		
0.4166	110.142	7	52.141	60	-0.063	125	-0.19		
0.4333	109.984	7.2	50.748	61	-0.031	126	-0.19		
0.45	109.794	7.4	49.355	62	-0.063	127	-0.19		
0.4666	109.605	7.6	48.026	63	-0.063	128	-0.19		
0.4833	109.352	7.8	46.633	64	-0.063	129	-0.158		
0.5	109.226	8	45.335	65	-0.095	130	-0.19		
0.5166	109.036	8.2	44.069	66	-0.095	131	-0.221		
0.5333	108.878	8.4	42.77	67	-0.063	132	-0.19		
0.55	108.72	8.6	41.536	68	-0.063	133	-0.19		
0.5666	108.562	8.8	40.301	69	-0.095	134	-0.221		
0.5833	108.372	9	39.097	70	-0.095	135	-0.158		
0.6	108.183	9.2	37.862	71	-0.063	136	-0.158		
0.6166	108.025	9.4	36.722	72	-0.095	137	-0.19		
0.6333	107.867	9.6	35.551	73	-0.095	138	-0.19		
0.65	107.709	9.8	34.442	74	-0.095	139	-0.158		
0.6666	107.488	10	33.366	75	-0.095	140	-0.158		
0.6833	107.33	11	27.949	76	-0.095	141	-0.19		
0.7	107.108	12	23.166	77	-0.095	142	-0.19		
0.7166	106.982	13	18.952	78	-0.126	143	-0.221		
0.7333	106.792	14	15.15	79	-0.126	144	-0.19		

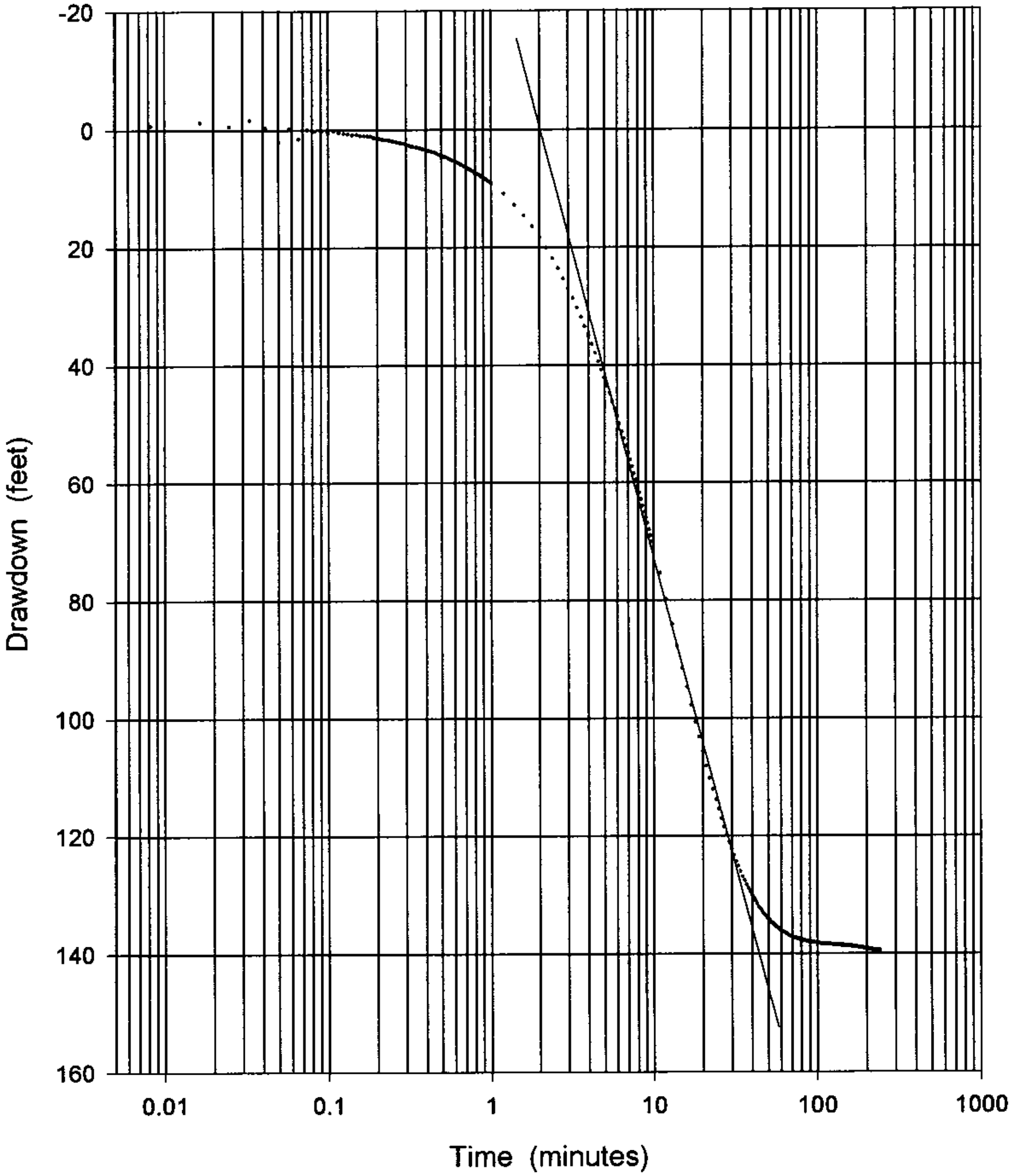
IW-1 Straddle Packer Test

2,515 – 2,531

COOPER CITY
IW 1
2515 - 2531
BACKGROUND, DRAWDOWN AND RECOVERY DATA

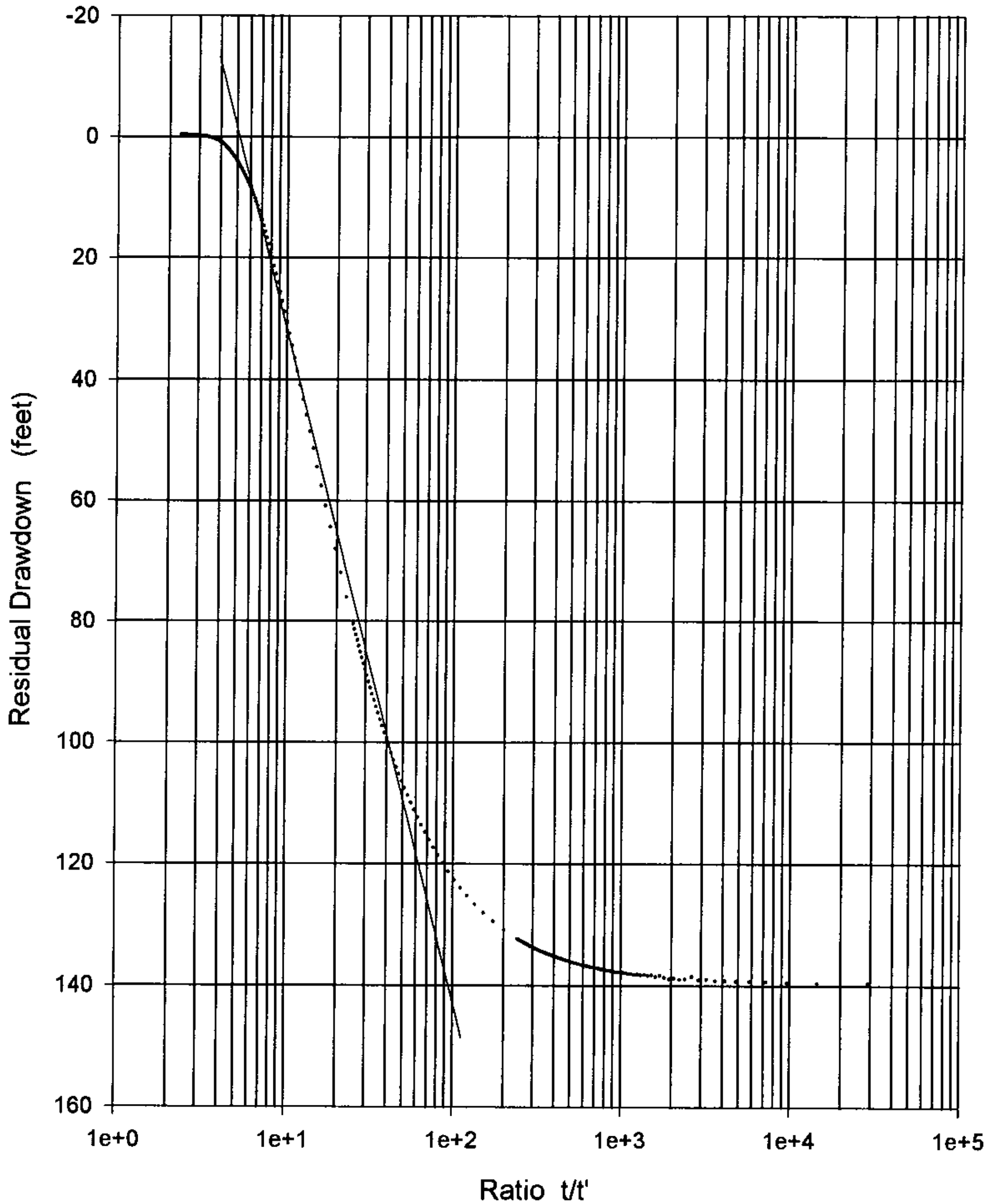


COOPER CITY
IW 1
2515 - 2531
DRAWDOWN



Cooper - Jacob Non-Equilibrim Analysis

COOPER CITY
IW 1
2515 - 2531
RESIDUAL DRAWDOWN VS t/t'



COOPER CITY
IW 1
2515 - 2531
BACKGROUND DATA

Time	Water Level	Time	Water Level	Time	Water Level	Time	Water Level
0	-0.602	0.75	-0.602	15	-0.602	80	-0.697
0.0083	-0.602	0.7666	-0.602	16	-0.634	81	-0.697
0.0166	-0.602	0.7833	-0.602	17	-0.634	82	-0.697
0.025	-0.602	0.8	-0.602	18	-0.634	83	-0.697
0.0333	-0.602	0.8166	-0.602	19	-0.634	84	-0.697
0.0416	-0.602	0.8333	-0.57	20	-0.634	85	-0.697
0.05	-0.602	0.85	-0.602	21	-0.665	86	-0.697
0.0583	-0.602	0.8666	-0.602	22	-0.634	87	-0.697
0.0666	-0.602	0.8833	-0.602	23	-0.665	88	-0.665
0.075	-0.602	0.9	-0.602	24	-0.665	89	-0.697
0.0833	-0.602	0.9166	-0.602	25	-0.665	90	-0.697
0.0916	-0.602	0.9333	-0.602	26	-0.665	91	-0.697
0.1	-0.602	0.95	-0.57	27	-0.665	92	-0.697
0.1083	-0.602	0.9666	-0.602	28	-0.665	93	-0.697
0.1166	-0.602	0.9833	-0.602	29	-0.634	94	-0.697
0.125	-0.602	1	-0.57	30	-0.665	95	-0.697
0.1333	-0.602	1.2	-0.602	31	-0.665	96	-0.697
0.1416	-0.602	1.4	-0.602	32	-0.665	97	-0.697
0.15	-0.602	1.6	-0.57	33	-0.665	98	-0.697
0.1583	-0.602	1.8	-0.634	34	-0.665	99	-0.697
0.1666	-0.602	2	-0.634	35	-0.665	100	-0.697
0.175	-0.602	2.2	-0.634	36	-0.665	101	-0.697
0.1833	-0.602	2.4	-0.634	37	-0.665	102	-0.729
0.1916	-0.602	2.6	-0.634	38	-0.665	103	-0.697
0.2	-0.602	2.8	-0.634	39	-0.665	104	-0.697
0.2083	-0.602	3	-0.634	40	-0.665	105	-0.697
0.2166	-0.602	3.2	-0.634	41	-0.665	106	-0.697
0.225	-0.602	3.4	-0.634	42	-0.665	107	-0.697
0.2333	-0.602	3.6	-0.634	43	-0.665	108	-0.697
0.2416	-0.602	3.8	-0.634	44	-0.634	109	-0.697
0.25	-0.602	4	-0.634	45	-0.665	110	-0.729
0.2583	-0.602	4.2	-0.634	46	-0.665	111	-0.729
0.2666	-0.602	4.4	-0.634	47	-0.665	112	-0.729
0.275	-0.602	4.6	-0.634	48	-0.665	113	-0.697
0.2833	-0.602	4.8	-0.634	49	-0.665	114	-0.729
0.2916	-0.602	5	-0.634	50	-0.665	115	-0.729
0.3	-0.602	5.2	-0.634	51	-0.665	116	-0.729
0.3083	-0.602	5.4	-0.634	52	-0.697	117	-0.729
0.3166	-0.602	5.6	-0.634	53	-0.697	118	-0.697
0.325	-0.602	5.8	-0.634	54	-0.697	119	-0.729
0.3333	-0.602	6	-0.634	55	-0.665	120	-0.665
0.35	-0.602	6.2	-0.634	56	-0.697	121	-0.665
0.3666	-0.57	6.4	-0.634	57	-0.697		
0.3833	-0.602	6.6	-0.634	58	-0.697		
0.4	-0.57	6.8	-0.634	59	-0.697		
0.4166	-0.602	7	-0.634	60	-0.697		
0.4333	-0.602	7.2	-0.634	61	-0.665		
0.45	-0.602	7.4	-0.634	62	-0.665		
0.4666	-0.602	7.6	-0.634	63	-0.665		
0.4833	-0.602	7.8	-0.634	64	-0.665		
0.5	-0.602	8	-0.634	65	-0.697		
0.5166	-0.602	8.2	-0.634	66	-0.697		
0.5333	-0.602	8.4	-0.634	67	-0.665		
0.55	-0.602	8.6	-0.634	68	-0.697		
0.5666	-0.602	8.8	-0.634	69	-0.697		
0.5833	-0.602	9	-0.634	70	-0.697		
0.6	-0.602	9.2	-0.634	71	-0.697		
0.6166	-0.602	9.4	-0.634	72	-0.697		
0.6333	-0.602	9.6	-0.634	73	-0.697		
0.65	-0.602	9.8	-0.634	74	-0.665		
0.6666	-0.602	10	-0.634	75	-0.697		
0.6833	-0.602	11	-0.634	76	-0.697		
0.7	-0.602	12	-0.634	77	-0.697		
0.7166	-0.602	13	-0.634	78	-0.697		
0.7333	-0.602	14	-0.634	79	-0.697		

COOPER CITY
IW 1
2515 - 2531
DRAWDOWN DATA

Time	Water Level	Time	Water Level	Time	Water Level	Time	Water Level
0	-0.665	0.75	6.846	15	91.521	80	137.709
0.0083	-0.665	0.7666	7.005	16	94.746	81	137.741
0.0166	-1.204	0.7833	7.1	17	97.812	82	137.741
0.025	-0.507	0.8	7.353	18	100.593	83	137.804
0.0333	-1.553	0.8166	7.48	19	103.153	84	137.835
0.0416	-0.348	0.8333	7.575	20	105.618	85	137.898
0.05	1.997	0.85	7.734	21	108.115	86	137.93
0.0583	-0.19	0.8666	7.924	22	110.2	87	137.93
0.0666	1.585	0.8833	8.051	23	112.064	88	137.962
0.075	0	0.9	8.241	24	113.865	89	137.993
0.0833	0.285	0.9166	8.368	25	115.445	90	138.025
0.0916	0.253	0.9333	8.494	26	117.119	91	138.056
0.1	0.348	0.95	8.684	27	118.509	92	138.088
0.1083	0.253	0.9666	8.843	28	119.899	93	138.088
0.1166	0.538	0.9833	8.97	29	121.162	94	138.151
0.125	0.665	1	9.128	30	122.299	95	138.151
0.1333	0.729	1.2	10.935	31	123.373	96	138.119
0.1416	0.919	1.4	12.836	32	124.415	97	138.214
0.15	0.824	1.6	14.674	33	125.205	98	138.183
0.1583	0.982	1.8	16.48	34	126.121	99	138.214
0.1666	1.014	2	18.318	35	127.005	100	138.246
0.175	1.141	2.2	20.155	36	127.668	101	138.309
0.1833	1.141	2.4	21.898	37	128.363	102	138.277
0.1916	1.363	2.6	23.608	38	128.931	103	138.277
0.2	1.394	2.8	25.382	39	129.531	104	138.34
0.2083	1.553	3	27.061	40	130.131	105	138.309
0.2166	1.68	3.2	28.677	41	130.637	106	138.372
0.225	1.743	3.4	30.292	42	131.079	107	138.372
0.2333	1.806	3.6	31.875	43	131.584	108	138.372
0.2416	1.902	3.8	33.459	44	132.057	109	138.435
0.25	1.997	4	35.011	45	132.405	110	138.467
0.2583	2.092	4.2	36.467	46	132.815	111	138.372
0.2666	2.155	4.4	37.956	47	133.194	112	138.467
0.275	2.25	4.6	39.412	48	133.478	113	138.467
0.2833	2.345	4.8	40.837	49	133.731	114	138.435
0.2916	2.409	5	42.167	50	134.078	115	138.467
0.3	2.535	5.2	43.528	51	134.268	116	138.498
0.3083	2.662	5.4	44.826	52	134.615	117	138.435
0.3166	2.757	5.6	46.283	53	134.804	118	138.498
0.325	2.852	5.8	47.454	54	135.025	119	138.467
0.3333	2.948	6	48.752	55	135.215	120	138.435
0.35	3.011	6.2	49.955	56	135.404	121	138.498
0.3666	3.169	6.4	51.284	57	135.594	122	138.467
0.3833	3.328	6.6	52.455	58	135.783	123	138.498
0.4	3.518	6.8	53.689	59	135.878	124	138.467
0.4166	3.645	7	54.924	60	136.067	125	138.498
0.4333	3.772	7.2	56.095	61	136.194	126	138.53
0.45	3.898	7.4	57.297	62	136.32	127	138.53
0.4666	4.089	7.6	58.5	63	136.446	128	138.498
0.4833	4.311	7.8	59.544	64	136.572	129	138.53
0.5	4.501	8	60.652	65	136.636	130	138.467
0.5166	4.596	8.2	61.791	66	136.793	131	138.498
0.5333	4.723	8.4	62.898	67	136.888	132	138.561
0.55	4.913	8.6	64.006	68	136.983	133	138.561
0.5666	5.103	8.8	65.018	69	137.078	134	138.53
0.5833	5.293	9	65.967	70	137.141	135	138.593
0.6	5.42	9.2	66.917	71	137.267	136	138.593
0.6166	5.515	9.4	67.992	72	137.299	137	138.561
0.6333	5.705	9.6	69.005	73	137.33	138	138.625
0.65	5.864	9.8	70.017	74	137.456	139	138.593
0.6666	6.086	10	70.966	75	137.425	140	138.625
0.6833	6.181	11	75.363	76	137.488	141	138.625
0.7	6.339	12	79.854	77	137.52	142	138.53
0.7166	6.529	13	84.091	78	137.551	143	138.656
0.7333	6.688	14	87.886	79	137.677	144	138.656

COOPER CITY
IW 1
2515 - 2531
DRAWDOWN DATA

Time	Water Level
145	138.656
146	138.625
147	138.656
148	138.656
149	138.656
150	138.688
151	138.625
152	138.751
153	138.719
154	138.751
155	138.719
156	138.719
157	138.782
158	138.751
159	138.751
160	138.751
161	138.782
162	138.782
163	138.846
164	138.782
165	138.846
166	138.814
167	138.846
168	138.846
169	138.877
170	138.877
171	138.814
172	138.814
173	138.877
174	138.877
175	138.94
176	138.94
177	138.909
178	138.909
179	138.94
180	138.94
181	138.94
182	138.972
183	139.035
184	139.003
185	139.003
186	139.098
187	139.098
188	139.067
189	139.035
190	139.067
191	139.035
192	139.098
193	139.098
194	139.193
195	139.193
196	139.193
197	139.193
198	139.161
199	139.193
200	139.193
201	139.256
202	139.193
203	139.287
204	139.224
205	139.256
206	139.256
207	139.287
208	139.287
209	139.256

Time	Water Level
210	139.287
211	139.319
212	139.382
213	139.351
214	139.319
215	139.414
216	139.351
217	139.351
218	139.414
219	139.414
220	139.445
221	139.414
222	139.382
223	139.414
224	139.477
225	139.445
226	139.445
227	139.477
228	139.445
229	139.477
230	139.508
231	139.477
232	139.508
233	139.477
234	139.508
235	139.477
236	139.477
237	139.477
238	139.508
239	139.508
240	139.477
241	139.54
242	139.477

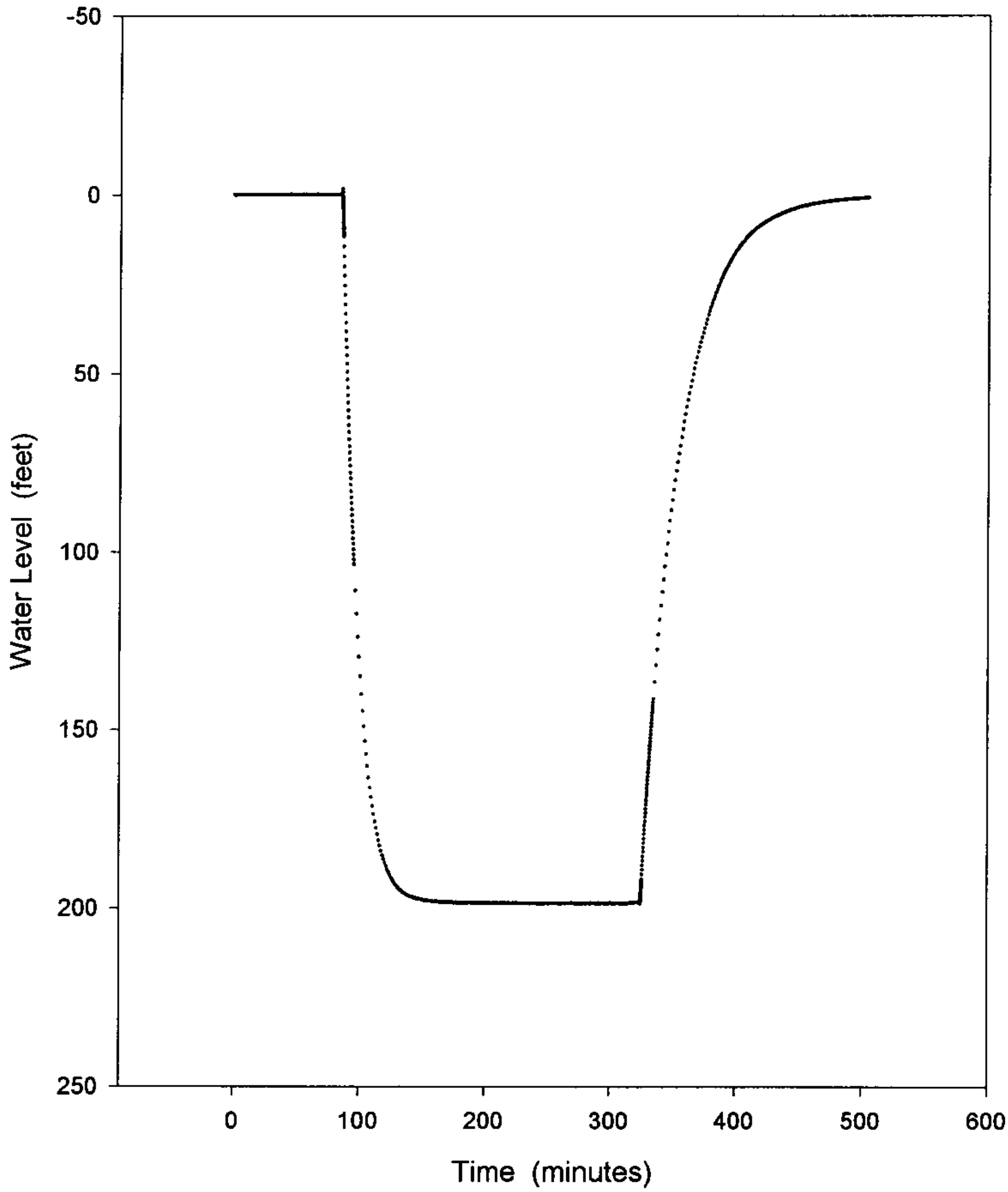
COOPER CITY
IW 1
2515 - 2531
RECOVERY DATA

Time	Water Level	Time	Water Level	Time	Water Level	Time	Water Level	Time	Water Level
0	139.54	0.75	134.141	15	60.905	80	0.919	145	-0.285
0.0083	139.54	0.7666	134.015	16	57.582	81	0.855	146	-0.285
0.0166	139.54	0.7833	133.889	17	54.449	82	0.76	147	-0.285
0.025	139.477	0.8	133.763	18	51.347	83	0.729	148	-0.285
0.0333	139.382	0.8166	133.636	19	48.53	84	0.634	149	-0.285
0.0416	139.287	0.8333	133.541	20	45.839	85	0.602	150	-0.285
0.05	139.287	0.85	133.415	21	43.307	86	0.507	151	-0.285
0.0583	139.193	0.8666	133.289	22	40.995	87	0.475	152	-0.253
0.0666	139.224	0.8833	133.163	23	38.652	88	0.412	153	-0.285
0.075	138.972	0.9	133.068	24	36.467	89	0.412	154	-0.285
0.0833	139.035	0.9166	132.942	25	34.409	90	0.348	155	-0.285
0.0916	138.498	0.9333	132.815	26	32.446	91	0.317	156	-0.285
0.1	138.877	0.95	132.689	27	30.577	92	0.253	157	-0.285
0.1083	138.972	0.9666	132.563	28	28.835	93	0.221	158	-0.317
0.1166	138.782	0.9833	132.468	29	27.156	94	0.19	159	-0.317
0.125	138.909	1	132.342	30	25.636	95	0.158	160	-0.253
0.1333	138.656	1.2	130.858	31	24.052	96	0.158	161	-0.285
0.1416	138.34	1.4	129.468	32	22.658	97	0.126	162	-0.285
0.15	138.53	1.6	128.079	33	21.327	98	0.095	163	-0.317
0.1583	138.246	1.8	126.689	34	20.06	99	0.063	164	-0.317
0.1666	138.372	2	125.331	35	18.888	100	0.063	165	-0.285
0.175	138.183	2.2	123.973	36	17.747	101	0.031	166	-0.317
0.1833	138.277	2.4	122.647	37	16.702	102	0	167	-0.317
0.1916	138.151	2.6	121.32	38	15.688	103	0	168	-0.317
0.2	138.183	2.8	119.993	39	14.737	104	-0.031	169	-0.285
0.2083	138.088	3	118.698	40	13.85	105	-0.031	170	-0.285
0.2166	138.056	3.2	117.435	41	13.058	106	-0.031	171	-0.317
0.225	137.993	3.4	116.14	42	12.266	107	-0.063	172	-0.317
0.2333	137.898	3.6	114.876	43	11.473	108	-0.063	173	-0.317
0.2416	137.867	3.8	113.644	44	10.808	109	-0.095	174	-0.317
0.25	137.804	4	112.38	45	10.206	110	-0.063	175	-0.317
0.2583	137.741	4.2	111.18	46	9.604	111	-0.095	176	-0.317
0.2666	137.709	4.4	109.979	47	9.065	112	-0.126	177	-0.317
0.275	137.614	4.6	108.747	48	8.526	113	-0.126	178	-0.317
0.2833	137.52	4.8	107.546	49	8.082	114	-0.126	179	-0.317
0.2916	137.488	5	106.377	50	7.575	115	-0.158	180	-0.317
0.3	137.425	5.2	105.207	51	7.1	116	-0.158	181	-0.317
0.3083	137.362	5.4	104.07	52	6.688	117	-0.158	182	-0.317
0.3166	137.299	5.6	102.932	53	6.276	118	-0.158		
0.325	137.235	5.8	101.794	54	5.895	119	-0.19		
0.3333	137.172	6	100.688	55	5.547	120	-0.158		
0.35	137.046	6.2	99.55	56	5.198	121	-0.158		
0.3666	136.92	6.4	98.476	57	4.881	122	-0.19		
0.3833	136.793	6.6	97.401	58	4.596	123	-0.19		
0.4	136.667	6.8	96.326	59	4.342	124	-0.221		
0.4166	136.572	7	95.252	60	4.057	125	-0.19		
0.4333	136.446	7.2	94.177	61	3.803	126	-0.221		
0.45	136.32	7.4	93.134	62	3.55	127	-0.221		
0.4666	136.194	7.6	92.122	63	3.328	128	-0.221		
0.4833	136.067	7.8	91.079	64	3.138	129	-0.221		
0.5	135.941	8	90.067	65	2.948	130	-0.19		
0.5166	135.815	8.2	89.055	66	2.757	131	-0.221		
0.5333	135.688	8.4	88.044	67	2.567	132	-0.221		
0.55	135.562	8.6	87.063	68	2.377	133	-0.221		
0.5666	135.467	8.8	86.083	69	2.218	134	-0.253		
0.5833	135.341	9	85.103	70	2.06	135	-0.253		
0.6	135.215	9.2	84.154	71	1.933	136	-0.253		
0.6166	135.089	9.4	83.206	72	1.743	137	-0.253		
0.6333	134.962	9.6	82.289	73	1.616	138	-0.253		
0.65	134.868	9.8	81.372	74	1.489	139	-0.253		
0.6666	134.741	10	80.486	75	1.363	140	-0.221		
0.6833	134.615	11	76.058	76	1.268	141	-0.253		
0.7	134.489	12	71.978	77	1.141	142	-0.253		
0.7166	134.362	13	68.119	78	1.077	143	-0.285		
0.7333	134.268	14	64.417	79	0.982	144	-0.253		

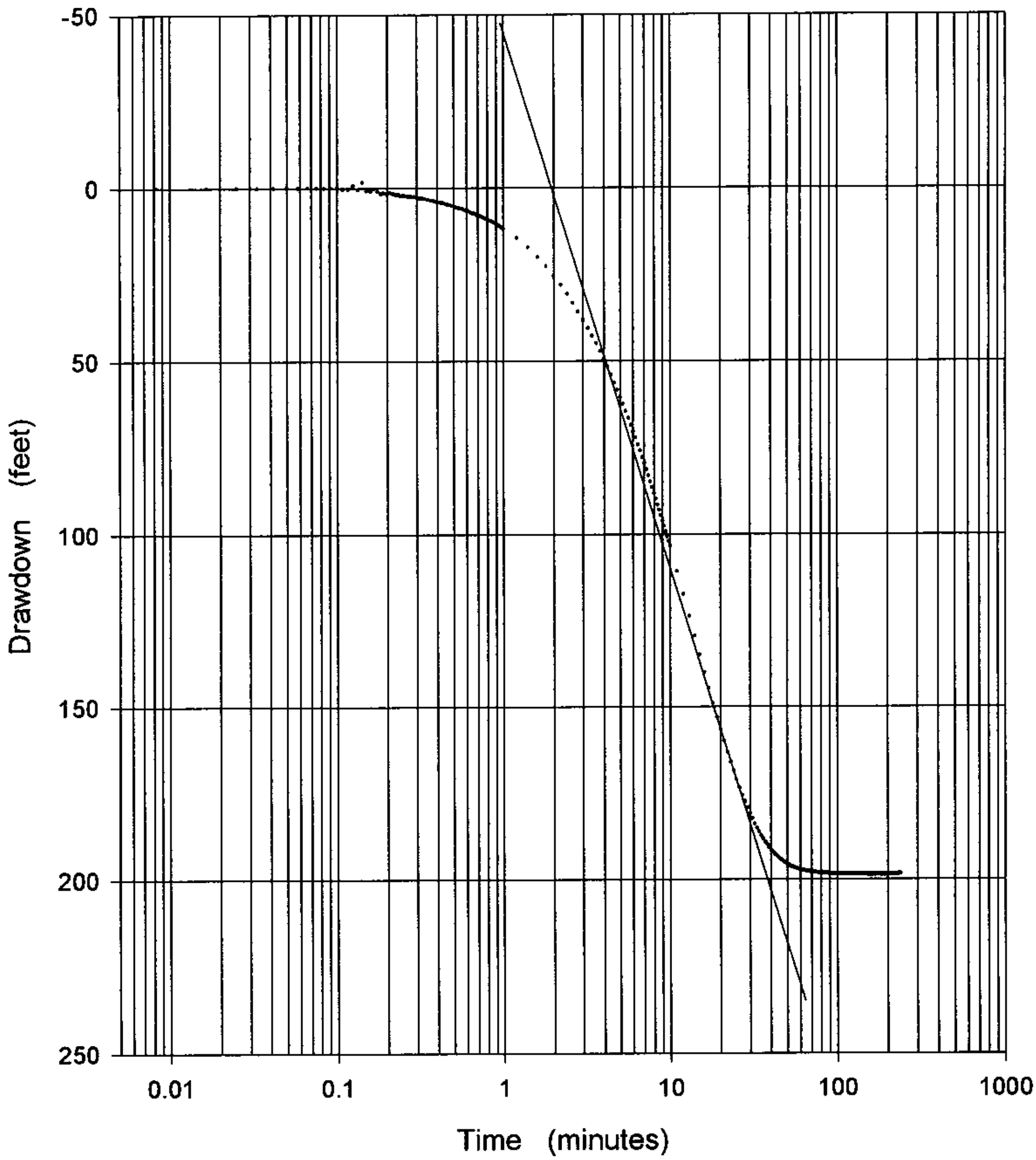
IW-1 Straddle Packer Test

2,724 – 2,740

COOPER CITY
IW 1
2724 - 2740
BACKGROUND, DRAWDOWN AND RECOVERY DATA

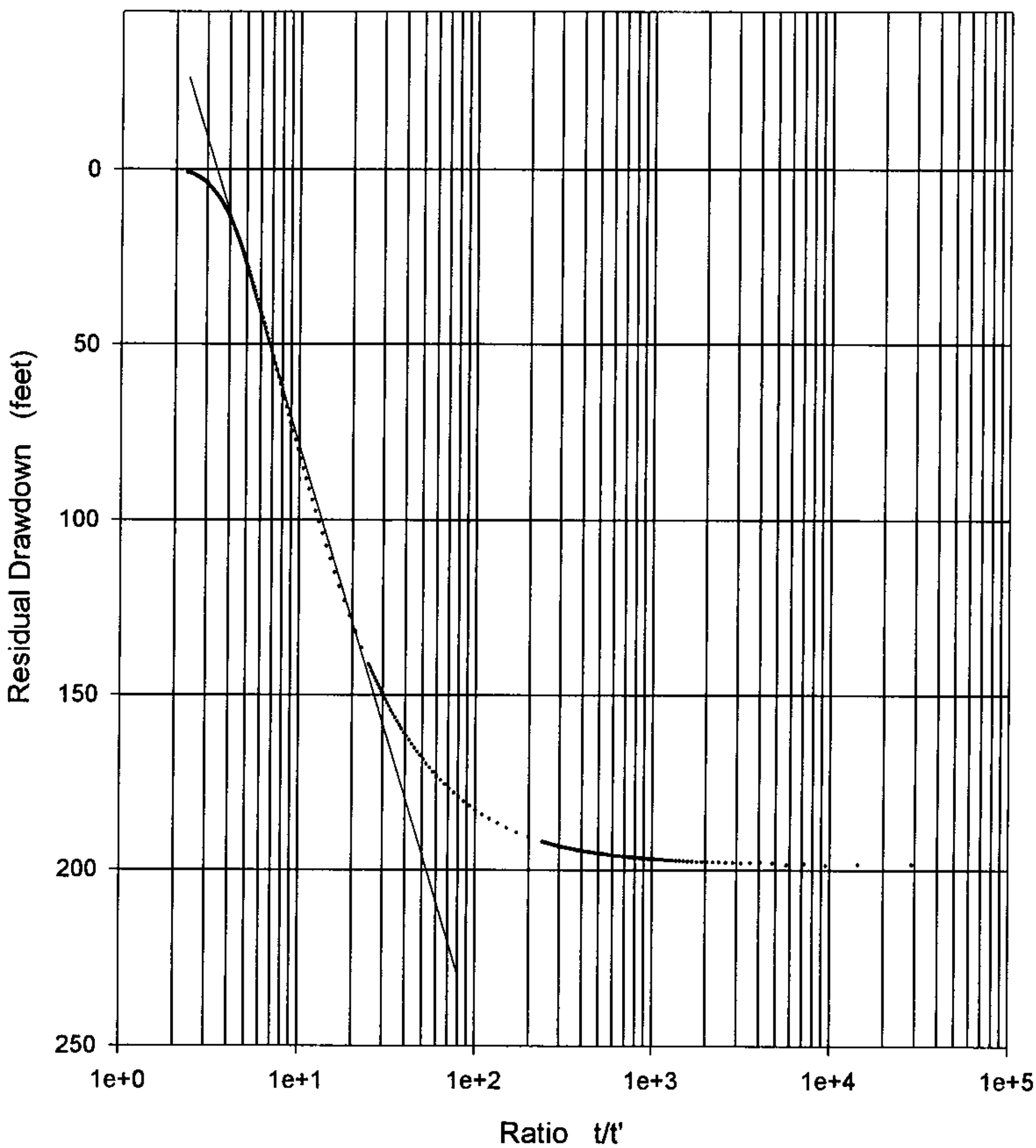


COOPER CITY
IW 1
2724 -2740
DRAWDOWN



Cooper - Jacob Non-Equilibrim Analysis

COOPER CITY
IW 1
2724 - 2740
RESIDUAL DRAWDOWN VS t/t'



COOPER CITY
IW 1
2724 - 2740
BACKGROUND DATA

Time	Water Level	Time	Water Level	Time	Water Level	Time	Water Level
0	0	0.75	0	15	-0.031	80	-0.063
0.0083	0	0.7666	0.031	16	-0.031	81	-0.063
0.0166	0	0.7833	0.031	17	-0.031	82	-0.063
0.025	0	0.8	0.031	18	-0.063	83	-0.063
0.0333	0	0.8166	0	19	-0.063	84	-0.063
0.0416	0	0.8333	0	20	-0.063	85	0
0.05	0	0.85	0	21	-0.063	86	-0.031
0.0583	0	0.8666	0	22	-0.063		
0.0666	0	0.8833	0	23	0		
0.075	0	0.9	0	24	-0.031		
0.0833	0	0.9166	0	25	-0.063		
0.0916	0	0.9333	0	26	-0.063		
0.1	0	0.95	0	27	-0.063		
0.1083	0	0.9666	0	28	-0.063		
0.1166	0	0.9833	0	29	-0.063		
0.125	0	1	0	30	-0.063		
0.1333	0	1.2	0	31	-0.063		
0.1416	0	1.4	0.031	32	-0.063		
0.15	0	1.6	0	33	-0.063		
0.1583	0	1.8	-0.031	34	-0.063		
0.1666	0	2	-0.031	35	-0.063		
0.175	0	2.2	-0.031	36	-0.063		
0.1833	0	2.4	-0.031	37	-0.063		
0.1916	0	2.6	-0.031	38	-0.031		
0.2	0	2.8	-0.031	39	-0.063		
0.2083	0	3	-0.031	40	-0.063		
0.2166	0	3.2	-0.031	41	-0.063		
0.225	0	3.4	0	42	-0.063		
0.2333	0	3.6	-0.031	43	-0.063		
0.2416	0	3.8	-0.031	44	-0.063		
0.25	0	4	0	45	-0.063		
0.2583	0	4.2	-0.031	46	-0.063		
0.2666	0	4.4	0	47	-0.063		
0.275	0	4.6	-0.031	48	-0.063		
0.2833	0	4.8	-0.031	49	-0.063		
0.2916	0	5	0	50	-0.063		
0.3	0	5.2	0	51	-0.063		
0.3083	0	5.4	0	52	-0.063		
0.3166	0	5.6	0	53	-0.031		
0.325	0	5.8	0	54	-0.063		
0.3333	0	6	0	55	-0.063		
0.35	0	6.2	-0.031	56	-0.063		
0.3666	0	6.4	-0.031	57	-0.063		
0.3833	0	6.6	0	58	-0.063		
0.4	0	6.8	0	59	-0.063		
0.4166	0	7	0	60	-0.063		
0.4333	0	7.2	0	61	-0.063		
0.45	0	7.4	0	62	-0.063		
0.4666	0	7.6	-0.031	63	-0.063		
0.4833	0	7.8	0	64	-0.063		
0.5	0	8	0	65	-0.063		
0.5166	0	8.2	0	66	-0.063		
0.5333	0	8.4	0	67	-0.063		
0.55	0	8.6	0	68	-0.063		
0.5666	0	8.8	-0.031	69	-0.063		
0.5833	0	9	0	70	-0.063		
0.6	0	9.2	0	71	-0.063		
0.6166	0	9.4	0	72	-0.063		
0.6333	0	9.6	0	73	-0.063		
0.65	0	9.8	0	74	-0.063		
0.6666	0	10	0	75	-0.031		
0.6833	0	11	-0.031	76	-0.063		
0.7	0	12	-0.063	77	-0.063		
0.7166	0	13	-0.063	78	-0.063		
0.7333	0	14	-0.063	79	-0.063		

COOPER CITY
IW 1
2724 - 2740
DRAWDOWN DATA

Time	Water Level	Time	Water Level	Time	Water Level	Time	Water Level
0	0	0.75	8.408	15	135.08	80	198.236
0.0083	0	0.7666	8.631	16	140.169	81	198.141
0.0166	-0.031	0.7833	8.916	17	144.751	82	198.33
0.025	-0.031	0.8	9.075	18	149.048	83	198.204
0.0333	-0.031	0.8166	9.297	19	153.155	84	198.236
0.0416	-0.031	0.8333	9.455	20	156.724	85	198.236
0.05	0	0.85	9.646	21	160.104	86	198.267
0.0583	-0.031	0.8666	9.868	22	163.389	87	198.299
0.0666	0	0.8833	10.027	23	166.262	88	198.267
0.075	0	0.9	10.312	24	168.883	89	198.362
0.0833	0	0.9166	10.566	25	171.409	90	198.425
0.0916	-0.031	0.9333	10.756	26	173.682	91	198.393
0.1	0	0.95	11.01	27	175.798	92	198.393
0.1083	0.285	0.9666	11.359	28	177.597	93	198.393
0.1166	0.285	0.9833	11.486	29	179.365	94	198.362
0.125	-0.761	1	11.708	30	181.038	95	198.425
0.1333	0.476	1.2	14.405	31	182.521	96	198.488
0.1416	-1.682	1.4	17.196	32	184.004	97	198.393
0.15	0.761	1.6	19.955	33	185.204	98	198.456
0.1583	0.92	1.8	22.62	34	186.308	99	198.425
0.1666	0.253	2	25.379	35	187.381	100	198.456
0.175	0.983	2.2	27.979	36	188.297	101	198.393
0.1833	1.65	2.4	30.642	37	189.275	102	198.393
0.1916	1.364	2.6	33.306	38	189.969	103	198.393
0.2	1.745	2.8	35.81	39	190.789	104	198.362
0.2083	1.269	3	38.22	40	191.484	105	198.362
0.2166	1.523	3.2	40.597	41	192.052	106	198.425
0.225	1.904	3.4	42.784	42	192.683	107	198.456
0.2333	1.935	3.6	44.939	43	193.093	108	198.551
0.2416	2.316	3.8	47.221	44	193.535	109	198.488
0.25	2.031	4	49.503	45	194.039	110	198.425
0.2583	2.221	4.2	51.658	46	194.323	111	198.519
0.2666	2.348	4.4	53.907	47	194.67	112	198.456
0.275	2.348	4.6	56.157	48	195.018	113	198.456
0.2833	2.602	4.8	58.184	49	195.27	114	198.393
0.2916	2.507	5	60.307	50	195.68	115	198.488
0.3	2.633	5.2	62.303	51	195.806	116	198.551
0.3083	2.887	5.4	64.393	52	196.09	117	198.425
0.3166	2.887	5.6	66.389	53	196.343	118	198.519
0.325	3.014	5.8	68.416	54	196.406	119	198.488
0.3333	3.046	6	70.379	55	196.627	120	198.551
0.35	3.3	6.2	72.089	56	196.753	121	198.519
0.3666	3.585	6.4	74.021	57	196.816	122	198.488
0.3833	3.776	6.6	75.794	58	197.1	123	198.519
0.4	4.03	6.8	77.821	59	197.1	124	198.583
0.4166	4.22	7	79.372	60	197.226	125	198.488
0.4333	4.315	7.2	81.177	61	197.415	126	198.551
0.45	4.601	7.4	82.981	62	197.352	127	198.519
0.4666	4.823	7.6	84.754	63	197.415	128	198.519
0.4833	5.013	7.8	86.368	64	197.51	129	198.425
0.5	5.236	8	88.109	65	197.573	130	198.456
0.5166	5.489	8.2	89.755	66	197.731	131	198.488
0.5333	5.711	8.4	91.496	67	197.762	132	198.583
0.55	5.87	8.6	93.015	68	197.762	133	198.551
0.5666	6.061	8.8	94.534	69	197.889	134	198.488
0.5833	6.346	9	96.211	70	197.92	135	198.583
0.6	6.568	9.2	97.73	71	197.983	136	198.583
0.6166	6.695	9.4	99.344	72	198.015	137	198.519
0.6333	7.044	9.6	100.768	73	197.952	138	198.519
0.65	7.266	9.8	102.16	74	198.109	139	198.551
0.6666	7.393	10	103.489	75	198.078	140	198.519
0.6833	7.584	11	110.86	76	198.046	141	198.583
0.7	7.869	12	117.565	77	198.141	142	198.583
0.7166	8.028	13	123.952	78	198.172	143	198.614
0.7333	8.282	14	129.611	79	198.236	144	198.614

COOPER CITY
IW 1
2724 - 2740
DRAWDOWN DATA

Time	Water Level	Time	Water Level
145	198.551	210	198.583
146	198.614	211	198.551
147	198.583	212	198.583
148	198.551	213	198.583
149	198.646	214	198.519
150	198.614	215	198.519
151	198.551	216	198.583
152	198.677	217	198.583
153	198.646	218	198.583
154	198.551	219	198.519
155	198.614	220	198.519
156	198.646	221	198.519
157	198.677	222	198.551
158	198.709	223	198.551
159	198.646	224	198.551
160	198.646	225	198.519
161	198.709	226	198.583
162	198.583	227	198.646
163	198.583	228	198.646
164	198.646	229	198.583
165	198.614	230	198.488
166	198.614	231	198.519
167	198.677	232	198.519
168	198.646	233	198.456
169	198.614	234	198.33
170	198.614	235	198.236
171	198.551	236	198.299
172	198.614	237	198.267
173	198.551	238	198.33
174	198.519	239	198.33
175	198.551		
176	198.614		
177	198.551		
178	198.519		
179	198.583		
180	198.551		
181	198.646		
182	198.551		
183	198.583		
184	198.456		
185	198.519		
186	198.646		
187	198.583		
188	198.583		
189	198.614		
190	198.551		
191	198.709		
192	198.551		
193	198.583		
194	198.583		
195	198.583		
196	198.551		
197	198.583		
198	198.646		
199	198.583		
200	198.519		
201	198.677		
202	198.646		
203	198.614		
204	198.583		
205	198.614		
206	198.519		
207	198.614		
208	198.583		
209	198.519		

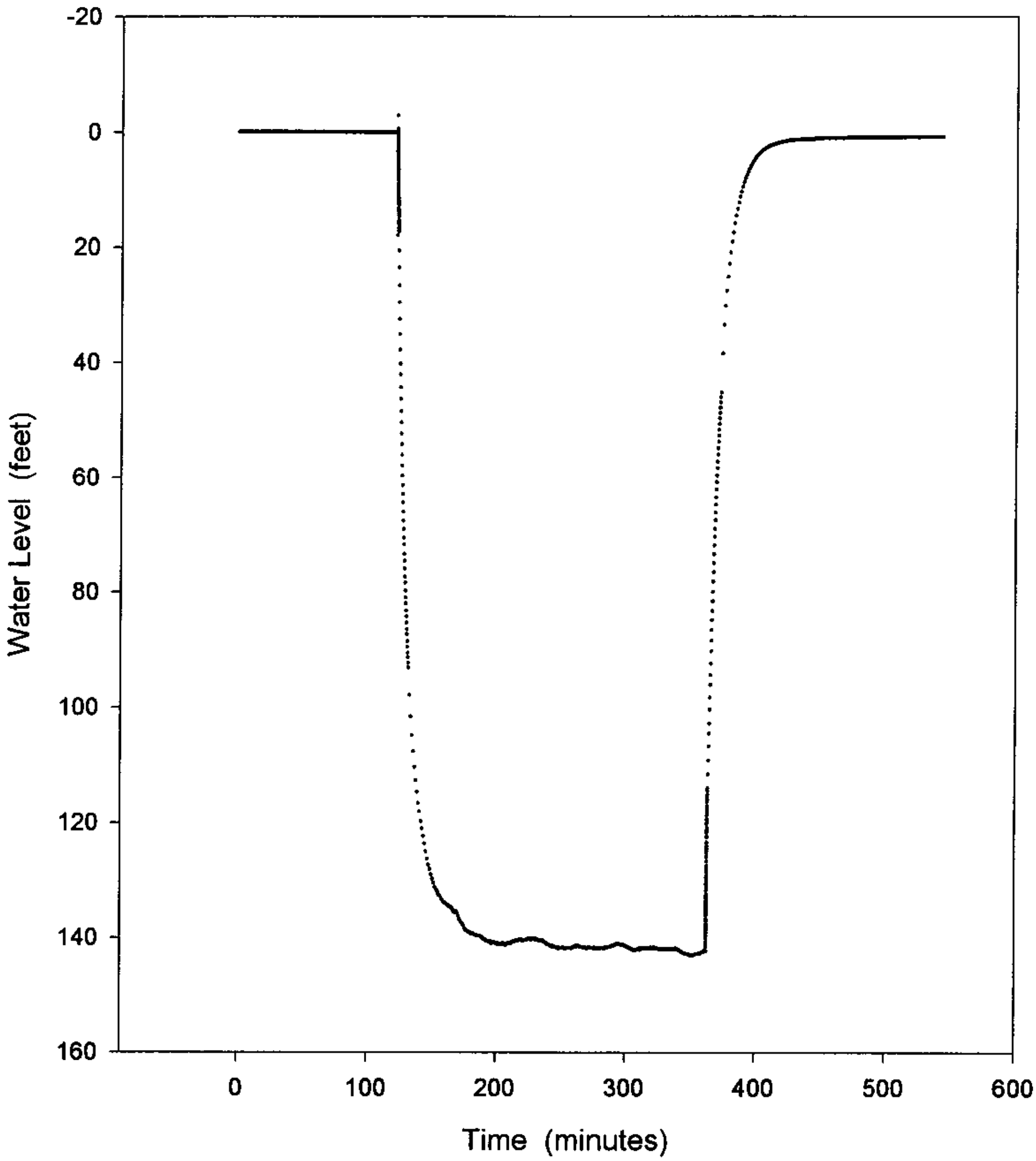
COOPER CITY
IW 1
2724 - 2740
RECOVERY DATA

Time	Water Level	Time	Water Level	Time	Water Level	Time	Water Level	Time	Water Level
0	198.299	0.75	193.535	15	119.146	80	13.294	145	1.967
0.0083	198.362	0.7666	193.408	16	115.13	81	12.882	146	1.935
0.0166	198.393	0.7833	193.314	17	111.303	82	12.501	147	1.872
0.025	198.677	0.8	193.188	18	107.696	83	12.057	148	1.84
0.0333	198.204	0.8166	193.093	19	104.027	84	11.645	149	1.777
0.0416	198.614	0.8333	192.998	20	100.768	85	11.327	150	1.713
0.05	197.983	0.85	192.904	21	97.509	86	10.947	151	1.745
0.0583	197.762	0.8666	192.777	22	94.313	87	10.661	152	1.65
0.0666	197.952	0.8833	192.651	23	91.243	88	10.28	153	1.586
0.075	197.983	0.9	192.556	24	88.268	89	9.931	154	1.555
0.0833	197.857	0.9166	192.462	25	85.324	90	9.614	155	1.523
0.0916	197.857	0.9333	192.336	26	82.538	91	9.329	156	1.459
0.1	197.731	0.95	192.241	27	79.815	92	9.075	157	1.428
0.1083	197.762	0.9666	192.115	28	77.219	93	8.821	158	1.396
0.1166	197.699	0.9833	192.02	29	74.718	94	8.567	159	1.364
0.125	197.636	1	191.925	30	72.343	95	8.313	160	1.364
0.1333	197.731	1.2	190.569	31	70.158	96	8.059	161	1.301
0.1416	197.541	1.4	189.275	32	67.782	97	7.901	162	1.269
0.15	197.478	1.6	188.013	33	65.534	98	7.615	163	1.237
0.1583	197.415	1.8	186.75	34	63.38	99	7.393	164	1.205
0.1666	197.352	2	185.488	35	61.289	100	7.171	165	1.174
0.175	197.321	2.2	184.225	36	59.293	101	6.981	166	1.142
0.1833	197.226	2.4	182.994	37	57.329	102	6.759	167	1.11
0.1916	197.226	2.6	181.7	38	55.428	103	6.568	168	1.079
0.2	197.131	2.8	180.469	39	53.59	104	6.378	169	1.047
0.2083	197.1	3	179.238	40	51.911	105	6.187	170	1.047
0.2166	197.005	3.2	178.039	41	50.137	106	6.029	171	1.015
0.225	196.974	3.4	176.839	42	48.52	107	5.838	172	0.983
0.2333	196.911	3.6	175.64	43	46.936	108	5.68	173	0.952
0.2416	196.847	3.8	174.44	44	45.415	109	5.521	174	0.92
0.25	196.816	4	173.272	45	43.925	110	5.394	175	0.888
0.2583	196.721	4.2	172.104	46	42.499	111	5.204	176	0.856
0.2666	196.69	4.4	170.936	47	41.199	112	5.045	177	0.825
0.275	196.627	4.6	169.767	48	39.9	113	4.918	178	0.793
0.2833	196.595	4.8	168.631	49	38.6	114	4.791	179	0.793
0.2916	196.532	5	167.494	50	37.3	115	4.633	180	0.793
0.3	196.469	5.2	166.357	51	36.032	116	4.506		
0.3083	196.406	5.4	165.22	52	34.859	117	4.379		
0.3166	196.374	5.6	164.115	53	33.654	118	4.252		
0.325	196.311	5.8	162.978	54	32.481	119	4.125		
0.3333	196.248	6	161.873	55	31.403	120	4.03		
0.35	196.122	6.2	160.799	56	30.325	121	3.903		
0.3666	196.027	6.4	159.693	57	29.311	122	3.776		
0.3833	195.932	6.6	158.62	58	28.296	123	3.649		
0.4	195.806	6.8	157.546	59	27.345	124	3.554		
0.4166	195.712	7	156.472	60	26.425	125	3.459		
0.4333	195.585	7.2	155.398	61	25.537	126	3.363		
0.45	195.459	7.4	154.355	62	24.713	127	3.268		
0.4666	195.365	7.6	153.313	63	23.825	128	3.173		
0.4833	195.238	7.8	152.27	64	22.968	129	3.078		
0.5	195.144	8	151.228	65	22.176	130	3.046		
0.5166	195.049	8.2	150.154	66	21.414	131	2.951		
0.5333	194.954	8.4	149.143	67	20.717	132	2.824		
0.55	194.828	8.6	148.163	68	20.019	133	2.76		
0.5666	194.734	8.8	147.152	69	19.321	134	2.665		
0.5833	194.607	9	146.173	70	18.687	135	2.602		
0.6	194.513	9.2	145.13	71	18.021	136	2.538		
0.6166	194.418	9.4	144.213	72	17.481	137	2.443		
0.6333	194.292	9.6	143.234	73	16.847	138	2.38		
0.65	194.197	9.8	142.254	74	16.276	139	2.316		
0.6666	194.071	10	141.338	75	15.705	140	2.284		
0.6833	193.976	11	136.597	76	15.198	141	2.253		
0.7	193.85	12	131.919	77	14.722	142	2.157		
0.7166	193.724	13	127.525	78	14.214	143	2.094		
0.7333	193.629	14	123.257	79	13.77	144	2.031		

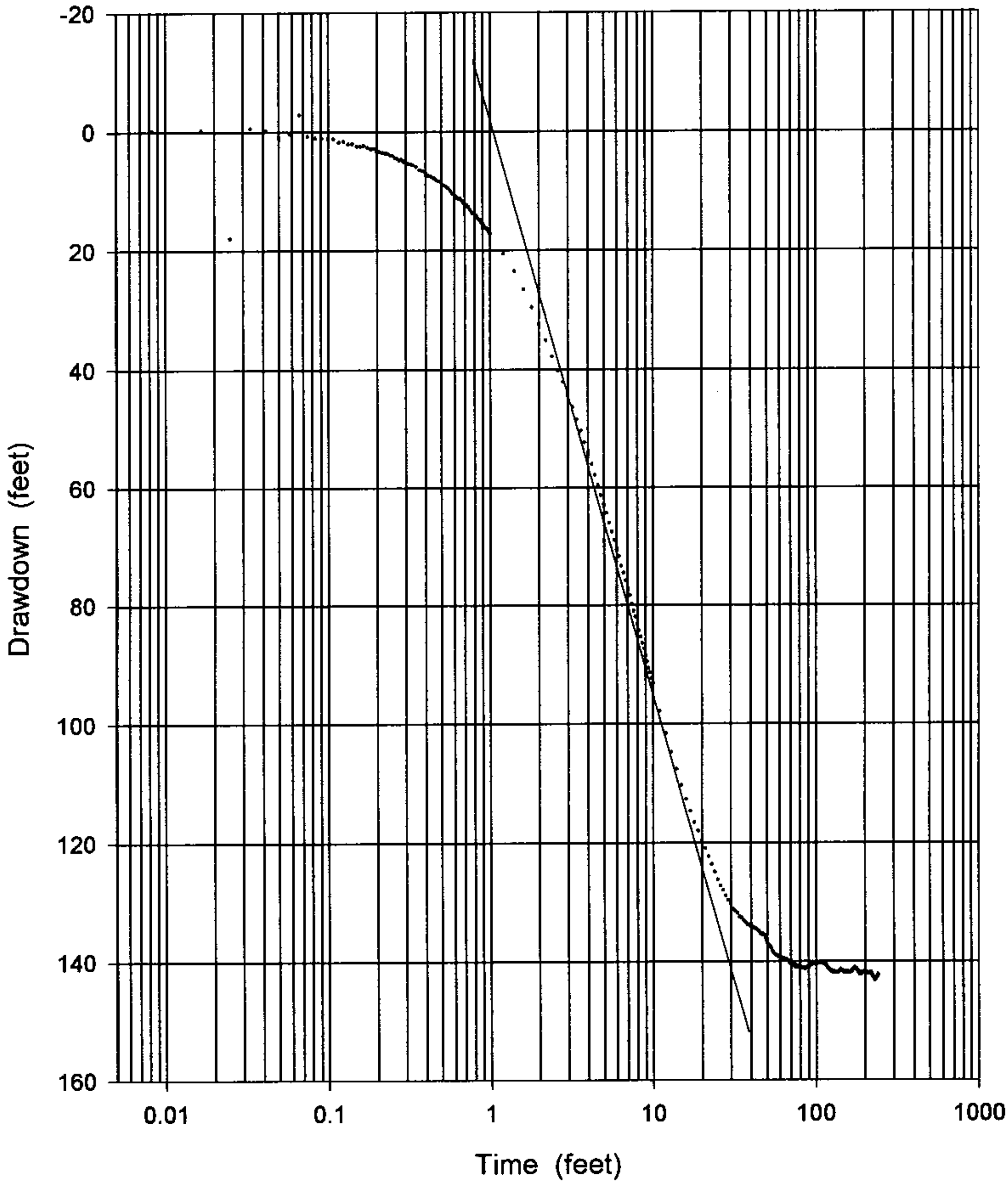
IW-1 Straddle Packer Test

2,794 – 2,810

COOPER CITY
IW 1
2794 - 2810
BACKGROUND, DRAWDOWN AND RECOVERY DATA

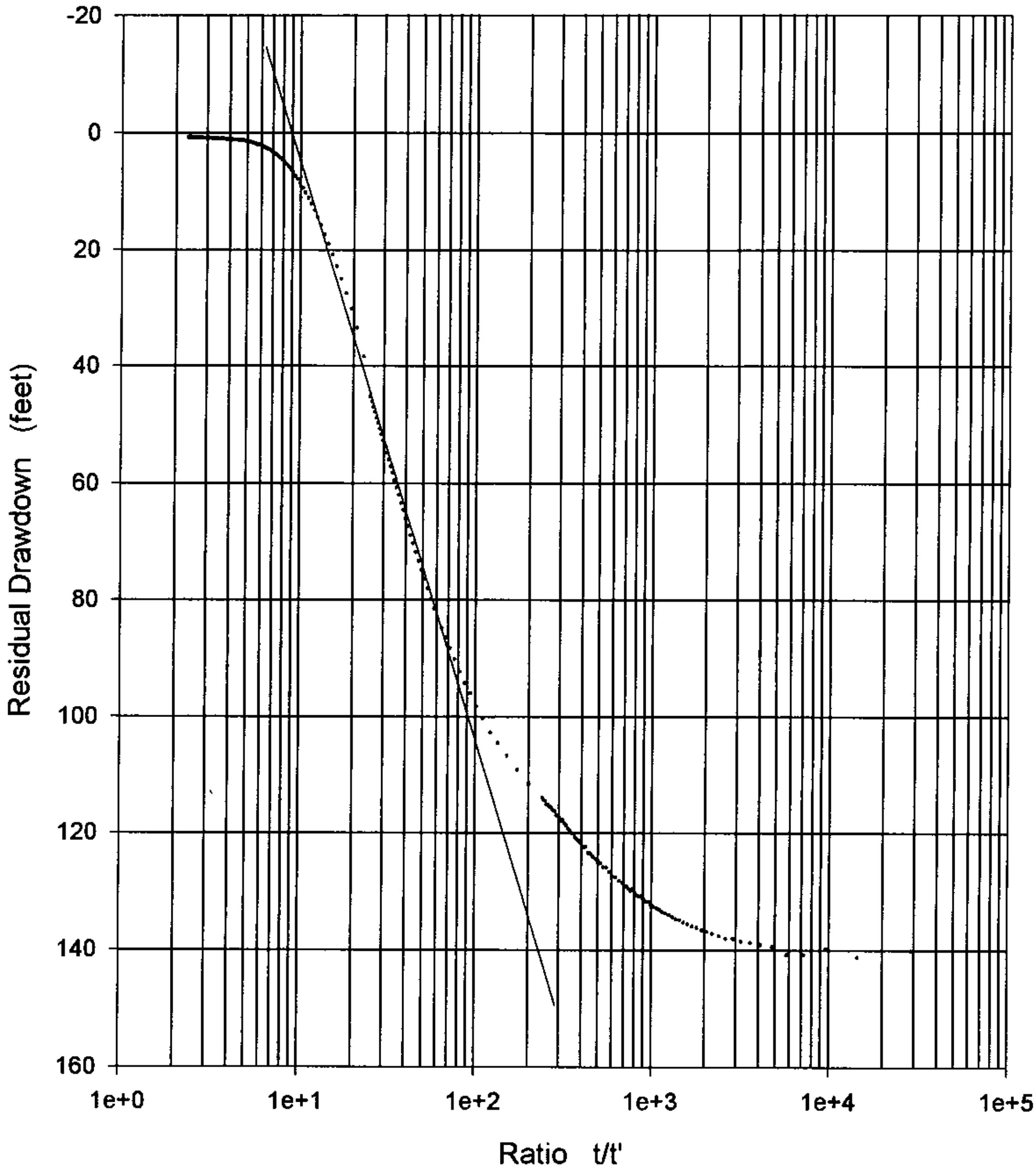


COOPER CITY
IW 1
2794 - 2810
DRAWDOWN



Cooper - Jacob Non-Equilibrim Analysis

COOPER CITY
IW 1
2794 - 2810
RESIDUAL DRAWDOWN



COOPER CITY
IW 1
2794 - 2810
DRAWDOWN DATA

Time	Water Level	Time	Water Level	Time	Water Level	Time	Water Level
0	-0.19	0.75	13.121	15	110.387	80	141.021
0.0083	-0.19	0.7666	13.501	16	112.694	81	141.179
0.0166	-0.253	0.7833	13.786	17	114.684	82	141.084
0.025	17.937	0.8	13.881	18	116.611	83	141.21
0.0333	-0.538	0.8166	14.135	19	118.033	84	141.052
0.0416	-0.158	0.8333	14.515	20	119.738	85	141.115
0.05	0.982	0.85	14.864	21	121.002	86	141.305
0.0583	0.38	0.8666	14.927	22	122.36	87	141.115
0.0666	-2.853	0.8833	15.339	23	123.686	88	141.052
0.075	0.792	0.9	15.561	24	125.013	89	141.052
0.0833	1.109	0.9166	15.941	25	126.308	90	141.021
0.0916	1.109	0.9333	16.226	26	127.35	91	140.8
0.1	1.172	0.95	16.321	27	128.076	92	140.737
0.1083	1.204	0.9666	16.67	28	129.055	93	140.674
0.1166	1.806	0.9833	17.145	29	129.781	94	140.579
0.125	1.711	1	17.303	30	130.444	95	140.453
0.1333	2.123	1.2	20.567	31	131.202	96	140.484
0.1416	2.092	1.4	23.513	32	131.613	97	140.295
0.15	2.504	1.6	26.617	33	131.96	98	140.326
0.1583	2.472	1.8	29.594	34	132.592	99	140.516
0.1666	2.345	2	32.54	35	132.749	100	140.453
0.175	2.662	2.2	35.168	36	133.223	101	140.453
0.1833	2.948	2.4	37.86	37	133.539	102	140.358
0.1916	2.884	2.6	40.266	38	133.886	103	140.358
0.2	3.328	2.8	42.134	39	133.949	104	140.232
0.2083	3.391	3	44.414	40	134.139	105	140.2
0.2166	3.581	3.2	46.408	41	134.328	106	140.389
0.225	3.613	3.4	48.529	42	134.517	107	140.137
0.2333	3.772	3.6	50.46	43	134.581	108	140.295
0.2416	3.994	3.8	52.422	44	134.865	109	140.137
0.25	4.057	4	54.226	45	135.086	110	140.421
0.2583	4.374	4.2	56.094	46	135.528	111	140.421
0.2666	4.469	4.4	57.929	47	135.37	112	140.484
0.275	4.818	4.6	59.67	48	135.622	113	140.453
0.2833	4.659	4.8	61.347	49	136.159	114	140.61
0.2916	4.976	5	62.929	50	136.791	115	140.516
0.3	5.23	5.2	64.352	51	137.201	116	140.737
0.3083	5.293	5.4	66.029	52	137.485	117	140.895
0.3166	5.483	5.6	67.611	53	137.769	118	141.147
0.325	5.515	5.8	69.035	54	138.274	119	141.21
0.3333	5.61	6	70.585	55	138.685	120	141.273
0.35	5.927	6.2	71.787	56	138.811	121	141.431
0.3666	6.466	6.4	73.4	57	139.032	122	141.589
0.3833	6.624	6.6	74.602	58	139.064	123	141.494
0.4	6.941	6.8	75.93	59	139.316	124	141.557
0.4166	7.353	7	77.354	60	139.285	125	141.747
0.4333	7.575	7.2	78.366	61	139.411	126	141.715
0.45	7.829	7.4	79.789	62	139.506	127	141.873
0.4666	8.177	7.6	80.959	63	139.537	128	141.778
0.4833	8.367	7.8	81.971	64	139.695	129	141.81
0.5	8.431	8	83.236	65	139.663	130	141.778
0.5166	9.033	8.2	84.248	66	139.727	131	141.778
0.5333	9.255	8.4	85.354	67	139.853	132	141.873
0.55	9.508	8.6	86.429	68	139.979	133	141.81
0.5666	9.92	8.8	87.346	69	140.326	134	141.81
0.5833	10.427	9	88.516	70	140.326	135	141.81
0.6	10.522	9.2	89.528	71	140.484	136	141.841
0.6166	10.871	9.4	90.571	72	140.61	137	141.873
0.6333	11.283	9.6	91.33	73	140.674	138	141.747
0.65	11.283	9.8	92.31	74	140.61	139	141.557
0.6666	11.6	10	93.132	75	141.021	140	141.494
0.6833	11.98	11	97.842	76	140.831	141	141.557
0.7	12.392	12	101.634	77	140.831	142	141.4
0.7166	12.36	13	104.858	78	140.958	143	141.526
0.7333	12.677	14	107.67	79	141.115	144	141.557

COOPER CITY
IW 1
2794 - 2810
DRAWDOWN DATA

Time	Water Level	Time	Water Level
145	141.652	210	142.062
146	141.684	211	141.968
147	141.684	212	141.936
148	141.778	213	142.062
149	141.968	214	141.968
150	141.778	215	141.968
151	141.747	216	142.062
152	141.841	217	141.999
153	141.841	218	141.873
154	141.841	219	142.031
155	141.747	220	142.126
156	141.905	221	142.283
157	141.873	222	142.473
158	141.81	223	142.662
159	141.873	224	142.757
160	141.841	225	142.757
161	141.81	226	142.852
162	141.841	227	142.852
163	141.778	228	142.978
164	141.841	229	143.104
165	141.684	230	143.167
166	141.652	231	143.104
167	141.621	232	143.041
168	141.494	233	142.883
169	141.463	234	142.852
170	141.4	235	142.852
171	141.242	236	142.694
172	141.115	237	142.725
173	141.115	238	142.536
174	141.147	239	142.536
175	141.21	240	142.22
176	141.273	241	142.347
177	141.336		
178	141.305		
179	141.494		
180	141.621		
181	141.621		
182	141.778		
183	141.905		
184	142.062		
185	142.126		
186	142.252		
187	142.157		
188	142.157		
189	141.905		
190	142.094		
191	141.841		
192	141.873		
193	141.873		
194	141.873		
195	141.905		
196	141.841		
197	141.873		
198	141.778		
199	141.778		
200	141.81		
201	141.747		
202	141.873		
203	141.873		
204	141.968		
205	141.905		
206	141.999		
207	141.968		
208	141.999		
209	142.031		

COOPER CITY
IW 1
2794 - 2810
RECOVERY DATA

Time	Water Level	Time	Water Level	Time	Water Level	Time	Water Level	Time	Water Level
0	141.589	0.75	118.348	15	25.065	80	1.141	145	0.855
0.0083	140.137	0.7666	117.748	16	22.848	81	1.141	146	0.855
0.0166	141.273	0.7833	117.875	17	20.852	82	1.109	147	0.855
0.025	139.79	0.8	117.432	18	19.014	83	1.109	148	0.855
0.0333	140.8	0.8166	117.148	19	17.43	84	1.109	149	0.824
0.0416	140.8	0.8333	116.99	20	15.878	85	1.077	150	0.855
0.05	139.506	0.85	116.295	21	14.547	86	1.077	151	0.855
0.0583	139.095	0.8666	116.106	22	13.343	87	1.077	152	0.824
0.0666	138.748	0.8833	115.916	23	12.265	88	1.014	153	0.824
0.075	138.527	0.9	115.474	24	11.251	89	1.014	154	0.824
0.0833	138.117	0.9166	115.505	25	10.332	90	1.046	155	0.824
0.0916	138.085	0.9333	115.126	26	9.508	91	1.046	156	0.824
0.1	137.643	0.95	115.095	27	8.716	92	1.014	157	0.824
0.1083	137.233	0.9666	114.463	28	8.019	93	1.014	158	0.792
0.1166	136.885	0.9833	114.4	29	7.448	94	1.014	159	0.824
0.125	136.633	1	113.957	30	6.846	95	1.014	160	0.824
0.1333	136.191	1.2	111.588	31	6.339	96	1.014	161	0.855
0.1416	135.938	1.4	109.187	32	5.864	97	0.982	162	0.824
0.15	135.654	1.6	106.754	33	5.42	98	0.982	163	0.824
0.1583	135.307	1.8	104.573	34	5.039	99	1.046	164	0.824
0.1666	134.896	2	102.804	35	4.691	100	0.982	165	0.824
0.175	134.77	2.2	100.37	36	4.374	101	0.982	166	0.792
0.1833	134.423	2.4	98.284	37	4.089	102	0.982	167	0.824
0.1916	134.044	2.6	96.04	38	3.835	103	0.982	168	0.792
0.2	133.728	2.8	94.365	39	3.581	104	0.982	169	0.792
0.2083	133.476	3	92.373	40	3.391	105	0.982	170	0.792
0.2166	133.128	3.2	90.255	41	3.169	106	0.982	171	0.792
0.225	132.876	3.4	88.358	42	2.979	107	0.951	172	0.792
0.2333	132.655	3.6	86.493	43	2.852	108	0.951	173	0.824
0.2416	132.37	3.8	84.785	44	2.694	109	0.982	174	0.792
0.25	131.834	4	83.236	45	2.567	110	0.919	175	0.792
0.2583	131.771	4.2	81.528	46	2.44	111	0.919	176	0.792
0.2666	131.36	4.4	79.947	47	2.345	112	0.919	177	0.792
0.275	130.855	4.6	78.144	48	2.218	113	0.919	178	0.792
0.2833	130.855	4.8	76.5	49	2.155	114	0.919	179	0.792
0.2916	130.697	5	74.887	50	2.06	115	0.919	180	0.824
0.3	130.223	5.2	73.368	51	1.997	116	0.919		
0.3083	129.592	5.4	71.85	52	1.965	117	0.919		
0.3166	129.939	5.6	70.332	53	1.87	118	0.887		
0.325	129.56	5.8	68.971	54	1.806	119	0.887		
0.3333	129.213	6	67.421	55	1.743	120	0.887		
0.35	128.581	6.2	66.061	56	1.68	121	0.919		
0.3666	128.202	6.4	64.669	57	1.648	122	0.951		
0.3833	127.634	6.6	63.435	58	1.616	123	0.919		
0.4	127.476	6.8	62.043	59	1.616	124	0.887		
0.4166	126.718	7	60.745	60	1.553	125	0.887		
0.4333	125.96	7.2	59.575	61	1.426	126	0.887		
0.45	125.897	7.4	58.277	62	1.394	127	0.887		
0.4666	125.202	7.6	57.17	63	1.363	128	0.887		
0.4833	124.855	7.8	55.967	64	1.363	129	0.919		
0.5	124.476	8	54.828	65	1.331	130	0.887		
0.5166	124.097	8.2	53.72	66	1.331	131	0.887		
0.5333	123.56	8.4	52.676	67	1.299	132	0.887		
0.55	123.465	8.6	51.663	68	1.299	133	0.887		
0.5666	122.391	8.8	50.682	69	1.299	134	0.887		
0.5833	122.518	9	49.7	70	1.267	135	0.887		
0.6	121.854	9.2	48.782	71	1.236	136	0.855		
0.6166	121.444	9.4	47.864	72	1.236	137	0.855		
0.6333	121.16	9.6	46.946	73	1.204	138	0.855		
0.65	120.812	9.8	46.06	74	1.204	139	0.887		
0.6666	120.18	10	45.205	75	1.204	140	0.855		
0.6833	120.054	11	38.43	76	1.172	141	0.855		
0.7	119.549	12	33.49	77	1.204	142	0.855		
0.7166	119.296	13	30.165	78	1.172	143	0.855		
0.7333	118.727	14	27.504	79	1.141	144	0.855		

Packer Test
Procedures and Quality Control

Packer Testing and Quality Control Procedures

General

Check Pipe tally to make sure that packer or packers are set at correct depth.

Note date and time on all recorded data.

Observe the pressuring up of the packer or packers, noting pressure applied to packers.

Monitor and record pressure on packers periodically during all phases of test.

Identify elevation benchmark.

Development

Note time of start of development.

Note method of development (air lift, pumping, etc.)

Check and record conductivity of development fluid initially and thereafter (maximum every 15 minutes).

Visually observe and record turbidity of development fluid (maximum every 15 minutes).

Visually observe and estimate fluid development rate (maximum every 15 minutes).

Continue development until conductivity has stabilized for 45 to 60 minutes.

Background

Observe and record the installation depths of the transducers (inside drill pipe and annulus).

Check and record transducer readings (maximum every 15 minutes).

Official background does not start until stabilization from development has occurred.

Continue recording background for 2 hours.

Pumping Test

Prior to starting pumping measure and record water level in drill pipe and annulus (referenced to a known benchmark).

Observe and record water levels in drill pipe and annulus (maximum every 10 minutes).

Observe and record the pumping rate (maximum every 10 minutes).

Pumping shall continue for a minimum of 4 hours.

Just prior to ending pumping observe water sample collection in accordance with water sampling checklist.

After stopping pump observe and record total volume of water pumped.

Recovery

Observe and record water levels in drill pipe and annulus (maximum every 10 minutes).

Recovery shall continue for a minimum of 3 hours.

APPENDIX I

PACKER TEST
WATER QUALITY LABORATORY RESULTS

INTAKE #: 540934

Sanders Laboratories
Environmental Testing Services

Date: *13-Feb-01*

Youngquist Brothers, Inc.
15465 Pine Ridge Road
Fort Myers, FL 33908-

Project Name:	Straddle Packer
Project Location:	Cooper City
Job ID:	
Sample Supply:	Ground Water
Collector:	client
Sample Received Date/Time:	1/11/01 14:30

Lab ID	Sample ID	Type	Sample Date/Time					
Analysis			**Method**	**Result**	**D. L.**	**Unit**	**Analysis Date/Time**	**LabID:**
N010434	**1660-1710**	**GRB**	**1/11/01**					
Total Dissolved Solids			EPA 160.1	4,500	5	mg/L	1/12/01	E84380
Chloride			SM4500Cl-B	2,400	100	mg/L	1/15/01	E84380
Sulfate			EPA 375.4	478	20	mg/L	1/15/01	E84380
Ammonia-N			EPA 350.1	0.57	0.02	mg/L	1/19/01	E83012
Nitrogen, Total Kjeldahl			EPA 351.2	0.72	0.05	mg/L	2/8/01	E83012
Conductivity			EPA 120.1	7,190	1.0	umhos/cm	1/15/01	E84380
N010435	**1660-1710**	**GRB**	**1/11/01**					
Total Dissolved Solids			EPA 160.1	5,090	5	mg/L	1/12/01	E84380
Chloride			SM4500Cl-B	2,370	100	mg/L	1/15/01	E84380
Sulfate			EPA 375.4	469	20	mg/L	1/15/01	E84380
Ammonia-N			EPA 350.1	0.49	0.02	mg/L	1/19/01	E83012
Nitrogen, Total Kjeldahl			EPA 351.2	0.54	0.05	mg/L	2/8/01	E83012
Conductivity			EPA 120.1	7,150	1.0	umhos/cm	1/15/01	E84380
N010436	**1660-1710**	**GRB**	**1/11/01**					
Total Dissolved Solids			EPA 160.1	5,170	5	mg/L	1/12/01	E84380
Chloride			SM4500Cl-B	2,350	100	mg/L	1/15/01	E84380
Sulfate			EPA 375.4	485	20	mg/L	1/15/01	E84380
Ammonia-N			EPA 350.1	0.53	0.02	mg/L	1/19/01	E83012

HRS Certification#'s E84380(Nokomis) E85457(Ft. Myers)

1050 Endeavor Ct. • Nokomis, FL 34275 • Phone: (941) 488-8103 • (800) 255-3108 • Fax: (941) 484-6774

Lab ID	Sample ID	Type	Sample Date/Time					
Analysis			**Method**	**Result**	**D. L.**	**Unit**	**Analysis Date/Time**	**LabID:**
Nitrogen, Total Kjeldahl			EPA 351.2	0.74	0.05	mg/L	2/8/01	E83012
Conductivity			EPA 120.1	7,120	1.0	umhos/cm	1/15/01	E84380
N010437	**1660-1710**	**GRB**	**1/11/01**					
Total Dissolved Solids			EPA 160.1	4,830	5	mg/L	1/12/01	E84380
Chloride			SM4500Cl-B	2,370	100	mg/L	1/15/01	E84380
Sulfate			EPA 375.4	485	20	mg/L	1/15/01	E84380
Ammonia-N			EPA 350.1	0.52	0.02	mg/L	1/19/01	E83012
Nitrogen, Total Kjeldahl			EPA 351.2	0.55	0.05	mg/L	1/30/01	E83012
Conductivity			EPA 120.1	7,140	1.0	umhos/cm	1/15/01	E84380
N010438	**1660-1710**	**GRB**	**1/11/01**					
Total Dissolved Solids			EPA 160.1	4,780	5	mg/L	1/12/01	E84380
Chloride			SM4500Cl-B	2,370	100	mg/L	1/15/01	E84380
Sulfate			EPA 375.4	485	20	mg/L	1/15/01	E84380
Ammonia-N			EPA 350.1	0.53	0.02	mg/L	1/19/01	E83012
Nitrogen, Total Kjeldahl			EPA 351.2	0.57	0.05	mg/L	2/8/01	E83012
Conductivity			EPA 120.1	7,110	1.0	umhos/cm	1/15/01	E84380
N010439	**1660-1710**	**GRB**	**1/11/01**					
Total Dissolved Solids			EPA 160.1	4,820	5	mg/L	1/12/01	E84380
Chloride			SM4500Cl-B	2,320	100	mg/L	1/15/01	E84380
Sulfate			EPA 375.4	495	20	mg/L	1/15/01	E84380
Ammonia-N			EPA 350.1	0.53	0.02	mg/L	1/19/01	E83012
Nitrogen, Total Kjeldahl			EPA 351.2	0.59	0.05	mg/L	2/8/01	E83012
Conductivity			EPA 120.1	7,090	1.0	umhos/cm	1/15/01	E84380
N010440	**1660-1710**	**GRB**	**1/11/01**					
Total Dissolved Solids			EPA 160.1	4,660	5	mg/L	1/12/01	E84380
Chloride			SM4500Cl-B	2,400	100	mg/L	1/15/01	E84380
Sulfate			EPA 375.4	463	20	mg/L	1/15/01	E84380
Ammonia-N			EPA 350.1	0.52	0.02	mg/L	1/19/01	E83012
Nitrogen, Total Kjeldahl			EPA 351.2	0.61	0.05	mg/L	2/8/01	E83012
Conductivity			EPA 120.1	7,120	1.0	umhos/cm	1/15/01	E84380

Lab ID	Sample ID	Type	Sample Date/Time					
Analysis			**Method**	**Result**	**D. L.**	**Unit**	**Analysis Date/Time**	**LabID:**
N010441	**1660-1710**	**GRB**	**1/11/01**					
Total Dissolved Solids			EPA 160.1	4,670	5	mg/L	1/12/01	E84380
Chloride			SM4500Cl-B	2,400	100	mg/L	1/15/01	E84380
Sulfate			EPA 375.4	471	20	mg/L	1/15/01	E84380
Ammonia-N			EPA 350.1	0.52	0.02	mg/L	1/19/01	E83012
Nitrogen, Total Kjeldahl			EPA 351.2	0.63	0.05	mg/L	2/8/01	E83012
Conductivity			EPA 120.1	7,170	1.0	umhos/cm	1/15/01	E84380

Approved by:

Debra A. Sanders

Debra Sanders
Laboratory Director

Comments:

HRS Certification#'s E84380(Nokomis) E85457(Ft. Myers)

Sanders Laboratories
Environmental Testing Services

CHAIN-OF-CUSTODY RECORD

4780

PROJECT # 540934

Page ____ of ____

Client: Cooper City (YQ)
Address:
Phone: Fax:

Report To: ED McCullers
Bill To:
P.O. #:
Project Name: Straddle Packers
Project Location:

Sample Supply: GW
Customer Type:
Field Report #:
Kit #:
REQUESTED DUE DATE: 1/15/01

Sampled By (PRINT): client
Sampler Signature:

PRESERVATIVES: 4°C, UNPRESERVED, H_2SO_4, HNO_3, HCL

ANALYSES REQUEST: TDS, Cl, SO4; TKN, NH3; COND

Bottle #	SAMPLE DESCRIPTION	Sample DATE	Sample TIME	Sample TYPE	TDS, Cl, SO4	TKN, NH3	COND	Sample ID #
1	Cooper City sample depth: 1660-1710	1/11/01		G	X	X	X	N01043
2	↓	↓		↓	↓	↓	↓	N01043
3	↓	↓		↓	↓	↓	↓	N01043
4	↓	↓		↓	↓	↓	↓	N01043
5	↓	↓		↓	↓	↓	↓	N01043
6	↓	↓		↓	↓	↓	↓	N0104
7	↓	↓		↓	↓	↓	↓	N0104
8	↓	↓		↓	↓	↓	↓	N0104

Bottle Lot #	OUT / DATE	SHIPMENT METHOD RETURNED / DATE	VIA	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
							Tina Kucculino	1/11/01	12
				Tina Kucculino	1/11/01	14:30	T. Bright	1/11/01	14

COMMENTS:

COOLER #

COOLER SEAL INTACT Yes No

1050 Endeavor Ct., Nokomis, FL 34275-3623 • (941)488-8103 • FAX 484-6774
1____ Gator Road, Fort Myers, FL 33912 • (941) 590-0337 • FAX (941) 590-0550

INTAKE #: 540825

Sanders Laboratories
Environmental Testing Services

Project Name:	Packer - IW #1
Project Location:	Cooper City WWTP
Job ID:	
Sample Supply:	Ground Water
Collector:	client
Sample Received Date/Time:	1/7/01 12:30

Date: *09-Jan-01*

Youngquist Brothers, Inc.
15465 Pine Ridge Road
Fort Myers, FL 33908-

Lab ID / Analysis	Sample ID	Type	Sample Date/Time / Method	Result	D. L.	Unit	Analysis Date/Time	LabID
N010213	**1763-1779**	**GRB**	**1/5/01**					
Chloride			SM4500Cl-B	5,800	100	mg/L	1/8/01	E84380
Sulfate			EPA 375.4	365	20	mg/L	1/8/01	E84380
Total Dissolved Solids			EPA 160.1	10,500	5	mg/L	1/7/01	E84380
N010214	**1763-1779**	**GRB**	**1/5/01**					
Chloride			SM4500Cl-B	5,750	100	mg/L	1/8/01	E84380
Sulfate			EPA 375.4	339	20	mg/L	1/8/01	E84380
Total Dissolved Solids			EPA 160.1	10,500	5	mg/L	1/7/01	E84380
N010215	**1763-1779**	**GRB**	**1/5/01**					
Chloride			SM4500Cl-B	5,800	100	mg/L	1/8/01	E84380
Sulfate			EPA 375.4	352	20	mg/L	1/8/01	E84380
Total Dissolved Solids			EPA 160.1	10,300	5	mg/L	1/7/01	E84380
N010216	**1763-1779**	**GRB**	**1/5/01**					
Chloride			SM4500Cl-B	5,900	100	mg/L	1/8/01	E84380
Sulfate			EPA 375.4	339	20	mg/L	1/8/01	E84380
Total Dissolved Solids			EPA 160.1	10,300	5	mg/L	1/7/01	E84380
N010217	**1763-1779**	**GRB**	**1/5/01**					
Chloride			SM4500Cl-B	5,750	100	mg/L	1/8/01	E84380
Sulfate			EPA 375.4	342	5	mg/L	1/8/01	E84380

HRS Certification#'s E84380(Nokomis) E85457(Ft. Myers)

1050 Endeavor Ct. • Nokomis, FL 34275 • Phone: (941) 488-8103 • (800) 255-3108 • Fax: (941) 484-6774

Lab ID	Sample ID	Type	Sample Date/Time					
Analysis			**Method**	**Result**	**D. L.**	**Unit**	**Analysis Date/Time**	**LabID**
Total Dissolved Solids			EPA 160.1	10,800	5	mg/L	1/7/01	E84380
N010218	**1763-1779**	**GRB**	**1/5/01**					
Chloride			SM4500Cl-B	5,650	100	mg/L	1/8/01	E84380
Sulfate			EPA 375.4	333	20	mg/L	1/8/01	E84380
Total Dissolved Solids			EPA 160.1	10,400	5	mg/L	1/7/01	E84380
N010219	**1763-1779**	**GRB**	**1/5/01**					
Chloride			A 300.0SM4500Cl-B	5,800	100	mg/L	1/8/01	E84380
Sulfate			EPA 375.4	330	20	mg/L	1/8/01	E84380
Total Dissolved Solids			EPA 160.1	10,300	5	mg/L	1/7/01	E84380
N010220	**1763-1779**	**GRB**	**1/5/01**					
Chloride			SM4500Cl-B	6,000	100	mg/L	1/8/01	E84380
Sulfate			EPA 375.4	333	20	mg/L	1/8/01	E84380
Total Dissolved Solids			EPA 160.1	10,800	5	mg/L	1/7/01	E84380

Comments:

Approved by:

Debra A. Sanders

Debra Sanders
Laboratory Director

Sanders Laboratories
Environmental Testing Services

CHAIN-OF-CUSTODY RECORD

PROJECT [illegible]

Page ______

Client: YA Bros - Cooper City

Address:

Phone: Fax:

Report To:

Bill To:

P.O. #

Project Name: Packer IW#1

Project Location: Cooper City WWTP

Sample Supply: GW

Customer Type:

Field Report #:

Kit #

REQUESTED DUE DATE: 1-9-0[illegible]

Sampled By (PRINT): Client

Sampler Signature: —

Bottle #	SAMPLE DESCRIPTION	Sample DATE	Sample TIME	Sample TYPE	4°C	UNPRESERVED	H_2SO_4	HNO_3	HCL	ANALYSES REQUEST: TDS, Cl, SO4										Sample ID
	Cooper City IW#1 1763-1779	1-05-01	—	g	X	X				X										wol
	" "	↓	↓	↓	↓	↓				↓										wol
	" "																			wol
	" "																			wol
	" "																			wol
	" "																			wol
	" "																			wol
	" "																			wol
	" "																			wol [illegible]
																				wol [illegible]

Bottle Lot #	OUT / DATE	SHIPMENT METHOD RETURNED DATE	VIA	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE
				client	1-6-01	2000	Mark C[illegible]	1-6-01
	COMMENTS:		COOLER #	Mark C[illegible]	1-7-01	1230	T. BRIGHT	1-7-01
			COOLER SEAL INTACT Yes No					

INTAKE #: 540955

Sanders Laboratories
Environmental Testing Services

Project Name:	Straddle Packer
Project Location:	Cooper City
Job ID:	
Sample Supply:	Ground Water
Collector:	client
Sample Received Date/Time:	1/13/01 12:00

Date: *01-Aug-01*

Youngquist Brothers, Inc.
15465 Pine Ridge Road
Fort Myers, FL 33908-

Lab ID / Analysis	Sample ID	Type	Sample Date/Time / Method	Result	D. L.	Unit	Analysis Date/Time	LabID:
N010521	**1800-1850**	**GRB**	**1/13/1901 10:00**					
Total Dissolved Solids			EPA 160.1	19,200	5	mg/L	1/13/01	E84380
Chloride			SM4500Cl-B	10,500	500	mg/L	1/17/01	E84380
Sulfate			EPA 375.4	365	100	mg/L	1/17/01	E84380
Ammonia-N			EPA 350.1	0.67	0.02	mg/L	1/19/01	E83012
Nitrogen, Total Kjeldahl			EPA 351.2	0.76	0.05	mg/L	2/8/01	E83012
Conductivity			EPA 120.1	24,500	1.0	umhos/cm	1/16/01	E84380
N010522	**1800-1850**	**GRB**	**1/13/1901 10:00**					
Total Dissolved Solids			EPA 160.1	17,000	5	mg/L	1/13/01	E84380
Chloride			SM4500Cl-B	10,500	500	mg/L	1/17/01	E84380
Sulfate			EPA 375.4	366	100	mg/L	1/17/01	E84380
Ammonia-N			EPA 350.1	0.68	0.02	mg/L	1/19/01	E83012
Nitrogen, Total Kjeldahl			EPA 351.2	0.68	0.05	mg/L	2/8/01	E83012
Conductivity			EPA 120.1	25,700	1.0	umhos/cm	1/16/01	E84380
N010523	**1800-1850**	**GRB**	**1/13/1901 10:00**					
Total Dissolved Solids			EPA 160.1	17,200	5	mg/L	1/13/01	E84380
Chloride			SM4500Cl-B	10,200	500	mg/L	1/17/01	E84380
Sulfate			EPA 375.4	352	100	mg/L	1/17/01	E84380
Ammonia-N			EPA 350.1	0.67	0.02	mg/L	1/19/01	E83012

HRS Certification#'s E84380(Nokomis) E85457(Ft. Myers)

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Lab ID	Sample ID	Type	Sample Date/Time					
Analysis			**Method**	**Result**	**D. L.**	**Unit**	**Analysis Date/Time**	**LabID:**
Nitrogen, Total Kjeldahl			EPA 351.2	0.69	0.05	mg/L	2/8/01	E83012
Conductivity			EPA 120.1	25,900	1.0	umhos/cm	1/16/01	E84380
N010524	**1800-1850**	**GRB**	**1/13/1901 10:00**					
Total Dissolved Solids			EPA 160.1	18,400	5	mg/L	1/13/01	E84380
Chloride			SM4500Cl-B	10,000	500	mg/L	1/17/01	E84380
Sulfate			EPA 375.4	370	100	mg/L	1/17/01	E84380
Ammonia-N			EPA 350.1	0.68	0.02	mg/L	1/19/01	E83012
Nitrogen, Total Kjeldahl			EPA 351.2	1.18	0.05	mg/L	1/30/01	E83012
Conductivity			EPA 120.1	27,500	1.0	umhos/cm	1/16/01	E84380
N010525	**1800-1850**	**GRB**	**1/13/1901 10:00**					
Total Dissolved Solids			EPA 160.1	12,200	5	mg/L	1/13/01	E84380
Chloride			SM4500Cl-B	10,200	500	mg/L	1/17/01	E84380
Sulfate			EPA 375.4	364	100	mg/L	1/17/01	E84380
Ammonia-N			EPA 350.1	0.68	0.02	mg/L	1/19/01	E83012
Nitrogen, Total Kjeldahl			EPA 351.2	0.69	0.05	mg/L	2/8/01	E83012
Conductivity			EPA 120.1	25,800	1.0	umhos/cm	1/16/01	E84380
N010526	**1800-1850**	**GRB**	**1/13/1901 10:00**					
Total Dissolved Solids			EPA 160.1	23,000	5	mg/L	1/13/01	E84380
Chloride			SM4500Cl-B	10,000	500	mg/L	1/17/01	E84380
Sulfate			EPA 375.4	357	100	mg/L	1/17/01	E84380
Ammonia-N			EPA 350.1	0.67	0.02	mg/L	1/19/01	E83012
Nitrogen, Total Kjeldahl			EPA 351.2	0.71	0.05	mg/L	2/8/01	E83012
Conductivity			EPA 120.1	26,100	1.0	umhos/cm	1/16/01	E84380
N010527	**1800-1850**	**GRB**	**1/13/1901 10:00**					
Total Dissolved Solids			EPA 160.1	15,900	5	mg/L	1/13/01	E84380
Chloride			SM4500Cl-B	10,000	500	mg/L	1/17/01	E84380
Sulfate			EPA 375.4	364	100	mg/L	1/17/01	E84380
Ammonia-N			EPA 350.1	0.68	0.02	mg/L	1/19/01	E83012
Nitrogen, Total Kjeldahl			EPA 351.2	0.70	0.05	mg/L	2/8/01	E83012
Conductivity			EPA 120.1	26,200	1.0	umhos/cm	1/16/01	E84380

HRS Certification#'s E84380(Nokomis) E85457(Ft. Myers)

Lab ID	Sample ID	Type	Sample Date/Time						
Analysis			**Method**	**Result**	**D. L.**	**Unit**	**Analysis Date/Time**	**LabID:**
N010528	**1800-1850**	**GRB**	**1/13/1901 10:00**					
Total Dissolved Solids			EPA 160.1	16,700	5	mg/L	1/13/01	E84380
Chloride			SM4500Cl-B	10,500	500	mg/L	1/17/01	E84380
Sulfate			EPA 375.4	368	100	mg/L	1/17/01	E84380
Ammonia-N			EPA 350.1	0.67	0.02	mg/L	1/19/01	E83012
Nitrogen, Total Kjeldahl			EPA 351.2	0.70	0.05	mg/L	2/8/01	E83012
Conductivity			EPA 120.1	26,200	1.0	umhos/cm	1/16/01	E84380

Comments:

Approved by:

Craig Toler
Laboratory Director

HRS Certification#'s E84380(Nokomis) E85457(Ft. Myers)

INTAKE #: 543827

Sanders Laboratories
Environmental Testing Services

Date: *16-May-01*

Project Name:	Packer Test
Project Location:	Cooper City
Job ID:	
Sample Supply:	Ground Water
Collector:	client
Sample Received Date/Time:	5/1/01 16:15

Youngquist Brothers, Inc.
15465 Pine Ridge Road
Fort Myers, FL 33908-

Lab ID	Sample ID	Type	Sample Date/Time					
Analysis			**Method**	**Result**	**D. L.**	**Unit**	**Analysis Date/Time**	**LabID:**
N014439	**1900-1950'**	**GRB**	**4/30/01**					
Total Dissolved Solids			EPA 160.1	27,400	5	mg/L	5/2/01	E84380
Chloride			SM4500Cl-B	15,500	1,000	mg/L	5/3/01	E84380
Sulfate			EPA 300.0	680	3	mg/L	5/2/01	E84380
Ammonia-N			EPA 350.3	*		mg/L		E84380
Nitrogen, Total Kjeldahl			EPA 351.2	*		mg/L		E84380
Conductivity			EPA 120.1	38,200	1.0	umhos/cm	5/3/01	E84380

Approved by:

Comments:
*-Resample requested. Analyses reported on intake #543974.

Craig Toler
Laboratory Director

HRS Certification#'s E84380(Nokomis) E85457(Ft. Myers)

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Sanders Laboratories
Environmental Testing Services

CHAIN-OF-CUSTODY RECORD

PROJECT #

Page 1 of 1

Client: Youngquist Cooper City
Address:
Phone: Fax:

Report To:
Bill To:
P.O. #:
Project Name: Cooper City
Project Location:

Sample Supply: GW
Customer Type:
Field Report #:
Kit #:
REQUESTED DUE DATE: 5-3-01

Sampled By (PRINT): Client
Sampler Signature:

Bottle #	SAMPLE DESCRIPTION	Sample DATE	Sample TIME	Sample TYPE	4°C	UNPRESERVED	H_2SO_4	HNO_3	HCL	TDS	Cl⁻	COND	SO_4	NH_3	TKN						Sample ID #
	Packer 1900-1950	4/30/01		G	X	X	X			✓	✓	✓	✓	✓	✓						N01-4439

Bottle Lot #	OUT / DATE	SHIPMENT METHOD RETURNED DATE	VIA	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
							Lina Vicedomini	5/1/01	10:30
	COMMENTS:		COOLER #	Lina Vicedomini	5/1/01	11:15	Rachel Clement	5/1/01	11:15
			COOLER SEAL INTACT Yes No						

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1000J Gateway Road, Fort Myers, FL 33912 • (941) 590-0337 • FAX (941) 590-0330

INTAKE #: 543974

Sanders Laboratories
Environmental Testing Services

Project Name:	Packer Test (Resample)
Project Location:	Cooper City
Job ID:	
Sample Supply:	Ground Water
Collector:	client
Sample Received Date/Time:	5/9/01 15:40

Date: *16-May-01*

Youngquist Brothers, Inc.
15465 Pine Ridge Road
Fort Myers, FL 33908-

Lab ID / Analysis	Sample ID	Type	Sample Date/Time / Method	Result	D. L.	Unit	Analysis Date/Time	LabID:
N014697	**1900-1950**		**4/27/01**					
Ammonia-N			EPA 350.3	0.54	0.05	mg/L	5/10/01	E84380
Nitrogen, Total Kjeldahl			EPA 351.2	0.82	0.10	mg/L	5/15/01	E84380

Approved by:

Craig Toler
Laboratory Director

Comments:
Original sample- Intake #543827

HRS Certification#'s E84380(Nokomis) E85457(Ft. Myers)

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Sanders Laboratories
Environmental Testing Services

CHAIN-OF-CUSTODY RECORD

PROJECT #

Page ____ of

Client: YOUNGQUIST BROS
Address:
Phone: Fax:

Report To: ED McCullers
Bill To:
P.O. #:
Project Name: Packer Resample
Project Location: Cooper City

Sample Supply: GW
Customer Type:
Field Report #:
Kit #:
REQUESTED DUE DATE: 5/10/

Sampled By (PRINT): CLIENT
Sampler Signature:

Bottle #	SAMPLE DESCRIPTION	DATE	TIME	TYPE	4°C	UNPRESERVED	H_2SO_4	HNO_3	HCL	NH3	TKN	Sample ID #
	1900 - 1950'	4/24/01			✓	✓				✓	✓	N01-4

Bottle Lot #	OUT / DATE	SHIPMENT METHOD RETURNED DATE	VIA	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE
				CLIENT	5/9/01	1245	Gino Fucchi	5/9/01
	COMMENTS:		COOLER #	Gino Fucchi	5/9/01	1540	[signature]	5/9/01
				[signature]	5/9/01	1700	T. Bright	5/9/01
			COOLER SEAL INTACT Yes No					

INTAKE #: 540872

Sanders Laboratories
Environmental Testing Services

Date: *12-Jan-01*

Project Name:	Straddle Packer
Project Location:	Cooper City
Job ID:	
Sample Supply:	Ground Water
Collector:	client
Sample Received Date/Time:	1/9/01 16:30

Youngquist Brothers, Inc.
15465 Pine Ridge Road
Fort Myers, FL 33908-

Lab ID / Analysis	Sample ID	Type	Sample Date/Time / Method	Result	D. L.	Unit	Analysis Date/Time	LabID:
N010369	**1950-1966**	**GRB**	**1/9/01 13:00**					
Chloride			SM4500Cl-B	17,200	500	mg/L	1/11/01	E84380
Sulfate			EPA 375.4	950	100	mg/L	1/11/01	E84380
Total Dissolved Solids			EPA 160.1	28,900	5	mg/L	1/10/01	E84380
Conductivity			EPA 120.1	41,200	1.0	umhos/cm	1/11/01	E84380
Nitrogen, Total Kjeldahl			EPA 351.2	<0.05	0.05	mg/L	1/11/01	E84380
Ammonia-N			EPA 350.3	<0.05	0.05	mg/L	1/11/01	E84380
N010370	**1950-1966**	**GRB**	**1/9/01 13:00**					
Chloride			SM4500Cl-B	17,200	500	mg/L	1/11/01	E84380
Sulfate			EPA 375.4	848	100	mg/L	1/11/01	E84380
Total Dissolved Solids			EPA 160.1	29,100	5	mg/L	1/10/01	E84380
Conductivity			EPA 120.1	40,400	1.0	umhos/cm	1/11/01	E84380
Nitrogen, Total Kjeldahl			EPA 351.2	<0.05	0.05	mg/L	1/11/01	E84380
Ammonia-N			EPA 350.3	<0.05	0.05	mg/L	1/11/01	E84380
N010371	**1950-1966**	**GRB**	**1/9/01 13:00**					
Chloride			SM4500Cl-B	16,700	500	mg/L	1/11/01	E84380
Sulfate			EPA 375.4	839	100	mg/L	1/11/01	E84380
Total Dissolved Solids			EPA 160.1	29,800	5	mg/L	1/10/01	E84380
Conductivity			EPA 120.1	41,700	1.0	umhos/cm	1/11/01	E84380

HRS Certification#'s E84380(Nokomis) E85457(Ft. Myers)

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Lab ID	Sample ID	Type	Sample Date/Time						
Analysis				**Method**	**Result**	**D. L.**	**Unit**	**Analysis Date/Time**	**LabID:**
Nitrogen, Total Kjeldahl				EPA 351.2	<0.05	0.05	mg/L	1/11/01	E84380
Ammonia-N				EPA 350.3	<0.05	0.05	mg/L	1/11/01	E84380
N010372	**1950-1966**	**GRB**	**1/9/01 13:00**						
Chloride				SM4500Cl-B	16,700	500	mg/L	1/11/01	E84380
Sulfate				EPA 375.4	856	100	mg/L	1/11/01	E84380
Total Dissolved Solids				EPA 160.1	30,100	5	mg/L	1/10/01	E84380
Conductivity				EPA 120.1	42,200	1.0	umhos/cm	1/11/01	E84380
Nitrogen, Total Kjeldahl				EPA 351.2	<0.05	0.05	mg/L	1/11/01	E84380
Ammonia-N				EPA 350.3	<0.05	0.05	mg/L	1/11/01	E84380
N010373	**1950-1966**	**GRB**	**1/9/01 13:00**						
Chloride				SM4500Cl-B	17,000	500	mg/L	1/11/01	E84380
Sulfate				EPA 375.4	887	100	mg/L	1/11/01	E84380
Total Dissolved Solids				EPA 160.1	31,200	5	mg/L	1/10/01	E84380
Conductivity				EPA 120.1	41,000	1.0	umhos/cm	1/11/01	E84380
Nitrogen, Total Kjeldahl				EPA 351.2	<0.05	0.05	mg/L	1/11/01	E84380
Ammonia-N				EPA 350.3	<0.05	0.05	mg/L	1/11/01	E84380
N010374	**1950-1966**	**GRB**	**1/9/01 13:00**						
Chloride				SM4500Cl-B	17,000	500	mg/L	1/11/01	E84380
Sulfate				EPA 375.4	898	100	mg/L	1/11/01	E84380
Total Dissolved Solids				EPA 160.1	31,400	2	mg/L	1/10/01	E84380
Conductivity				EPA 120.1	41,600	1.0	umhos/cm	1/11/01	E84380
Nitrogen, Total Kjeldahl				EPA 351.2	<0.05	0.05	mg/L	1/11/01	E84380
Ammonia-N				EPA 350.3	<0.05	0.05	mg/L	1/11/01	E84380
N010375	**1950-1966**	**GRB**	**1/9/01 13:00**						
Chloride				SM4500Cl-B	17,000	500	mg/L	1/11/01	E84380
Sulfate				EPA 375.4	902	0.12	mg/L	1/11/01	E84380
Total Dissolved Solids				EPA 160.1	30,000	5	mg/L	1/10/01	E84380
Conductivity				EPA 120.1	41,600	1.0	umhos/cm	1/11/01	E84380
Nitrogen, Total Kjeldahl				EPA 351.2	<0.05	0.05	mg/L	1/11/01	E84380
Ammonia-N				EPA 350.3	<0.05	0.05	mg/L	1/11/01	E84380

HRS Certification#'s E84380(Nokomis) E85457(Ft. Myers)

Lab ID	Sample ID	Type	Sample Date/Time

Analysis	Method	Result	D. L.	Unit	Analysis Date/Time	LabID:

Comments:

Approved by:

Debra A. Sanders

Debra Sanders
Laboratory Director

HRS Certification#'s E84380(Nokomis) E85457(Ft. Myers)

Sanders Laboratories
Environmental Testing Services

CHAIN-OF-CUSTODY RECORD

PROJECT # [illegible]

Page ____ of ____

Client: Cooper City - VQ
Address:
Phone: Fax:

Report To: MikeW. / Ed.M.
Bill To:
P.O. #
Project Name: Straddle Packer
Project Location:

Sample Supply: GW
Customer Type:
Field Report #:
Kit #
REQUESTED DUE DATE: 1-12-01

Sampled By (PRINT): Client
Sampler Signature:

PRESERVATIVES: 4°C, UNPRESERVED, H_2SO_4, HNO_3, HCL

ANALYSES REQUEST: TDS, Cl, SO_4; Conductivity; TKN, NH_3

Bottle #	SAMPLE DESCRIPTION	Sample DATE	Sample TIME	Sample TYPE	4°C	UNPRESERVED	H_2SO_4	HNO_3	HCL	TDS, Cl, SO_4	Conductivity	TKN, NH_3	Sample ID #
	C.C IW#1 Test#2 (1950-1966)	1-9-01	1300	g	X					X	X	X	W01 0369
	" "												0370
													0371
													0372
													0373
													0374
													0375
													0376

Bottle Lot #	OUT / DATE	SHIPMENT METHOD RETURNED DATE	VIA	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
				Client	1-9-01		Gina Kuadulo	1-9-01	14:00
				Gina Kuadulo	1-9-01	16:30	Mark Oels	1-9-01	16:30

COMMENTS:

COOLER #

COOLER SEAL INTACT Yes No

1050 Endeavor Ct., Nokomis, FL 34275-3607 • (941) [illegible]3-810[illegible] • FAX [illegible] 774
168[illegible] [illegible]ator Road, Fort Myers, FL 33912 • (941) 590-0337 • FAX (941) 590-0536

Sanders Laboratories
Environmental Testing Services

Project Name:	Packer #8
Project Location:	Cooper City
Job ID:	
Sample Supply:	Ground Water
Collector:	client
Sample Received Date/Time:	2/20/01 12:45

Date: *23-Feb-01*

Youngquist Brothers, Inc.
15465 Pine Ridge Road
Fort Myers, FL 33908-

Lab ID | Sample ID | Type | Sample Date/Time

Analysis	Method	Result	D. L.	Unit	Analysis Date/Time	LabID:
N012191a 2269-2285'						
Chloride	SM4500Cl-B	18,700	500	mg/L	2/22/01	E84380
Sulfate	EPA 375.4	2,480	100	mg/L	2/23/01	E84380
Total Dissolved Solids	EPA 160.1	31,500	5	mg/L	2/20/01	E84380
N012191b 2269-2285'						
Chloride	SM4500Cl-B	18,500	1,000	mg/L	2/22/01	E84380
Sulfate	EPA 375.4	2,460	100	mg/L	2/23/01	E84380
Total Dissolved Solids	EPA 160.1	31,300	5	mg/L	2/20/01	E84380
N012191c 2269-2285'						
Chloride	SM4500Cl-B	20,500	1,000	mg/L	2/22/01	E84380
Sulfate	EPA 375.4	2,450	100	mg/L	2/23/01	E84380
Total Dissolved Solids	EPA 160.1	30,700	5	mg/L	2/20/01	E84380
N012191d 2269-2285'						
Chloride	SM4500Cl-B	18,500	1,000	mg/L	2/22/01	E84380
Sulfate	EPA 375.4	2,460	100	mg/L	2/23/01	E84380
Total Dissolved Solids	EPA 160.1	32,000	5	mg/L	2/20/01	E84380
N012191e 2269-2285'						
Chloride	SM4500Cl-B	19,000	1,000	mg/L	2/22/01	E84380
Sulfate	EPA 375.4	2,480	100	mg/L	2/23/01	E84380

HRS Certification#'s E84380(Nokomis) E85457(Ft. Myers)

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Lab ID	Sample ID	Type	Sample Date/Time					
Analysis			**Method**	**Result**	**D. L.**	**Unit**	**Analysis Date/Time**	**LabID:**
Total Dissolved Solids			EPA 160.1	31,200	5	mg/L	2/20/01	E84380
N012191f	**2269-2285'**							
Chloride			SM4500Cl-B	19,000	1,000	mg/L	2/22/01	E84380
Sulfate			EPA 375.4	2,460	100	mg/L	2/23/01	E84380
Total Dissolved Solids			EPA 160.1	32,300	5	mg/L	2/20/01	E84380
N012191g	**2269-2285'**							
Chloride			SM4500Cl-B	19,500	1,000	mg/L	2/22/01	E84380
Sulfate			EPA 375.4	2,490	100	mg/L	2/23/01	E84380
Total Dissolved Solids			EPA 160.1	31,600	5	mg/L	2/20/01	E84380
N012191h	**2269-2285'**							
Chloride			SM4500Cl-B	19,000	1,000	mg/L	2/22/01	E84380
Sulfate			EPA 375.4	2,460	100	mg/L	2/23/01	E84380
Total Dissolved Solids			EPA 160.1	30,400	5	mg/L	2/20/01	E84380

Approved by:

Debra A. Sanders

Debra Sanders
Laboratory Director

Comments:

HRS Certification#'s E84380(Nokomis) E85457(Ft. Myers)

Sanders Laboratories
Environmental Testing Services

CHAIN-OF-CUSTODY RECORD

PROJECT #

Page ____ of ____

Client: YQ - Cooper City

Address:

Phone: Fax:

Report To: Ed. M.

Bill To:

P.O. #

Project Name: Packer #

Project Location: Cooper City

Sample Supply: GW

Customer Type:

Field Report #:

Kit #

REQUESTED DUE DATE: 2/23/01

Sampled By (PRINT): Client

Sampler Signature:

Bottle #	SAMPLE DESCRIPTION	Sample DATE	Sample TIME	Sample TYPE	4°C	UNPRESERVED	H_2SO_4	HNO_3	HCL		ANALYSES REQUEST: DS, CT, SO4											Sample ID #
	CC IW#1 Packer #8 2269-2255			g	X	X					X											N01 2191 A
	"				X	X					X											N01 2191 B
	"				X	X					X											N01 2191 C
	"				X	X					X											N01 2191 D
	"				X	X					X											N01 2191 E
	"				X	X					X											N01 2191 F
	"				X	X					X											N01 2191 G
	"			g	X	X					X											N01 2191 H

Bottle Lot #	OUT / DATE	SHIPMENT METHOD RETURNED / DATE	VIA	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
				[signature]	2/20/01	1245	T. Bright	2/20/01	1245

COMMENTS:

COOLER #

COOLER SEAL INTACT Yes No

1050 Endeavor Ct., Nokomis, FL 34275-3623 • (941)488-8103 • FAX 484-6774
16880 Gator Road, Fort Myers, FL 33912 • (941) 590-0337 • FAX (941) 590-0536

INTAKE #: 541916

Sanders Laboratories
Environmental Testing Services

Date: *21-Feb-01*

Youngquist Brothers, Inc.
15465 Pine Ridge Road
Fort Myers, FL 33908-

Project Name:	Packer #7
Project Location:	Cooper City
Job ID:	
Sample Supply:	Ground Water
Collector:	Mark Ocks
Sample Received Date/Time:	2/16/01 9:30

Lab ID / Analysis	Sample ID	Type	Sample Date/Time / Method	Result	D. L.	Unit	Analysis Date/Time	LabID:
N011992a	**2515-2531**	**GRB**	**2/16/01 1:45**					
Chloride			EPA SM4500B	20,500	1,000	mg/L	2/19/01	E84380
Sulfate			EPA 375.4	2,660	100	mg/L	2/16/01	E84380
Total Dissolved Solids			EPA 160.1	34,500	5	mg/L	2/16/01	E84380
N011992b	**2515-2531**	**GRB**	**2/16/01 1:45**					
Chloride			EPA SM4500B	20,500	1,000	mg/L	2/19/01	E84380
Sulfate			EPA 375.4	2,660	100	mg/L	2/16/01	E84380
Total Dissolved Solids			EPA 160.1	34,950	5	mg/L	2/16/01	E84380
N011992c	**2515-2531**	**GRB**	**2/16/01 1:45**					
Chloride			EPA SM4500B	20,500	1,000	mg/L	2/19/01	E84380
Sulfate			EPA 375.4	2,650	100	mg/L	2/16/01	E84380
Total Dissolved Solids			EPA 160.1	33,850	5	mg/L	2/16/01	E84380
N011992d	**2515-2531**	**GRB**	**2/16/01 1:45**					
Chloride			EPA SM4500B	20,000	1,000	mg/L	2/19/01	E84380
Sulfate			EPA 375.4	2,630	100	mg/L	2/16/01	E84380
Total Dissolved Solids			EPA 160.1	38450	5	mg/L	2/16/01	E84380
N011992e	**2515-2531**	**GRB**	**2/16/01 1:45**					
Chloride			EPA SM4500B	20,000	1,000	mg/L	2/19/01	E84380
Sulfate			EPA 375.4	2,640	100	mg/L	2/16/01	E84380

HRS Certification#'s E84380(Nokomis) E85457(Ft. Myers)

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Lab ID	Sample ID	Type	Sample Date/Time					
Analysis			**Method**	**Result**	**D. L.**	**Unit**	**Analysis Date/Time**	**LabID:**
Total Dissolved Solids			EPA 160.1	33,100	5	mg/L	2/16/01	E84380
N011992f	**2515-2531**	**GRB**	**2/16/01 1:45**					
Chloride			EPA SM4500B	19,500	1,000	mg/L	2/19/01	E84380
Sulfate			EPA 375.4	2,660	100	mg/L	2/16/01	E84380
Total Dissolved Solids			EPA 160.1	33,400	5	mg/L	2/16/01	E84380
N011992g	**2515-2531**	**GRB**	**2/16/01 1:45**					
Chloride			EPA SM4500B	19,500	1,000	mg/L	2/19/01	E84380
Sulfate			EPA 375.4	2,640	100	mg/L	2/16/01	E84380
Total Dissolved Solids			EPA 160.1	31,650	5	mg/L	2/16/01	E84380
N011992h	**2515-2531**	**GRB**	**2/16/01 1:45**					
Chloride			EPA SM4500B	20,000	1,000	mg/L	2/19/01	E84380
Sulfate			EPA 375.4	2,650	100	mg/L	2/16/01	E84380
Total Dissolved Solids			EPA 160.1	34,000	5	mg/L	2/16/01	E84380

Comments:

Approved by:

Debra A. Sanders

Debra Sanders
Laboratory Director

Sanders Laboratories
Environmental Testing Services

CHAIN-OF-CUSTODY RECORD

PROJECT #

Page ____

Client YQ-CooperCity
Address
Phone Fax

Report To: EdM.
Bill To:
P.O. #
Project Name Packer #7
Project Location: CC WWTP

Sample Supply: GW
Customer Type:
Field Report #:
Kit #
REQUESTED DUE DATE: 2-19-0

Sampled By (PRINT) Mark Ochs
Sampler Signature Mark Ochs

Bottle #	SAMPLE DESCRIPTION	Sample DATE	Sample TIME	Sample TYPE	4°C	UNPRESERVED	H_2SO_4	HNO_3	HCL	TDS Cl (and SO4)	Sa... I...
	CC IW #1 Packer #7 (255-3531)	2-16-01	0145	g	X	X				X	no1-
	" "	↓	↓	↓	X	X				X	no1-
	" "				X	X				X	no1-
	" "				X	X				X	no1-
	" "				X	X				X	no1-
	" "				X	X				X	no1-
	" "				X	X				X	no1-
	" "	↓	↓	↓	X	X				X	no1-

Bottle Lot #	OUT / DATE	SHIPMENT METHOD RETURNED / DATE	VIA	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE
				Mark Ochs	2-16-01	0930	T. Bright	2-16-0

COMMENTS:

COOLER #

COOLER SEAL INTACT Yes No

INTAKE #: 541861

Sanders Laboratories
Environmental Testing Services

Project Name:	Packer #5
Project Location:	Cooper City
Job ID:	
Sample Supply:	Ground Water
Collector:	client
Sample Received Date/Time:	2/13/01 11:30

Date: *19-Feb-01*

Youngquist Brothers, Inc.
15465 Pine Ridge Road
Fort Myers, FL 33908-

Lab ID / Analysis	Sample ID	Type	Sample Date/Time / Method	Result	D. L.	Unit	Analysis Date/Time	LabID:
N011954a	**2724-2740**	**GRB**	**2/10/01**					
Total Dissolved Solids			EPA 160.1	35,200	5	mg/L	2/14/01	E84380
Chloride			SM4500Cl-B	21,500	1,000	mg/L	2/15/01	E84380
Sulfate			EPA 375.4	2,820	100	mg/L	2/16/01	E84380
N011954b	**2724-2740**	**GRB**	**2/10/01**					
Total Dissolved Solids			EPA 160.1	33,800	5	mg/L	2/14/01	E84380
Chloride			SM4500Cl-B	21,000	1,000	mg/L	2/15/01	E84380
Sulfate			EPA 375.4	2,790	100	mg/L	2/16/01	E84380
N011954c	**2724-2740**	**GRB**	**2/10/01**					
Total Dissolved Solids			EPA 160.1	33,800	5	mg/L	2/14/01	E84380
Chloride			SM4500Cl-B	22,000	1,000	mg/L	2/15/01	E84380
Sulfate			EPA 375.4	2,830	100	mg/L	2/16/01	E84380
N011954d	**2724-2740**	**GRB**	**2/10/01**					
Total Dissolved Solids			EPA 160.1	34,760	5	mg/L	2/14/01	E84380
Chloride			SM4500Cl-B	20,000	1,000	mg/L	2/15/01	E84380
Sulfate			EPA 375.4	2,740	100	mg/L	2/16/01	E84380
N011954e	**2724-2740**	**GRB**	**2/10/01**					
Total Dissolved Solids			EPA 160.1	24,400	5	mg/L	2/14/01	E84380
Chloride			SM4500Cl-B	20,500	1,000	mg/L	2/15/01	E84380

HRS Certification#'s E84380(Nokomis) E85457(Ft. Myers)

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Lab ID	Sample ID	Type	Sample Date/Time					
Analysis			**Method**	**Result**	**D. L.**	**Unit**	**Analysis Date/Time**	**LabID:**
Sulfate			EPA 375.4	2,730	100	mg/L	2/16/01	E84380
N011954f	**2724-2740**	**GRB**	**2/10/01**					
Total Dissolved Solids			EPA 160.1	33,520	5	mg/L	2/14/01	E84380
Chloride			SM4500Cl-B	21,000	1,000	mg/L	2/15/01	E84380
Sulfate			EPA 375.4	2,820	100	mg/L	2/16/01	E84380
N011954g	**2724-2740**	**GRB**	**2/10/01**					
Total Dissolved Solids			EPA 160.1	34,920	5	mg/L	2/14/01	E84380
Chloride			SM4500Cl-B	20,500	1,000	mg/L	2/15/01	E84380
Sulfate			EPA 375.4	2,780	100	mg/L	2/16/01	E84380
N011954h	**2724-2740**	**GRB**	**2/10/01**					
Total Dissolved Solids			EPA 160.1	35,600	5	mg/L	2/15/01	E84380
Chloride			SM4500Cl-B	20,500	1,000	mg/L	2/15/01	E84380
Sulfate			EPA 375.4	2,830	100	mg/L	2/16/01	E84380

Comments:

Approved by:

Debra A. Sanders

Debra Sanders
Laboratory Director

CHAIN-OF-CUSTODY RECORD

PROJECT #

Sanders Laboratories
Environmental Testing Services

Page ______ of ______

Client: YQ-Coper City
Address:
Phone: Fax:

Report To: Ed. M.
Bill To:
P.O. #
Project Name: Packer #5
Project Location: CC WWTP

Sample Supply: GW
Customer Type:
Field Report #:
Kit #
REQUESTED DUE DATE: 2-16-01

Sampled By (PRINT): Client

Sampler Signature

Bottle #	SAMPLE DESCRIPTION	Sample DATE	Sample TIME	Sample TYPE	4°C	UNPRESERVED	H_2SO_4	HNO_3	HCL		ANALYSES REQUEST: TDS, Cl, SO4	Sample ID #
	PackerTest #5 (2724'-2740')	2-10-01		g	X	X					X	001-1954A
	" "	2-10-01										-1954B
	" "	2-10-01										-1954C
	" "	2-10-01										-1954D
	" "	2-10-01										-1954E
	" "	2-10-01										-1954F
	" "	2-10-01		g								-1954G
												-1954H

Bottle Lot #	OUT / DATE	SHIPMENT METHOD RETURNED DATE	VIA	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
				~~Ed~~ Client / Gina Puorchio	2/13/01	11:30	T. Bright	2/13/01	11:30

COMMENTS:

COOLER #

COOLER SEAL INTACT Yes No

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16880 Gator Road, Fort Myers, FL 33912 • (941) 590-0337 • FAX (941) 590-0536

INTAKE #: 541862

Sanders Laboratories
Environmental Testing Services

Date: *19-Feb-01*

Youngquist Brothers, Inc.
15465 Pine Ridge Road
Fort Myers, FL 33908-

Project Name:	Packer #6
Project Location:	Cooper City
Job ID:	
Sample Supply:	Ground Water
Collector:	client
Sample Received Date/Time:	2/13/01 11:30

Lab ID / Analysis	Sample ID	Type	Sample Date/Time / Method	Result	D. L.	Unit	Analysis Date/Time	LabID:
N011955a	**2794-2810**	**GRB**	**2/10/01**					
Total Dissolved Solids			EPA 160.1	33,720	5	mg/L	2/14/01	E84380
Chloride			SM4500Cl-B	20,000	1,000	mg/L	2/15/01	E84380
Sulfate			EPA 375.4	2,720	100	mg/L	2/16/01	E84380
N011955b	**2794-2810**	**GRB**	**2/10/01**					
Total Dissolved Solids			EPA 160.1	33,720	5	mg/L	2/14/01	E84380
Chloride			SM4500Cl-B	19,500	1,000	mg/L	2/15/01	E84380
Sulfate			EPA 375.4	2,700	100	mg/L	2/16/01	E84380
N011955c	**2794-2810**	**GRB**	**2/10/01**					
Total Dissolved Solids			EPA 160.1	33,360	5	mg/L	2/14/01	E84380
Chloride			SM4500Cl-B	21,000	1,000	mg/L	2/15/01	E84380
Sulfate			EPA 375.4	2,700	100	mg/L	2/16/01	E84380
N011955d	**2794-2810**	**GRB**	**2/10/01**					
Total Dissolved Solids			EPA 160.1	33,440	5	mg/L	2/14/01	E84380
Chloride			SM4500Cl-B	20,000	1,000	mg/L	2/15/01	E84380
Sulfate			EPA 375.4	2,690	100	mg/L	2/16/01	E84380
N011955e	**2794-2810**	**GRB**	**2/10/01**					
Total Dissolved Solids			EPA 160.1	34,200	5	mg/L	2/14/01	E84380
Chloride			SM4500Cl-B	20,500	1,000	mg/L	2/15/01	E84380

HRS Certification#'s E84380(Nokomis) E85457(Ft. Myers)

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Lab ID	Sample ID	Type	Sample Date/Time					
Analysis			**Method**	**Result**	**D. L.**	**Unit**	**Analysis Date/Time**	**LabID:**
Sulfate			EPA 375.4	2,700	100	mg/L	2/16/01	E84380
N011955f	**2794-2810**	**GRB**	**2/10/01**					
Total Dissolved Solids			EPA 160.1	33,920	5	mg/L	2/14/01	E84380
Chloride			SM4500Cl-B	20,000	1,000	mg/L	2/15/01	E84380
Sulfate			EPA 375.4	2,550	100	mg/L	2/16/01	E84380
N011955g	**2794-2810**	**GRB**	**2/10/01**					
Total Dissolved Solids			EPA 160.1	33,360	5	mg/L	2/14/01	E84380
Chloride			SM4500Cl-B	21,000	1,000	mg/L	2/15/01	E84380
Sulfate			EPA 375.4	2,690	100	mg/L	2/16/01	E84380
N011955h	**2794-2810**	**GRB**	**2/10/01**					
Total Dissolved Solids			EPA 160.1	35,040	5	mg/L	2/15/01	E84380
Chloride			SM4500Cl-B	18,500	1,000	mg/L	2/15/01	E84380
Sulfate			EPA 375.4	2,700	100	mg/L	2/16/01	E84380

Comments:

Approved by:

Debra A. Sanders

Debra Sanders
Laboratory Director

HRS Certification#'s E84380(Nokomis) E85457(Ft. Myers)

Sanders Laboratories
Environmental Testing Services

CHAIN-OF-CUSTODY RECORD

PROJECT #

Page ____ of ____

Client: YQ - Cooper City
Address:
Phone: Fax:

Report To: Ed. M.
Bill To:
P.O. #
Project Name: Packer #6
Project Location: CC WWTP

Sample Supply: GW
Customer Type:
Field Report #:
Kit #
REQUESTED DUE DATE: 2-16-01

Sampled By (PRINT): client

Sampler Signature:

Bottle #	SAMPLE DESCRIPTION	Sample DATE	Sample TIME	Sample TYPE	4°C	UNPRESERVED	H_2SO_4	HNO_3	HCL	ANALYSES REQUEST: TDS, Cl, SO4	Sample ID #
	Packer Test #6 (2794'-2810')	2-10-01			X	X				X	N01-1955
	↓	↓		g	X	X				↓	N01-1955
	↓	↓		↓	X	X				↓	N01-1955
	↓	↓		↓	X	X				↓	N01-1955
	↓	↓		↓	X	X				↓	N01-1955
	↓	↓		↓	X	X				↓	N01-1955
	↓	↓		↓	X	X				↓	N01-1955
	↓	↓		↓	X	X				↓	N01-1955
				g							N01-1955

Bottle Lot #	OUT / DATE	SHIPMENT METHOD RETURNED / DATE	VIA	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
				client / Gina Rumcchiu	2/13/01	11:30	T. Bright	2/13/01	11:3

COMMENTS:

COOLER #

COOLER SEAL INTACT Yes No

INTAKE #: 543973

Sanders Laboratories
Environmental Testing Services

Date: *16-May-01*

Project Name:	Packer Test
Project Location:	Cooper City
Job ID:	
Sample Supply:	Ground Water
Collector:	client
Sample Received Date/Time:	5/9/01 15:40

Youngquist Brothers, Inc.
15465 Pine Ridge Road
Fort Myers, FL 33908-

Lab ID **Sample ID** **Type** **Sample Date/Time**

Analysis	Method	Result	D. L.	Unit	Analysis Date/Time	LabID:
N014692 **1763-1779**						
Conductivity	EPA 120.1	13,300	1.0	umhos/cm	5/10/01	E84380
Ammonia-N	EPA 350.3	0.47	0.05	mg/L	5/10/01	E84380
Nitrogen, Total Kjeldahl	EPA 351.2	0.99	0.05	mg/L	5/10/01	E84380
N014693 **2724-2740**						
Conductivity	EPA 120.1	36,700	1.0	umhos/cm	5/10/01	E84380
Ammonia-N	EPA 350.3	<0.05	0.05	mg/L	5/10/01	E84380
Nitrogen, Total Kjeldahl	EPA 351.2	0.13	0.05	mg/L	5/10/01	E84380
N014694 **2794-2810**						
Conductivity	EPA 120.1	36,200	1.0	umhos/cm	5/10/01	E84380
Ammonia-N	EPA 350.3	0.08	0.05	mg/L	5/10/01	E84380
Nitrogen, Total Kjeldahl	EPA 351.2	0.11	0.05	mg/L	5/10/01	E84380
N014695 **2515-2531**						
Conductivity	EPA 120.1	36,700	1.0	umhos/cm	5/10/01	E84380
Ammonia-N	EPA 350.3	0.05	0.05	mg/L	5/10/01	E84380
Nitrogen, Total Kjeldahl	EPA 351.2	0.12	0.05	mg/L	5/10/01	E84380
N014696 **2269-2285**						
Conductivity	EPA 120.1	42,800	1.0	umhos/cm	5/10/01	E84380
Ammonia-N	EPA 350.3	0.52	0.05	mg/L	5/10/01	E84380

HRS Certification#'s E84380(Nokomis) E85457(Ft. Myers)

1050 Endeavor Ct. • Nokomis, FL 34275 • Phone: (941) 488-8103 • (800) 255-3108 • Fax: (941) 484-6774

Lab ID	Sample ID	Type	Sample Date/Time

Analysis	Method	Result	D. L.	Unit	Analysis Date/Time	LabID:
Nitrogen, Total Kjeldahl	EPA 351.2	0.69	0.1	mg/L	5/15/01	E84380

Approved by:

Craig Toler
Laboratory Director

Comments:

HRS Certification#'s E84380(Nokomis) E85457(Ft. Myers)

Sanders Laboratories
Environmental Testing Services

CHAIN-OF-CUSTODY RECORD

PROJECT #

Page ______ of ______

Client: YoungQuist Bros.
Address:
Phone: / Fax:

Report To: ED McCullers
Bill To:
P.O. #
Project Name: Packer Test
Project Location: Cooper City

Sample Supply: GW
Customer Type:
Field Report #:
Kit #
REQUESTED DUE DATE: 5/11/01

Sampled By (PRINT): CLIENT
Sampler Signature:

Bottle #	SAMPLE DESCRIPTION	Sample DATE	Sample TIME	Sample TYPE	Preservatives: 4°C	UNPRESERVED	H_2SO_4	HNO_3	HCL	Analyses Request: COND	NH3	TKN	Sample ID #
	#1 1763-1779				✓					✓	✓	✓	N01-4692
	#5 2724-2740				✓					✓	✓	✓	4693
	#6 2794-2810				✓					✓	✓	✓	4694
	#7 2515-2531				✓					✓	✓	✓	4695
	#8 2269-2285				✓					✓	✓	✓	4696

Bottle Lot #	OUT / DATE	SHIPMENT METHOD RETURNED DATE	VIA

COMMENTS:

COOLER #

COOLER SEAL INTACT Yes No

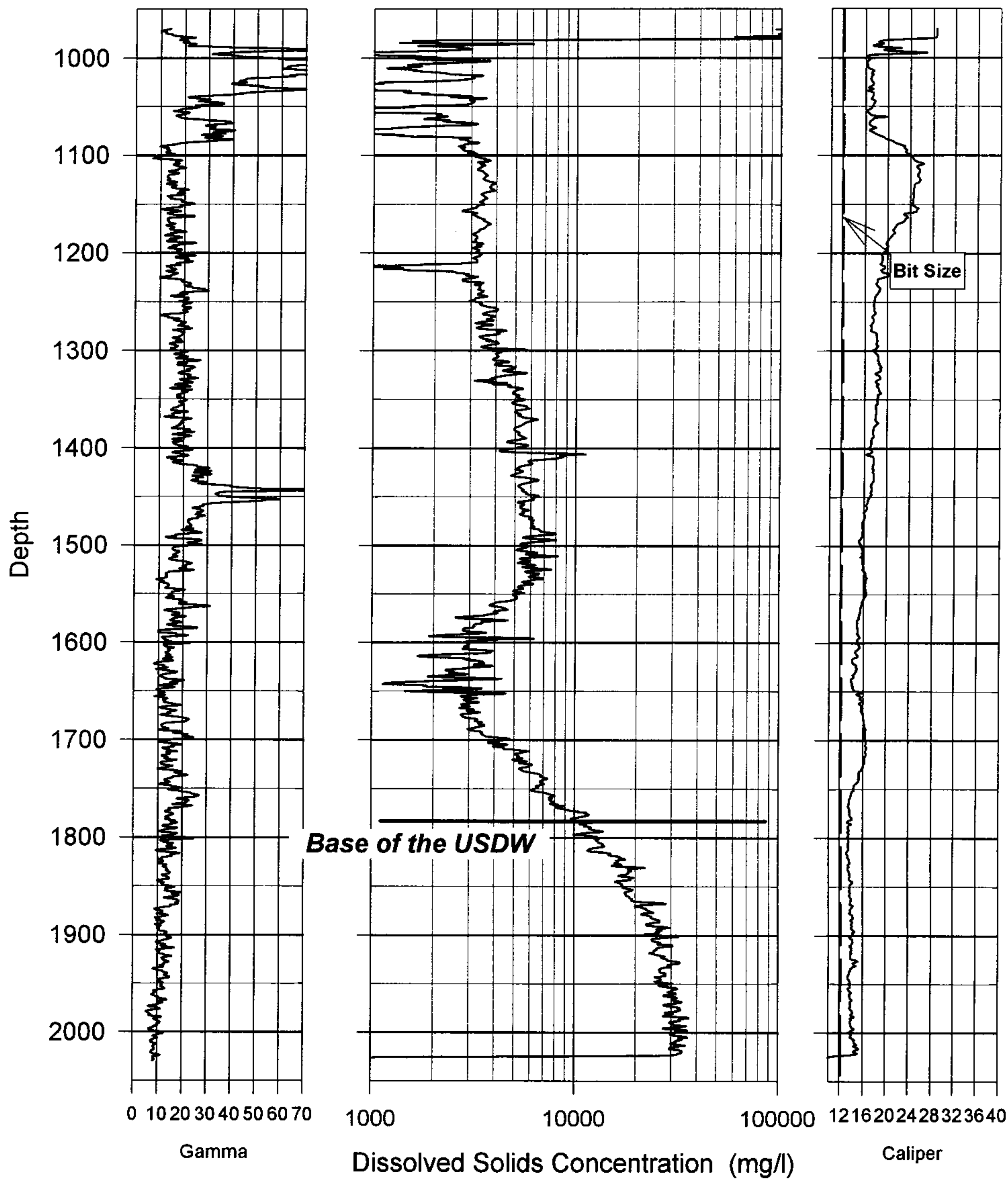
RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
CLIENT	5/9/01	1245	Gina Fiucchi	5/9/01	1245
Gina Fiucchi	5/9/01	1540	[illegible]	5/9/01	1540
[illegible]	5/7/01	1700	T Bright	5/9/01	1700

1050 Endeavor Ct., Nokomis, FL 34275-3623 • (941)488-8103 • FAX 484-6774
16880 Gator Road, Fort Myers, FL 33912 • (941) 590-0337 • FAX (941) 590-0536

APPENDIX J

LOG DERIVED WATER QUALITY GRAPHS

Cooper City - Concentrate Disposal Well #1
Log Derived Water Quality



Used Best fit (a and m) values (R-H, m=2.0, a=1.0) non-Corrected Rt

APPENDIX K

CASING AND TUBING MILL CERTIFICATES

Submittal Data
FROM
Youngquist Brothers, Inc.

15465 Pine Ridge Rd.
Ft. Myers, FL. 33908
941-489-4444 Fax: 941-489-4545

Project: <u>Cooper City - 40340</u>
Concentrate Disposal Well

I have reviewed this submittal for general conformance with the design concepts and contract documents. Generally no conflict with materials or dimensions will arise from the approval of this shop drawing submittal.

November 30, 2000 Number of Copies: 9

Submittal Number: 02852-06-A

Specification Section Number: 02852/2.05/B

Item Submitted: 50" x .5" I/W Conductor Casing Mill Certifications

New Submittal: ☒ Resubmittal: ☐

Subcontractor:

Youngquist Brothers, Inc. Representative:

Guerry T. Harbin

Transmittal Date: 11-30-00

- ☐ Approved
- ☐ Approved with changes
- ☐ Rejected, Revise & Resubmit
- ☐ Not Reviewed

By: ____________________

Firm: ____________________

Date: ____________________

VASS PIPE & STEEL CO., INC.

A DEPENDABLE SOURCE YOU CAN COUNT ON

158 THIRD STREET • P.O. BOX 583 • MINEOLA • NY 11501 • TEL: 516.741.8398 • FAX: 516.741.8210

PHONE# 516-741-8398 FAX #516-741-8210
TOLL FREE TELEPHONE # 800-272-8277

ATTN.: Guerry Harbin

COMPANY: Youngquist

FAX #: 941 - 489 - 4545

DATE: 11-29-2000

FROM: JENNIFER REYES

PIPE TALLY / PACKING SLIP

P.O. #: 208035-14

TOTAL FOOTAGE	DESCRIPTION	NO. OF PCS			HEAT #
251.0	5 Pcs x 50.2' 50" BPE A139B	5x	40.2		8755P
	.500w SPIRAL WELD				7962P

Youngquist Brothers, Inc.
Has reviewed this Shop Drawing/Submittal
YBI / Section No. # 02852-06-A 2.05B
Transmittal # Date : 11/30/2000
Signature: Guerry T. Harbin

TELEPHONE: (416) 259-1113
FAX: (416) 259-6501

CANADIAN PHOENIX STEEL PRODUCTS

DIVISION OF 1045781 ONTARIO LIMITED
259 HORNER AVENUE
ETOBICOKE, ONTARIO,
CANADA
M8Z 4Y4

LABORATORY REPORT AND MILL TEST CERTIFICATE

DATE Nov.13/00

CUSTOMER

SPECIFICATION A139B

CUSTOMER'S P.O 6545

DIA. & WALL 50"O.D. X .500 WT

PHOENIX REF.# 00-3654

HYDROTEST 560 PSI FOR 10 Sec.

PHYSICAL PROPERTIES

HEAT NO.	PIPE NO.	LONGITUDINAL TEST YIELD	LONGITUDINAL TEST TENSILE	% ELONGATION	TRANSVERSE WELD TENSILE	BREAK LOCATION
8755P	4	51900	72300	30.0	75600	PM
7962P	2	62200	73100	30.0	76300	PM

LADLE ANALYSIS **CHEMICAL COMPOSITION**

HEAT NO	C	MN	S	P	SI	CR	NI	CU	MO	AL
8755P	.17	.86	.008	.011	.25	.01	.01	.01	.01	.042
7962P	.18	.83	.009	.005	.25	.01	.01	.02	.01	.050

The material listed on this report has been tested in accordance with the specification shown above.

Authorized Approval

Youngquist Brothers, Inc.
Has reviewed this Shop Drawing/Submittal
YBI / Section No. # 02852-06-A 2.05B
Transmittal # Date : 11/30/2000
Signature: Guerry T. Harbin

Submittal Data
FROM
Youngquist Brothers, Inc.

15465 Pine Ridge Rd.
Ft. Myers, FL. 33908
941-489-4444 Fax: 941-489-4545

Project: Cooper City - 40340
Concentrate Disposal Well

I have reviewed this submittal for general conformance with the design concepts and contract documents. Generally no conflict with materials or dimensions will arise from the approval of this shop drawing submittal.

November 29, 2000

Number of Copies: 9

Submittal Number: 02852-07-A

Specification Section Number: 02852/2.05/C

Item Submitted: 42" x .375" I/W Surface Casing Mill Certifications

New Submittal: ☒

Resubmittal: ☐

Subcontractor:

Youngquist Brothers, Inc. Representative:

Guerry T. Harbin

Transmittal Date: 11-30-00

- ☐ Approved
- ☐ Approved with changes
- ☐ Rejected, Revise & Resubmit
- ☐ Not Reviewed

By: ____________

Firm: ____________

Date: ____________

VASS PIPE & STEEL CO., INC.

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PHONE# 516-741-8398 FAX #516-741-8210
TOLL FREE TELEPHONE # 800-272-8277

ATTN.: Guerry Harbin

COMPANY: Youngquist Bros

FAX #: 941-489-4545

DATE: 11-29-00

FROM: JENNIFER REYES

'as reviewed this Shop Drawing/Submittal
YBI / Section No. # 02852-07-A 2.05C
Transmittal # Date : 11/29/2000
Signature: Guerry T. Harbin

PIPE TALLY / PACKING SLIP

P.O. #: 208035-14

TOTAL FOOTAGE	DESCRIPTION	NO. OF PCS	HEAT #
192.2	5Pcs x D/R 42" BPE API5LBX42	37.6	561752
	.375W DSAW	38.2	561740
	Load 1	37.9	4D0896
	Landstar: Carrier	37.8	4D0916
		40.7	561772
16050	4Pcs x D/R 42" BE API5LBX42	40.6	561768
	.375W DSAW	39.8	561698
	Load 2	40.0	561767
	Carrier: Precision	40.7	561717
199.6	5Pcs x D/R 42" BPE API5LBX42	38.6	561773
	.375W DSAW	39.6	561755
		40.7	561717
	Load 3	40.0	561727
	Carrier: JRC	40.7	661698

VASS PIPE & STEEL CO., INC.

A DEPENDABLE SOURCE YOU CAN COUNT ON

158 THIRD STREET - P.O. BOX 583 - MINEOLA - NY 11501 - TEL: 516.741.8398 - FAX: 516.741.8210

PHONE# 516-741-8398 FAX #516-741-8210
TOLL FREE TELEPHONE # 800-272-8277

ATTN.: Guerry Hamblin

COMPANY: Youngquist Bros

FAX #: 941-489-4545

DATE: 11-29-00

FROM: JENNIFER REYES

PIPE TALLY / PACKING SLIP

P.O. #: 208035-14

TOTAL FOOTAGE	DESCRIPTION	NO. OF PCS			HEAT #
162.8	4P00 x D/R 42" BPE API5LBX42		40.7		5G1404
	.375W DSAW		40.7		UD0894
	Load 4		40.7		5G1717
	Carrier: Decato		40.7		5G1727
157.6	4P00 x D/R 42" BPE API5LBX42		40.7		UD0898
	.375W DSAW		39.4	38.5	5G1767
			39.6		5G1747

SAW Pipes USA, Inc.
P.O. Box 2349
Baytown, TX 77522-2349
(281) 383-3300

SAW FORM NO. 20

16247

METALLURGICAL AND PIPE TEST REPORT

CUSTOMER	P.O. DATE	P.O. NUMBER	
VASS PIPE & STEEL 158 THIRD STREET P.O. BOX 583 MINEOLA, NY. 11501	3/19/99	7543-SJ	This is to certify that the product described herein was manufactured, sampled, and tested in accordance with the specifications and requirements in such specifications. Approved: [signature] Date: 5/7/99
	SHIP TO: VASS PIPE & STEEL CUSTOMER PICK-UP		

API 5L APRIL 1995 41ST EDITION, SR 15

GUIDED BEND TEST:
FACE BEND: SATISFACTORY
ROOT BEND: SATISFACTORY
FRACTURE LOCATION:
WELD TENSILE: BASE METAL

WELD SEAM INSPECTED BY FLOUROSCOPIC RADIOLOGICAL METHOD

ITEM NO.	MATERIAL DESCRIPTION SPECIFICATION AND GRADE	MAT	HEAT/LOT	HYDRO	YIELD PSI	TENSILE PSI	ELON %	C WIDTH	CHARPY %SHEAR	CHARPY ENERGY	DWTT % SHEAR
1	42" X 0.375" 5L GRADE B/X42	DSAW	5G1752	680 PSI							
	A. LONGITUDINAL			10 SECONDS	52,600	70,700	45.0	1.499			
	B. TRANSVERSE			(MIN)	58,100	72,800	34.0	1.486			
	C. WELD				51,600	70,400		1.461			

HEAT NO.	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Al	Nb	V	C.E.	
5G1752	0.150	0.930	0.015	0.021	0.180					0.038				YIELD STRENGTH DETERMINED AT 0.5% EXT.
PRODUCT	0.150	0.950	0.015	0.017	0.180					0.043				
PRODUCT	0.140	0.940	0.015	0.014	0.180					0.042				

CERTIFIED COPY

SAW Pipes USA, Inc.
P.O. Box 2349
Baytown, TX 77522-2349
(281) 383-3300

SAW FORM NO. 20

16229

METALLURGICAL AND PIPE TEST REPORT

CUSTOMER

VASS PIPE & STEEL
158 THIRD STREET
P.O. BOX 583
MINEOLA, NY. 11501

P.O. DATE 3/19/99

P.O. NUMBER 7543-SJ

SHIP TO:

VASS PIPE & STEEL

CUSTOMER PICK-UP

This is to certify that the product described herein was manufactured, sampled, and tested in accordance with the specifications and requirements in such specifications.

Approved:

Date: 5/7/99

API 5L APRIL - 1995 41ST EDITION, SR 15

GUIDED BEND TEST:
FACE BEND: SATISFACTORY
ROOT BEND: SATISFACTORY
FRACTURE LOCATION:
WELD TENSILE: BASE METAL

WELD SEAM INSPECTED BY FLOUROSCOPIC RADIOLOGICAL METHOD

ITEM NO.	MATERIAL DESCRIPTION SPECIFICATION AND GRADE	MAT	HEAT/LOT	HYDRO	YIELD PSI	TENSILE PSI	ELON %	C WIDTH	CHARPY %SHEAR	CHARPY ENERGY	DWTT % SHEAR
1	42" X 0.375" 5L GRADE B/X42	DSAW	5G1740	680 PSI							
	A. LONGITUDINAL			10 SECONDS	54,100	75,400	42.0	1.521			
	B. TRANSVERSE			(MIN)	60,400	78,000	40.0	1.502			
	C. WELD				52,900	75,700		1.481			

HEAT NO.	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Al	Nb	V	C.E.
5G1740	0.180	0.950	0.014	0.020	0.210					0.027			
PRODUCT	0.180	0.970	0.019	0.017	0.220					0.027			
PRODUCT	0.190	0.890	0.015	0.014	0.220					0.028			

YIELD STRENGTH DETERMINED AT 0.5% EXT.

CERTIFIED COPY

SAW Pipes USA, Inc.
P.O. Box 2349
Baytown, TX 77522-2349
(281) 383-3300

SAW FORM NO. 20

10283

METALLURGICAL AND PIPE TEST REPORT

CUSTOMER

VASS PIPE & STEEL
158 THIRD STREET
P.O. BOX 583
MINEOLA, NY. 11501

P.O. DATE 3/19/99

P.O. NUMBER 7543-SJ

SHIP TO:

VASS PIPE & STEEL

CUSTOMER PICK-UP

This is to certify that the product described herein was manufactured, sampled, and tested in accordance with the specifications and requirements in such specifications.

Approved: A. Lem

Date: 5/10/99

API 5L APRIL 1995 41ST EDITION, SR 15

GUIDED BEND TEST:
FACE BEND: SATISFACTORY
ROOT BEND: SATISFACTORY
FRACTURE LOCATION:
WELD TENSILE: BASE METAL

WELD SEAM INSPECTED BY FLOUROSCOPIC RADIOLOGICAL METHOD

ITEM NO.	MATERIAL DESCRIPTION SPECIFICATION AND GRADE	MAT	HEAT/LOT	HYDRO	YIELD PSI	TENSILE PSI	ELON %	C WIDTH	CHARPY %SHEAR	CHARPY ENERGY	DWTT % SHEAR
1	42" X 0.375" 5L GRADE B/X42	DSAW	UD0688	680 PSI							
	A. LONGITUDINAL			10 SECONDS	55,200	69,500	33.0	1.493			
	B. TRANSVERSE			(MIN)	56,000	70,500	39.0	1.498			
	C. WELD				50,000	67,700		1.478			

HEAT NO.	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Al	Nb	V	C.E.
UD0688	0.110	1.050	0.019	0.010	0.280					0.041			
PRODUCT	0.090	1.030	0.018	0.008	0.280					0.046			
PRODUCT	0.100	1.050	0.017	0.010	0.280					0.040			

YIELD STRENGTH DETERMINED AT 0.5% EXT.

CERTIFIED COPY

SAW Pipes USA, Inc.
P.O. Box 2349
Baytown, TX 77522-2349
(281) 383-3300

SAW FORM NO. 20

16291

METALLURGICAL AND PIPE TEST REPORT

CUSTOMER

VASS PIPE & STEEL
158 THIRD STREET
P.O. BOX 583
MINEOLA, NY. 11501

P.O. DATE 3/19/99

P.O. NUMBER 7543-SJ

SHIP TO:

VASS PIPE & STEEL

CUSTOMER PICK-UP

This is to certify that the product described herein was manufactured, sampled, and tested in accordance with the specifications and requirements in such specifications.

Approved: [signature]

Date: 5/10/99

API 5L APRIL 1995 41ST EDITION, SR 15

GUIDED BEND TEST:
FACE BEND: SATISFACTORY
ROOT BEND: SATISFACTORY
FRACTURE LOCATION:
WELD TENSILE: BASE METAL

WELD SEAM INSPECTED BY FLOUROSCOPIC RADIOLOGICAL METHOD

ITEM NO.	MATERIAL DESCRIPTION SPECIFICATION AND GRADE	MAT	HEAT/LOT	HYDRO	YIELD PSI	TENSILE PSI	ELON %	C WIDTH	CHARPY %SHEAR	CHARPY ENERGY	DWTT % SHEAR
1	42" X 0.375" 5L GRADE BX42	DSAW	UD0816	680 PSI							
	A. LONGITUDINAL			10 SECONDS	57,000	67,700	45.0	1.508			
	B. TRANSVERSE			(MIN)	58,800	69,100	37.0	1.498			
	C. WELD				53,400	67,400		1.471			

HEAT NO.	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Al	Nb	V	C.E.
UD0816	0.060	1.010	0.019	0.018	0.270					0.042			
PRODUCT	0.050	1.010	0.020	0.017	0.280					0.042			
PRODUCT	0.050	1.000	0.019	0.015	0.270					0.041			

YIELD STRENGTH DETERMINED AT 0.5% EXT.

CERTIFIED COPY

SAW Pipes USA, Inc.
P.O. Box 2340
Baytown, TX 77522-2349
(281) 383-3300

SAW FORM NO. 20

f8271

METALLURGICAL AND PIPE TEST REPORT

CUSTOMER

VASS PIPE & STEEL
158 THIRD STREET
P.O. BOX 583
MINEOLA, NY. 11501

P.O. DATE 3/19/99

P.O. NUMBER 7543-SJ

SHIP TO:

VASS PIPE & STEEL

CUSTOMER PICK-UP

This is to certify that the product described herein was manufactured, sampled, and tested in accordance with the specifications and requirements in such specifications.

Approved: A. Lam

Date: 5/10/99

API 5L APRIL 1995 41ST EDITION, SR 15

GUIDED BEND TEST:
FACE BEND: SATISFACTORY
ROOT BEND: SATISFACTORY
FRACTURE LOCATION:
WELD TENSILE: BASE METAL

WELD SEAM INSPECTED BY FLOUROSCOPIC RADIOLOGICAL METHOD

ITEM NO.	MATERIAL DESCRIPTION SPECIFICATION AND GRADE	MAT	HEAT/LOT	HYDRO	YIELD PSI	TENSILE PSI	ELON %	C WIDTH	CHARPY %SHEAR	CHARPY ENERGY	DWTT % SHEAR
1	42" X 0.375" 5L GRADE B/X42	DSAW	5G1772	680 PSI							
	A. LONGITUDINAL			10 SECONDS	54,300	73,800	42.0	1.518			
	B. TRANSVERSE			(MIN)	59,300	78,300	35.0	1.508			
	C. WELD				53,000	73,600		1.468			

HEAT NO.	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Al	Nb	V	C.E.
5G1772	0.170	0.810	0.015	0.020	0.170					0.045			
PRODUCT	0.170	0.810	0.015	0.020	0.160					0.052			
PRODUCT	0.170	0.810	0.015	0.020	0.160					0.054			

YIELD STRENGTH DETERMINED AT 0.5% EXT.

CERTIFIED COPY

NOV. 29. 2000 1:20PM VASS pipe NO. 4693 P. 9

SAW Pipes USA, Inc.
P.O. Box 2349
Baytown, TX 77522-2349
(281) 383-3300

SAW FORM NO. 20

16263

METALLURGICAL AND PIPE TEST REPORT

CUSTOMER

VASS PIPE & STEEL
158 THIRD STREET
P.O. BOX 583
MINEOLA, NY. 11501

P.O. DATE 3/19/99

P.O. NUMBER 7543-SJ

SHIP TO:

VASS PIPE & STEEL

CUSTOMER PICK-UP

This is to certify that the product described herein was manufactured, sampled, and tested in accordance with the specifications and requirements in such specifications.

Approved: [signature]

Date: 5/7/99

API 5L APRIL 1995 41ST EDITION, SR 15

GUIDED BEND TEST:
FACE BEND: SATISFACTORY
ROOT BEND: SATISFACTORY
FRACTURE LOCATION:
WELD TENSILE: BASE METAL

WELD SEAM INSPECTED BY FLOUROSCOPIC RADIOLOGICAL METHOD

ITEM NO.	MATERIAL DESCRIPTION SPECIFICATION AND GRADE	MAT	HEAT/LOT	HYDRO	YIELD PSI	TENSILE PSI	ELON %	C WIDTH	CHARPY %SHEAR	CHARPY ENERGY	DWTT % SHEAR
1	42" X 0.375" 5L GRADE B/X42	DSAW	5G1768	680 PSI							
	A. LONGITUDINAL			10 SECONDS	51,200	73,300	41.0	1.498			
	B. TRANSVERSE			(MIN)	55,300	72,700	43.0	1.504			
	C. WELD				50,600	72,400		1.500			

HEAT NO.	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Al	Nb	V	C.E.
5G1768	0.170	0.910	0.015	0.022	0.190					0.048			
PRODUCT	0.150	0.940	0.018	0.018	0.170					0.043			
PRODUCT	0.160	0.960	0.017	0.018	0.220					0.064			

YIELD STRENGTH DETERMINED AT 0.5% EXT.

CERTIFIED COPY

SAW Pipes USA, Inc.
P.O. Box 2349
Baytown, TX 77522-2349
(281) 383-3300

SAW FORM NO 70

78203

METALLURGICAL AND PIPE TEST REPORT

CUSTOMER	P.O. DATE	P.O. NUMBER
VASS PIPE & STEEL 158 THIRD STREET P.O. BOX 583 MINEOLA, NY. 11501	3/19/99	7543-SJ

SHIP TO:

VASS PIPE & STEEL

CUSTOMER PICK-UP

This is to certify that the product described herein was manufactured, sampled, and tested in accordance with the specifications and requirements in such specifications.

Approved: [signature]

Date: 5/7/99

API 5L APRIL 1995 41ST EDITION, SR 15

GUIDED BEND TEST:
FACE BEND: SATISFACTORY
ROOT BEND: SATISFACTORY
FRACTURE LOCATION:
WELD TENSILE: BASE METAL

WELD SEAM INSPECTED BY FLOUROSCOPIC RADIOLOGICAL METHOD

ITEM NO.	MATERIAL DESCRIPTION SPECIFICATION AND GRADE	MAT	HEAT/LOT	HYDRO	YIELD PSI	TENSILE PSI	ELON %	C WIDTH	CHARPY %SHEAR	CHARPY ENERGY	DWTT % SHEAR
1	42" X 0.375" 5L GRADE B/X42	DSAW	5G1698	680 PSI							
	A. LONGITUDINAL			10 SECONDS	48,800	73,300	43.0	1.473			
	B. TRANSVERSE			(MIN)	54,400	75,500	38.0	1.461			
	C. WELD				60,900	74,800		1.485			

HEAT NO.	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Al	Nb	V		C.E.	
5G1698	0.180	0.880	0.015	0.020	0.200					0.043					
PRODUCT	0.160	1.000	0.016	0.015	0.200					0.050					
PRODUCT	0.170	1.000	0.016	0.015	0.200					0.050					

YIELD STRENGTH DETERMINED AT 0.5% EXT.

CERTIFIED COPY

NOV. 29. 2000 1:20PM VASS pipe NO. 4896 P. 10

NOV. 29. 2000 1:21PM VASS pipe

SAW Pipes USA, Inc.
P.O. Box 2349
Baytown, TX 77522-2349
(281) 383-3300

SAW FORM NO. 20

16261

METALLURGICAL AND PIPE TEST REPORT

CUSTOMER

VASS PIPE & STEEL
158 THIRD STREET
P.O. BOX 583
MINEOLA, NY. 11501

P.O. DATE 3/19/99

P.O. NUMBER 7543-SJ

SHIP TO:

VASS PIPE & STEEL

CUSTOMER PICK-UP

This is to certify that the product described herein was manufactured, sampled, and tested in accordance with the specifications and requirements in such specifications.

Approved: [signature]

Date: 5/7/99

API 5L APRIL 1995 41ST EDITION, SR 15

GUIDED BEND TEST:
FACE BEND: SATISFACTORY
ROOT BEND: SATISFACTORY
FRACTURE LOCATION:
WELD TENSILE: BASE METAL

WELD SEAM INSPECTED BY FLOUROSCOPIC RADIOLOGICAL METHOD

ITEM NO.	MATERIAL DESCRIPTION SPECIFICATION AND GRADE	MAT	HEAT/LOT	HYDRO	YIELD PSI	TENSILE PSI	ELON %	C WIDTH	CHARPY %SHEAR	CHARPY ENERGY	DWTT % SHEAR
1	42" X 0.375" 5L GRADE B/X42	DSAW	5G1767	650 PSI							
	A. LONGITUDINAL			10 SECONDS	54,500	73,600	40.0	1.488			
	B. TRANSVERSE			(MIN)	56,600	74,800	38.0	1.491			
	C. WELD				49,600	72,500		1.528			

HEAT NO.	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Al	Nb	V		C.E.						
5G1767	0.140	0.670	0.018	0.025	0.180					0.036										YIELD STRENGTH DETERMINED AT 0.5% EXT.
PRODUCT	0.140	0.680	0.016	0.024	0.190					0.043										
PRODUCT	0.140	0.680	0.016	0.010	0.190					0.042										

CERTIFIED COPY

NO. 2393

NOV. 29. 2000 1:21PM VASS pipe

SAW Pipes USA, Inc.
P.O. Box 2349
Baytown, TX 77522-2349
(281) 383-3300

SAW FORM NO. 20

16219

METALLURGICAL AND PIPE TEST REPORT

CUSTOMER	P.O. DATE	P.O. NUMBER	
VASS PIPE & STEEL 158 THIRD STREET P.O. BOX 583 MINEOLA, NY. 11501	3/19/99	7543-SJ	This is to certify that the product described herein was manufactured, sampled, and tested in accordance with the specifications and requirements in such specifications. Approved: [signature] Date: 5/7/99
	SHIP TO: VASS PIPE & STEEL CUSTOMER PICK-UP		

API 5L APRIL 1995 41ST EDITION, SR 15

GUIDED BEND TEST:
FACE BEND: SATISFACTORY
ROOT BEND: SATISFACTORY
FRACTURE LOCATION:
WELD TENSILE: BASE METAL

WELD SEAM INSPECTED BY FLOUROSCOPIC RADIOLOGICAL METHOD

ITEM NO.	MATERIAL DESCRIPTION SPECIFICATION AND GRADE	MAT	HEAT/LOT	HYDRO	YIELD PSI	TENSILE PSI	ELON %	C WIDTH	CHARPY %SHEAR	CHARPY ENERGY	DWTT % SHEAR
1	42" X 0.375" 5L GRADE B/X42	DSAW	5G1717	680 PSI							
	A. LONGITUDINAL			10 SECONDS	50,900	73,400	44.0	1.463			
	B. TRANSVERSE			(MIN)	57,100	75,100	34.0	1.480			
	C. WELD				52,400	72,400		1.484			

HEAT NO.	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Al	Nb	V	C.E.
5G1717	0.160	0.880	0.020	0.018	0.220					0.042			
PRODUCT	0.140	1.000	0.018	0.016	0.230					0.050			
PRODUCT	0.140	1.010	0.017	0.015	0.230					0.050			

YIELD STRENGTH DETERMINED AT 0.5% EXT.

CERTIFIED COPY

NO. 4393 P. 12

SAW Pipes USA, Inc.
P.O. Box 2349
Baytown, TX 77522-2349
(281) 383-3300

SAW FORM NO. 20

18273

METALLURGICAL AND PIPE TEST REPORT

CUSTOMER	P.O. DATE	P.O. NUMBER	
VASS PIPE & STEEL 158 THIRD STREET P.O. BOX 583 MINEOLA, NY. 11501	3/19/99	7543-SJ	This is to certify that the product described herein was manufactured, sampled, and tested in accordance with the specifications and requirements in such specifications. Approved: Date: 5/10/99
	SHIP TO: VASS PIPE & STEEL CUSTOMER PICK-UP		

API 5L APRIL 1995 41ST EDITION, SR 15

GUIDED BEND TEST:
FACE BEND: SATISFACTORY
ROOT BEND: SATISFACTORY
FRACTURE LOCATION:
WELD TENSILE: BASE METAL

WELD SEAM INSPECTED BY FLOUROSCOPIC RADIOLOGICAL METHOD

ITEM NO.	MATERIAL DESCRIPTION SPECIFICATION AND GRADE	MAT	HEAT/LOT	HYDRO	YIELD PSI	TENSILE PSI	ELON %	C WIDTH	CHARPY %SHEAR	CHARPY ENERGY	DWTT % SHEAR
1	42" X 0.375" 5L GRADE B/X42	DSAW	5G1773	680 PSI							
	A. LONGITUDINAL			10 SECONDS	54,400	70,700	46.0	1.495			
	B. TRANSVERSE			(MIN)	57,200	72,400	43.0	1.504			
	C. WELD				52,700	71,300		1.500			

HEAT NO.	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Al	Nb	V	C.E.
5G1773	0.170	0.890	0.016	0.023	0.180					0.058			
PRODUCT	0.150	0.900	0.015	0.018	0.190					0.064			
PRODUCT	0.160	0.910	0.015	0.020	0.180					0.070			

YIELD STRENGTH DETERMINED AT 0.5% EXT.

CERTIFIED COPY

SAW Pipes USA, Inc.
P.O. Box 2349
Baytown, TX 77522-2349
(281) 383-3300

SAW FORM NO. 20

16249

METALLURGICAL AND PIPE TEST REPORT

CUSTOMER

VASS PIPE & STEEL
158 THIRD STREET
P.O. BOX 583
MINEOLA, NY. 11501

P.O. DATE: 3/19/99

P.O. NUMBER: 7543-SJ

SHIP TO:

VASS PIPE & STEEL

CUSTOMER PICK-UP

This is to certify that the product described herein was manufactured, sampled, and tested in accordance with the specifications and requirements in such specifications.

Approved: [signature]

Date: 5/7/98

API 5L APRIL 1995 41ST EDITION, SR 15

GUIDED BEND TEST:
FACE BEND: SATISFACTORY
ROOT BEND: SATISFACTORY
FRACTURE LOCATION:
WELD TENSILE: BASE METAL

WELD SEAM INSPECTED BY FLOUROSCOPIC RADIOLOGICAL METHOD

ITEM NO.	MATERIAL DESCRIPTION SPECIFICATION AND GRADE	MAT	HEAT/LOT	HYDRO	YIELD PSI	TENSILE PSI	ELON %	C WIDTH	CHARPY %SHEAR	CHARPY ENERGY	DWTT % SHEAR
1	42" X 0.375" 5L GRADE BX42	DSAW	5G1755	680 PSI							
	A. LONGITUDINAL			10 SECONDS	50,500	72,400	41.0	1.507			
	B. TRANSVERSE			(MIN)	57,200	73,700	40.0	1.503			
	C. WELD				50,300	72,400		1.508			

HEAT NO.	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Al	Nb	V	C.E.	
5G1755	0.180	0.820	0.016	0.020	0.180					0.057				
PRODUCT	0.180	0.870	0.013	0.015	0.190					0.048				YIELD STRENGTH DETERMINED AT 0.5% EXT.
PRODUCT	0.180	0.880	0.015	0.022	0.180					0.038				

CERTIFIED COPY

NOV. 29. 2000 1:21PM VASS pipe NO. 4393 P. 12

SAW Pipes USA, Inc.
P.O. Box 2349
Baytown, TX 77522-2349
(281) 383-3300

SAW FORM NO. 20

16223

METALLURGICAL AND PIPE TEST REPORT

CUSTOMER	P.O. DATE	P.O. NUMBER
VASS PIPE & STEEL 158 THIRD STREET P.O. BOX 583 MINEOLA, NY. 11501	3/19/99	7543-SJ
	SHIP TO: VASS PIPE & STEEL CUSTOMER PICK-UP	

This is to certify that the product described herein was manufactured, sampled, and tested in accordance with the specifications and requirements in such specifications.

Approved: [signature]

Date: 5/7/99

API 5L APRIL 1995 41ST EDITION, SR 15

GUIDED BEND TEST:
FACE BEND: SATISFACTORY
ROOT BEND: SATISFACTORY
FRACTURE LOCATION:
WELD TENSILE: BASE METAL

WELD SEAM INSPECTED BY FLOUROSCOPIC RADIOLOGICAL METHOD

ITEM NO.	MATERIAL DESCRIPTION SPECIFICATION AND GRADE	MAT	HEAT/LOT	HYDRO	YIELD PSI	TENSILE PSI	ELON %	C WIDTH	CHARPY %SHEAR	CHARPY ENERGY	DWTT % SHEAR
1	42" X 0.375" 5L GRADE B/X42	DSAW	5G1727	680 PSI 10 SECONDS (MIN)							
	A. LONGITUDINAL				53,400	72,300	42.0	1.498			
	B. TRANSVERSE				55,300	73,900	36.0	1.491			
	C. WELD				49,600	71,400		1.464			

HEAT NO.	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Al	Nb	V	C.E.	
5G1727	0.160	0.980	0.014	0.025	0.260					0.047				
PRODUCT	0.150	0.980	0.013	0.023	0.260					0.049				YIELD STRENGTH DETERMINED AT 0.5% EXT
PRODUCT	0.150	0.980	0.013	0.024	0.260					0.050				

CERTIFIED COPY

SAW Pipes USA, Inc.
P.O. Box 2349
Baytown, TX 77522-2349
(281) 383-3300

SAW FORM NO. 20

16201

METALLURGICAL AND PIPE TEST REPORT

CUSTOMER
VASS PIPE & STEEL
158 THIRD STREET
P.O. BOX 583
MINEOLA, NY. 11501

P.O. DATE: 3/19/99

P.O. NUMBER: 7543-SJ

SHIP TO:
VASS PIPE & STEEL
CUSTOMER PICK-UP

This is to certify that the product described herein was manufactured, sampled, and tested in accordance with the specifications and requirements in such specifications.

Approved: [signature]

Date: 5/7/99

API 5L APRIL 1995 41ST EDITION, SR 15

GUIDED BEND TEST:
FACE BEND: SATISFACTORY
ROOT BEND: SATISFACTORY
FRACTURE LOCATION:
WELD TENSILE: BASE METAL

WELD SEAM INSPECTED BY FLOUROSCOPIC RADIOLOGICAL METHOD

ITEM NO.	MATERIAL DESCRIPTION SPECIFICATION AND GRADE	MAT	HEAT/LOT	HYDRO	YIELD PSI	TENSILE PSI	ELON %	C WIDTH	CHARPY %SHEAR	CHARPY ENERGY	DWTT % SHEAR
1	42" X 0.375" 5L GRADE BX42	DSAW	5G1404	880 PSI							
	A. LONGITUDINAL			10 SECONDS	48,900	68,800	43.0	1.479			
	B. TRANSVERSE			(MIN)	51,200	67,600	42.0	1.481			
	C. WELD				47,800	68,100		1.480			

HEAT NO.	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Al	Nb	V		C.E.
5G1404	0.160	0.440	0.012	0.015	0.230									
PRODUCT	0.150	0.450	0.011	0.014	0.240					0.004				
PRODUCT	0.140	0.440	0.010	0.013	0.230					0.004				

YIELD STRENGTH DETERMINED AT 0.5% EXT.

CERTIFIED COPY

NOV. 29. 2000 1:22PM VASS pipe NO. 4693

SAW Pipes USA, Inc.
P.O. Box 2349
Baytown, TX 77522-2349
(281) 383-3300

SAW FORM NO. 20

18281

METALLURGICAL AND PIPE TEST REPORT

CUSTOMER

VASS PIPE & STEEL
158 THIRD STREET
P.O. BOX 583
MINEOLA, NY. 11501

P.O. DATE: 3/19/99

P.O. NUMBER: 7543-SJ

SHIP TO:

VASS PIPE & STEEL

CUSTOMER PICK-UP

This is to certify that the product described herein was manufactured, sampled, and tested in accordance with the specifications and requirements in such specifications.

Approved: [signature]

Date: 5/10/99

API 5L APRIL 1995 41ST EDITION, SR 15

GUIDED BEND TEST:
FACE BEND: SATISFACTORY
ROOT BEND: SATISFACTORY
FRACTURE LOCATION:
WELD TENSILE: BASE METAL

WELD SEAM INSPECTED BY FLOUROSCOPIC RADIOLOGICAL METHOD

ITEM NO.	MATERIAL DESCRIPTION SPECIFICATION AND GRADE	MAT	HEAT/LOT	HYDRO	YIELD PSI	TENSILE PSI	ELON %	C WIDTH	CHARPY %SHEAR	CHARPY ENERGY	DWTT % SHEAR
1	42" X 0.375" 5L GRADE B/X42	DSAW	UD0894	660 PSI							
	A. LONGITUDINAL			10 SECONDS	53,100	70,300	40.0	1.483			
	B. TRANSVERSE			(MIN)	58,000	70,600	41.0	1.492			
	C. WELD				49,500	66,400		1.490			

HEAT NO.	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Al	Nb	V	C.E.
UD0894	0.090	1.110	0.015	0.011	0.320					0.039			
PRODUCT	0.090	1.110	0.016	0.013	0.330					0.040			
PRODUCT	0.080	1.100	0.016	0.010	0.320					0.039			

YIELD STRENGTH DETERMINED AT 0.5% EXT.

CERTIFIED COPY

NOV. 29. 2000 1:22PM VASS pipe

SAW Pipes USA, Inc.
P.O. Box 2349
Baytown, TX 77522-2349
(281) 383-3300

SAW FORM NO. 20

16285

METALLURGICAL AND PIPE TEST REPORT

CUSTOMER	P.O. DATE	P.O. NUMBER	
VASS PIPE & STEEL 158 THIRD STREET P.O. BOX 583 MINEOLA, NY. 11501	3/19/99	7543-SJ	This is to certify that the product described herein was manufactured, sampled, and tested in accordance with the specifications and requirements in such specifications. Approved: [signature] Date: 5/10/99
	SHIP TO: VASS PIPE & STEEL CUSTOMER PICK-UP		

API 5L APRIL 1995 41ST EDITION, SR 15

GUIDED BEND TEST:
FACE BEND: SATISFACTORY
ROOT BEND: SATISFACTORY
FRACTURE LOCATION:
WELD TENSILE: BASE METAL

WELD SEAM INSPECTED BY FLOUROSCOPIC RADIOLOGICAL METHOD

ITEM NO.	MATERIAL DESCRIPTION SPECIFICATION AND GRADE	MAT	HEAT/LOT	HYDRO	YIELD PSI	TENSILE PSI	ELON %	C WIDTH	CHARPY %SHEAR	CHARPY ENERGY	DWTT % SHEAR
1	42" X 0.375" 5L GRADE BX42	DSAW	UD0898	890 PSI							
	A. LONGITUDINAL			10 SECONDS	54,000	66,600	45.0	1.479			
	B. TRANSVERSE			(MIN)	53,300	67,900	44.0	1.487			
	C. WELD				46,900	68,100		1.481			

HEAT NO.	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Al	Nb	V		C.E.	
UD0898	0.080	0.980	0.010	0.010	0.250					0.032					
PRODUCT	0.080	0.990	0.019	0.012	0.260					0.031					
PRODUCT	0.080	0.980	0.018	0.010	0.250					0.032					

YIELD STRENGTH DETERMINED AT 0.5% EXT.

CERTIFIED COPY

NO. 4898 P. 18

SAW Pipes USA, Inc.
P.O. Box 2349
Baytown, TX 77522-2349
(281) 383-3300

SAW FORM NO. 20

16239

METALLURGICAL AND PIPE TEST REPORT

CUSTOMER

VASS PIPE & STEEL
158 THIRD STREET
P.O. BOX 583
MINEOLA, NY. 11501

P.O. DATE 3/19/99

P.O. NUMBER 7543-SJ

SHIP TO:

VASS PIPE & STEEL

CUSTOMER PICK-UP

This is to certify that the product described herein was manufactured, sampled, and tested in accordance with the specifications and requirements in such specifications.

Approved:

Date: 5/7/99

API 5L APRIL 1995 41ST EDITION, SR 15

GUIDED BEND TEST:
FACE BEND: SATISFACTORY
ROOT BEND: SATISFACTORY
FRACTURE LOCATION:
WELD TENSILE: BASE METAL

WELD SEAM INSPECTED BY FLUOROSCOPIC RADIOLOGICAL METHOD

ITEM NO.	MATERIAL DESCRIPTION SPECIFICATION AND GRADE	MAT	HEAT/LOT	HYDRO	YIELD PSI	TENSILE PSI	ELON %	C WIDTH	CHARPY %SHEAR	CHARPY ENERGY	DWTT % SHEAR
1	42" X 0.375" 5L GRADE B/X42	DSAW	5G1747	680 PSI							
	A. LONGITUDINAL			10 SECONDS	54,800	73,900	42.0	1.492			
	B. TRANSVERSE			(MIN)	60,800	75,500	40.0	1.500			
	C. WELD				52,200	73,000		1.488			

HEAT NO.	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Al	Nb	V	C.E.
5G1747	0.180	0.960	0.013	0.018	0.240					0.039			
PRODUCT	0.160	0.960	0.013	0.017	0.260					0.049			
PRODUCT	0.150	1.050	0.016	0.016	0.250					0.047			

YIELD STRENGTH DETERMINED AT 0.5% EXT.

CERTIFIED COPY

NOV. 29. 2000 1:22PM VASS pipe NO. 4692 P. 19

U.S. STEEL GROUP
A DIVISION OF USX CORPORATION

TUBULAR PRODUCTS CERTIFIED TEST REPORT

(TYPE B - IN ACCORDANCE WITH ISO 10474/EN10204/DIN50049)

DATE: 01/22/01
TIME: 13:11:06 USX

USS, USX, USX are trademarks of USX Corporation

MILL ORDER/ITEM NO.	SHIPPERS NO.	P.O. NUMBER	VEHICLE I.D.
DR12072 01		1123	

SOLD TO ADDRESS	MAIL TO ADDRESS	VENDOR
BARTOW STEEL INC P O BOX 1789 BARTOW FL 33830-1789	BARTOW STEEL INC P O BOX 1789 BARTOW FL 33830-1789	USS TUBULAR PRODUCTS 2199 EAST 28TH ST. LORAIN, OH 44055

SPECIFICATION AND GRADE

PIPE CARBON SMLS STD PIPE API 5L-*42ND EDITION DATED 1/00 PSL-2 GRADE B AND GRADE X42 ASTM A53-*99B ASTM A106-*99 GRADE B QUAD STENCIL ASME SA53-*1998 EDITION 2000 ADDENDUM ASME SA106-*1998 EDITION 2000 ADDENDUM GRADE B BLK BARE PE BEV 30 DEG MEETING ALL THE APPLICABLE REQUIREMENTS OF NACE STANDARD MR-01-75 *2000

MATERIAL COND: AS ROLLED

O.D.: 24.000(609.600) in (mm) WALL: 0.500 (12.700) in (mm)

TENSILE

PRODUCT IDENTIFICATION	TEST TYPE/ ORIENTATION	TEST COND.	GAUGE WIDTH IN	YIELD PSI	EXT % .50	TENSILE PSI	Y/T	ELONG % IN 2"	HARDNESS SCALE: HRB	MIN HYDRO PSI	DWELL (SEC)
				MIN: 42000 MAX: 65000		MIN: 70000 MAX: 118000	MAX:	MIN: 30.0	MIN: MAX: 100.0	1500	5
B09838 1A3060	STRIP/T/B	AR	1.500	46800	.50	76000	0.62	45.0	B 80.7	1500	5

** END OF DATA THIS SHEET **

LEGEND: L - LONGITUDINAL, U - UPSET, T - TRANSVERSE, N - NORMALIZED, QT - QUENCHED & TEMPERED, SR - STRESS RELIEVED, AR - AS ROLLED, B - BODY, W - WELD

PRODUCT IDENTIFICATION	TYPE	C	MN	P	S	SI	CU	NI	CR	MO	AL	N	V	B	TI	CB	CO	CE* MAX .43
B09838	HEAT	.18	1.04	.010	.008	.22	.02	.02	.06	.02	.037		.004			.001		.37
B09838 1A3060	PROD	.17	1.03	.009	.009	.21	.02	.02	.06	.02	.034		.001			.001		.36
B09838 1A3060	PROD	.18	1.06	.008	.008	.21	.02	.02	.06	.02	.034		.001			.001		.38

** END OF DATA THIS SHEET **

*C.E. IS BASED ON THE FOLLOWING EQUATION(S): CE=C+(MN/6)+(CR+MO+V)/5+ (NI+CU)/15

DECIMAL POSITIONS FOR ELEMENTS ARE INDICATED BY THE LEFT MARGIN, VERTICAL DOTTED LINE OR DECIMAL POINT.

02/28/01 WED 16:47 FAX 9414884845 ... YOUNGQUIST BROTHERS INC 2001.02-28 16:15 #725 P.02/02

U.S. STEEL GROUP
A DIVISION OF USX CORPORATION

TUBULAR PRODUCTS
CERTIFIED TEST REPORT
(TYPE B - IN ACCORDANCE WITH ISO 10474/EN10204/DIN50049)

DATE: 01/22/01
TIME: 13:11:06 USX™

USS, USX, USX are trademarks of USX Corporation

MILL ORDER/ITEM NO.	SHIPPERS NO.	PO NUMBER
DR12072 01		1123

MATERIAL COND: AS ROLLED

O.D.: 24.000(609.600) in (mm)   WALL: 0.500 (12.700) in (mm)

PRODUCT IDENTIFICATION	FLAT	BEND	GRAIN SIZE	MIN COLLAPSE	DIR	TEST LOC.	TEMP	SIZE	TEST COND.	FT-LBS 1	FT-LBS 2	FT-LBS 3	FT-LBS AVG	% SHEAR 1	% SHEAR 2	% SHEAR 3	% SHEAR AVG
							DEG F										
B09B38 1A3060	OK				T	B	+ 32	FULL	AR	101	119	109	110	70	80	80	77

** END OF DATA THIS SHEET **

(Charpy V-Notch Impact Testing)

LEGEND: L - LONGITUDINAL   T - TRANSVERSE   B - BODY   W - WELD   HAZ - HEAT AFFECTED ZONE

TESTING / INSPECTION INFORMATION

TEST / INSPECTION	YES	RESULTS / COMMENTS
FULL LENGTH VISUAL	X	
FULL LENGTH EMI	X	
FULL LENGTH MPI	X	OD X OD/ID ___ L X L/T ___ 10.0% NOTCH
FULL LENGTH UT		
END AREA INSPECTION (PLAIN END)		OD ___ OD/ID ___ L ___ L/T ___
SPECIAL END AREA (SEA) INSP.		MPI ___ UT ___
FULL LENGTH DRIFT		MPI ___ UT ___
		DRIFT MANDREL SIZE:

ADDITIONAL NOTES/COMMENTS

ALL MELTING AND MANUFACTURING TOOK PLACE IN THE USA. NO REPAIRS BY WELDING. NO MERCURY OR MERCURY COMPOUNDS ARE ADDED TO THE STEEL AND ALL MERCURY BEARING EQUIPMENT IS PROTECTED BY A DOUBLE BOUNDARY OF CONTAINMENT.
PIPE ALSO MEET THE REQUIREMENTS OF ASTM A106 GRADE C & ASME SA106 GRADE C

THIS IS TO CERTIFY THAT THE PRODUCT DESCRIBED HEREIN WAS MANUFACTURED, SAMPLED, TESTED AND/OR INSPECTED IN ACCORDANCE WITH THE SPECIFICATION AND FULFILLS THE REQUIREMENTS IN SUCH RESPECTS

PREPARED BY THE OFFICE OF: J. MASSIMINO MGR. MET. & Q.A. USS TUBULAR PRODUCTS

DATE 01/22/01

U.S. STEEL GROUP
A DIVISION OF USX CORPORATION

TUBULAR PRODUCTS
CERTIFIED TEST REPORT
(TYPE B - IN ACCORDANCE WITH ISO 10474/EN10204/DIN50049)

DATE: 01/22/01
TIME: 13:11:53 USX™

USS, USX, USX are trademarks of USX Corporation

MILL ORDER/ITEM NO.	SHIPPERS NO.	P.O. NUMBER	VEHICLE ID
DR12072 01		1123	

SOLD TO ADDRESS	MAIL TO ADDRESS	VENDOR
BARTOW STEEL INC P O BOX 1789 BARTOW FL 33830-1789	BARTOW STEEL INC P O BOX 1789 BARTOW FL 33830-1789	USS TUBULAR PRODUCTS 2199 EAST 28TH ST. LORAIN, OH 44055

SPECIFICATION AND GRADE

PIPE CARBON SMLS STD PIPE API 5L-*42ND EDITION DATED 1/00 PSL-2 GRADE B AND GRADE X42 ASTM A53-*99B ASTM A106-*99 GRADE B QUAD STENCIL ASME SA53-*1998 EDITION 2000 ADDENDUM ASME SA106-*1998 EDITION 2000 ADDENDUM GRADE B BLK BARE PE BEV 30 DEG MEETING ALL THE APPLICABLE REQUIREMENTS OF NACE STANDARD MR-01-75 *2000

THESE MILL TEST REPORTS APPLY TO
YOUR P.O. # 32207
BARTOW STEEL REF. #________

MATERIAL COND: AS ROLLED | O.D. 24.000(609.600) in (mm) | WALL: 0.500 (12.700) in (mm)

TENSILE

PRODUCT IDENTIFICATION	TEST TYPE/ ORIENTATION	TEST COND.	GAUGE WIDTH	YIELD PSI	EXT % .50	TENSILE PSI	Y/T	ELONG % IN 2"	HARDNESS SCALE: HRB	MIN HYDRO PSI	DWELL (SEC)
			IN	MIN: 42000 MAX: 65000		MIN: 70000 MAX: 110000	MAX:	MIN: 30.0	MIN: MAX: 100.0	1580	5
B09839 IA3059	STRIP/T/B	AR	1.500	49200	.50	77500	0.64	43.0	B 81.3	1580	5

** END OF DATA THIS SHEET **

LEGEND: L - LONGITUDINAL; U - UPSET; T - TRANSVERSE; N - NORMALIZED; QT - QUENCHED & TEMPERED; SR - STRESS RELIEVED; AR - AS ROLLED; B - BODY; W - WELD

PRODUCT IDENTIFICATION	TYPE		C	MN	P	S	SI	CU	NI	CR	MO	AL	N	V	B	TI	CB	CO				C.E.* MAX
																						.43
B09839	HEAT		18	104	009	004	23	02	03	08	02	038		004			001					.38
B09839 IA3059	PROD		20	106	007	005	22	02	03	08	02	035		001			001					.40
B09839 IA3059	PROD		19	105	007	005	22	02	03	08	02	034		001			001					.39

** END OF DATA THIS SHEET **

*C.E. IS BASED ON THE FOLLOWING EQUATION(S): CE=C+(MN/6)+(CR+MO+V)/5+ (NI+CU)/15

DECIMAL POSITIONS FOR ELEMENTS ARE INDICATED BY THE LEFT MARGIN, VERTICAL DOTTED LINE OR DECIMAL POINT

U.S. STEEL GROUP
A DIVISION OF USX CORPORATION

TUBULAR PRODUCTS CERTIFIED TEST REPORT

(TYPE B IN ACCORDANCE WITH ISO 10474/EN10204/DIN50049)

DATE: 01/22/01
TIME: 13:11:53 USX

USS, USX, USX are trademarks of USX Corporation

FROM : BARTOW STEEL 863 619 8779 2001,02-28 17:04 #728 P.04/04

MILL ORDER/ITEM NO.	SHIPPERS NO.	P.O. NUMBER
0R12072 01		1123

MATERIAL COND: AS ROLLED

OD: 24.000(609.600) in (mm) WALL: 0.500 (12.700) in (mm)

PRODUCT IDENTIFICATION	FLAT	BEND	GRAIN SIZE	MIN COLLAPSE	DIR	TEST LOC.	TEMP	SIZE	TEST COND.	FT-LBS 1	FT-LBS 2	FT-LBS 3	FT-LBS AVG	% SHEAR 1	% SHEAR 2	% SHEAR 3	% SHEAR AVG
					CHARPY V-NOTCH IMPACT TESTING		DEG F										
809839 1A3059	OK				T	B	+ 32	FULL	AR	155	135	155	148	100	75	100	92

** END OF DATA THIS SHEET **

LEGEND: L - LONGITUDINAL T - TRANSVERSE B - BODY W - WELD HAZ - HEAT AFFECTED ZONE

TESTING / INSPECTION INFORMATION

TEST / INSPECTION	YES	RESULTS / COMMENTS
~~FULL LENGTH VISUAL~~	X	
FULL LENGTH EM	X	OD X OD/ID ___ L X U/T ___ 10.0% NOTCH
FULL LENGTH MPI		
FULL LENGTH UT		OD ___ OD/ID ___ L ___ U/T ___
END AREA INSPECTION (PLAIN END)		MPI ___ UT ___
SPECIAL END AREA (SEA) INSP.		MPI ___ UT ___
FULL LENGTH DRIFT		DRIFT MANDREL SIZE

ADDITIONAL NOTES/COMMENTS

ALL MELTING AND MANUFACTURING TOOK PLACE IN THE USA. NO REPAIRS BY WELDING. NO MERCURY OR MERCURY COMPOUNDS ARE ADDED TO THE STEEL AND ALL MERCURY BEARING EQUIPMENT IS PROTECTED BY A DOUBLE BOUNDARY OF CONTAINMENT.
PIPE ALSO MEET THE REQUIREMENTS OF ASTM A106 GRADE C & ASME SA106 GRADE C

THIS IS TO CERTIFY THAT THE PRODUCT DESCRIBED HEREIN WAS MANUFACTURED, SAMPLED, TESTED AND/OR INSPECTED IN ACCORDANCE WITH THE SPECIFICATION AND FULFILLS THE REQUIREMENTS IN SUCH RESPECTS.

PREPARED BY THE OFFICE OF: J. MASSIMINO MGR. MET. & Q.A. USS TUBULAR PRODUCTS

DATE 01/22/01

THESE MILL TEST REPORTS APPLY TO
YOUR P.O. # 32207
BARTOW STEEL REF. #

U.S. STEEL GROUP
A DIVISION OF USX CORPORATION

TUBULAR PRODUCTS CERTIFIED TEST REPORT

(TYPE B - IN ACCORDANCE WITH ISO 10474/EN10204/DIN50049)

DATE: 01/22/01
TIME: 13:09:52 USX

MILL ORDER/ITEM NO.	SHIPPERS NO.	P.O. NUMBER	VEHICLE I.D.
DR12072 01		1123	

SOLD TO ADDRESS	MAIL TO ADDRESS	VENDOR
BARTOW STEEL INC P O BOX 1789 BARTOW FL 33830-1789	BARTOW STEEL INC P O BOX 1789 BARTOW FL 33830-1789	USS TUBULAR PRODUCTS 2199 EAST 28TH ST. LORAIN, OH 44055

SPECIFICATION AND GRADE

PIPE CARBON SMLS STD PIPE API 5L-*42ND EDITION DATED 1/00 PSL-2 GRADE B AND GRADE X42 ASTM A106-*99 GRADE B QUAD STENCIL ASME SA53-*1998 EDITION 2000 ADDENDUM ASME SA106-*1998 EDITION 2000 ASTM A53-*99B ADDENDUM GRADE B BLK BARE PE BEV 30 DEG MEETING ALL THE APPLICABLE REQUIREMENTS OF NACE STANDARD MR-01-75 *2000

THESE MILL TEST REPORTS APPLY TO
YOUR P.O. # 32207
BARTOW STEEL REF. #

MATERIAL COND.: AS ROLLED
OD: 24.000(609.600)
WALL: 0.500 (12.700) in (mm)

PRODUCT IDENTIFICATION	TENSILE TEST TYPE/ ORIENTATION	TEST COND.	GAUGE WIDTH IN	YIELD PSI	EXT % .50	TENSILE PSI	Y/T	ELONG % IN 2"	HARDNESS SCALE: HRB	MIN HYDRO PSI	DWELL (SEC)
				MIN: 42000 MAX: 65000		MIN: 70000 MAX: 110000	MAX:	MIN: 30.0	MIN: MAX: 100.0	1500	5
B09028 1A3061	STRIP/T/B	AR	1.500	48300	.50	75500	0.64	45.0	B 81.0	1500	5

** END OF DATA THIS SHEET **

LEGEND: L - LONGITUDINAL; U - UPSET; T - TRANSVERSE; N - NORMALIZED; QT - QUENCHED & TEMPERED; SR - STRESS RELIEVED; AR - AS ROLLED; B - BODY; W - WELD

PRODUCT IDENTIFICATION	TYPE	C	MN	P	S	SI	CU	NI	CR	MO	AL	N	V	B	TI	CB	CO	C.E.* MAX
B09028	HEAT	18	111	009	007	25	01	02	05	01	041		008			001		.43
B09028 1A3061	PROD	17	108	009	008	24	01	02	05	01	038		001			001		.38
B09028 1A3061	PROD	18	109	008	008	24	01	02	05	01	038		001			001		.37
																		.38

** END OF DATA THIS SHEET **

*C.E. IS BASED ON THE FOLLOWING EQUATION(S): CE=C+(MN/6)+(CR+MO+V)/5+ (NI+CU)/15

DECIMAL POSITIONS FOR ELEMENTS ARE INDICATED BY THE LEFT MARGIN, VERTICAL DOTTED LINE OR DECIMAL POINT.

U.S. STEEL GROUP
A DIVISION OF USX CORPORATION

TUBULAR PRODUCTS CERTIFIED TEST REPORT

(TYPE B - IN ACCORDANCE WITH ISO 10474/EN10204/DIN50049)

DATE: 01/22/01
TIME: 13:09:52 USX™

USS, USX, USX are trademarks of USX Corporation

MILL ORDER/ITEM NO.	SHIPPERS NO.	P.O. NUMBER
DR12072 01		1123

MATERIAL COND: AS ROLLED

OD: 24.000(609.600) in (mm) WALL 0.500 (12.700) in (mm)

PRODUCT IDENTIFICATION	FLAT	BEND	GRAIN SIZE	MIN COLLAPSE	DIR	TEST LOC.	TEMP	SIZE	TEST COND.	FT-LBS 1	FT-LBS 2	FT-LBS 3	FT-LBS AVG	% SHEAR 1	% SHEAR 2	% SHEAR 3	% SHEAR AVG
							DEG F										
B09028 1A3061	OK				T	B	+ 32	FULL	AR	104	109	121	111	60	60	70	63
			** END OF DATA THIS SHEET **														

Charpy V-Notch Impact Testing

LEGEND: L - LONGITUDINAL T - TRANSVERSE B - BODY W - WELD HAZ - HEAT AFFECTED ZONE

TESTING / INSPECTION INFORMATION

TEST / INSPECTION	YES	RESULTS / COMMENTS
FULL LENGTH VISUAL	X	
FULL LENGTH EMI	X	OD X OD/ID ___ L X L/T ___ 10.0% NOTCH
FULL LENGTH MPI		
FULL LENGTH UT		
END AREA INSPECTION (PLAIN END)		OD ___ OD/ID ___ L ___ L/T ___
SPECIAL END AREA (SEA) INSP.		MPI ___ UT ___
FULL LENGTH DRIFT		MPI ___ UT ___
		DRIFT MANDREL SIZE:

ADDITIONAL NOTES/COMMENTS

ALL MELTING AND MANUFACTURING TOOK PLACE IN THE USA. NO REPAIRS BY WELDING. NO MERCURY OR MERCURY COMPOUNDS ARE ADDED TO THE STEEL AND ALL MERCURY BEARING EQUIPMENT IS PROTECTED BY A DOUBLE BOUNDARY OF CONTAINMENT.
PIPE ALSO MEET THE REQUIREMENTS OF ASTM A106 GRADE C & ASME SA106 GRADE C

THESE MILL TEST REPORTS APPLY TO
YOUR P.O. # 32207
BARTOW STEEL REF. #

THIS IS TO CERTIFY THAT THE PRODUCT DESCRIBED HEREIN WAS MANUFACTURED, SAMPLED, TESTED AND/OR INSPECTED IN ACCORDANCE WITH THE SPECIFICATION AND FULFILLS THE REQUIREMENTS IN SUCH RESPECTS

PREPARED BY THE OFFICE OF: J. MASSIMINO MGR. MET. & Q.A. USS TUBULAR PRODUCTS

DATE 01/22/01

CANADIAN PHOENIX STEEL PRODUCTS

DIVISION OF 1045701 ONTARIO LIMITED
288 HORNER AVENUE
ETOBICOKE, ONTARIO,
CANADA
M8Z 4Y4

LABORATORY REPORT AND MILL TEST CERTIFICATE

DATE Dec.7/00

CUSTOMER Pipe & Piling Supplies

SPECIFICATION A139B

CUSTOMER'S P.O. BLK-1125

DIA. & WALL 34" O.D. X .375 WT

PHOENIX REF.# 00-3658

HYDROTEST 620 PSI FOR 2 Min.

PHYSICAL PROPERTIES

HEAT NO.	PIPE NO.	LONGITUDINAL TEST YIELD	LONGITUDINAL TEST TENSILE	% ELONGATION	TRANSVERSE WELD TENSILE	BREAK LOCATION
7950P	3	48700	73900	37.5	77300	PM
7955P	10	57800	81300	37.5	83900	PM
8064M	14	59400	83100	37.5	85800	PM
8163M	49	46200	67300	37.5	70600	PM
121581	54	49000	74300	37.5	77100	PM

LADLE ANALYSIS

CHEMICAL COMPOSITION

HEAT NO	C	MN	S	P	SI	CR	NI	CU	MO	AL
7950P	.20	.84	.006	.009	.23	.02	.01	.03	.010	.034
7955P	.18	.83	.007	.009	.22	.01	.01	.01	---	.036
8064M	.18	.89	.005	.011	.23	.02	.01	.02	---	.038
8163M	.18	.86	.004	.011	.22	.02	.01	.01	.010	.042
121581	.21	.97	.003	.007	.04	.06	.04	.12	.013	.041

The material listed on this report has been tested in accordance with the specification shown above.

M. [signature]

Authorized Approval

CANADIAN PHOENIX STEEL PRODUCTS

DIVISION OF 1045701 ONTARIO LIMITED
288 HORNER AVENUE
ETOBICOKE, ONTARIO,
CANADA
M8Z 4Y4

LABORATORY REPORT AND MILL TEST CERTIFICATE

DATE Dec.7/00

CUSTOMER Pipe & Piling Supplies

SPECIFICATION A139B

CUSTOMER'S P.O. BLK-1125

DIA. & WALL 34" O.D. X .375 WT

PHOENIX REF.# 00-3658

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7955P	10	57800	81300	37.5	83900	PM
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CHEMICAL COMPOSITION

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7955P	.18	.83	.007	.009	.22	.01	.01	.01	---	.036
8064M	.18	.89	.005	.011	.23	.02	.01	.02	---	.038
8163M	.18	.86	.004	.011	.22	.02	.01	.01	.010	.042
121581	.21	.97	.003	.007	.04	.06	.04	.12	.013	.041

The material listed on this report has been tested in accordance with the specification shown above.

M. [signature]

Authorized Approval

CANADIAN PHOENIX STEEL PRODUCTS

DIVISION OF 1045701 ONTARIO LIMITED
298 HORNER AVENUE
ETOBICOKE, ONTARIO,
CANADA
M8Z 4Y4

LABORATORY REPORT AND MILL TEST CERTIFICATE

DATE Dec.7/00

CUSTOMER Pipe & Piling Supplies

SPECIFICATION A139B

CUSTOMER'S P.O. BLK-1125

DIA. & WALL 34" O.D. X .375 WT

PHOENIX REF.# 00-3658

HYDROTEST 620 PSI FOR 2 Min.

PHYSICAL PROPERTIES

HEAT NO.	PIPE NO.	LONGITUDINAL TEST YIELD	LONGITUDINAL TEST TENSILE	% ELONGATION	TRANSVERSE WELD TENSILE	BREAK LOCATION
7950P	3	48700	73900	37.5	77300	PM
7955P	10	57800	81300	37.5	83900	PM
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LADLE ANALYSIS CHEMICAL COMPOSITION

HEAT NO	C	MN	S	P	SI	CR	NI	CU	MO	AL
7950P	.20	.84	.006	.009	.23	.02	.01	.03	.010	.034
7955P	.18	.83	.007	.009	.22	.01	.01	.01	---	.036
8064M	.18	.89	.005	.011	.23	.02	.01	.02	---	.038
8163M	.18	.86	.004	.011	.22	.02	.01	.01	.010	.042
121581	.21	.97	.003	.007	.04	.06	.04	.12	.013	.041

The material listed on this report has been tested in accordance with the specification shown above.

M [signature]

Authorized Approval

LONE STAR STEEL COMPANY
P.O. BOX 1000, HWY. 259 S. LONE STAR, TX 75668

ISO 9001 REGISTERED QUALITY SYSTEM

MATERIAL TEST REPORT

Page 1 of 1
Print Date: 01/28/2000
Serial #: 200094493

Results relate only to items tested. Test report not to be reproduced except in full without written approval of the Director, Quality.

LSO: 0103504
Item: 3
Heat: 33108
Lot: 02

Product: 6 5/8" 36.39 X52
.562" Wall
PE-BEV RG 3(41'-43') BR

Specification: API 5L X52, ERW
MANUFACTURED IN THE USA

Customer Order: TSL4728
Customer Resource:
Customer Specification:

Sold to
THOMAS PIPE AND STEEL, INC.
P.O. BOX 84160
BATON ROUGE LA 70884

Ship to
THOMAS PIPE AND STEEL, INC.
C/O T&N WAREHOUSE
BOND TX

MTR Copies
Sold To: 1
Ship To: 0

CHEMICAL ANALYSIS, %

	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	Al	V	B	Cb	Ti	Ca	N	O	CEQ	DI	PcM
Heat	.18	1.14	.008	.003	.19	.01	.00	.004	.001	.001	.041	.075	.0002	.036	.002	.0019	.0027				
Check	.18	1.09	.007	.003	.18	.01	.01	.007	.003	.001	.037	.074	.0001	.033	.002	.0023					
Check	.18	1.09	.007	.003	.18	.01	.01	.007	.003	.001	.036	.073	.0001	.032	.002	.0018					

[illegible]

MECHANICAL PROPERTIES

Test	Dir	Loc	Notch	Yield KSI	Tensile KSI	Elong % in 2"	Area Red	Fracture Location	Y/T Ratio
1	L	B	N	55.9	77.3	42.0			.722
2									
3									
4									

Grain size
Martensite %
Collapse, PSI
Hydrotest, PSI 3000
Flattening P

RR-1
RR-2
RR-3

Impact Tests

Test	Dir	Loc	Size	Temp	Energy	%Shear	Lat Exp
1							
2							
3							
4							

Hardness

Scale	O.D.	M.W.	I.D.	Var	Body	Weld	HAZ	Surf

Remarks

THESE MILL TEST REPORTS APPLY TO
YOUR P.O. # 32208
BARTOW STEEL REF. # 29680

Inspections Performed

Tests are performed in accordance with one or more of the following tests methods: E3, E8, E10, E18, E23, etc. E112, E340, E381, E384, E407, E415, E1019, E1077, A255, A370

From the Office of:

A. Z. Harm Jr.

Director of Quality

This is to certify that the product described herein was manufactured, sampled, tested, and/or inspected in accordance with the specification/order, and fulfills the requirements in such respects.

검 사 증 명 서(A)

MILL INSPECTION CERTIFICATE

현대강관주식회사
HYUNDAI PIPE CO.,LTD.
본사·공장: 울산광역시 북구 염포동 265번지
HEAD OFFICE: #265, YUMPO-DONG, BUK-KU, ULSAN, KOREA
(ULSAN PLANT) TEL:288-0110 FAX:(052)287-9916
TLX:HDPIPE K 53776
서울사무소: 서울특별시 중구 무교동 77번지
SEOUL OFFICE: # 77, MUGYO-DONG, JOONG-KU, SEOUL, KOREA
TEL 3455-0500 FAX:775-2895

성적서번호 CERTIFICATE NO	E08054
페이지 PAGE	1
발행일자 DATE OF ISSUE	NOV. 3, 2000. E4055X02
계약번호 CONTRACT (P/O) NO	
품명 COMMODITY	E.R.W. STEEL PIPE
적용규격 SPECIFICATION	ASTM A53B/ASME SA53B
수요가 CUSTOMER	

G:GOOD

관종 TYPE OF PIPE END	치수 DIMENSION 외경×두께×길이 (OUTDIA. × THICK. × LENGTH)	수량 QUANTITY (PCS)	중량 WEIGHT (KG)	수압시험 HYDROSTATIC TEST MPa / kgf/cm² (PSI)	외관 및 치수검사	편평	굽힘	용접부연성	확관	파괴	비파괴	열처리	기타	도금시험 COATING TEST	경도 HARDNESS HRB HV	제강번호 HEAT NO.	항복강도 YIELD STRENGTH PSI	인장강도 TENSILE STRENGTH B	인장강도 TENSILE STRENGTH W	연신율 ELONGATION %	C	Si	Mn	P	S	Cu	Ni	Cr	Mo	V	Nb	Al	Ceq	충격시험 IMPACT
X/BE NB 16"	x .500" x42.000'	33	75,761	92	G	G	G	G					G			313150	30.5	48.3	50.6	37	17	2	75	12	6	1	1	2	Tr	Tr				
	(406.4mm x12.70mm x 12.802M)			1310													43400	68700	72000															
																213151	29.7	46.7	49.5	34	17	1	73	15	6	1	2	1	Tr	Tr				
																	42200	66400	70400															
																320141	33.5	48.9	51.4	30	18	2	79	14	4	1	2	2	1	Tr				
																	47600	69600	73100															
																526283	32.5	46.8	49.5	35	15	1	65	11	9	1	2	1	Tr	Tr				
																	46200	66600	70400															
	TOTAL ->	33	75,761																															

비고 REMARK

THESE MILL TEST REPORTS APPLY TO
YOUR P.O. # 32208
BARTOW STEEL REF. # 29680

주 NOTES

*1 Type of pipe End 관종

X
- B : Black
- G : Galvanized
- E : Enameled

X
- V : Varnish
- R : Removal Varnish
- O : Oiling Coating
- F : PE Coating
- C : Coaltar Coating
- A : Asphalt Coating

XX
- PE : Plain End
- BE : Bevel End
- TE : Thread End
- TC : Thread Coupling
- BL : Bell End
- SE : Swaging End
- VJ : Victaulic Joint

*2 NB : Nominal Bore 호칭경, OD: Outside Diameter
*3 Unit 단위 (M : mm, I : inch)
*4 Unit 단위 (M : Meter, F : Feet, I : inch)
*5 G : Good
*6 Visual & Dimension Test 외관 및 치수검사
*7 Flattening or Bending Test 편평 또는 굽힘시험
*8 Weld Ductility Test 용접부 연성시험
*9 Nondestructive Test 비파괴검사
*10 Drift Test 확관시험
*11 Flaring Test 확관시험
*12 Crush Test 압궤시험
*13 Reverse Flattening Test 역편평시험
*14 Heat Treatment 열처리
*15 B : Base Metal 모재부
*16 W : Weld Part 용접부
*17 H : Heat(Ladle)Analysis 레이들분석 P:Product Analysis 제품분석

SURVEYOR	

본 제품은 관련규격에 합격되었음을 보증합니다.
WE CERTIFY THAT THE DESCRIBED MATERIAL HAS HEREIN BEEN ACCEPTED IN ACCORDANCE WITH THE PRESCRIBED SPECIFICATION AND ORDER.

H. G. Lee
QUALITY ASSURANCE TEAM GENERAL MGR.

HPS - B 301 - 83 - 0 - OLT

HYUNDAI PIPE CO., LTD.

352 - 280

152

검 사 증 명 서 (A)

MILL INSPECTION CERTIFICATE

현 대 강 관 주 식 회 사
HYUNDAI PIPE CO.,LTD.
• 본사 · 공장: 울산광역시 동구 염포동 265번지 [illegible]
ULSAN PLANT: 265, YUMPO-DONG, DONG-KU, ULSAN METROPOLITAN, KOREA
TEL: (0522) 287-2101~9 FAX: (0522) 80-4811
TLX: HDPIPE K 53778

• 서울사무소 서울특별시 중구 무교동 77번지 [illegible]
SEOUL OFFICE: #77, MUKYO-DONG, JUNG-KU, SEOUL, KOREA
TEL: 773-0522 FAX: 775-7095
TLX: HDPIPE K 24636, K 22956

성적서번호 CERTIFICATE NO: E-8-03-495 페이지 PAGE: 2
발행일자 DATE OF ISSUE: MAR. 28. 1998. E4988400
계약번호 CONTRACT P/O NO:
품명 COMMODITY: E.R.W. STEEL PIPE
제품규격 SPECIFICATION: API 5L X-42/API 5LB/ASTM A53B
수요가 CUSTOMER:

O : GOOD

관종 TYPE OF PIPE END	DIMENSION 외경 × 두께 × 길이 (OUTDIA. × THICK. × LENGTH)	수량 QUANTITY (PCS.)	중량 WEIGHT (KG)	수압시험 HYDROSTATIC TEST (Mpa kg/cm² PSI)	시험 TESTS	재강번호 HEAT NO.	항복강도 YIELD STRENGTH	인장강도 TENSILE STRENGTH B	인장강도 TENSILE STRENGTH W	연신율 ELONGATION (%)	C	Si	Mn	P	S	Cu	Ni	Cr	Mo	V	충격시험 IMPACT	비고 REMARK
						A28713	32.8	48.9	51.3	37	15	1	75	15	7	6	1	2	1	Tr		
							46400	69800	73000													
						A30711	30.3	48.6	51.6	39	18	1	80	16	9	6	2	1	1	Tr		
							43100	69100	73100													
						B57081	30.3	47.8	50.5	38	16	1	75	14	7	8	1	2	Tr	1		
							43100	68000	71800													
BPEB	OD 16" x .500" x42.000'	40	63,134	157	G G G G G	A31618	32.0	49.3	52.6	38	16	1	80	19	1	8	1	2	1	Tr		
	(406.4mm x12.70mm x 12.802M)			2230			45500	70100	74700													
						A32602	30.5	48.5	51.2	36	14	1	75	17	8	8	1	2	1	Tr		
							43400	69000	72800													
						B57081	30.3	47.8	50.5	38	18	1	75	14	7	8	1	2	Tr	1		
							43100	68000	71800													
BPEB	OD 18" x .500" x42.000'	4	7,128	139	G G G G G	A28405	30.3	48.6	51.6	39	17	1	79	17	6	5	2	1	7	7		
	(457.0mm x12.70mm x 12.802M)			1980			43100	69100	73400													
	TOTAL ->	2058	696,228																			

THESE MILL TEST REPORTS APPLY TO
YOUR P.O. # 32208
BARTOW STEEL REF. # 29680

참고—NOTES (주1) Type of pipe End 관끝

BPE	Black Plain End Square-cut	GPE	Galvanized Plain End Square-cut
BPEB	Black Plain End Beveled	GPEB	Galvanized Plain End Beveled
BTC	Black Threaded & Coupled	GTC	Galvanized Threaded & Coupled
BVJ	Black Victaulic Joint	GVJ	Galvanized Victaulic Joint
ETC	Enameled Threaded & Coupled		

(주2) NB : Nominal Bore호칭경, OD : Outside Diameter
(주3) Unit 단위(M : mm, I : Inch)
(주4) Unit 단위(M : Meter, F : Feet, I : Inch)
(주5) G : Good
(주6) Visual & Dimension Test(육안 및 치수검사)
(주7) Flattening or Bending Test 편평 또는 굽힘시험
(주8) Weld Ductility Test 용접부 연성시험
(주9) Nondestructive Test 비파괴검사
(주10) Drift Test 관통시험
(주11) Flaring Test 확관시험
(주12) Crush Test 압궤시험
(주13) Reverse Flattening Test 역편평시험
(주14) B : Base Metal 모재부
(주15) W : Weld Part 용접부
(주16) H : Heat (Ladle) Analysis 용선분석, P : Product Analysis 제품분석

본 제품은 검사규격에 합격되었음을 보증합니다.

WE HEREBY CERTIFY THAT THE MATERIAL DESCRIBED HEREIN HAS BEEN ACCEPTED IN ACCORDANCE WITH THE PRESCRIBED SPECIFICATION AND ORDER.

SURVEYOR

INSPECTION MANAGER
S. K. Kim

HPS-3301-043-OLT

△ HYUNDAI PIPE CO.,LTD.

FROM : BARTOW STEEL   04/05/01 THU 07:08 FAX 9414894545   663 619 9779   YOUNGQUIST BROTHERS INC   2001,05-26 11:00 #252 P.02/05   005

검 사 증 명 서 (A)

MILL INSPECTION CERTIFICATE

증서번호: CERTIFICATE NO : S02120   페이지: PAGE : 1

발행일자: DATE OF ISSUE : FEB. 11. 2000.   E4001000

계약번호: CONTRACT (P/O) NO :

품명: COMMODITY : E.R.W. STEEL PIPE

제품규격: SPECIFICATION : API 5L X42/API 5LB/ASTM A53B/ASME SA53B

수요가: CUSTOMER :

현대강관주식회사
HYUNDAI PIPE CO.,LTD.

• 본사·공장: 울산광역시 북구 염포동 265번지
HEAD OFFICE : #265, YUMPO-DONG, BUK-KU, ULSAN, KOREA
(ULSAN PLANT) TEL:(052)280-0114 FAX:(052)287-0918
TLX:HDPIPE K 53776

• 서울사무소: 서울특별시 중구 무교동 77번지
SEOUL OFFICE : # 77, MUGYO-DONG, JOONG-KU, SEOUL, KOREA
TEL:3455-6000 FAX:775-7995

G:GOOD

관종 TYPE OF PIPE END ※1	치수 DIMENSION 외경×두께×길이 (OUTDIA. × THICK. × LENGTH) ※2 ※3 ※4	수량 QUANTITY (PCS)	중량 WEIGHT (KG)	수압시험 HYDROSTATIC TEST MPa kg/cm² PSI	6-14 tests	제강번호 HEAT NO.	항복강도 YIELD STRENGTH PSI	인장강도 TENSILE STRENGTH	인장강도 TENSILE STRENGTH	연신율 ELONGATION %	C	Si	Mn	P	S	Cu	Ni	Cr	Mo	V	Nb	Al	Ceq
BVBE	CD 24" x .500" x42.000'	2[illegible]	50.292	1110	G G G G G G G	A76223	31.9	50.1	53.2	38	19	2	79	10	5	1	1	1	Tr	Tr			
	(610.0mm x12.70mm x 12.802M)			1580			45400	71300	75700														
	TOTAL ->	2[illegible]	50.292																				

비고 REMARK

THESE MILL TEST REPORTS APPLY TO
YOUR P.O. # 32208
BARTOW STEEL REF. # 29680

참고 NOTES

※1 Type of pipe End 관종

X: B: Black, G: Galvanized, E: Enameled

X: V: Varnish, R: Removal Varnish, D: Oiling Coating, F: PE Coating, C: Coaltar Coating, A: Asphalt Coating

XX: PE: Plain End, BE: Bevel End, TE: Thread End, TC: Thread Coupling, BL: Bell End, SE: Swaging End, VJ: Victaulic Joint

※2 NB: Nominal Bore 호칭경, OD: Outside Diameter
※3 Unit 단위 (M: mm, I: Inch)
※4 Unit 단위 (M: Meter, F: Feet, I: Inch)
※5 G: Good
※6 Visual & Dimension Test 육안 및 치수검사
※7 Flattening or Bending Test 편평 또는 굽힘시험
※8 Weld Ductility Test 용접부 연성시험
※9 Nondestructive Test 비파괴검사
※10 Drift Test 관통시험
※11 Flaring Test 확관시험
※12 Crush Test 충격시험
※13 Reverse Flattening Test 역편평시험
※14 Heat Treatment 열처리
※15 B: Base Metal 모재부
※16 W: Weld Part 용접부
※17 H: Heat(Ladle)Analysis 용강분석, P:Product Analysis 제품분석

SURVEYOR

본 제품은 관련규격에 합격되었음을 보증합니다.
WE CERTIFY THAT THE DESCRIBED MATERIAL HAS HEREIN BEEN ACCEPTED IN ACCORDANCE WITH THE PRESCRIBED SPECIFICATION AND ORDER.

H. G. Lee
QUALITY ASSURANCE TEAM GENERAL MGR.

HPS-B 301-031-0-OLT

HYUNDAI PIPE CO., LTD.

VASS PIPE & STEEL CO., INC.

A DEPENDABLE SOURCE YOU CAN COUNT ON

158 THIRD STREET • P.O. BOX 583 • MINEOLA • NY 11501 • TEL: 516.741.8398 • FAX: 516.741.8210

TOLL FREE PHONE:800-272-8277PHONE:516-741-8398FAX:516-741-8210Email :v.vass@worldnet.att.net

ATTN.: Edward McCullers

DATE: 3-1-2001

COMPANY: Youngquist Bros

FROM: JENNIFER REYES

FAX #: 941-489-4545

TOTAL PAGES: 2

PIPE TALLY / PACKING SLIP/ MTRs

P.O. #: 208035 RELEASE # 20245

TOTAL FOOTAGE	DESCRIPTION	NO. OF PCS			HEAT #
	Load 1				
683.4	17Pcs x 40.2' 14" BPE API5LB/	17x	40.2		0081620
	A53B .500W SMLS				0070398
	Carrier, RSC				
	Load 2				
643.2	16 Pcs x 40.2' 14" BPE API5LB/	16x	40.2		0081620
	A53B .500W SMLS				0070398
	Carrier: HUNT				
	Load 3				
643.2	16Pcs x 40.2' 14" BPE API5LB/	16x	40.2		0081620
	A53B .500W SMLS				0070398
	Load 4				
643.2	16Pcs x 40.2' 14" BPE API5LB/	16x	40.2		0081620
	A53B .500W SMLS				0070398

PANGANG GROUP CHENGDU SEAMLESS STEEL TUBE CO., LTD. (1) SPECIAL SEAL OF PRODUCT QUALITY CERTIFICATION

MILL CERTIFICATE

CONTRACT No : 5774000/HTX2000-079

CUSTOMER :

L/C No :

OBJECT : Seamless Steel Line Pipes

PANGANG GROUP CHENGDU SEAMLESS STEEL TUBE CO., LTD.

SHIPPING MARK : HOUSTON

CERTIFICATE No : [illegible]

STANDARD: API 5L/ASTM A106/A53/ASME SA106/SA53/NACE MR-0175

GRADE : X42/B

TOTAL: 89 PACKAGES, 89 PCS., 1085.09 m, 116501 Kg

HEAT No.	SIZE	QUANTITY				TEST PIECE No	MECHANICAL PROPERTIES			WORKMANSHIP TEST		CHEMICAL COMPOSITION (%)									
		PACKAGES	PCS.	m	Kg		Y.S (PSI)	T.S (PSI)	EL (%)	1	4	C	Si	Mn	S	P	RESIDUAL ELEMENTS: Cr	Ni	Mo	Cu	V
[illegible]	14" x 0.500" x 40'	42	42	512.06	58970	[illegible] A B	50000 53000	77000 78000	40.0 46.0	G	2550	0.22	0.47	1.25	0.006	0.016	0.04	0.06	0.010	[illegible]	0.01
[illegible]	14" x 0.500" x 40'	47	47	573.03	61525	[illegible] A B	49000 51000	72000 73000	44.0 46.0	G	2550	0.22	0.40	1.[illegible]	0.020	0.010	0.01	0.05	0.010	0.070	0.01

NOTES:

1. FLATTEN TEST
2. BENDING TEST
3. FLARING TEST
4. HYDROSTATIC TEST(PSI)

REMARK:

1. CONDITION OF SUPPLY : HOT-ROLLED
2. TUBE DELIVERED IN THEORETICAL WEIGHT
3. G----GOOD

INSPECTOR: 陈 [illegible]

CONSIGNOR: 刘 [illegible]

DATE: 2000.1.[illegible]

Submittal Data
FROM

Youngquist Brothers, Inc.

15465 Pine Ridge Rd.
Ft. Myers, FL. 33908
941-489-4444 Fax: 941-489-4545

Project: Cooper City - 40340
Concentrate Disposal Well

I have reviewed this submittal for general conformance with the design concepts and contract documents. Generally no conflict with materials or dimensions will arise from the approval of this shop drawing submittal.

October 20, 2000 Number of Copies:9

Submittal Number: 2582-05-A

Specification Section Number: 2852

Item Submitted: Mill Certification for 60" M/W casing

New Submittal: ☒ Resubmittal: ☐

Subcontractor:

Youngquist Brothers, Inc. Representative:

Guerry T. Harbin

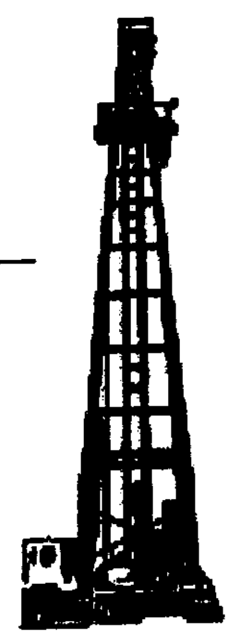
Transmittal Date: 10-24-00

- ☐ Approved
- ☐ Approved with changes
- ☐ Rejected, Revise & Resubmit
- ☐ Not Reviewed

By: ____________________

Firm: ____________________

Date: ____________________



UNIVERSAL PIPE & STEEL SUPPLY, INC.

CERTIFICATE OF CHEMICAL ANALYSIS AND TESTS

Type of Material ASTM A - 139 GRADE B

Specification

Buyer Youngquist Brothers

Shipped To

Date 10/19/00

Heat No.	Gage and Size	Yield Point lbs. PSI	Tensile STR. PSI
	80' 60" X .375 Wall	35,602	68.420
	80' 34' X .375 Wall	36,918	69,120

"This Certified Test Report has been delivered to a cosignee of material purchased from Universal Pipe & Steel Supply, Inc. To avoid the possibility of misuse, on redelivery of the report to a third party, it must be recertified by and under the name of such cosignee."

The Chemical Analysis and Mechanical Test above is correct as contained in the records of the Company.

UNIVERSAL PIPE & STEEL SUPPLY, INC.

SIGNED

Youngquist Brothers, Inc.
Has reviewed this Shop Drawing/Submittal
YBI / Section No. # 15100-01-A Date : 10/20/2000
Transmittal #
Signature: Guerry T. Harbin

Submittal Data
FROM

Youngquist Brothers, Inc.

15465 Pine Ridge Rd.
Ft. Myers, FL. 33908
941-489-4444 Fax: 941-489-4545

Project: Cooper City - 40340
Concentrate Disposal Well

I have reviewed this submittal for general conformance with the design concepts and contract documents. Generally no conflict with materials or dimensions will arise from the approval of this shop drawing submittal.

October 20, 2000

Number of Copies:9

Submittal Number: 2582-01-A

Specification Section Number: 2852

Item Submitted: Mill Certification for 34" M/W casing

New Submittal: ☒

Resubmittal: ☐

Subcontractor:

Youngquist Brothers, Inc. Representative:

Guerry T. Harbin

Transmittal Date: 10-24-00

☐ Approved
☐ Approved with changes
☐ Rejected, Revise & Resubmit
☐ Not Reviewed

By: ____________________

Firm: ____________________

Date: ____________________

UNIVERSAL PIPE & STEEL SUPPLY, INC.

CERTIFICATE OF CHEMICAL ANALYSIS AND TESTS

Type of Material ASTM A - 139 GRADE B

Specification

Buyer Youngquist Brothers

Shipped To Date 10/19/00

Heat No.	Gage and Size	Yield Point lbs. PSI	Tensile STR. PSI
	80' 60" X .375 Wall	35,602	68.420
	80' 34' X .375 Wall	36,918	69,120

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The Chemical Analysis and Mechanical Test above is correct as contained in the records of the Company.

UNIVERSAL PIPE & STEEL SUPPLY, INC.

SIGNED

Youngquist Brothers, Inc.
Has reviewed this Shop Drawing/Submittal
YBI / Section No. # 15100-01-A Date : 10/20/2000
Transmittal #
Signature: Guerry T. Harbin

Submittal Data
FROM
Youngquist Brothers, Inc.
15465 Pine Ridge Rd.
Ft. Myers, FL. 33908
941-489-4444 Fax: 941-489-4545

Project: Cooper City - 40340
Concentrate Disposal Well

I have reviewed this submittal for general conformance with the design concepts and contract documents. Generally no conflict with materials or dimensions will arise from the approval of this shop drawing submittal.

October 20, 2000

Number of Copies:9

Submittal Number: 2582-01-A

Specification Section Number: 2852

Item Submitted: Mill Certification for 34" M/W casing

New Submittal: ☒

Resubmittal: ☐

Subcontractor:

Youngquist Brothers, Inc. Representative:

Guerry T. Harbin

Transmittal Date: 10-24-00

- ☐ Approved
- ☐ Approved with changes
- ☐ Rejected, Revise & Resubmit
- ☐ Not Reviewed

By: ______________________

Firm: ______________________

Date: ______________________

UNIVERSAL PIPE & STEEL SUPPLY, INC.

CERTIFICATE OF CHEMICAL ANALYSIS AND TESTS

Type of Material ASTM A - 139 GRADE B

Specification

Buyer Youngquist Brothers

Shipped To Date 10/19/00

Heat No.	Gage and Size	Yield Point lbs. PSI	Tensile STR. PSI
	80' 60" X .375 Wall	35,602	68.420
	80' 34' X .375 Wall	36,918	69,120

"This Certified Test Report has been delivered to a cosignee of material purchased from Universal Pipe & Steel Supply, Inc. To avoid the possibility of misuse, on redelivery of the report to a third party, it must be recertified by and under the name of such cosignee."

The Chemical Analysis and Mechanical Test above is correct as contained in the records of the Company.

UNIVERSAL PIPE & STEEL SUPPLY, INC.

SIGNED

Youngquist Brothers, Inc.
Has reviewed this Shop Drawing/Submittal
YBI / Section No. # 15100-01-A Date : 10/20/2000
Transmittal #
Signature: Guerry T. Harbin

APPENDIX L

CEMENT REPORTS

Injection Well 1 Cement Report

Casing Diameter:	50-inches
Casing Depth:	250 feet below pad level
Bit Size:	nominal 58-inch diameter
Cement Specification:	ASTM C 150 Type II
Number of Stages:	1
Cement Blend:	Neat
	12% Bentonite
Cement Density:	Neat - 12.6 lb./gal
	12% Bentonite - 12.6 lb./gal
	Theoretical Fill From Caliper Log: 1,642 - cubic feet
	Volume Pumped: Neat - 134 cubic feet
	12% Bentonite – 1,728 cubic feet
	Total – 1,862 cubic feet
Percent Difference:	11.8

The 50-inch casing was cemented in one stage. The cement was circulated to surface and was visually confirmed. The difference in the theoretical and actual volume pumped is due to additional cement utilized to fill small irregularities in the borehole wall.

Certified by

WATER TECHNOLOGY ASSOCIATES, INC.

James A. Wheatley P.G. ,No. 530

Injection Well 1 Cement Report

Casing Diameter:	42-inches
Casing Depth:	985 feet below pad level
Bit Size:	Nominal 50-inch diameter
Cement Specification:	ASTM C 150 Type II
Number of Stages:	2
Cement Blend:	Neat 12% Bentonite
Cement Density:	Neat - 15.6 lb./gal 12% Bentonite - 12.6 lb./gal
Theoretical Fill From Caliper Log:	3,700 cubic feet
Volume Pumped:	Neat - 1,172 cubic feet 12% Bentonite - 2,878 cubic feet Total - 4,050 cubic feet
Percent Difference:	8.7

The 42-inch casing was cemented in two stages. After each stage a temperature log was run downhole and the cement physically tagged to determine the actual fill. On the final stage the cement was circulated to surface and was visually confirmed. The difference in the theoretical and actual volume pumped is due to additional cement utilized to small irregularities in the borehole wall.

Certified by

WATER TECHNOLOGY ASSOCIATES, INC.

James A. Wheatley P.G. ,No. 530

Injection Well 1 Cement Report

Casing Diameter:	34-inches
Casing Depth:	2,000 feet below pad level
Bit Size:	Nominal 42-inch diameter
Cement Specification:	ASTM C 150 Type II
Number of Stages:	6
Cement Blend:	Neat 12% Bentonite
Cement Density:	Neat - 15.6 lb./gal 12% Bentonite - 12.6 lb./gal
Theoretical Fill From Caliper Log:	6,812 cubic feet
Volume Pumped:	Neat - 151cubic feet 12% Bentonite - 8,202 cubic feet Total - 8,353 cubic feet
Percent Difference:	18.5

The 34-inch casing was cemented in six stages. After each stage a temperature log was run downhole and the cement physically tagged to determine the actual fill. On the final stage the cement was circulated to surface and was visually confirmed. The difference in the theoretical and actual volume pumped is due to additional cement utilized to fill spaces that exceed the maximum opening of the caliper tool and small irregularities in the borehole wall.

Certified by

WATER TECHNOLOGY ASSOCIATES, INC.

James A. Wheatley P.G., No. 530

Injection Well 1 Cement Report

Casing Diameter: 24-inches
Casing Depth: 2,975 feet below pad level
Bit Size: Nominal 32-inch diameter
Cement Specification: ASTM C 150 Type II
Number of Stages: 8
Cement Blend: Neat
12% Bentonite
Cement Density: Neat - 15.7 lb./gal
12% Bentonite - 12.6 lb./gal
Theoretical Fill From Caliper Log: 9636 cubic feet
Volume Pumped: Neat - 1,615 cubic feet
12% Bentonite - 8,857 cubic feet
Total - 10,472 cubic feet
Percent Difference: 8.0

The 24-inch casing was cemented in eight stages. After each stage a temperature log was run downhole and the cement physically tagged to determine the actual fill. On the final stage the cement was circulated to surface and was visually confirmed. The difference in the theoretical and actual volume pumped is due to additional cement utilized to fill spaces that exceed the maximum opening of the caliper tool and small irregularities in the borehole wall.

Certified by

WATER TECHNOLOGY ASSOCIATES, INC.

James A. Wheatley P.G. ,No. 5

Monitor Well 1 Cement Report

Casing Diameter:	24-inches
Casing Depth:	251 feet below pad level
Bit Size:	Nominal 34-inch diameter
Cement Specification:	ASTM C 150 Type II
Number of Stages:	1
Cement Blend:	Neat 12% Bentonite
Cement Density:	Neat – 15.7 lb./gal 12% Bentonite - 12.6 lb./gal
Theoretical Fill From Caliper Log:	963 - cubic feet
Volume Pumped:	Neat - 550 cubic feet 12% Bentonite – 471 cubic feet Total – 1,021 cubic feet
Percent Difference:	6.0

The 24-inch casing was cemented in one stage. The cement was circulated to surface and was visually confirmed. The difference in the theoretical and actual volume pumped is due to additional cement utilized to fill small irregularities in the borehole wall.

Certified by

WATER TECHNOLOGY ASSOCIATES, INC.

James A. Wheatley P.G. ,No. 530

Monitor Well 1 Cement Report

Casing Diameter:	16-inches
Casing Depth:	1,660 feet below pad level
Bit Size:	Nominal 24-inch diameter
Cement Specification:	ASTM C 150 Type II
Number of Stages:	5
Cement Blend:	Neat 12% Bentonite
Cement Density:	Neat – 15.7 lb./gal 12% Bentonite - 12.6 lb./gal
Theoretical Fill From Caliper Log:	2,294 - cubic feet
Volume Pumped:	Neat - 196 cubic feet 12% Bentonite – 1,862 cubic feet Total – 2,058 cubic feet
Percent Difference:	11.5

The 16-inch casing was cemented in five stages. After each stage a temperature log was run downhole and the cement physically tagged to determine the actual fill. On the final stage the cement was circulated to surface and was visually confirmed

Certified by

WATER TECHNOLOGY ASSOCIATES, INC.

James A. Wheatley P.G. ,No. 530

Monitor Well 1 Cement Report

Casing Diameter:	6 5/8-inches
Casing Depth:	1,900 feet below pad level
Bit Size:	Nominal 12 1/4-inch diameter
Cement Specification:	ASTM C 150 Type II
Number of Stages:	3
Cement Blend:	Neat
Cement Density:	Neat – 15.7 lb./gal
Theoretical Fill From Caliper Log:	174 - cubic feet
Volume Pumped:	Neat - 248 cubic feet Total – 248 cubic feet
Percent Difference:	29.8

The 6 5/8-inch casing was cemented in three stages. After each stage a temperature log was run downhole and the cement physically tagged to determine the actual fill. The difference in the theoretical and actual volume pumped is due to additional cement utilized to fill spaces that exceed the maximum opening of the caliper tool and small irregularities in the borehole wall.

Certified by

WATER TECHNOLOGY ASSOCIATES, INC.

James A. Wheatley P.G. ,No. 530

APPENDIX M

CASING AND TUBING PRESSURE TESTS

Casing Hydrostatic Pressure Test
Injection Well 1 – 24-inch Casing

Delta Time (minutes)	Pressure (psi)
0	152.0
5	152.0
10	152.0
15	152.0
20	152.0
25	152.0
30	152.0
35	152.0
40	152.0
45	152.0
50	152.0
55	152.0
60	152.0

Date of Test	March 26, 2001
Witnesses	Michael Wengrenovich P.E., H&S Len Fishkin P.G., FDEP
Gage Serial No.	1C121
Gage Certified On	March 16, 2001
Casing Diameter	24 inches
Packer Depth	2,955 ft (below land surface)
Allowable Pressure Change	5% (7.6 psi)
Actual Pressure Change	0.0 psi
Test Result	PRESSURE TEST PASSED

Certified by

HAZEN AND SAWYER, P.C.

Michael Wengrenovich, P.E., No. 34939

Casing/Annulus Hydrostatic Pressure Test
Injection Well 1 – 14-inch Casing

Delta Time (minutes)	Pressure (psi)
0	155.0
5	155.0
10	155.0
15	155.0
20	154.0
25	154.0
30	153.5
35	153.5
40	153.0
45	153.0
50	152.75
55	152.75
60	152.75

Date of Test	June 1, 2001
Witnesses	James A. Wheatley, P.G.
Gage Serial No.	1C121
Gage Certified On	March 16, 2001
Casing Diameter	14 inches
Packer Depth	2,955 ft (below land surface)
Allowable Pressure Change	5% (7.75 psi)
Actual Pressure Change	2.25 psi
Test Result	PRESSURE TEST PASSED

Certified by

HAZEN AND SAWYER, P.C.

James A. Wheatley, P.G.

Casing Hydrostatic Pressure Test
Monitor Well 1 – 16-inch Casing

Delta Time (minutes)	Pressure (psi)	Delta Time (minutes)	Pressure (psi)
0	89.75	65	89.75
5	89.75	70	89.75
10	89.75	75	89.75
15	89.75	80	89.75
20	89.75	85	89.75
25	89.75	90	89.75
30	89.75	95	89.75
35	89.75	100	89.75
40	89.75	105	89.75
45	89.75	110	89.75
50	89.75	115	89.75
55	89.75	120	89.75
60	89.75		

Date of Test	April 30, 2001
Witnesses	John Largey, H&S William Green, YBI
Gage Serial No.	IC123
Gage Certified On	March 27, 2001
Casing Diameter	16 inches
Packer Depth	1,642 ft (below land surface)
Allowable Pressure Change	5% (4.5 psi)
Actual Pressure Change	0.0 psi
Test Result	PRESSURE TEST PASSED

Certified by

WATER TECHNOLOGY ASSOCIATES, INC.

James A. Wheatley P.G.

Casing Hydrostatic Pressure Test
Injection Well 1 – 6 5/8-inch Casing

Delta Time (minutes)	Pressure (psi)
0	73.5
5	73.5
10	73.5
15	73.5
20	73.5
25	73.5
30	74.0
35	74.0
40	74.0
45	74.2
50	74.5
55	74.8
60	75.0

Date of Test	May 10, 2001
Witnesses	Michael Wengrenovich, P.E., H&S Cameron Webster, YBI
Gage Serial No.	8064187
Gage Certified On	March 16, 2001
Casing Diameter	6 5/8 inches
Allowable Pressure Change	5% (3.67 psi)
Actual Pressure Change	1.5 psi
Test Result	PRESSURE TEST PASSED

Certified by

HAZEN AND SAWYER, P.C.

Michael Wengrenovich, P.E. No. 34939

KELI **Kimball Electronic Laboratory, Inc.**
Precision Measurement Equipment Specialists

Certificate of Calibration

Customer: YOUNGQUIST BROTHERS, INC.
Certificate # 0000090599
Manufacturer: MCDANIEL
Model Number: 200 PSI
Nomenclature: PRESSURE GAUGE
Serial/I.D. # IC121
Specifications: +/- 0.25% FS
Cal. Procedure: MP03/C1-NAV
KELI Control # YOU-90599

The accuracy and calibration of this instrument is traceable to the National Institute of Standards and Technology through certified standards maintained in the laboratories of KELI Inc. or derived by the ratio type of self-calibration techniques and is guaranteed to meet published specifications. The metrology procedures utilized satisfy the requirements set forth in ANSI/NCSL Z540-1.

In Tolerance When Received? Y Cal. Tech:055 Relative Humidity: 51% Temperature: 71 Deg. F

In-House Y Cal. Cycle: .0 Mos. Calibration Date: 03/16/2001 Calibration Due: 03/16/2002

Remarks: PERFORMED ROUTINE CALIBRATION/CERTIFICATION

Standards Used

I.D. #		Cal. Date	Cal. Due
331	AMETEK T-150 DEAD WEIGHT TESTER	09/07/1999	09/06/2001

Quality Assurance

milcert- 4/97

Kimball Electronic Laboratory, Inc.

8081 West 21st Lane Hialeah, Florida 33016
ph:(305)822-5792 fax:(305)362-3125

Certificate of Test # 090599

Customer: YOUNGQUIST BROTHERS, INC.
Manufacturer: MCDANIEL
Nomenclature: PRESSURE GAUGE

KELI # YOU-90599 P.O.# UNK
Model: 200 PSI
S.N./I.D. IC121

Range	Nominal	Pre-Cal	Post-Cal	Low Limit	High Limit
200 PSI	40	40.2	40.2	39.5	40.5
	80	80.1	80.1	79.5	80.5
	120	120.0	120.0	119.5	120.5
	160	160.0	160.0	159.5	160.5
	200	200.2	200.2	199.5	200.5

The accuracy and calibration of this instrument is traceable to the National Institute of Standards and Technology through certified standards maintained in the laboratories of KELI Labs., Inc. or derived by the ratio of self-calibration techniques and is guaranteed to meet published specifications. The metrology procedures utilized satisfy the requirements set forth in ANSI/NCSL 540-1.

Cal. Procedure: MP03/C1-NAV Specifications: +/- 0.25% FS Rcvd. in tol.? Y Temp. (F): 71.0 R.H.% 51.0
Cal. Cycle: 0 days Calibration Date: 03/16/2001 Calibration Due: 03/16/2002 Cal. Tech: 055 In-House: Y
Remarks: PERFORMED ROUTINE CALIBRATION/CERTIFICATION

I.D. #	Standards Used	Cal. Date	Cal. Due
331	AMETEK T-150 DEAD WEIGHT TESTER	09/07/1999	09/06/2001

Quality Assurance

APPENDIX N

POSITIVE SEAL PACKER ASSEMBLY

YBI POSITIVE SEAL PACKER

INSTALLATION PROCEEDURE

1.) Run caliper log from 2,000 feet to total depth.

2.) Install bridge plug from 2,990 to 2,980 feet.

3.) Install 2,975 feet of 24" x .500" seamless casing with YBI-PSP hanger installed 20 feet from the bottom.

4.) Run inflatable packer below YBI-PSP hanger, inflate and conduct zero loss pressure test.

5.) Run cement tubing below inflatable packer.

6.) Pressure grout 24" casing.

7.) Remove tubing and inflated packer and trimmie cement stages as needed.

8.) Drill / Clean out plug and open hole to total depth.

OPERATING PROCEEDURE

1.) Fill annulus with corrosion inhibitor & pressurize.

2.) Maintain annulus pressure and fluid level as required by FDEP.

3.) Mechanical Integrity Test as required by FDEP.

Youngquist Brothers, Inc.

YBI Positive Seal Packer

Technical Specification

Construction

Material

ASTM A53 Grade B mild steel

Ring #1 Outer Mandrel

24" outside diameter with an inside taper of 2-1/2 degrees, end connections: weld x weld.

Collapse:	500 psi
Burst:	2500 psi

Ring #2: Inner Mandrel

13" inside diameter with a diameter taper of 2-1/2 degrees , top connection beveled for welding.

Collapse	650psi
Burst:	3000psi

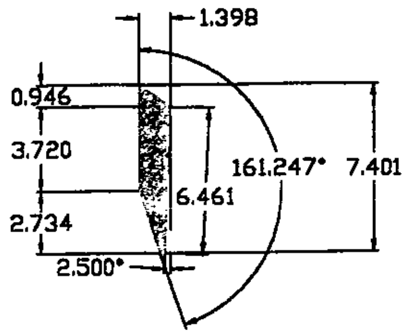
*Note-see attached drawings for detail dimensions.

Seal Surface

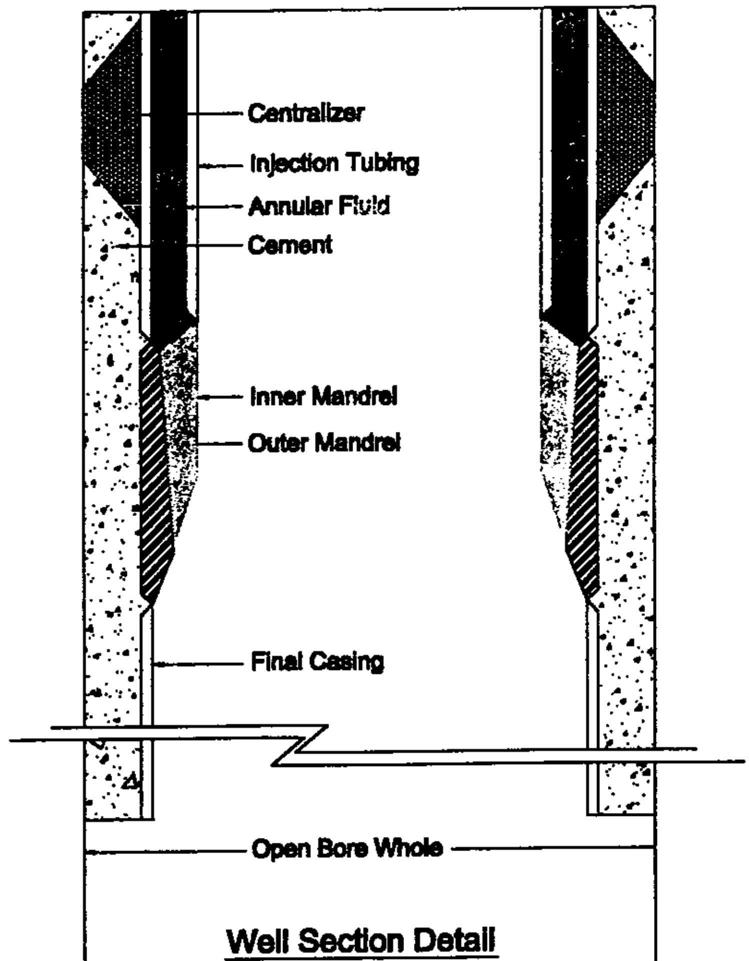
Ground and polished to 16 RMS.

Welding Procedures

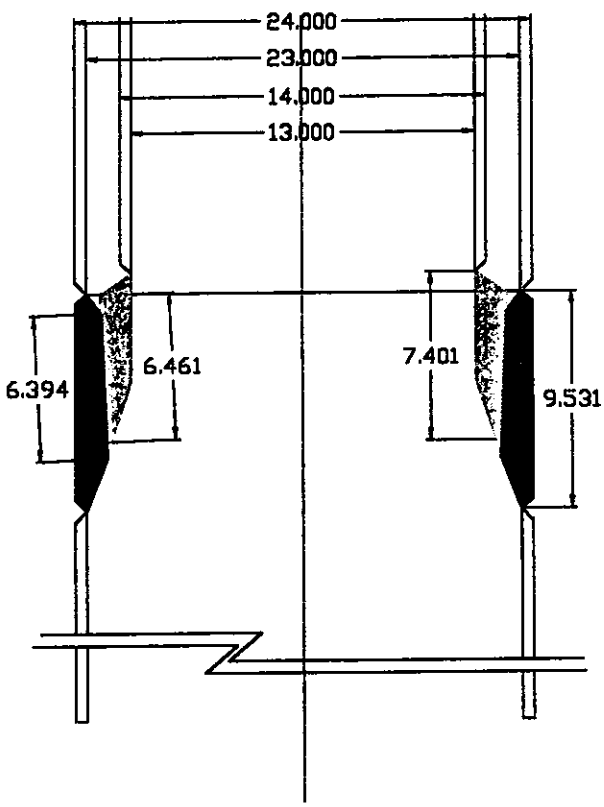
As per contract specifications for 14" and 24" casings.



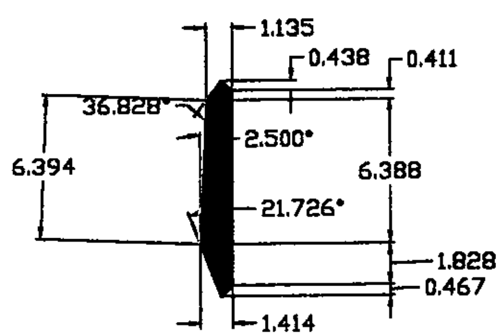
Inner Mandrel
NTS



Well Section Detail
NTS



Assembly Detail
NTS



Outer Mandrel
NTS

Notes:
1) All dimensions are in inches unless noted ohterwise.
2) Inner and outer mandrel to be mild steel.
3) Machining tolerances to be +- 0.000 Inches.

Youngquist Brothers, Inc.	
Cooper City Concentrate Disposal Well	
YBI Packer Assembly	Date: 11/17/2000
Drawn by: DC	[illegible]

APPENDIX O
BACKGROUND WATER QUALITY TEST RESULTS

Injection Well
Background Water Quality

TABLE
PRIMARY DRINKING WATER STANDARDS
Analytical Results for Cooper City (Injection Zone)

Parameter	Units	Maximum Contaminant Level	Lab Result	Detection Limit	Analysis Date	Method
Inorganic Compounds						
Antimony	mg/L	0.006	0.002	0.001	6/21/01	SM3113B
Arsenic	mg/L	0.05	0.0062	0.0056	6/21/01	200.7
Asbestos	MFL	7	<0.170***	0.17	6/26/01	100.2
Barium	mg/L	2	<0.0002	0.000	6/21/01	200.7
Beryllium	mg/L	0.004	0.0028	0.0016	6/21/01	200.7
Cadmium	mg/L	0.005	<0.0004	0.0004	6/21/01	200.7
Chromium	mg/L	0.1	<0.002	0.002	6/21/01	200.7
Cyanide	mg/L	0.2	<0.006	0.006	6/27/01	4500CNE
Fluoride	mg/L	4.0	1	0.100	6/13/01	340.2
Lead	mg/L	0.015	0.014	0.01	6/27/01	SM3113B
Mercury	mg/L	0.002	<0.001	0.001	6/13/01	245.1
Nickel	mg/L	0.1	<0.002	0.002	6/21/01	200.7
Nitrate	mg/L as N	10	0.35	0.05	7/6/01	353.2
Nitrite	mg/L as N	1	<0.01	0.01	6/12/01	354.1
Total Nitrate & Nitrite	mg/L as N	10	0.35	0.05	6/18/01	353.2
Selenium	mg/L	0.05	<0.4	0.4	6/27/01	SM3113B
Sodium	mg/L	160	11,000	35	6/21/01	200.7
Thallium	mg/L	0.002	<0.020	0.02	6/26/01	SM3113B
Pesticides & Polychlorinated Compounds						
2,4,5-TP (Silvex)	mg/L	0.05	<0.0250*	0.025	6/18/01	515.1
2,4-D	mg/L	0.07	<0.362*	0.362	6/18/01	515.1
Alachlor	mg/L	0.002	<0.0625*	0.0625	6/15/01	507
Atrazine	mg/L	0.003	<0.625*	0.625	6/15/01	507
Benzo (a) pyrene	mg/L	0.0002	<0.0400*	0.04	6/13/01	525.2
Carbofuran	mg/L	0.04	<0.900*	0.9	6/19/01	531.1
Chlordane	mg/L	0.002	<0.500*	0.5	6/15/01	508
Dalapon	mg/L	0.2	<0.625*	0.625	6/18/01	515.1
Di (2-ethylhexyl) adipate	mg/L	0.4	<0.600*	0.6	6/13/01	525.2
Di (2-ethylhexyl) phthalate	mg/L	0.006	<1.32*	1.32	6/13/01	525.2
1,2-Dibromo-3-chloropropane	mg/L	0.0002	<0.0200*	0.0200	6/14/01	504
Dinoseb	mg/L	0.007	<0.125*	0.125	6/18/01	515.1
Dioxin (2, 3 ,7, 8, -TCDD)	mg/L	0.00000003	<0.480**	0.48	6/20/01	SW8468280
Diquat	mg/L	0.02	<4*	4	6/18/01	549.1
Endothall	mg/L	0.1	<5*	5	6/14/01	548.1
Endrin	mg/L	0.002	<0.0100*	0.0100	6/15/01	508
Ethylene dibromide (EDB)	mg/L	0.00002	<0.0100*	0.0100	6/14/01	504.1
Glyphosate	mg/L	0.7	<2.40*	2.40	6/13/01	547
Heptachlor	mg/L	0.0004	<0.0540*	0.0540	6/15/01	508
Heptachlor epoxide	mg/L	0.0002	<0.0245*	0.0245	6/15/01	508
Hexachlorobenzene	mg/L	0.001	<0.0100*	0.0100	6/15/01	508
Hexcachlorocyclopentadiene	mg/L	0.05	<0.0200*	0.0200	6/15/01	508
Lindane	mg/L	0.0002	<0.0240*	0.0240	6/15/01	508
Methoxychlor	mg/L	0.04	<0.250*	0.250	6/15/01	508
Oxamyl (vydate)	mg/L	0.2	<1.13*	1.13	6/19/01	531.1
Pentachlorophenol	mg/L	0.001	<0.0545*	0.0545	6/18/01	515.1
Picloram	mg/L	0.5	<0.250*	0.250	6/18/01	515.1
Polychlorinated biphenyl (PCB)	mg/L	0.0005	<0.250*	0.250	6/15/01	508
Simazine	mg/L	0.004	<0.176*	0.176	6/15/01	507
Toxaphene	mg/L	0.003	<0.500*	0.500	6/15/01	508

mg/L - milligrams per liter

MFL- million fibers per liter greater than 10 microns

TABLE (Continued)
PRIMARY DRINKING WATER STANDARDS
Analytical Results for City of Cooper City (Injection Zone)

Parameter	Units	Maximum Contaminant Level	Lab Result	Detection Limit	Analysis Date	Method
Volatile Organic Compounds						
1,1,1-Trichloroethane	mg/L	0.2	<0.21000*	0.21000	6/14/01	524.2
1,1,2-Trichloroethane	mg/L	0.005	<0.23000*	0.23000	6/14/01	524.2
1,1-Dichloroethylene	mg/L	0.007	<0.02000*	0.02000	6/14/01	524.2
1,2,4-Trichlorobenzene	mg/L	0.07	<0.22000*	0.22000	6/14/01	524.2
1,2-Dichlorethane	mg/L	0.003	<0.02000*	0.02000	6/14/01	524.2
1,2-Dichloropropane	mg/L	0.005	<0.33000*	0.33000	6/14/01	524.2
Benzene	mg/L	0.001	<0.05000*	0.05000	6/14/01	524.2
Carbon tetrachloride	mg/L	0.003	<0.29000*	0.29000	6/14/01	524.2
cis-1,2,-Dichloroethylene	mg/L	0.07	<0.03000*	0.03000	6/14/01	524.2
Dichloromethane	mg/L	0.005	<0.31000*	0.31000	6/14/01	524.2
Ethylbenzene	mg/L	0.7	<0.47000*	0.47000	6/14/01	524.2
Monochlorobenzene	mg/L	0.1	<0.23000*	0.23000	6/14/01	524.2
o-Dichlorobenzene	mg/L	0.6	<0.05000*	0.05000	6/14/01	524.2
para-Dichlorobenzene	mg/L	0.075	<0.02000*	0.02000	6/14/01	524.2
Styrene	mg/L	0.1	<0.47000*	0.47000	6/14/01	524.2
Tetrachloroethylene	mg/L	0.003	<0.21000*	0.21000	6/14/01	524.2
Toluene	mg/L	1	<0.41000*	0.41000	6/14/01	524.2
Total trihalomethanes (TTHM)	mg/L	0.10	<0.360*	0.360	6/14/01	524.2
trans-1,2-Dichlorethylene	mg/L	0.1	<0.12000*	0.12000	6/14/01	524.2
Trichloroethylene	mg/L	0.003	<0.02000*	0.02000	6/14/01	524.2
Vinyl chloride	mg/L	0.001	<0.29000*	0.29000	6/14/01	524.2
Xylenes (total)	mg/L	10	<0.24000	0.24000	6/14/01	524.2
Physical Characteristics						
Turbidity	NTU	1				
Microbiological Characteristics						
Total Coliform		<5% positive	absent	n/a	6/12/01	9222B
Fecal Coliform		<1				
Radionuclides						
Combined Radium 226 & 228	pCi/L	5	2.3	0.1	6/27/01	EPA 903.1
Gross Alpha	pCi/L	15	<91.7	91.7	6/21/01	900.0
Man-made beta & photon emitters	mRem/yr	4				
Treatment Chemicals						
Acrylamide		0.05% @1				
Epichlorohydrin		0.01% @20				

mg/L - milligrams per liter

pCi/L - picocurie per liter

m/Rem/yr - millirem per year

NTU - nephelometric turbidity unit

TABLE (Continued)
SECONDARY DRINKING WATER STANDARDS
Analytical Results for City of Cooper City (Injection Zone)

Parameter	Units	Maximum Contaminant Level	Lab Result	Detection Limit	Analysis Date	Method
Aluminum	mg/L	0.2	<0.040	0.040	6/21/01	200.7
Chloride	mg/L	250	17,800	15	6/19/01	300.0
Color	color units	15	83	1	6/13/01	110.3
Copper	mg/L	1	0.0178	0.0024	6/21/01	200.7
Fluoride	mg/L	2	1	0.100	6/13/01	340.2
Foaming Agents	mg/L	0.5	<0.05	0.05	6/27/01	4500C
Iron	mg/L	0.3	<0.06	0.06	6/27/01	SM3113B
Manganese	mg/L	0.05	0.0383	0.0002	6/21/01	200.7
Odor	TON	3	<1	1	6/13/01	140.1
pH	---	6.5-8.5	7.56	0.01	6/12/01	150.1
Silver	mg/L	0.1	<0.002	0.002	6/21/01	200.7
Sulfate	mg/L	250	3240	15	6/19/01	300.0
Total Dissolved Solids (TDS)	mg/L	500	37200	5	6/12/01	160.1
Zinc	mg/L	5	0.015	0.004	6/21/01	200.7

mg/L - milligrams per liter
TON - threshold odor number

*results are in mg/L
**results are in ng/L
***results are in mill/L

Client Project: Cooper City
Lab Project: N0106262
Report Date: 08/03/01

Sanders Laboratories
Environmental Testing Services

Youngquist Brothers, Inc.
15465 Pine Ridge Road
Ft. Myers, FL 33908

Lab ID	Sample Description	Sample Source	Sample Date/Time
N0106262-01	injection well grab	Ground Water	6/12/01 10:00

Analysis	Method	Results	Qual	Detection Limit	Units	AnalysisDate/Time	Analyst
1,1,1,2-Tetrachloroethane	524.2	<0.13000		0.13000	ug/L	6/18/01 12:40	TA
1,1,1-Trichloroethane	524.2	<0.21000		0.21000	ug/L	6/18/01 12:40	TA
1,1,2,2-Tetrachloroethane	524.2	<0.33000		0.33000	ug/L	6/18/01 12:40	TA
1,1,2-Trichloroethane	524.2	<0.23000		0.23000	ug/L	6/18/01 12:40	TA
1,1-Dichloroethane	524.2	<0.02000		0.02000	ug/L	6/18/01 12:40	TA
1,1-Dichloroethene	524.2	<0.02000		0.02000	ug/L	6/18/01 12:40	TA
1,1-Dichloropropene	524.2	<0.06000		0.06000	ug/L	6/18/01 12:40	TA
1,2,3-Trichloropropane	524.2	<0.39000		0.39000	ug/L	6/18/01 12:40	TA
1,2,4-Trichlorobenzene	524.2	<0.22000		0.22000	ug/L	6/18/01 12:40	TA
1,2-Dibromo-3-chloropropane	504.1	< 0.0200		0.02000	ug/L	6/15/01 14:26	TA
1,2-Dichlorobenzene	524.2	<0.05000		0.05000	ug/L	6/18/01 12:40	TA
1,2-Dichloroethane	524.2	<0.02000		0.02000	ug/L	6/18/01 12:40	TA
1,2-Dichloropropane	524.2	<0.33000		0.33000	ug/L	6/18/01 12:40	TA
1,3-Dichlorobenzene	524.2	<0.20000		0.20000	ug/L	6/18/01 12:40	TA
1,3-Dichloropropane	524.2	<0.05000		0.05000	ug/L	6/18/01 12:40	TA
1,3-Dichloropropene	524.2	<0.21000		0.21000	ug/L	6/18/01 12:40	TA
1,4-Dichlorobenzene	524.2	<0.02000		0.02000	ug/L	6/18/01 12:40	TA
2,2-Dichloropropane	524.2	<0.38000		0.38000	ug/L	6/18/01 12:40	TA

Client Project: Cooper City
Lab Project: N0106262
Report Date: 08/03/01

Lab ID	Sample Description	Sample Source	Sample Date/Time
N0106262-01	injection well grab	Ground Water	6/12/01 10:00

Analysis	Method	Results	Qual	Detection Limit	Units	AnalysisDate/Time	Analyst
2,4,5-TP (Silvex)	515.1	< 0.0250		0.02500	ug/L	6/22/01 22:12	TA
2,4,6-Trichlorophenol	625	< 4.46		4.46000	ug/L	6/21/01 20:15	TA
2,4-D	515.1	< 0.362		0.36200	ug/L	6/22/01 22:12	TA
2,4-Dinitrotoluene	625	< 4.78		4.78000	ug/L	6/21/01 20:15	TA
2-Chlorophenol	625	< 4.10		4.10000	ug/L	6/21/01 20:15	TA
2-Chlorotoluene	524.2	<0.33000		0.33000	ug/L	6/18/01 12:40	TA
2-Methyl-4,6-dinitrophenol	625	< 4		4	ug/L	6/21/01 20:15	TA
3-Hydroxycarbofuran	531.1	< 1.13		1.13000	ug/L	6/20/01 8:53	TA
4-Chlorotoluene	524.2	<0.29000		0.29000	ug/L	6/18/01 12:40	TA
Alachlor	507	< 0.0625		0.0625	ug/L	6/20/01 1:11	TA
Aldicarb	531.1	< 1.04		1.04000	ug/L	6/20/01 8:53	TA
Aldicarb Sulfone	531.1	< 0.647		0.64700	ug/L	6/20/01 8:53	TA
Aldicarb Sulfoxide	531.1	< 0.850		0.85000	ug/L	6/20/01 8:53	TA
Aldrin	508	< 0.0525		0.0525	ug/L	6/20/01 1:11	TA
Aluminum	200.7	< 0.040		0.040	mg/L	6/21/01 16:23	LH
Ammonia-N	350.3	< 0.05		0.05	mg/L	6/13/01 16:15	DH
Anthracene	625	<5		5	ug/L	6/21/01 20:15	TA
Antimony	SM3113B	0.002		0.001	mg/L	6/21/01 13:49	LH
Arsenic	200.7	0.0062		0.0056	mg/L	6/21/01 16:23	LH
Asbestos	100.2	< 0.170		0.170	mill/L	6/26/01 0:00	EMSL
Atrazine	507	< 0.625		0.625	ug/L	6/20/01 1:11	TA

Client Project: Cooper City
Lab Project: N0106262
Report Date: 08/03/01

Lab ID	Sample Description	Sample Source	Sample Date/Time
N0106262-01	injection well grab	Ground Water	6/12/01 10:00

Analysis	Method	Results	Qual	Detection Limit	Units	AnalysisDate/Time	Analyst
Barium	200.7	< 0.0002		0.0002	mg/L	6/21/01 16:23	LH
Benzene	524.2	<0.05000		0.05000	ug/L	6/18/01 12:40	TA
Benzo(a)pyrene	525.2	< 0.0400		0.0400	ug/L	6/19/01 14:39	TA
Beryllium	200.7	0.0028		0.0016	mg/L	6/21/01 16:23	LH
Biochemical Oxygen Demand (5)	405.1	< 1		1	mg/L	6/12/01 17:45	CC
Bromobenzene	524.2	<0.05000		0.05000	ug/L	6/18/01 12:40	TA
Bromodichloromethane	524.2	< 0.360		0.360	ug/L	6/18/01 12:40	TA
Bromoform	524.2	< 0.310		0.310	ug/L	6/18/01 12:40	TA
Bromomethane	524.2	<0.29000		0.29000	ug/L	6/18/01 12:40	TA
Butachlor	507	< 0.500		0.500	ug/L	6/20/01 1:11	TA
Butylbenzylphthalate	625	< 2.55		2.55000	ug/L	6/21/01 20:15	TA
Cadmium	200.7	< 0.0004		0.0004	mg/L	6/21/01 16:23	LH
Carbaryl	531.1	< 0.599		0.59900	ug/L	6/20/01 8:53	TA
Carbofuran	531.1	< 0.900		0.90000	ug/L	6/20/01 8:53	TA
Carbon Tetrachloride	524.2	<0.29000		0.29000	ug/L	6/18/01 12:40	TA
Chemical Oxygen Demand	410.4	758		60	mg/L	7/5/01 16:00	DW
Chlordane	508	< 0.500		0.500	ug/L	6/20/01 1:11	TA
Chloride	300.0	17800		15	mg/L	6/19/01 17:00	DW
Chlorobenzene	524.2	<0.23000		0.23000	ug/L	6/18/01 12:40	TA
Chloroethane	524.2	<0.29000		0.29000	ug/L	6/18/01 12:40	TA
Chloroform	524.2	< 0.160		0.160	ug/L	6/18/01 12:40	TA

Client Project: Cooper City
Lab Project: N0106262
Report Date: 08/03/01

Lab ID	Sample Description	Sample Source	Sample Date/Time
N0106262-01	injection well grab	Ground Water	6/12/01 10:00

Analysis	Method	Results	Qual	Detection Limit	Units	AnalysisDate/Time	Analyst
Chloromethane	524.2	<0.35000		0.35000	ug/L	6/18/01 12:40	TA
Chromium	200.7	< 0.002		0.002	mg/L	6/21/01 16:23	LH
Cis-1,2-Dichloroethene	524.2	<0.03000		0.03000	ug/L	6/18/01 12:40	TA
Color	110.3	83		1	PtCo units	6/13/01 13:50	DW
Conditional Gross Alpha	900.0	<91.7		91.7	pCi/L	6/21/01 0:00	FRC
Conductivity	120.1	48100		0.1	umhos/cm	7/2/01 12:30	DW
Copper	200.7	0.0178		0.0024	mg/L	6/21/01 16:23	LH
Corrosivity	SM2330B	(-)6.06		N/A	NONE	6/12/01 15:06	LH
Cyanide, Total	4500CNE	< 0.006		0.00600	mg/L	6/27/01 12:42	TA
Dalapon	515.1	< 0.625		0.62500	ug/L	6/22/01 22:12	TA
Detergents (MBAS)	5540C	<0.05		0.05000	mg/L	6/14/01 8:00	SA
Di(2-ethylhexyl)adiipate	525.2	< 0.600		0.600	ug/L	6/19/01 14:39	TA
Di(2-ethylhexyl)phthalate	525.2	< 1.32		1.32	ug/L	6/19/01 14:39	TA
Dibromochloromethane	524.2	< 0.270		0.270	ug/L	6/18/01 12:40	TA
Dibromomethane	524.2	<0.03000		0.03000	ug/L	6/18/01 12:40	TA
Dicamba	515.1	< 0.0250		0.02500	ug/L	6/22/01 22:12	TA
Dichlorodiflouromethane	524.2	<0.50000		0.50000	ug/L	6/18/01 12:40	TA
Dieldrin	508	< 0.0270		0.0270	ug/L	6/20/01 1:11	TA
Diethylphthalate	625	< 4.96		4.96000	ug/L	6/21/01 20:15	TA
Dimethylphthalate	625	< 5		5	ug/L	6/21/01 20:15	TA
Di-n-butylphthalate	625	< 4.01		4.01000	ug/L	6/21/01 20:15	TA

Client Project: Cooper City
Lab Project: N0106262
Report Date: 08/03/01

Lab ID	Sample Description	Sample Source	Sample Date/Time
N0106262-01	injection well grab	Ground Water	6/12/01 10:00

Analysis	Method	Results	Qual	Detection Limit	Units	AnalysisDate/Time	Analyst
Di-n-octylphthalate	625	< 2.43		2.43000	ug/L	6/21/01 20:15	TA
Dinoseb	515.1	< 0.125		0.12500	ug/L	6/22/01 22:12	TA
Dioxin	SW8468280	< 0.480		0.480	ng/L	6/27/01 0:00	STL
Diquat	549.1	< 4		4	ug/L	6/25/01 9:30	TA
Endothall	548.1	< 5		5	ug/L	6/19/01 15:08	TA
Endrin	508	< 0.0100		0.0100	ug/L	6/20/01 1:11	TA
Ethylbenzene	524.2	<0.47000		0.47000	ug/L	6/18/01 12:40	TA
Ethylene Dibromide	504.1	< 0.0100		0.01000	ug/L	6/15/01 14:26	TA
Fluoride	340.2	1.0		0.1	mg/L	6/13/01 14:00	DW
Glyphosate	547	< 2.40		2.40	ug/L	6/18/01 6:24	TA
Heptachlor	508	< 0.0540		0.0540	ug/L	6/20/01 1:11	TA
Heptachlor Epoxide	508	< 0.0245		0.0245	ug/L	6/20/01 1:11	TA
Hexachlorobenzene	508	< 0.0100		0.0100	ug/L	6/20/01 1:11	TA
Hexachlorocyclopentadiene	508	< 0.0200		0.0200	ug/L	6/20/01 1:11	TA
Iron	200.7	< 0.060		0.060	mg/L	6/21/01 16:23	LH
Isophorone	625	< 7.26		7.26000	ug/L	6/21/01 20:15	TA
Lead	SM3113B	0.014		0.010	mg/L	6/27/01 9:03	LH
Lindane	508	< 0.0240		0.0240	ug/L	6/20/01 1:11	TA
Manganese	200.7	0.0383		0.0002	mg/L	6/21/01 16:23	LH
Mercury	245.1	< 0.001		0.001	mg/L	6/13/01 13:39	LH
Methomyl	531.1	< 0.254		0.25400	ug/L	6/20/01 8:53	TA

Client Project: Cooper City
Lab Project: N0106262
Report Date: 08/03/01

Lab ID	Sample Description	Sample Source	Sample Date/Time
N0106262-01	injection well grab	Ground Water	6/12/01 10:00

Analysis	Method	Results	Qual	Detection Limit	Units	AnalysisDate/Time	Analyst
Methoxychlor	508	< 0.250		0.250	ug/L	6/20/01 1:11	TA
Methylene Chloride	524.2	<0.31000		0.31000	ug/L	6/18/01 12:40	TA
Methyl-Tert-Butyl -Ether	524.2	<1.0000		1.0000	ug/L	6/18/01 12:40	TA
Metolachlor	507	< 0.500		0.500	ug/L	6/20/01 1:11	TA
Metribuzin	507	< 0.120		0.120	ug/L	6/20/01 1:11	TA
Naphthalene	625	<5		5	ug/L	6/21/01 20:15	TA
Nickel	200.7	< 0.002		0.002	mg/L	6/21/01 16:23	LH
Nitrate+Nitrite-N	353.2	0.35		0.05	mg/L	6/18/01 15:15	NL
Nitrate-N	353.2	0.35		0.05	mg/L	7/6/01 14:00	DH
Nitrite-N	354.1	<0.05		0.01	mg/L	6/12/01 14:00	NL
Nitrogen, Organic	351.2/350.3	0.30		0.05	mg/L	6/17/01 14:58	DH
Nitrogen, Total Kjeldahl	351.2	0.30		0.05	mg/L	7/17/01 14:58	DH
Odor	140.1	< 1		1	TON	6/13/01 14:00	DW
Oxamyl (Vydate)	531.1	< 1.13		1.13000	ug/L	6/20/01 8:53	TA
PCB	508	< 0.250		0.250	ug/L	6/20/01 1:11	TA
Pentachlorophenol	515.1	< 0.0545		0.05450	ug/L	6/22/01 22:12	TA
pH	150.1	7.56		0.01	pH units	6/12/01 14:00	DP
Phenanthrene	625	<5		5	ug/L	6/21/01 20:15	TA
Phenol	625	< 3.01		3.01000	ug/L	6/21/01 20:15	TA
Phenolics, Total	420.1	<0.004		0.00400	mg/L	6/27/01 13:38	TA
Phosphorus, Total	6010B	0.050		0.010	mg/L	6/13/01 16:26	LH

Client Project: Cooper City
Lab Project: N0106262
Report Date: 08/03/01

Lab ID	Sample Description	Sample Source	Sample Date/Time
N0106262-01	injection well grab	Ground Water	6/12/01 10:00

Analysis	Method	Results	Qual	Detection Limit	Units	AnalysisDate/Time	Analyst
Picloram	515.1	< 0.250		0.25000	ug/L	6/22/01 22:12	TA
Propachlor	508	< 0.380		0.380	ug/L	6/20/01 1:11	TA
Radium 226	903.1	2.3		0.1	pCi/L	6/27/01 0:00	FRC
Selenium	SM3113B	< 0.4		0.4	mg/L	6/27/01 15:56	LH
Silver	200.7	< 0.002		0.002	mg/L	6/21/01 16:23	LH
Simazine	507	< 0.176		0.176	ug/L	6/20/01 1:11	TA
Sodium	200.7	11,000		35	mg/L	6/21/01 16:23	LH
Styrene	524.2	<0.47000		0.47000	ug/L	6/18/01 12:40	TA
Sulfate	300.0	3240		15	mg/L	6/19/01 17:00	DW
Tetrachloroethene	524.2	<0.21000		0.21000	ug/L	6/18/01 12:40	TA
Thallium	SM3113B	<0.020		0.020	mg/L	6/26/01 13:56	LH
Toluene	524.2	<0.41000		0.41000	ug/L	6/18/01 12:40	TA
Total Coliform, MF	9222B	Absent		n/a	col/100ml	6/12/01 16:45	DP
Total Dissolved Solids	160.1	37200		5	mg/L	6/12/01 16:30	CC
Total THM	524.2	< 0.360		0.360	ug/L	6/18/01 12:40	TA
Toxaphene	508	< 0.500		0.500	ug/L	6/20/01 1:11	TA
trans-1,2-Dichloroethene	524.2	<0.12000		0.12000	ug/L	6/18/01 12:40	TA
Trichloroethene	524.2	<0.02000		0.02000	ug/L	6/18/01 12:40	TA
Trichloroflouromethane	524.2	<0.28000		0.28000	ug/L	6/18/01 12:40	TA
Vinyl Chloride	524.2	<0.29000		0.29000	ug/L	6/18/01 12:40	TA
Xylenes	524.2	<0.24000		0.24000	ug/L	6/18/01 12:40	TA

Client Project: Cooper City
Lab Project: N0106262
Report Date: 08/03/01

Lab ID	Sample Description	Sample Source	Sample Date/Time
N0106262-01	injection well grab	Ground Water	6/12/01 10:00

Analysis	Method	Results	Qual	Detection Limit	Units	AnalysisDate/Time	Analyst
Zinc	200.7	0.015		0.004	mg/L	6/21/01 16:23	LH

Approved by:

Craig Toler/Lab Director
Laura Sullivan/QA Officer
Kathrine Bartkiewicz/Lab Supervisor

Comments:

Amended Final Report

Upper Monitor Zone
Background Water Quality

TABLE
PRIMARY DRINKING WATER STANDARDS
Analytical Results for Cooper City (Upper Monitoring Zone)

Parameter	Units	Maximum Contaminant Level	Lab Result	Detection Limit	Analysis Date	Method
Inorganic Compounds						
Antimony	mg/L	0.006	0.004	0.001	6/21/01	SM3113B
Arsenic	mg/L	0.05	<0.0056	0.0056	6/21/01	200.7
Asbestos	MFL	7	<0.170***	0.17	6/26/01	100.2
Barium	mg/L	2	<0.0002	0.0002	6/21/01	200.7
Beryllium	mg/L	0.004	<0.0016	0.0016	6/21/01	200.7
Cadmium	mg/L	0.005	<0.0004	0.0004	6/21/01	200.7
Chromium	mg/L	0.1	<0.0020	0.002	6/21/01	200.7
Cyanide	mg/L	0.2	<0.006	0.006	6/14/01	SM4500CNE
Fluoride	mg/L	4.0	1.1	0.100	6/12/01	340.2
Lead	mg/L	0.015	<0.010	0.01	6/27/01	SM3113B
Mercury	mg/L	0.002	<0.001	0.001	6/13/01	245.1
Nickel	mg/L	0.1	<0.002	0.002	6/21/01	200.7
Nitrate	mg/L as N	10	<0.05	0.05	6/13/01	353.2
Nitrite	mg/L as N	1	<0.05	0.05	6/12/01	354.1
Total Nitrate & Nitrite	mg/L as N	10	<0.05	0.05	6/18/01	353.2
Selenium	mg/L	0.05	<0.4	0.4	6/27/01	SM3113B
Sodium	mg/L	160	973	0.7	6/21/01	200.7
Thallium	mg/L	0.002	<0.020	0.02	6/26/01	SM3113B
Pesticides & Polychlorinated Compounds						
2,4,5-TP (Silvex)	mg/L	0.05	<0.0250*	0.025	6/18/01	515.1
2,4-D	mg/L	0.07	<0.362*	0.362	6/18/01	515.1
Alachlor	mg/L	0.002	<0.0625*	0.0625	6/15/01	507
Atrazine	mg/L	0.003	<0.638*	0.638	6/15/01	507
Benzo (a) pyrene	mg/L	0.0002	<0.0400*	0.04	6/14/01	525.2
Carbofuran	mg/L	0.04	<0.900*	0.9	6/20/01	531.1
Chlordane	mg/L	0.002	<0.500*	0.5	6/15/01	508
Dalapon	mg/L	0.2	<0.625*	0.625	6/18/01	515.1
Di (2-ethylhexyl) adipate	mg/L	0.4	<0.600*	0.6	6/14/01	525.2
Di (2-ethylhexyl) phthalate	mg/L	0.006	<1.32*	1.32	6/14/01	525.2
1,2-Dibromo-3-chloropropane	mg/L	0.0002	<0.0200*	0.0200	6/14/01	504
Dinoseb	mg/L	0.007	<0.125*	0.125	6/18/01	515.1
Dioxin (2, 3 ,7, 8, -TCDD)	mg/L	0.00000003	<0.46**	0.46	6/20/01	SW8468280
Diquat	mg/L	0.02	<4*	4	6/18/01	549.1
Endothall	mg/L	0.1	<5*	5	6/14/01	548.1
Endrin	mg/L	0.002	<0.0100*	0.0100	6/15/01	508
Ethylene dibromide (EDB)	mg/L	0.00002	<0.0100*	0.0100	6/14/01	504.1
Glyphosate	mg/L	0.7	<2.40*	2.40	6/18/01	547
Heptachlor	mg/L	0.0004	<0.0540*	0.0540	6/15/01	508
Heptachlor epoxide	mg/L	0.0002	<0.0245*	0.0245	6/15/01	508
Hexachlorobenzene	mg/L	0.001	<0.0100*	0.0100	6/15/01	508
Hexcachlorocyclopentadiene	mg/L	0.05	<0.0200*	0.0200	6/15/01	508
Lindane	mg/L	0.0002	<0.0240*	0.0240	6/15/01	508
Methoxychlor	mg/L	0.04	<0.250*	0.025	6/15/01	508
Oxamyl (vydate)	mg/L	0.2	<1.13*	1.13	6/20/01	531.1
Pentachlorophenol	mg/L	0.001	<0.0545*	0.0545	6/18/01	515.1
Picloram	mg/L	0.5	<0.250*	0.250	6/18/01	515.1
Polychlorinated biphenyl (PCB)	mg/L	0.0005	<0.250*	0.250	6/15/01	508
Simazine	mg/L	0.004	<0.176*	0.176	6/15/01	507
Toxaphene	mg/L	0.003	<0.500*	0.500	6/15/01	508

mg/L - milligrams per liter

MFL- million fibers per liter greater than 10 microns

TABLE (Continued)
PRIMARY DRINKING WATER STANDARDS
Analytical Results for Cooper City (Upper Monitoring Zone)

Parameter	Units	Maximum Contaminant Level	Lab Result	Detection Limit	Analysis Date	Method
Volatile Organic Compounds						
1,1,1-Trichloroethane	mg/L	0.2	<0.210*	0.21000	6/14/01	524.2
1,1,2-Trichloroethane	mg/L	0.005	<0.23000*	0.23000	6/14/01	524.2
1,1-Dichloroethylene	mg/L	0.007	<0.02000*	0.02000	6/14/01	524.2
1,2,4-Trichlorobenzene	mg/L	0.07	<0.22000*	0.22000	6/14/01	524.2
1,2-Dichlorethane	mg/L	0.003	<0.02000*	0.02000	6/14/01	524.2
1,2-Dichloropropane	mg/L	0.005	<0.33000*	0.33000	6/14/01	524.2
Benzene	mg/L	0.001	<0.05000*	0.05000	6/14/01	524.2
Carbon tetrachloride	mg/L	0.003	<0.29000*	0.29000	6/14/01	524.2
cis-1,2,-Dichloroethylene	mg/L	0.07	<0.03000*	0.03000	6/14/01	524.2
Dichloromethane	mg/L	0.005	<0.31000*	0.31000	6/14/01	524.2
Ethylbenzene	mg/L	0.7	<0.47000*	0.47000	6/14/01	524.2
Monochlorobenzene	mg/L	0.1	<0.23000*	0.23000	6/14/01	524.2
o-Dichlorobenzene	mg/L	0.6	<0.05000*	0.05000	6/14/01	524.2
para-Dichlorobenzene	mg/L	0.075	<0.02000*	0.02000	6/14/01	524.2
Styrene	mg/L	0.1	<0.47000*	0.47000	6/14/01	524.2
Tetrachloroethylene	mg/L	0.003	<0.21000*	0.21000	6/14/01	524.2
Toluene	mg/L	1	<0.41000*	0.41000	6/14/01	524.2
Total trihalomethanes (TTHM)	mg/L	0.10	<0.360*	0.360	6/14/01	524.2
trans-1,2-Dichlorethylene	mg/L	0.1	<0.12000*	0.12000	6/14/01	524.2
Trichloroethylene	mg/L	0.003	<0.02000*	0.02000	6/14/01	524.2
Vinyl chloride	mg/L	0.001	<0.29000*	0.29000	6/14/01	524.2
Xylenes (total)	mg/L	10	<0.24000	0.24000	6/14/01	524.2
Physical Characteristics						
Turbidity	NTU	1				
Microbiological Characteristics						
Total Coliform		<5% positive	absent	n/a	6/11/01	9222B
Fecal Coliform		<1				
Radionuclides						
Combined Radium 226 & 228	pCi/L	5	15.6/<1.0	0.1/1.0	6/26/01	903.1/Ra-05
Gross Alpha	pCi/L	15	19	7.2	6/16/01	900.0
Man-made beta & photon emitters	mRem/yr	4				
Treatment Chemicals						
Acrylamide		0.05% @1				
Epichlorohydrin		0.01% @20				

mg/L - milligrams per liter

pCi/L - picocurie per liter

m/Rem/yr - millirem per year

NTU - nephelometric turbidity unit

TABLE (Continued)
SECONDARY DRINKING WATER STANDARDS
Analytical Results for Cooper City (Upper Monitoring Zone)

Parameter	Units	Maximum Contaminant Level	Lab Result	Detection Limit	Analysis Date	Method
Aluminum	mg/L	0.2	<0.040	0.040	6/21/01	200.7
Chloride	mg/L	250	2350	15	6/19/01	300.0
Color	color units	15	20	1	6/12/01	110.3
Copper	mg/L	1	<00024	0.0024	6/21/01	200.7
Fluoride	mg/L	2	1.1	0.100	6/12/01	340.2
Foaming Agents	mg/L	0.5	0.028	0.02	6/13/01	5540C
Iron	mg/L	0.3	<0.0600	0.06	6/21/01	EPA 200.7
Manganese	mg/L	0.05	0.008	0.0002	6/21/01	200.7
Odor	TON	3	1.40	1	6/11/01	140.1
pH	---	6.5-8.5	7.95	0.01	6/11/01	150.1
Silver	mg/L	0.1	<0.002	0.002	6/21/01	200.7
Sulfate	mg/L	250	1720	15	6/19/01	300.0
Total Dissolved Solids (TDS)	mg/L	500	4100	5	6/11/01	160.1
Zinc	mg/L	5	<0.004	0.004	6/21/01	200.7

mg/L - milligrams per liter
TON - threshold odor number

*results are in mg/L
**results are in ng/L
***results are in mill/L

Client Project: Cooper City
Lab Project: N0106203
Report Date: 07/10/01

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JOB No. 40340

Youngquist Brothers, Inc.
15465 Pine Ridge Road
Ft. Myers, FL 33908

Lab ID	Sample Description	Sample Source	Sample Date/Time
N0106203-01	upper zone grab	Ground Water	6/11/01 6:45

Analysis	Method	Results	Qual	Detection Limit	Units	AnalysisDate/Time	Analyst
1,1,1,2-Tetrachloroethane	524.2	<0.13000		0.13000	ug/L	6/14/01 10:39	TA
1,1,1-Trichloroethane	524.2	<0.21000		0.21000	ug/L	6/14/01 10:39	TA
1,1,2,2-Tetrachloroethane	524.2	<0.33000		0.33000	ug/L	6/14/01 10:39	TA
1,1,2-Trichloroethane	524.2	<0.23000		0.23000	ug/L	6/14/01 10:39	TA
1,1-Dichloroethane	524.2	<0.02000		0.02000	ug/L	6/14/01 10:39	TA
1,1-Dichloroethene	524.2	<0.02000		0.02000	ug/L	6/14/01 10:39	TA
1,1-Dichloropropene	524.2	<0.06000		0.06000	ug/L	6/14/01 10:39	TA
1,2,3-Trichloropropane	524.2	<0.39000		0.39000	ug/L	6/14/01 10:39	TA
1,2,4-Trichlorobenzene	524.2	<0.22000		0.22000	ug/L	6/14/01 10:39	TA
1,2-Dibromo-3-chloropropane	504.1	< 0.0200		0.0200	ug/L	6/14/01 19:10	TA
1,2-Dichlorobenzene	524.2	<0.05000		0.05000	ug/L	6/14/01 10:39	TA
1,2-Dichloroethane	524.2	<0.02000		0.02000	ug/L	6/14/01 10:39	TA
1,2-Dichloropropane	524.2	<0.33000		0.33000	ug/L	6/14/01 10:39	TA
1,3-Dichlorobenzene	524.2	<0.2000		0.20000	ug/L	6/14/01 10:39	TA
1,3-Dichloropropane	524.2	<0.05000		0.05000	ug/L	6/14/01 10:39	TA
1,3-Dichloropropene	524.2	<0.21000		0.21000	ug/L	6/14/01 10:39	TA
1,4-Dichlorobenzene	524.2	<0.02000		0.02000	ug/L	6/14/01 10:39	TA
2,2-Dichloropropane	524.2	<0.38000		0.38000	ug/L	6/14/01 10:39	TA

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Client Project: Cooper City
Lab Project: N0106203
Report Date: 07/10/01

Lab ID	Sample Description	Sample Source	Sample Date/Time
N0106203-01	upper zone grab	Ground Water	6/11/01 6:45

Analysis	Method	Results	Qual	Detection Limit	Units	AnalysisDate/Time	Analyst
2,4,5-TP (Silvex)	515.1	< 0.0250		0.0250	ug/L	6/18/01 20:43	TA
2,4,6-Trichlorophenol	625	<4.53		4.53	ug/L	6/15/01 21:02	TA
2,4-D	515.1	< 0.362		0.362	ug/L	6/18/01 20:43	TA
2,4-Dinitrotoluene	625	<4.85		4.85	ug/L	6/15/01 21:02	TA
2-Chlorophenol	625	<4.16		4.16	ug/L	6/15/01 21:02	TA
2-Chlorotoluene	524.2	<0.33000		0.33000	ug/L	6/14/01 10:39	TA
2-Methyl-4,6-dinitrophenol	625	<4.06		4.06	ug/L	6/15/01 21:02	TA
3-Hydroxycarbofuran	531.1	< 1.13		1.13	ug/L	6/20/01 7:02	TA
4-Chlorotoluene	524.2	<0.29000		0.29000	ug/L	6/14/01 10:39	TA
Alachlor	507	< 0.0625		0.0625	ug/L	6/15/01 7:07	TA
Aldicarb	531.1	< 1.04		1.04	ug/L	6/20/01 7:02	TA
Aldicarb Sulfone	531.1	< 0.647		0.647	ug/L	6/20/01 7:02	TA
Aldicarb Sulfoxide	531.1	< 0.850		0.850	ug/L	6/20/01 7:02	TA
Aldrin	508	< 0.0525		0.0525	ug/L	6/15/01 7:07	TA
Aluminum	200.7	< 0.040		0.040	mg/L	6/21/01 13:48	LH
Ammonia-N	350.3	0.46		0.05	mg/L	6/11/01 16:15	DH
Anthracene	625	<5.08		5.08	ug/L	6/15/01 21:02	TA
Antimony	SM3113B	0.004		0.001	mg/L	6/21/01 13:49	LH
Arsenic	200.7	< 0.0056		0.0056	mg/L	6/21/01 13:48	LH
Asbestos	100.2	< 0.170		0.170	mill/L	6/26/01 0:00	EMSL
Atrazine	507	< 0.625		0.625	ug/L	6/15/01 7:07	TA

Client Project: Cooper City
Lab Project: N0106203
Report Date: 07/10/01

Lab ID	Sample Description	Sample Source	Sample Date/Time
N0106203-01	upper zone grab	Ground Water	6/11/01 6:45

Analysis	Method	Results	Qual	Detection Limit	Units	AnalysisDate/Time	Analyst
Barium	200.7	< 0.0002		0.0002	mg/L	6/21/01 13:48	LH
Benzene	524.2	<0.05000		0.05000	ug/L	6/14/01 10:39	TA
Benzo(a)pyrene	525.2	< 0.0400		0.0400	ug/L	6/14/01 0:20	TA
Beryllium	200.7	< 0.0016		0.0016	mg/L	6/21/01 13:48	LH
Biochemical Oxygen Demand (5)	405.1	2		1	mg/L	6/11/01 16:45	CC
Bromobenzene	524.2	<0.05000		0.05000	ug/L	6/14/01 10:39	TA
Bromodichloromethane	524.2	< 0.360		0.36000	ug/L	6/14/01 10:39	TA
Bromoform	524.2	< 0.310		0.31000	ug/L	6/14/01 10:39	TA
Bromomethane	524.2	<0.29000		0.29000	ug/L	6/14/01 10:39	TA
Butachlor	507	< 0.500		0.500	ug/L	6/15/01 7:07	TA
Butylbenzylphthalate	625	<2.59		2.59	ug/L	6/15/01 21:02	TA
Cadmium	200.7	< 0.0004		0.0004	mg/L	6/21/01 13:48	LH
Carbaryl	531.1	< 0.599		0.599	ug/L	6/20/01 7:02	TA
Carbofuran	531.1	< 0.900		0.900	ug/L	6/20/01 7:02	TA
Carbon Tetrachloride	524.2	<0.29000		0.29000	ug/L	6/14/01 10:39	TA
Chemical Oxygen Demand	410.4	65		6	mg/L	6/18/01 15:00	DW
Chlordane	508	< 0.500		0.500	ug/L	6/15/01 7:07	TA
Chloride	300.0	2350		15	mg/L	6/19/01 17:00	DW
Chlorobenzene	524.2	<0.23000		0.23000	ug/L	6/14/01 10:39	TA
Chloroethane	524.2	<0.29000		0.29000	ug/L	6/14/01 10:39	TA
Chloroform	524.2	0.33000		0.16000	ug/L	6/14/01 10:39	TA

Client Project: Cooper City
Lab Project: N0106203
Report Date: 07/10/01

Lab ID	Sample Description	Sample Source	Sample Date/Time
N0106203-01	upper zone grab	Ground Water	6/11/01 6:45

Analysis	Method	Results	Qual	Detection Limit	Units	AnalysisDate/Time	Analyst
Chloromethane	524.2	<0.35000		0.35000	ug/L	6/14/01 10:39	TA
Chromium	200.7	< 0.0020		0.002	mg/L	6/21/01 13:48	LH
Cis-1,2-Dichloroethene	524.2	<0.03000		0.03000	ug/L	6/14/01 10:39	TA
Color	110.3	20		1	PtCo units	6/12/01 12:40	DW
Conditional Gross Alpha	900.0	19.0		7.20000	pCi/L	6/16/01 0:00	FRC
Conductivity	120.1	6660		0.1	umhos/cm	7/2/01 12:30	DW
Copper	200.7	< 0.0024		0.0024	mg/L	6/21/01 13:48	LH
Corrosivity	SM2330B	(+)0.07		N/A	NONE	6/12/01 15:06	LH
Cyanide, Total	4500CNE	< 0.006		0.006	mg/L	6/14/01 14:30	TA
Dalapon	515.1	< 0.625		0.625	ug/L	6/18/01 20:43	TA
Detergents (MBAS)	5540C	0.028		0.02000	mg/L	6/13/01 12:00	TA
Di(2-ethylhexyl)adiipate	525.2	< 0.600		0.600	ug/L	6/14/01 0:20	TA
Di(2-ethylhexyl)phthalate	525.2	< 1.32		1.32	ug/L	6/14/01 0:20	TA
Dibromochloromethane	524.2	< 0.270		0.27000	ug/L	6/14/01 10:39	TA
Dibromomethane	524.2	<0.03000		0.03000	ug/L	6/14/01 10:39	TA
Dicamba	515.1	< 0.0250		0.0250	ug/L	6/18/01 20:43	TA
Dichlorodiflouromethane	524.2	<0.5000		0.50000	ug/L	6/14/01 10:39	TA
Dieldrin	508	< 0.0270		0.0270	ug/L	6/15/01 7:07	TA
Diethylphthalate	625	<5.04		5.04	ug/L	6/15/01 21:02	TA
Dimethylphthalate	625	<5.08		5.08	ug/L	6/15/01 21:02	TA
Di-n-butylphthalate	625	<4.07		4.07	ug/L	6/15/01 21:02	TA

Client Project: Cooper City
Lab Project: N0106203
Report Date: 07/10/01

Lab ID	Sample Description	Sample Source	Sample Date/Time
N0106203-01	upper zone grab	Ground Water	6/11/01 6:45

Analysis	Method	Results	Qual	Detection Limit	Units	AnalysisDate/Time	Analyst
Di-n-octylphthalate	625	<2.47		2.47	ug/L	6/15/01 21:02	TA
Dinoseb	515.1	< 0.125		0.125	ug/L	6/18/01 20:43	TA
Dioxin	SW8468280	<0.46		0.46000	ng/L	6/20/01 0:00	STL
Diquat	549.1	< 4		4	ug/L	6/18/01 6:57	TA
Endothall	548.1	< 5		5	ug/L	6/14/01 18:31	TA
Endrin	508	< 0.0100		0.0100	ug/L	6/15/01 7:07	TA
Ethylbenzene	524.2	<0.47000		0.47000	ug/L	6/14/01 10:39	TA
Ethylene Dibromide	504.1	< 0.0100		0.0100	ug/L	6/14/01 19:10	TA
Fluoride	340.2	1.1		0.1	mg/L	6/12/01 14:16	DP
Glyphosate	547	< 2.40		2.40	ug/L	6/18/01 5:47	TA
Heptachlor	508	< 0.0540		0.0540	ug/L	6/15/01 7:07	TA
Heptachlor Epoxide	508	< 0.0245		0.0245	ug/L	6/15/01 7:07	TA
Hexachlorobenzene	508	< 0.0100		0.0100	ug/L	6/15/01 7:07	TA
Hexachlorocyclopentadiene	508	< 0.0200		0.0200	ug/L	6/15/01 7:07	TA
Iron	200.7	< 0.0600		0.0600	mg/L	6/21/01 13:48	LH
Isophorone	625	< 7.37		7.37	ug/L	6/15/01 21:02	TA
Lead	SM3113B	< 0.010		0.010	mg/L	6/27/01 9:03	LH
Lindane	508	< 0.0240		0.0240	ug/L	6/15/01 7:07	TA
Manganese	200.7	0.008		0.0002	mg/L	6/21/01 13:48	LH
Mercury	245.1	< 0.001		0.001	mg/L	6/13/01 13:39	LH
Methomyl	531.1	< 0.254		0.254	ug/L	6/20/01 7:02	TA

Client Project: Cooper City
Lab Project: N0106203
Report Date: 07/10/01

Lab ID	Sample Description	Sample Source	Sample Date/Time
N0106203-01	upper zone grab	Ground Water	6/11/01 6:45

Analysis	Method	Results	Qual	Detection Limit	Units	AnalysisDate/Time	Analyst
Methoxychlor	508	< 0.250		0.250	ug/L	6/15/01 7:07	TA
Methylene Chloride	524.2	<0.31000		0.31000	ug/L	6/14/01 10:39	TA
Methyl-Tert-Butyl -Ether	524.2	<0.27000		0.27000	ug/L	6/14/01 10:39	TA
Metolachlor	507	< 0.500		0.500	ug/L	6/15/01 7:07	TA
Metribuzin	507	< 0.120		0.120	ug/L	6/15/01 7:07	TA
Naphthalene	625	<5.08		5.08	ug/L	6/15/01 21:02	TA
Nickel	200.7	< 0.002		0.002	mg/L	6/21/01 13:48	LH
Nitrate+Nitrite-N	353.2	<0.05		0.05	mg/L	6/18/01 13:30	NL
Nitrate-N	353.2	< 0.05		0.05	mg/L	6/13/01 11:30	DW
Nitrite-N	354.1	<0.05		0.01	mg/L	6/12/01 14:00	NL
Nitrogen, Organic	351.2/350.3	0.19		0.05	mg/L	6/13/01 13:35	DH
Nitrogen, Total Kjeldahl	351.2	0.65		0.05	mg/L	7/13/01 13:35	DH
Odor	140.1	1.4		1	TON	6/11/01 14:30	DW
Oxamyl (Vydate)	531.1	< 1.13		1.13	ug/L	6/20/01 7:02	TA
PCB	508	< 0.250		0.250	ug/L	6/15/01 7:07	TA
Pentachlorophenol	515.1	< 0.0545		0.0545	ug/L	6/18/01 20:43	TA
pH	150.1	7.95		0.01	std units	6/11/01 15:00	CC
Phenanthrene	625	<5.08		5.08	ug/L	6/15/01 21:02	TA
Phenol	625	<3.06		3.06	ug/L	6/15/01 21:02	TA
Phenolics, Total	420.1	<0.004		0.00400	mg/L	6/27/01 13:38	TA
Phosphorus, Total	6010B	0.040		0.010	mg/L	6/12/01 16:21	LH

Client Project: Cooper City
Lab Project: N0106203
Report Date: 07/10/01

Lab ID	Sample Description	Sample Source	Sample Date/Time
N0106203-01	upper zone grab	Ground Water	6/11/01 6:45

Analysis	Method	Results	Qual	Detection Limit	Units	AnalysisDate/Time	Analyst
Picloram	515.1	< 0.250		0.250	ug/L	6/18/01 20:43	TA
Propachlor	508	< 0.380		0.380	ug/L	6/15/01 7:07	TA
Radium 226	903.1	15.6		0.10000	pCi/L	6/26/01 0:00	FRC
Radium 228	Ra-05	<1.0		1.00000	pCi/L	6/26/01 0:00	FRC
Selenium	SM3113B	<0.4		0.4	mg/L	6/27/01 15:56	LH
Silver	200.7	< 0.002		0.002	mg/L	6/21/01 13:48	LH
Simazine	507	< 0.176		0.176	ug/L	6/15/01 7:07	TA
Sodium	200.7	973		0.700	mg/L	6/21/01 13:48	LH
Styrene	524.2	<0.47000		0.47000	ug/L	6/14/01 10:39	TA
Sulfate	300.0	1720		15	mg/L	6/19/01 17:00	DW
Tetrachloroethene	524.2	<0.21000		0.21000	ug/L	6/14/01 10:39	TA
Thallium	SM3113B	<0.020		0.020	mg/L	6/26/01 13:56	LH
Toluene	524.2	<0.41000		0.41000	ug/L	6/14/01 10:39	TA
Total Coliform, MF	9222B	Absent		n/a	col/100ml	6/11/01 13:40	DP
Total Dissolved Solids	160.1	4100		5	mg/L	6/11/01 15:00	CC
Total THM	524.2	< 0.360		0.36000	ug/L	6/14/01 10:39	TA
Toxaphene	508	< 0.500		0.500	ug/L	6/15/01 7:07	TA
trans-1,2-Dichloroethene	524.2	<0.12000		0.12000	ug/L	6/14/01 10:39	TA
Trichloroethene	524.2	<0.02000		0.02000	ug/L	6/14/01 10:39	TA
Trichloroflouromethane	524.2	<0.28000		0.28000	ug/L	6/14/01 10:39	TA
Vinyl Chloride	524.2	<0.29000		0.29000	ug/L	6/14/01 10:39	TA

Client Project: Cooper City
Lab Project: N0106203
Report Date: 07/10/01

Lab ID	Sample Description	Sample Source	Sample Date/Time
N0106203-01	upper zone grab	Ground Water	6/11/01 6:45

Analysis	Method	Results	Qual	Detection Limit	Units	AnalysisDate/Time	Analyst
Xylenes	524.2	<0.24000		0.24000	ug/L	6/14/01 10:39	TA
Zinc	200.7	< 0.004		0.004	mg/L	6/21/01 13:48	LH

Approved by:

Craig Teler/Lab Director
Laura Sullivan/QA Officer
Kathrine Bartkiewicz/Lab Supervisor

Comments:

Amended Final Report

Lower Monitor Zone
Background Water Quality

TABLE
PRIMARY DRINKING WATER STANDARDS
Analytical Results for Cooper City (Lower Monitoring Zone)

Parameter	Units	Maximum Contaminant Level	Lab Result	Detection Limit	Analysis Date	Method
Inorganic Compounds						
Antimony	mg/L	0.006	<0.001	0.001	6/21/01	SM3113B
Arsenic	mg/L	0.05	<0.0056	0.0056	6/21/01	200.7
Asbestos	MFL	7	<0.170***	0.17	6/26/01	100.2
Barium	mg/L	2	<0.0002	0.000	6/21/01	200.7
Beryllium	mg/L	0.004	0.0032	0.0016	6/21/01	200.7
Cadmium	mg/L	0.005	<0.0004	0.0004	6/21/01	200.7
Chromium	mg/L	0.1	<0.002	0.002	6/21/01	200.7
Cyanide	mg/L	0.2	<0.020	0.02	6/14/01	4500CNE
Fluoride	mg/L	4.0	0.9	0.100	6/12/01	340.2
Lead	mg/L	0.015	0.019	0.01	6/27/01	SM3113B
Mercury	mg/L	0.002	<0.001	0.001	6/13/01	245.1
Nickel	mg/L	0.1	<0.002	0.002	6/21/01	200.7
Nitrate	mg/L as N	10	<0.05	0.05	6/18/01	353.2
Nitrite	mg/L as N	1	<0.01	0.01	6/12/01	354.1
Total Nitrate & Nitrite	mg/L as N	10	<0.05	0.05	6/18/01	353.2
Selenium	mg/L	0.05	<0.4	0.4	6/27/01	SM3113B
Sodium	mg/L	160	8200	35	6/21/01	200.7
Thallium	mg/L	0.002	<0.020	0.02	6/26/01	SM3113B
Pesticides & Polychlorinated Compounds						
2,4,5-TP (Silvex)	mg/L	0.05	<0.0250*	0.025	6/18/01	515.1
2,4-D	mg/L	0.07	<0.362*	0.362	6/18/01	515.1
Alachlor	mg/L	0.002	<0.0625*	0.0625	6/15/01	507
Atrazine	mg/L	0.003	<0.625*	0.625	6/15/01	507
Benzo (a) pyrene	mg/L	0.0002	<0.0400*	0.04	6/13/01	525.2
Carbofuran	mg/L	0.04	<0.900*	0.9	6/19/01	531.1
Chlordane	mg/L	0.002	<0.500*	0.5	6/15/01	508
Dalapon	mg/L	0.2	<0.625*	0.625	6/18/01	515.1
Di (2-ethylhexyl) adipate	mg/L	0.4	<0.600*	0.6	6/13/01	525.2
Di (2-ethylhexyl) phthalate	mg/L	0.006	<1.32*	1.32	6/13/01	525.2
1,2-Dibromo-3-chloropropane	mg/L	0.0002	<0.0200*	0.0200	6/14/01	504
Dinoseb	mg/L	0.007	<0.125*	0.125	6/18/01	515.1
Dioxin (2, 3 ,7, 8, -TCDD)	mg/L	0.00000003	<0.240**	0.24	6/20/01	SW8468280
Diquat	mg/L	0.02	<4*	4	6/18/01	549.1
Endothall	mg/L	0.1	<5*	5	6/14/01	548.1
Endrin	mg/L	0.002	<0.0100*	0.0100	6/15/01	508
Ethylene dibromide (EDB)	mg/L	0.00002	<0.0100*	0.0100	6/14/01	504.1
Glyphosate	mg/L	0.7	<2.40*	2.40	6/13/01	547
Heptachlor	mg/L	0.0004	<0.0540*	0.0540	6/15/01	508
Heptachlor epoxide	mg/L	0.0002	<0.0245*	0.0245	6/15/01	508
Hexachlorobenzene	mg/L	0.001	<0.0100*	0.0100	6/15/01	508
Hexcachlorocyclopentadiene	mg/L	0.05	<0.0200*	0.0200	6/15/01	508
Lindane	mg/L	0.0002	<0.0240*	0.0240	6/15/01	508
Methoxychlor	mg/L	0.04	<0.250*	0.250	6/15/01	508
Oxamyl (vydate)	mg/L	0.2	<1.13*	1.13	6/19/01	531.1
Pentachlorophenol	mg/L	0.001	<0.0545*	0.0545	6/18/01	515.1
Picloram	mg/L	0.5	<0.250*	0.250	6/18/01	515.1
Polychlorinated biphenyl (PCB)	mg/L	0.0005	<0.250*	0.250	6/15/01	508
Simazine	mg/L	0.004	<0.176*	0.176	6/15/01	507
Toxaphene	mg/L	0.003	<0.500*	0.500	6/15/01	508

mg/L - milligrams per liter

MFL- million fibers per liter greater than 10 microns

TABLE (Continued)
PRIMARY DRINKING WATER STANDARDS
Analytical Results for Cooper City (Lower Monitoring Zone)

Parameter	Units	Maximum Contaminant Level	Lab Result	Detection Limit	Analysis Date	Method
Volatile Organic Compounds						
1,1,1-Trichloroethane	mg/L	0.2	<0.21000*	0.21000	6/14/01	524.2
1,1,2-Trichloroethane	mg/L	0.005	<0.23000*	0.23000	6/14/01	524.2
1,1-Dichloroethylene	mg/L	0.007	<0.02000*	0.02000	6/14/01	524.2
1,2,4-Trichlorobenzene	mg/L	0.07	<0.22000*	0.22000	6/14/01	524.2
1,2-Dichlorethane	mg/L	0.003	<0.02000*	0.02000	6/14/01	524.2
1,2-Dichloropropane	mg/L	0.005	<0.33000*	0.33000	6/14/01	524.2
Benzene	mg/L	0.001	<0.05000*	0.05000	6/14/01	524.2
Carbon tetrachloride	mg/L	0.003	<0.29000*	0.29000	6/14/01	524.2
cis-1,2,-Dichloroethylene	mg/L	0.07	<0.03000*	0.03000	6/14/01	524.2
Dichloromethane	mg/L	0.005	<0.31000*	0.31000	6/14/01	524.2
Ethylbenzene	mg/L	0.7	<0.47000*	0.47000	6/14/01	524.2
Monochlorobenzene	mg/L	0.1	<0.23000*	0.23000	6/14/01	524.2
o-Dichlorobenzene	mg/L	0.6	<0.05000*	0.05000	6/14/01	524.2
para-Dichlorobenzene	mg/L	0.075	<0.02000*	0.02000	6/14/01	524.2
Styrene	mg/L	0.1	<0.47000*	0.47000	6/14/01	524.2
Tetrachloroethylene	mg/L	0.003	<0.21000*	0.21000	6/14/01	524.2
Toluene	mg/L	1	<0.41000*	0.41000	6/14/01	524.2
Total trihalomethanes (TTHM)	mg/L	0.10	<0.360*	0.360	6/14/01	524.2
trans-1,2-Dichlorethylene	mg/L	0.1	<0.12000*	0.12000	6/14/01	524.2
Trichloroethylene	mg/L	0.003	<0.02000*	0.02000	6/14/01	524.2
Vinyl chloride	mg/L	0.001	<0.29000*	0.29000	6/14/01	524.2
Xylenes (total)	mg/L	10	<0.24000	0.24000	6/14/01	524.2
Physical Characteristics						
Turbidity	NTU	1				
Microbiological Characteristics						
Total Coliform		<5% positive	present	n/a	6/11/01	9222B
Fecal Coliform		<1				
Radionuclides						
Combined Radium 226 & 228	pCi/L	5	4.3/1.1	0.1/1.0	6/26/01	EPA 903.1/Ra-05
Gross Alpha	pCi/L	15	115	46.1	6/16/01	900.0
Man-made beta & photon emitters	mRem/yr	4				
Treatment Chemicals						
Acrylamide		0.05% @1				
Epichlorohydrin		0.01% @20				

mg/L - milligrams per liter

pCi/L - picocurie per liter

m/Rem/yr - millirem per year

NTU - nephelometric turbidity unit

TABLE (Continued)
SECONDARY DRINKING WATER STANDARDS
Analytical Results for Cooper City (Lower Monitoring Zone)

Parameter	Units	Maximum Contaminant Level	Lab Result	Detection Limit	Analysis Date	Method
Aluminum	mg/L	0.2	<0.040	0.040	6/21/01	200.7
Chloride	mg/L	250	14200	15	6/19/01	300.0
Color	color units	15	93	1	6/12/01	110.3
Copper	mg/L	1	0.0029	0.0024	6/21/01	200.7
Fluoride	mg/L	2	0.9	0.100	6/12/01	340.2
Foaming Agents	mg/L	0.5	0.038	0.02	6/13/01	5540C
Iron	mg/L	0.3	0.315	0.06	6/27/01	SM3113B
Manganese	mg/L	0.05	0.0335	0.0002	6/27/01	200.7
Odor	TON	3	1.00	1	6/11/01	140.1
pH	---	6.5-8.5	7.42	0.01	6/11/01	150.1
Silver	mg/L	0.1	<0.002	0.002	6/21/01	200.7
Sulfate	mg/L	250	1890	15	6/19/01	300.0
Total Dissolved Solids (TDS)	mg/L	500	29600	5	6/11/01	160.1
Zinc	mg/L	5	0.009	0.004	6/21/01	200.7

mg/L - milligrams per liter
TON - threshold odor number

*results are in mg/L
**results are in ng/L
***results are in mill/L

Client Project: Cooper City
Lab Project: N0106218
Report Date: 08/03/01

Sanders Laboratories
Environmental Testing Services

Youngquist Brothers, Inc.
15465 Pine Ridge Road
Ft. Myers, FL 33908

Lab ID	Sample Description	Sample Source	Sample Date/Time
N0106218-01	lower zone grab	Ground Water	6/11/01 7:00

Analysis	Method	Results	Qual	Detection Limit	Units	AnalysisDate/Time	Analyst
1,1,1,2-Tetrachloroethane	524.2	<0.13000		0.13000	ug/L	6/14/01 10:16	TA
1,1,1-Trichloroethane	524.2	<0.21000		0.21000	ug/L	6/14/01 10:16	TA
1,1,2,2-Tetrachloroethane	524.2	<0.33000		0.33000	ug/L	6/14/01 10:16	TA
1,1,2-Trichloroethane	524.2	<0.23000		0.23000	ug/L	6/14/01 10:16	TA
1,1-Dichloroethane	524.2	<0.02000		0.02000	ug/L	6/14/01 10:16	TA
1,1-Dichloroethene	524.2	<0.02000		0.02000	ug/L	6/14/01 10:16	TA
1,1-Dichloropropene	524.2	<0.06000		0.06000	ug/L	6/14/01 10:16	TA
1,2,3-Trichloropropane	524.2	<0.39000		0.39000	ug/L	6/14/01 10:16	TA
1,2,4-Trichlorobenzene	524.2	<0.22000		0.22000	ug/L	6/14/01 10:16	TA
1,2-Dibromo-3-chloropropane	504.1	< 0.0200		0.0200	ug/L	6/14/01 18:50	TA
1,2-Dichlorobenzene	524.2	<0.05000		0.05000	ug/L	6/14/01 10:16	TA
1,2-Dichloroethane	524.2	<0.02000		0.02000	ug/L	6/14/01 10:16	TA
1,2-Dichloropropane	524.2	<0.33000		0.33000	ug/L	6/14/01 10:16	TA
1,3-Dichlorobenzene	524.2	<0.20000		0.20000	ug/L	6/14/01 10:16	TA
1,3-Dichloropropane	524.2	<0.05000		0.05000	ug/L	6/14/01 10:16	TA
1,3-Dichloropropene	524.2	<0.21000		0.21000	ug/L	6/14/01 10:16	TA
1,4-Dichlorobenzene	524.2	<0.02000		0.02000	ug/L	6/14/01 10:16	TA
2,2-Dichloropropane	524.2	<0.38000		0.38000	ug/L	6/14/01 10:16	TA

1050 Endeavor Ct. • Nokomis, FL 34275 • Phone: (941) 488-8103 • (800) 255-3108 • Fax: (941) 484-6774

Client Project: Cooper City
Lab Project: N0106218
Report Date: 08/03/01

Lab ID	Sample Description	Sample Source	Sample Date/Time
N0106218-01	lower zone grab	Ground Water	6/11/01 7:00

Analysis	Method	Results	Qual	Detection Limit	Units	AnalysisDate/Time	Analyst
2,4,5-TP (Silvex)	515.1	< 0.0250		0.0250	ug/L	6/18/01 20:15	TA
2,4,6-Trichlorophenol	625	< 4.46		4.46000	ug/L	6/15/01 20:17	TA
2,4-D	515.1	< 0.362		0.362	ug/L	6/18/01 20:15	TA
2,4-Dinitrotoluene	625	< 4.78		4.78000	ug/L	6/15/01 20:17	TA
2-Chlorophenol	625	< 4.10		4.10000	ug/L	6/15/01 20:17	TA
2-Chlorotoluene	524.2	<0.33000		0.33000	ug/L	6/14/01 10:16	TA
2-Methyl-4,6-dinitrophenol	625	< 4		4	ug/L	6/15/01 20:17	TA
3-Hydroxycarbofuran	531.1	< 1.13		1.13	ug/L	6/19/01 14:05	TA
4-Chlorotoluene	524.2	<0.29000		0.29000	ug/L	6/14/01 10:16	TA
Alachlor	507	< 0.0625		0.0625	ug/L	6/15/01 6:41	TA
Aldicarb	531.1	< 1.04		1.04	ug/L	6/19/01 14:05	TA
Aldicarb Sulfone	531.1	< 0.647		0.647	ug/L	6/19/01 14:05	TA
Aldicarb Sulfoxide	531.1	< 0.850		0.850	ug/L	6/19/01 14:05	TA
Aldrin	508	< 0.0525		0.0525	ug/L	6/15/01 6:41	TA
Aluminum	200.7	< 0.040		0.040	mg/L	6/21/01 10:01	LH
Ammonia-N	350.3	0.38		0.05	mg/L	6/11/01 16:15	DH
Anthracene	625	<5		5	ug/L	6/15/01 20:17	TA
Antimony	SM3113B	< 0.001		0.001	mg/L	6/21/01 13:49	LH
Arsenic	200.7	< 0.0056		0.0056	mg/L	6/21/01 10:01	LH
Asbestos	100.2	< 0.170		0.170	mill/L	6/26/01 0:00	EMSL
Atrazine	507	< 0.625		0.625	ug/L	6/15/01 6:41	TA

Client Project: Cooper City
Lab Project: N0106218
Report Date: 08/03/01

Lab ID	Sample Description	Sample Source	Sample Date/Time
N0106218-01	lower zone grab	Ground Water	6/11/01 7:00

Analysis	Method	Results	Qual	Detection Limit	Units	AnalysisDate/Time	Analyst
Barium	200.7	< 0.0002		0.0002	mg/L	6/21/01 10:01	LH
Benzene	524.2	<0.05000		0.05000	ug/L	6/14/01 10:16	TA
Benzo(a)pyrene	525.2	< 0.0400		0.0400	ug/L	6/13/01 23:50	TA
Beryllium	200.7	0.0032		0.0016	mg/L	6/21/01 10:01	LH
Biochemical Oxygen Demand (5)	405.1	1		1	mg/L	6/11/01 16:45	CC
Bromobenzene	524.2	<0.05000		0.05000	ug/L	6/14/01 10:16	TA
Bromodichloromethane	524.2	< 0.360		0.360	ug/L	6/14/01 10:16	TA
Bromoform	524.2	< 0.310		0.310	ug/L	6/14/01 10:16	TA
Bromomethane	524.2	<0.29000		0.29000	ug/L	6/14/01 10:16	TA
Butachlor	507	< 0.500		0.500	ug/L	6/15/01 6:41	TA
Butylbenzylphthalate	625	< 2.55		2.55000	ug/L	6/15/01 20:17	TA
Cadmium	200.7	< 0.0004		0.0004	mg/L	6/21/01 10:01	LH
Carbaryl	531.1	< 0.599		0.599	ug/L	6/19/01 14:05	TA
Carbofuran	531.1	< 0.900		0.900	ug/L	6/19/01 14:05	TA
Carbon Tetrachloride	524.2	<0.29000		0.29000	ug/L	6/14/01 10:16	TA
Chemical Oxygen Demand	410.4	410		60	mg/L	6/26/01 14:00	DW
Chlordane	508	< 0.500		0.500	ug/L	6/15/01 6:41	TA
Chloride	300.0	14200		15	mg/L	6/19/01 17:00	DW
Chlorobenzene	524.2	<0.23000		0.23000	ug/L	6/14/01 10:16	TA
Chloroethane	524.2	<0.29000		0.29000	ug/L	6/14/01 10:16	TA
Chloroform	524.2	< 0.160		0.160	ug/L	6/14/01 10:16	TA

Client Project: Cooper City
Lab Project: N0106218
Report Date: 08/03/01

Lab ID	Sample Description	Sample Source	Sample Date/Time
N0106218-01	lower zone grab	Ground Water	6/11/01 7:00

Analysis	Method	Results	Qual	Detection Limit	Units	AnalysisDate/Time	Analyst
Chloromethane	524.2	<0.35000		0.35000	ug/L	6/14/01 10:16	TA
Chromium	200.7	< 0.002		0.002	mg/L	6/21/01 10:01	LH
Cis-1,2-Dichloroethene	524.2	<0.03000		0.03000	ug/L	6/14/01 10:16	TA
Color	110.3	93		1	PtCo units	6/12/01 12:40	DW
Conditional Gross Alpha	900.0	115.		46.10000	pCi/L	6/16/01 0:00	FRC
Conductivity	120.1	40800		0.1	umhos/cm	7/2/01 12:30	DW
Copper	200.7	0.0029		0.0024	mg/L	6/21/01 10:01	LH
Corrosivity	SM2330B	(-) 4.58		N/A	NONE	6/12/01 15:06	LH
Cyanide, Total	4500CNE	< 0.020		0.020	mg/L	6/14/01 14:30	TA
Dalapon	515.1	< 0.625		0.625	ug/L	6/18/01 20:15	TA
Detergents (MBAS)	5540C	0.038		0.02000	mg/L	6/13/01 12:00	TA
Di(2-ethylhexyl)adiipate	525.2	< 0.600		0.600	ug/L	6/13/01 23:50	TA
Di(2-ethylhexyl)phthalate	525.2	< 1.32		1.32	ug/L	6/13/01 23:50	TA
Dibromochloromethane	524.2	< 0.270		0.270	ug/L	6/14/01 10:16	TA
Dibromomethane	524.2	<0.03000		0.03000	ug/L	6/14/01 10:16	TA
Dicamba	515.1	< 0.0250		0.0250	ug/L	6/18/01 20:15	TA
Dichlorodiflouromethane	524.2	<0.50000		0.50000	ug/L	6/14/01 10:16	TA
Dieldrin	508	< 0.0270		0.0270	ug/L	6/15/01 6:41	TA
Diethylphthalate	625	< 4.96		4.96000	ug/L	6/15/01 20:17	TA
Dimethylphthalate	625	< 5		5	ug/L	6/15/01 20:17	TA
Di-n-butylphthalate	625	< 4.01		4.01000	ug/L	6/15/01 20:17	TA

Client Project: Cooper City
Lab Project: N0106218
Report Date: 08/03/01

Lab ID	Sample Description	Sample Source	Sample Date/Time
N0106218-01	lower zone grab	Ground Water	6/11/01 7:00

Analysis	Method	Results	Qual	Detection Limit	Units	AnalysisDate/Time	Analyst
Di-n-octylphthalate	625	< 2.43		2.43000	ug/L	6/15/01 20:17	TA
Dinoseb	515.1	< 0.125		0.125	ug/L	6/18/01 20:15	TA
Dioxin	SW8468280	< 0.240		0.240	ng/L	6/20/01 0:00	STL
Diquat	549.1	< 4		4	ug/L	6/18/01 6:35	TA
Endothall	548.1	< 5		5	ug/L	6/14/01 18:12	TA
Endrin	508	< 0.0100		0.0100	ug/L	6/15/01 6:41	TA
Ethylbenzene	524.2	<0.47000		0.47000	ug/L	6/14/01 10:16	TA
Ethylene Dibromide	504.1	< 0.0100		0.0100	ug/L	6/14/01 18:50	TA
Fluoride	340.2	0.9		0.1	mg/L	6/12/01 14:16	DP
Glyphosate	547	< 2.40		2.40	ug/L	6/13/01 9:49	TA
Heptachlor	508	< 0.0540		0.0540	ug/L	6/15/01 6:41	TA
Heptachlor Epoxide	508	< 0.0245		0.0245	ug/L	6/15/01 6:41	TA
Hexachlorobenzene	508	< 0.0100		0.0100	ug/L	6/15/01 6:41	TA
Hexachlorocyclopentadiene	508	< 0.0200		0.0200	ug/L	6/15/01 6:41	TA
Iron	200.7	0.315		0.06000	mg/L	6/21/01 10:01	LH
Isophorone	625	< 7.26		7.26000	ug/L	6/15/01 20:17	TA
Lead	SM3113B	0.019		0.010	mg/L	6/27/01 9:03	LH
Lindane	508	< 0.0240		0.0240	ug/L	6/15/01 6:41	TA
Manganese	200.7	0.0335		0.0002	mg/L	6/21/01 10:01	LH
Mercury	245.1	< 0.001		0.001	mg/L	6/13/01 13:39	LH
Methomyl	531.1	< 0.254		0.254	ug/L	6/19/01 14:05	TA

Client Project: Cooper City
Lab Project: N0106218
Report Date: 08/03/01

Lab ID	Sample Description	Sample Source	Sample Date/Time
N0106218-01	lower zone grab	Ground Water	6/11/01 7:00

Analysis	Method	Results	Qual	Detection Limit	Units	AnalysisDate/Time	Analyst
Methoxychlor	508	< 0.250		0.250	ug/L	6/15/01 6:41	TA
Methylene Chloride	524.2	<0.31000		0.31000	ug/L	6/14/01 10:16	TA
Methyl-Tert-Butyl -Ether	524.2	<0.27000		0.27000	ug/L	6/14/01 10:16	TA
Metolachlor	507	< 0.500		0.500	ug/L	6/15/01 6:41	TA
Metribuzin	507	< 0.120		0.120	ug/L	6/15/01 6:41	TA
Naphthalene	625	<5		5	ug/L	6/15/01 20:17	TA
Nickel	200.7	< 0.002		0.002	mg/L	6/21/01 10:01	LH
Nitrate+Nitrite-N	353.2	< 0.05		0.05	mg/L	6/18/01 13:30	NL
Nitrate-N	353.2	< 0.05		0.05	mg/L	6/18/01 13:30	DW
Nitrite-N	354.1	<0.05		0.01	mg/L	6/12/01 14:00	NL
Nitrogen, Organic	351.2/350.3	0.29		0.05	mg/L	6/13/01 13:35	DH
Nitrogen, Total Kjeldahl	351.2	0.67		0.05	mg/L	7/13/01 13:35	DH
Odor	140.1	1		1	TON	6/11/01 14:30	DW
Oxamyl (Vydate)	531.1	< 1.13		1.13	ug/L	6/19/01 14:05	TA
PCB	508	< 0.250		0.250	ug/L	6/15/01 6:41	TA
Pentachlorophenol	515.1	< 0.0545		0.0545	ug/L	6/18/01 20:15	TA
pH	150.1	7.42		0.01	std units	6/11/01 15:00	CC
Phenanthrene	625	<5		5	ug/L	6/15/01 20:17	TA
Phenol	625	< 3.01		3.01000	ug/L	6/15/01 20:17	TA
Phenolics, Total	420.1	<0.004		0.00400	mg/L	6/27/01 13:38	TA
Phosphorus, Total	6010B	0.027		0.010	mg/L	6/12/01 16:21	LH

Client Project: Cooper City
Lab Project: N0106218
Report Date: 08/03/01

Lab ID	Sample Description	Sample Source	Sample Date/Time
N0106218-01	lower zone grab	Ground Water	6/11/01 7:00

Analysis	Method	Results	Qual	Detection Limit	Units	AnalysisDate/Time	Analyst
Picloram	515.1	< 0.250		0.250	ug/L	6/18/01 20:15	TA
Propachlor	508	< 0.380		0.380	ug/L	6/15/01 6:41	TA
Radium 226	903.1	4.3		0.10000	pCi/L	6/26/01 0:00	FRC
Radium 228	Ra-05	1.1		1.00000	pCi/L	6/26/01 0:00	FRC
Selenium	SM3113B	< 0.4		0.4	mg/L	6/27/01 15:56	LH
Silver	200.7	< 0.002		0.002	mg/L	6/21/01 10:01	LH
Simazine	507	< 0.176		0.176	ug/L	6/15/01 6:41	TA
Sodium	200.7	8200		35	mg/L	6/21/01 10:01	LH
Styrene	524.2	<0.47000		0.47000	ug/L	6/14/01 10:16	TA
Sulfate	300.0	1890		15	mg/L	6/19/01 17:00	DW
Tetrachloroethene	524.2	<0.21000		0.21000	ug/L	6/14/01 10:16	TA
Thallium	SM3113B	<0.020		0.020	mg/L	6/26/01 13:56	LH
Toluene	524.2	<0.41000		0.41000	ug/L	6/14/01 10:16	TA
Total Coliform, MF	9222B	Present		n/a	col/100ml	6/11/01 13:40	DP
Total Dissolved Solids	160.1	29600		5	mg/L	6/11/01 15:00	CC
Total THM	524.2	< 0.360		0.360	ug/L	6/14/01 10:16	TA
Toxaphene	508	< 0.500		0.500	ug/L	6/15/01 6:41	TA
trans-1,2-Dichloroethene	524.2	<0.12000		0.12000	ug/L	6/14/01 10:16	TA
Trichloroethene	524.2	<0.02000		0.02000	ug/L	6/14/01 10:16	TA
Trichloroflouromethane	524.2	<0.28000		0.28000	ug/L	6/14/01 10:16	TA
Vinyl Chloride	524.2	<0.29000		0.29000	ug/L	6/14/01 10:16	TA

Client Project: Cooper City
Lab Project: N0106218
Report Date: 08/03/01

Lab ID	Sample Description	Sample Source	Sample Date/Time
N0106218-01	lower zone grab	Ground Water	6/11/01 7:00

Analysis	Method	Results	Qual	Detection Limit	Units	AnalysisDate/Time	Analyst
Xylenes	524.2	<0.24000		0.24000	ug/L	6/14/01 10:16	TA
Zinc	200.7	0.009		0.004	mg/L	6/21/01 10:01	LH

Approved by:

Craig Toler/Lab Director
Laura Sullivan/QA Officer
Kathrine Bartkiewicz/Lab Supervisor

Comments:

Amended Final Report

Plant Effluent
Background Water Quality

Wastewater Effluent Composite
Water Quality

Cooper City
40340
Concentrate Disposal System

Environmental Reagent Service

Maria Allpiste
Telephone 954-316-8792

4650 SW 51st Street
Davie, Florida 33314

Mr. Don Long
City of Cooper City
11791 SW 49th Street
Cooper City, Florida 33330

February 15, 2001
FDER CompQap# 970157
HRS Certification#E86563

Site Location/Project
City of Cooper City

Sample ID: WW Comb Effluent Comp
Collected: 01/08/01
Received: 01/09/01
Collected by: Cris Cummings

INORGANIC ANALYSIS
62-550.310(1)
(PWS030)

Parameter ID	Name(MCL mg/L)	Analysis Result (mg/L)	Method	MDL	Date	Analyst ID	Lab ID
1005	Arsenic (.05)	<0.005	SM3113B	0.005	01/31/01	E56565	01023
1010	Barium (2)	0.010	SM3113B	0.005	01/29/01	E56565	01023
1015	Cadmium (.005)	<0.0010	SM3113B	0.001	01/31/01	E56565	01023
1020	Chromium (0.1)	<0.005	SM3113B	0.005	01/19/01	E56565	01023
1024	Cyanide (0.2)	<0.004	EPA375.4	0.004	01/31/01	E56565	01023
1025	Fluoride (4)	0.75	SM4500F	0.01	01/09/01	E86563	01023
1030	Lead (0.15)	<0.005	SM3113B	0.005	01/31/01	E56565	01023
1035	Mercury (0.002)	<0.001	EPA245.1	0.001	11/03/00	E56565	01023
1036	Nickel (0.1)	<0.005	SM3113B	0.005	01/29/01	E56565	01023
1040	Nitrate (10)	5.05	SM4500NO3E	0.010	01/09/01	E86563	01023
1041	Nitrite (1)	0.02	SM4500NO2B	0.010	01/09/01	E86563	01023
1045	Selenium (0.05)	<0.005	SM3113B	0.005	02/01/01	E56565	01023
1052	Sodium (160)	47	SM3113B	1.0	01/31/01	E56565	01023
1074	Antimony (0.006)	<0.005	SM3113B	0.005	01/29/01	E56565	01023
1075	Beryllium (0.004)	<0.001	SM3113B	0.001	01/29/01	E56565	01023
1085	Thallium (0.002)	<0.001	EPA200.9	0.001	01/29/01	E56565	01023

***Work Subcontracted to Outside Labs Denoted by HRS Cert ID in analyst Field
Qualifier following result conforms to FAC 17-160 table 7
ND - Not Detectable

Maria Allpiste, Laboratory Director

Environmental Reagent Service

Maria Allpiste
Telephone 954-316-8792

4650 SW 51st Street
Davie, Florida 33314

Mr. Don Long
City of Cooper City
11791 SW 49th Street
Cooper City, Florida 33330

February 15, 2001
FDER CompQap# 970157
HRS Certification#E86563

Site Location/Project
City of Cooper City

Sample ID: WW Comb Effluent Comp
Collected: 01/08/01
Received: 01/09/01
Collected by: Cris Cummings

✓

SECONDARY CHEMICAL ANALYSIS
62-550.320
(PWS031)

Parameter ID	Name(MCL mg/L)	Analysis Result (mg/L)	Method	MDL	Date	Analyst ID	Lab ID
1002	Aluminium (0.2)	0.056	SM3113B	0.20	01/31/01	E56565	01023
1017	Chloride (250)	143	EPA325.3	1.0	01/09/01	E86563	01023
1022	Copper (1)	<0.005	SM3113B	0.005	01/12/01	E56565	01023
1025	Fluoride (2.0)	0.75	SM4500F	0.01	01/09/01	E86563	01023
1028	Iron (0.3)	0.24	SM3113B	0.05	01/29/01	E56565	01023
1032	Manganese (0.05)	0.010	SM3113B	0.005	01/12/01	E56565	01023
1050	Silver (0.1)	<0.005	SM3113B	0.005	01/12/01	E56565	01023
1055	Sulfate (250)	368	EPA300.0	1.0	01/09/01	E86563	01023
1095	Zinc (5)	0.83	SM3113B	0.010	01/31/01	E86565	01023
1905	Color (15 color units)	46.6	SM2021B	1.0	01/15/01	E86563	01023
1920	Odor (3 threshold odor number)	<1.0	EPA140.1	1.0	01/09/01	E86563	01023
1925	pH (6.5 - 8.5)	7.07	EPA150.1	1.0	01/09/01	E86563	01023
1930	Total Dissolved Solids (500)	810	EPA160.1	10	01/11/01	E86563	01023
2905	Foaming Agents (0.5)	0.094	EPA160.1	0.01	01/11/01	E86565	01023

***Work Subcontracted to Outside Labs Denoted by HRS Cert ID in analyst Field
Qualifier following result conforms to FAC 17-160 table 7
ND - Not Detectable

Maria Allpiste, Laboratory Director

Environmental Reagent Service

Maria Allpiste
Telephone 954-316-8792

4650 SW 51st Street
Davie, Florida 33314

Mr. Don Long
City of Cooper City
11791 SW 49th Street
Cooper City, Florida 33330

February 15, 2001
FDER CompQap# 970157
HRS Certification#E86563

Site Location/Project
City of Cooper City

Sample ID: WW Comb Effluent Comp
Collected: 01/08/01
Received: 01/09/01
Collected by: Cris Cummings

✓

RADIOCHEMICAL ANALYSIS
62-550.310(5)
(PWS033)

Parameter ID	Name(MCL mg/L)	Analysis Result (pCi/L)	Method	Detection Limits	Date	Analyst ID	Lab ID
4000	Radium 226	0.5±0.07	EPA903.1	N/A	01/23/01	E84025	01023
4000	Radium 228	0.0±0.7	EERFRa-05	N/A	01/28/01	E84025	01023
4000	Gross Alpha	12.5±2.1	EPA900.0	N/A	01/20/01	E84025	01023

***Work Subcontracted to Outside Labs Denoted by HRS Cert ID in analyst Field
Qualifier following result conforms to FAC 17-160 table 7
ND - Not Detectable

Maria Allpiste, Laboratory Director

3

Environmental Reagent Service

Maria Allpiste
Telephone 954-316-8792

4650 SW 51st Street
Davie, Florida 33314

Mr. Don Long
City of Cooper City
11791 SW 49th Street
Cooper City, Florida 33330

February 15, 2001
FDER CompQap# 970157
HRS Certification#E86563

Site Location/Project
City of Cooper City

Sample ID: WW Comb Effluent Comp
Collected: 01/08/01
Received: 01/09/01
Collected by: Cris Cummings

✓

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

Parameter ID	Name(MCL ug/L)	Analysis Result (ug/L)	Method	MDL	Date	Analyst ID	Lab ID
2378	1,2,4-Trichlorobenzene (70)	<0.5	502.2	0.5	01/11/01	E56565	01023
2380	cis-1,2-Dichloroethylene (70)	<0.5	502.2	0.5	01/11/01	E56565	01023
2955	Xylenes (10,000)	<0.5	502.2	0.5	01/11/01	E56565	01023
2964	Dichloromethane (5)	<0.5	502.2	0.5	01/11/01	E56565	01023
2968	o-Dichlorobenzene (600)	<0.5	502.2	0.5	01/11/01	E56565	01023
2969	para-Dichlorobenzene (75)	<0.5	502.2	0.5	01/11/01	E56565	01023
2976	Vinyl chloride (1)	<0.5	502.2	0.5	01/11/01	E56565	01023
2977	1,1-Dichloroethylene (7)	<0.5	502.2	0.5	01/11/01	E56565	01023
2979	trans-1,2-Dichloroethylene (100)	<0.5	502.2	0.5	01/11/01	E56565	01023
2980	1,2-Dichloroethane (3)	<0.5	502.2	0.5	01/11/01	E56565	01023
2981	1,1,1-Trichloroethane (200)	<0.5	502.2	0.5	01/11/01	E56565	01023
2982	Carbon tetrachloride (3)	<0.5	502.2	0.5	01/11/01	E56565	01023
2983	1,2-Dichloropropane (5)	<0.5	502.2	0.5	01/11/01	E56565	01023
2984	Trichloroethylene (3)	<0.5	502.2	0.5	01/11/01	E56565	01023
2985	1,1,2-Trichloroethane (5)	<0.5	502.2	0.5	01/11/01	E56565	01023
2987	Tertrachloroethylene (3)	<0.5	502.2	0.5	01/11/01	E56565	01023
2989	Monochlorobenzene (100)	<0.5	502.2	0.5	01/11/01	E56565	01023
2990	Benzene (1)	<0.5	502.2	0.5	01/11/01	E56565	01023
2991	Toluene (1,000)	<0.5	502.2	0.5	01/11/01	E56565	01023
2992	Ethylbenzene (700)	<0.5	502.2	0.5	01/11/01	E56565	01023
2996	Styrene (100)	<0.5	502.2	0.5	01/11/01	E56565	01023

***Work Subcontracted to Outside Labs Denoted by HRS Cert ID in analyst Field
Qualifier following result conforms to FAC 17-160 table 7
ND - Not Detectable

Maria Allpiste Laboratory Director

Environmental Reagent Service

Maria Allpiste
Telephone 954-316-8792

4650 SW 51st Street
Davie, Florida 33314

Mr. Don Long
City of Cooper City
11791 SW 49th Street
Cooper City, Florida 33330

February 15, 2001
FDER CompQap# 970157
HRS Certification#E86563

Site Location/Project
City of Cooper City

Sample ID: WW Comb Effluent Comp
Collected: 01/08/01
Received: 01/09/01
Collected by: Cris Cummings

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

Parameter ID	Name(MCL ug/L)	Analysis Result (ug/L)	Method	MDL	Date	Analyst	Lab ID
2005	Endrin (2)	<0.20	EPA525.2	0.20	01/16/01	E56565	01023
2010	Lindane (.2)	<0.05	EPA525.2	0.05	01/16/01	E56565	01023
2015	Methoxychlor (40)	<0.20	EPA525.2	0.20	01/16/01	E56565	01023
2020	Toxaphene (3)	<0.20	EPA525.2	0.20	01/16/01	E56565	01023
2031	Dalapon (200)	<0.20	EPA515.1	0.20	01/19/01	E56565	01023
2032	Diquat (20)	<1.0	EPA549.1	1.0	01/15/01	E84129	01023
2033	Endothall (100)	<10	EPA548.1	10	01/15/01	E84129	01023
2034	Glyphosate (700)	<10	EPA547	10	01/17/01	E84129	01023
2035	Di(2-ethylhexyl)adipate (400)	<0.40	EPA525.2	0.40	01/16/01	E56565	01023
2036	Oxamyl (Vydate) (200)	<0.5	EPA531.1	0.5	01/24/01	E84129	01023
2037	Simazine (4)	<0.20	EPA525.2	0.20	01/16/01	E56565	01023
2039	Di(2-ethylhexyl)phthalate (6)	<0.40	EPA525.2	0.40	01/16/01	E56565	01023
2040	Picloram (500)	<0.25	EPA515.1	0.25	01/19/01	E56565	01023
2041	Dinoseb (7)	<0.12	EPA515.1	0.12	01/19/01	E56565	01023
2042	Hexachlorocyclopentadiene (50)	<0.20	EPA525.2	0.20	01/16/01	E56565	01023
2046	Carbofuran (40)	<0.5	EPA531.1	0.5	01/24/01	E84129	01023
2050	Atrazine (3)	<0.20	EPA525.2	0.20	01/16/01	E56565	01023
2051	Alachlor (2)	<0.40	EPA525.2	0.40	01/16/01	E56565	01023
2063	2,3,7,8-TCDD (Dioxin) (.00003)						
2065	Heptachlor (.4)	<0.20	EPA525.2	0.20	01/16/01	E56565	01023
2067	Heptachlor Epoxide (.2)	<0.20	EPA525.2	0.20	01/16/01	E56565	01023
2105	2,4-D (70)	<0.40	EPA515.1	0.40	01/19/01	E56565	01023

***Work Subcontracted to Outside Labs Denoted by HRS Cert ID in analyst Field
Qualifier following result conforms to FAC 17-160 table 7
ND - Not Detectable

Maria Allpiste, Laboratory Director

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Environmental Reagent Service

Maria Allpiste

Telephone 954-316-8792

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Davie, Florida 33314

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Collected by: Cris Cummings

√

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

Parameter ID	Name(MCL ug/L)	Analysis Result (ug/L)	Method	MDL	Date	Analyst	Lab ID
2110	2,4,5-TP (Silvex) (50)	<0.20	EPA515.1	0.20	01/19/01	E56565	00622
2274	Hexachlorobenzene (1)	<0.20	EPA525.2	0.20	01/16/01	E56565	00622
2306	Benzo(a)pyrene (.2)	<0.20	EPA525.2	0.20	01/16/01	E56565	00622
2326	Pentachlorophenol (1)	<0.20	EPA515.1	0.20	01/19/01	E56565	00622
2383	PCB (.5)	<0.10	EPA508	0.10	01/19/01	E56565	00622
2931	Dibromochloropropane (.2)	<0.05	EPA504.1	0.05	01/19/01	E56565	00622
2946	Ethylene dibromide	<0.50	EPA504.1	0.50	01/19/01	E56565	00622
2959	Chlordane (2)	<0.20	EPA525.1	0.20	01/16/01	E56565	00622

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Qualifier following result conforms to FAC 17-160 table 7
ND - Not Detectable

Maria Allpiste, Laboratory Director

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Environmental Reagent Service

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Davie, Florida 33314

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February 15, 2001
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Site Location/Project
City of Cooper City

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Collected: 01/08/01
Received: 01/09/01
Collected by: Cris Cummings

GROUND WATER MONITORING PARAMETERS

BASE/NEUTRAL ORGANICS

PARAMETER	RESULT	UNITS	METHOD	DETECTION LIMIT	DATE ANALY.	ANALYST
Anthracene	<5.0	ug/L	EPA8270	5.0	01/29/01	E56565
Butylbenzylphthalate	<5.0	ug/L	EPA8270	5.0	01/29/01	E56565
Dimethylphthalate	<5.0	ug/L	EPA8270	5.0	01/29/01	E56565
Naphalene	<5.0	ug/L	EPA8270	5.0	01/29/01	E56565
Phenanthrene	<5.0	Ug/L	EPA8270	5.0	01/29/01	E56565

PESTICIDES AND PCBs

PARAMETER	RESULT	UNITS	METHOD	DETECTION LIMIT	DATE ANALY.	ANALYST
Aldrin	<0.5	ug/L	EPA608	0.5	01/29/01	E56565
Dieldrin	<0.5	ug/L	EPA608	0.5	01/29/01	E56565
Dioxin (screen)	<5.0	ug/L	EPA608	5.0	01/29/01	E56565

***BDL;Indicates analyte is Below Detection Limit
***Work Subcontracted to Outside Lab Denoted by HRS Cert ID in Analyst Field

Laboratory Manager:

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February 15, 2001
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HRS Certification#E86563

Site Location/Project
City of Cooper City

Sample ID: WW Comb Effluent Comp
Collected: 01/08/01
Received: 01/09/01
Collected by: Cris Cummings

GROUND WATER MONITORING PARAMETERS

ACID EXTRACTABLES

PARAMETER	RESULT	UNITS	METHOD	DETECTION LIMIT	DATE ANALY.	ANALYST
2-Chlorophenol	<5.0	ug/L	EPA8270	5.0	01/29/01	E56565
Phenol	<5.0	ug/L	EPA8270	5.0	01/29/01	E56565
2,4,6-trichlorophenol	<5.0	ug/L	EPA8270	5.0	01/29/01	E56565

OTHER

PARAMETER	RESULT	UNITS	METHOD	DETECTION LIMIT	DATE ANALY.	ANALYST
Conductivity	1200	Umhoms /cm	EPA120.1	0.01	01/09/01	MA
Biological oxygen demand	BDL	mg/L	SM5210B	2.0	01/09/01	MA
Chemical oxygen demand	36	mg/L	SM5210B	2.0	01/19/01	MA
Temperature	23.1	C°	EPA170.1	0.01	01/09/01	MA

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Telephone 954-316-8792

4650 SW 51st Street
Davie, Florida 33314

Mr. Don Long
City of Cooper City
11791 SW 49th Street
Cooper City, Florida 33330

February 15, 2001
FDER CompQap# 970157
HRS Certification#E86563

Site Location/Project
City of Cooper City

Sample ID: WW Comb Effluent Comp
Collected: 01/08/01
Received: 01/09/01
Collected by: Cris Cummings

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

Parameter ID	Name(MCL mg/L)	Analysis Result (ug/L)	Method	MDL	Date	Analyst ID	Lab ID
2950	Bromodichloromethane	<0.5	EPA502.2	0.5	01/11/01	E56565	01023
2950	Dibromochloromethane	<0.5	EPA502.2	0.5	01/11/01	E56565	01023
2950	Bromoform	<0.5	EPA502.2	0.5	01/11/01	E56565	01023
2950	Chloroform	<0.5	EPA502.2	0.5	01/11/01	E56565	01023
2950	Total Trihalomethanes	<0.5	EPA502.2	0.5	01/11/01	E56565	01023

***Work Subcontracted to Outside Labs Denoted by HRS Cert ID in analyst Field
Qualifier following result conforms to FAC 17-160 table 7
ND - Not Detectable

Maria Allpiste, Laboratory Director

Environmental Reagent Service

Maria Allpiste Telephone 954-316-8792

4650 SW 51st Street
Davie, Florida 33314

Mr. Don Long
City of Cooper City
11791 SW 49th Street
Cooper City, Florida 33330

February 15, 2001
FDER CompQap# 970157
HRS Certification#E86563

Site Location/Project
City of Cooper City

Sample ID: WW Comb Effluent Comp
Collected: 01/08/01
Received: 01/09/01
Collected by: Cris Cummings

UNREGULATED GROUP I ANALYSIS
62-550.405
(PWS035)

Parameter ID	Name(MCL ug/L)	Analysis Result (ug/L)	Method	MDL	Date	Lab ID
2043	Aldicarb Sulfoxide	<0.50	531.1	0.50	01/24/01	E84129
2044	Aldicarb Sulfone	<0.50	531.1	0.50	01/24/01	E84129
2047	Aldicarb	<0.50	531.1	0.50	01/24/01	E84129

ND - Not Detectable

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ND - Not Detectable

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Davie, Florida 33314

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Site Location/Project
City of Cooper City

Sample ID: WW Comb Effluent Comp
Collected: 01/08/01
Received: 01/09/01
Collected by: Cris Cummings

GROUND WATER MONITORING PARAMETERS

INORGANICS						
PARAMETER	**RESULT**	**UNITS**	**METHOD**	**DETECTION LIMIT**	**DATE ANALY.**	**ANALYST**
Nitrogen (Ammonia)	5.95	mg/L	SM4500NH3C	0.01	01/15/01	MA
Nitrogen (Organic)	0.32	mg/L	CAL	0.10	02/13/01	MA
Nitrogen (Kjeldahl)	6.27	mg/L	EPA351.3	0.10	01/16/01	MA
Phosphorus, Total	0.85	Mg/L	SM4500P-E	0.02	01/11/01	MA

VOLATILE ORGANICS						
PARAMETER	**RESULT**	**UNITS**	**METHOD**	**DETECTION LIMIT**	**DATE ANALY.**	**ANALYST**
Chloroethane	<0.5	ug/L	EPA502.2	0.5	01/11/01	E56565
Chloroform	<0.5	ug/L	EPA502.2	0.5	01/11/01	E56565
Para-Dichlorobenzene	<0.5	ug/L	EPA502.2	0.5	01/11/01	E56565
1,2-Dichloroethylene	<0.5	ug/L	EPA502.2	0.5	01/11/01	E56565

***BDL;Indicates analyte is Below Detection Limit
***Work Subcontracted to Outside Lab Denoted by HRS Cert ID in Analyst Field

Laboratory Manager: ____________

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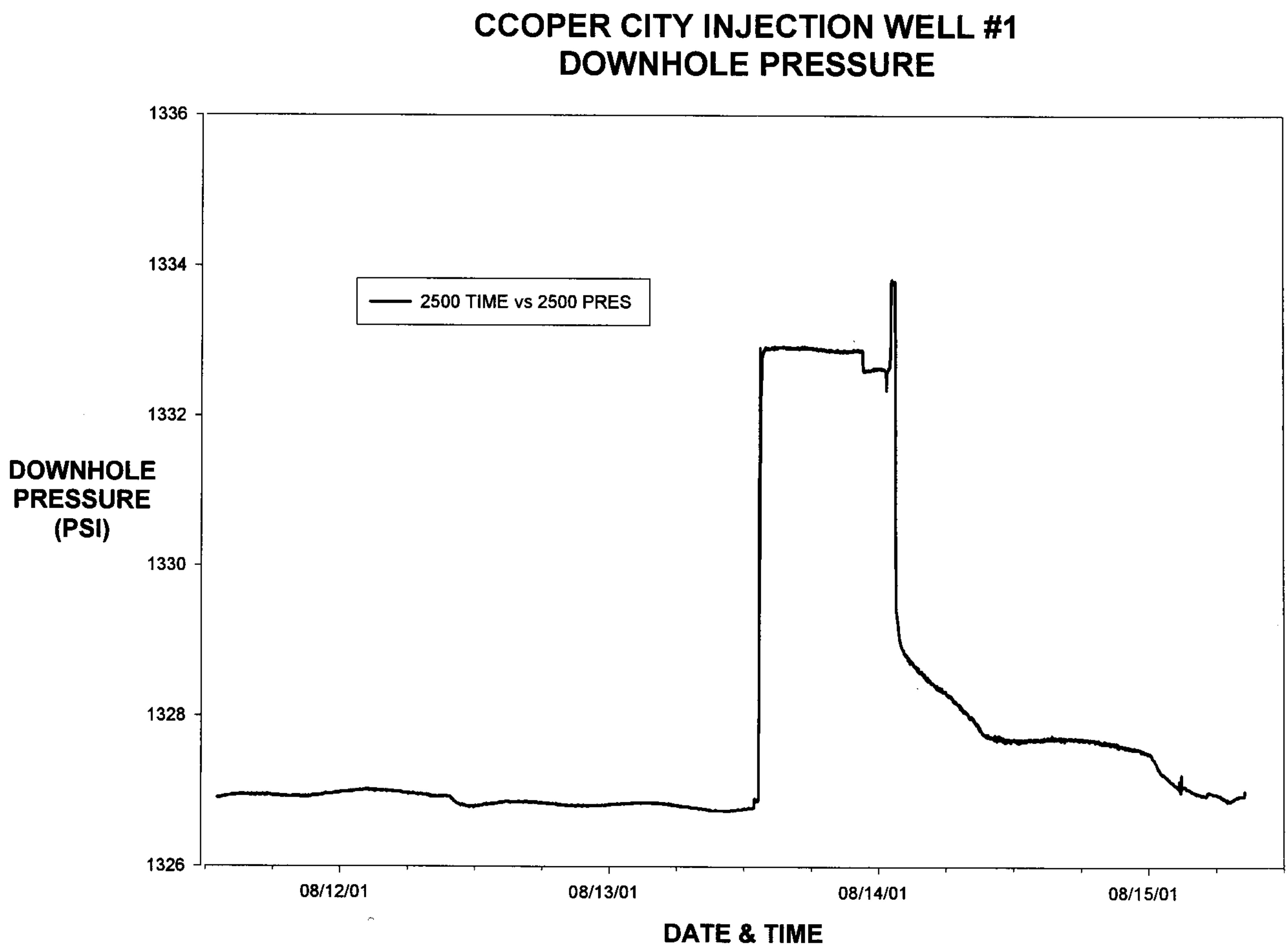
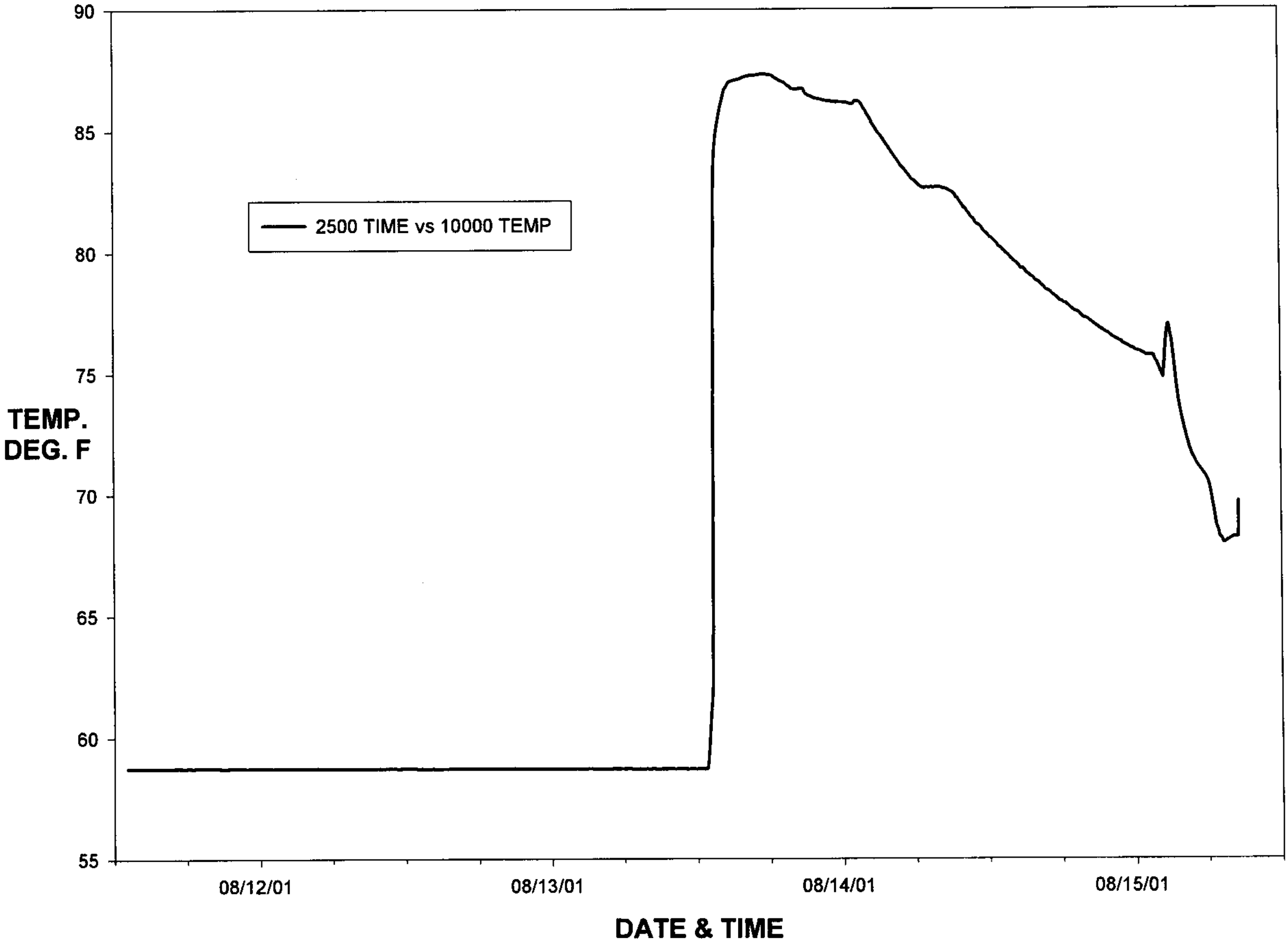
APPENDIX P
INJECTION TEST DATA

INJECTION TEST DATA

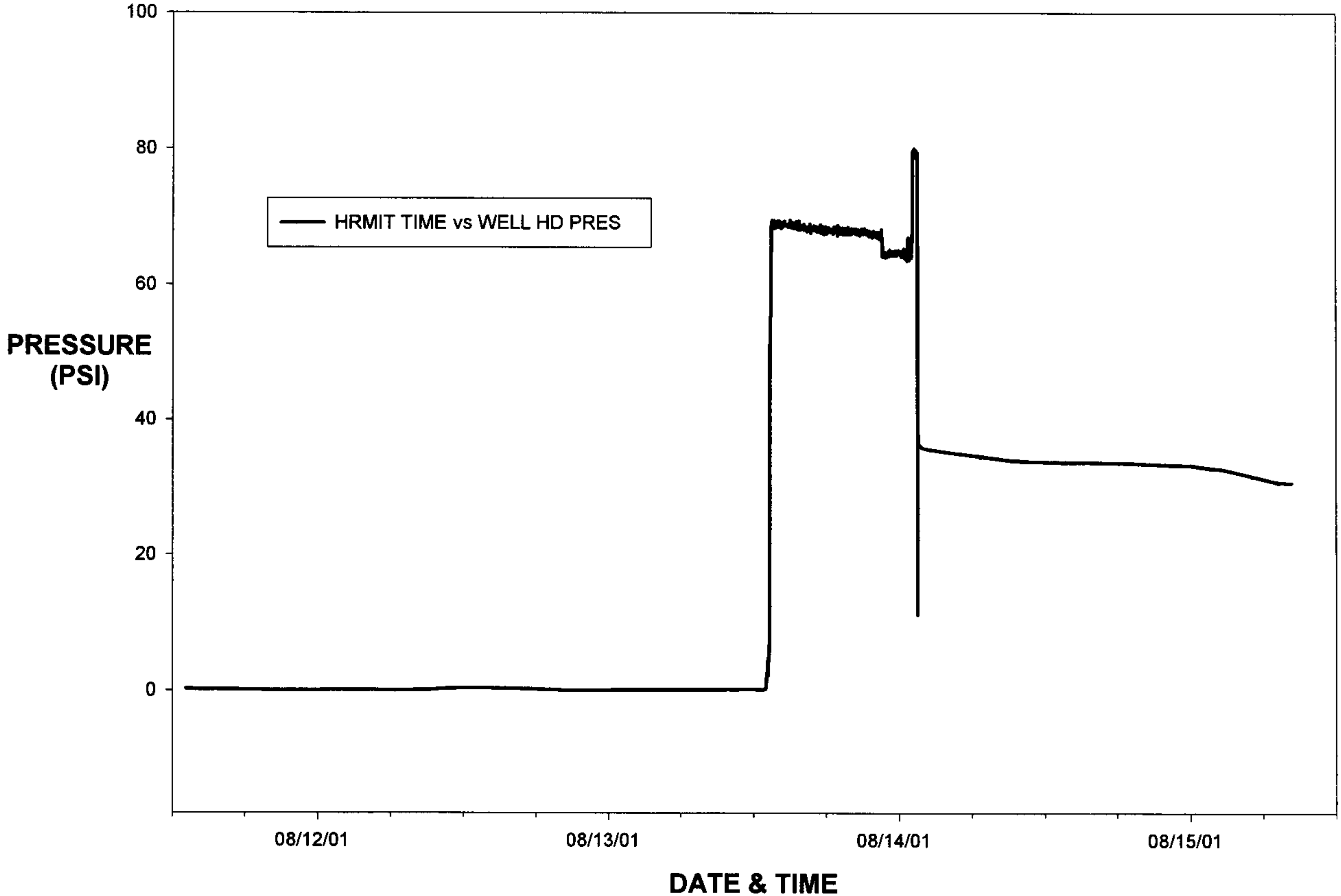


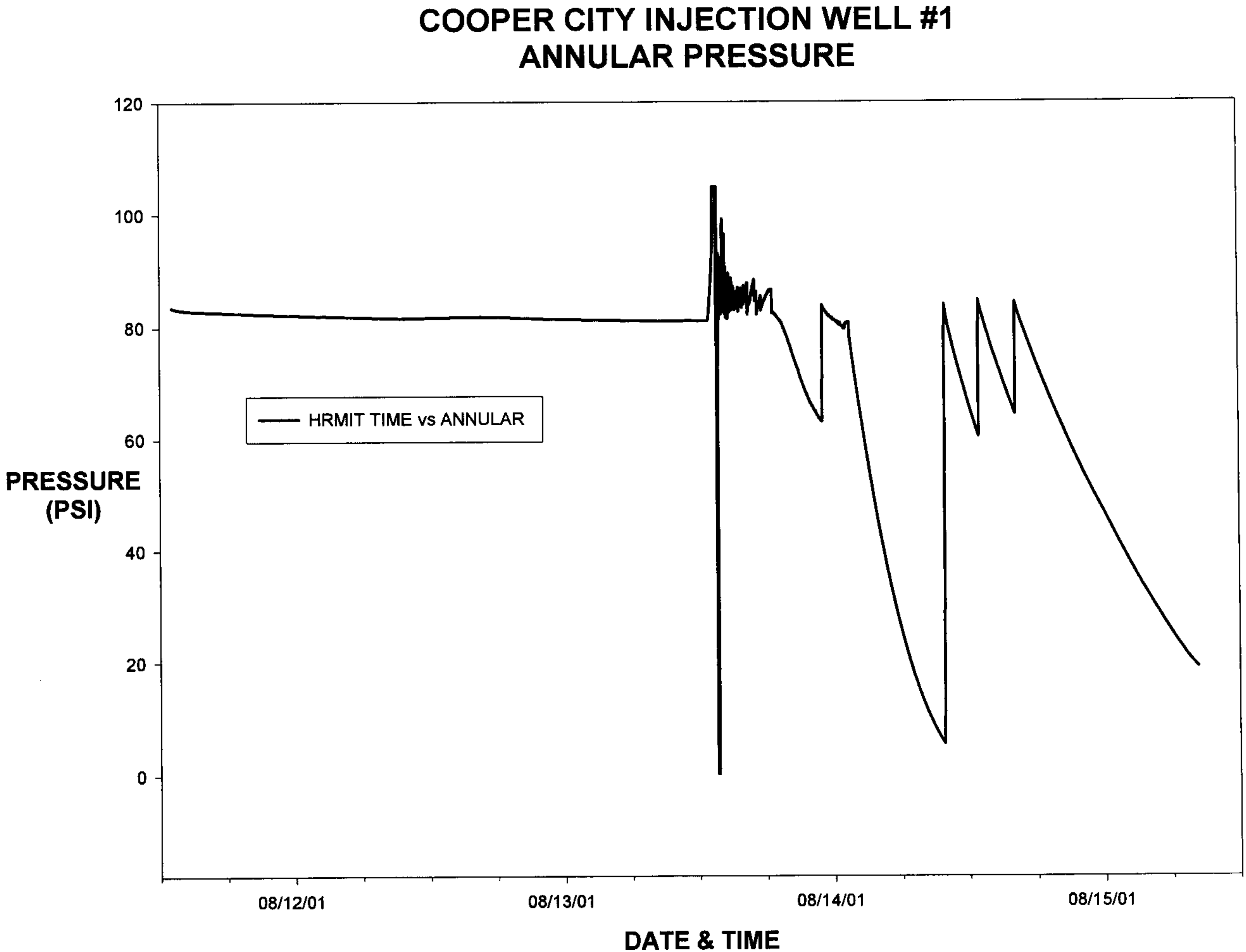
CCOPER CITY INJECTION WELL #1
DOWNHOLE PRESSURE
DOWNHOLE PRESSURE (PSI)
1336
1334
1332
1330
1328
1326
2500 TIME vs 2500 PRES
08/12/01
08/13/01
08/14/01
08/15/01
DATE & TIME

COOPER CITY INJECTION WELL #1
DOWNHOLE TEMPERATURE

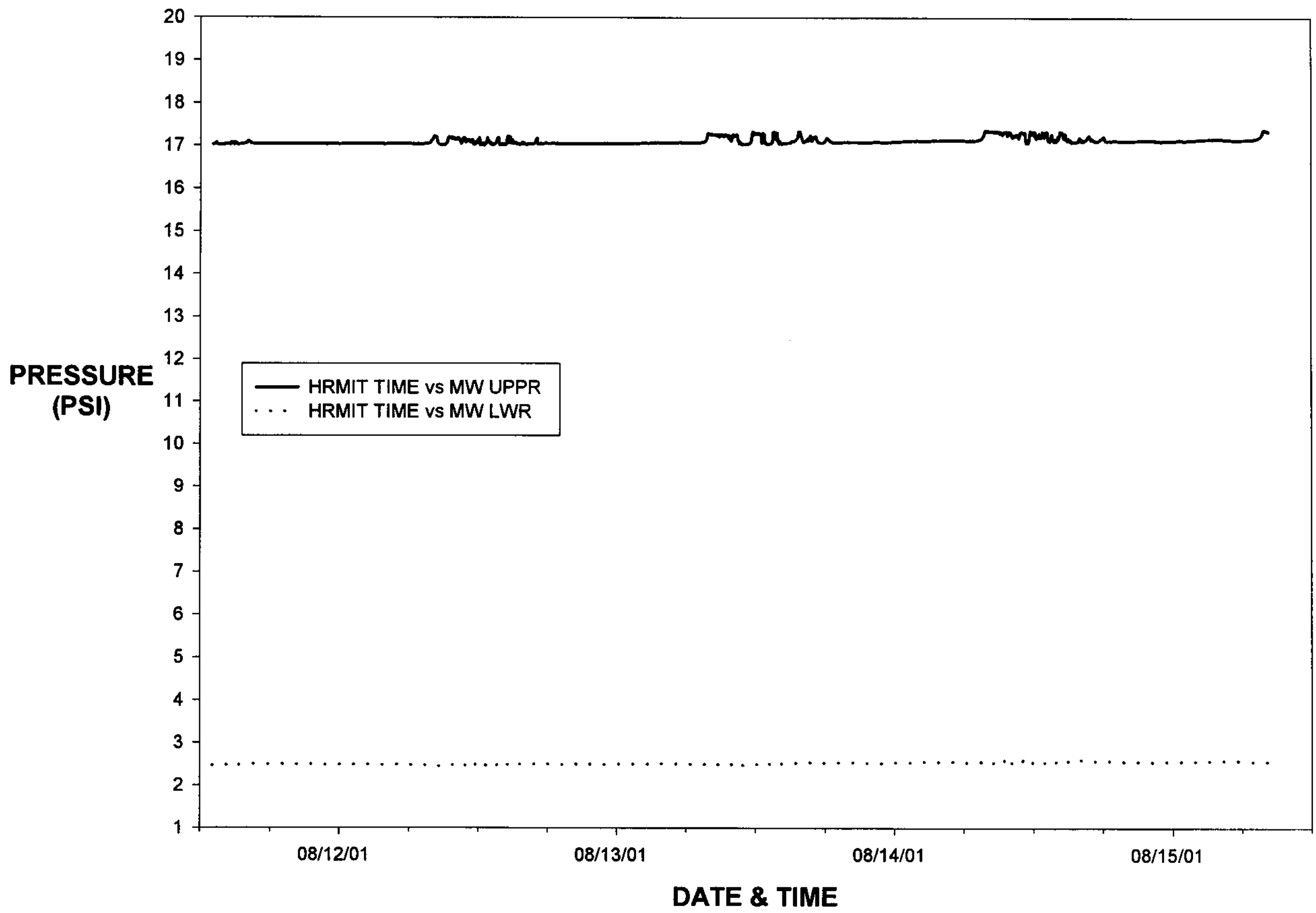


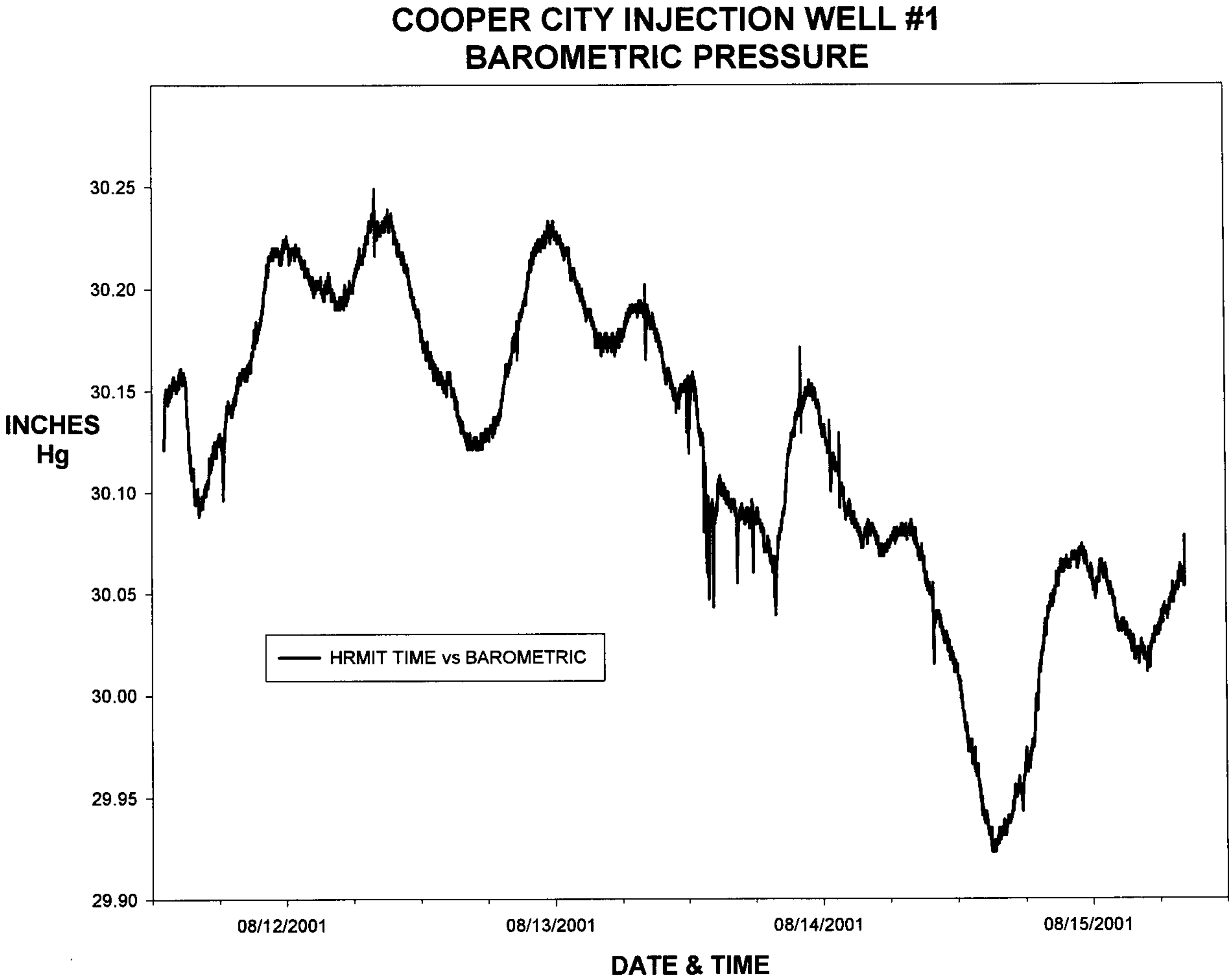
COOPER CITY INJECTION WELL #1
WELLHEAD PRESSURE



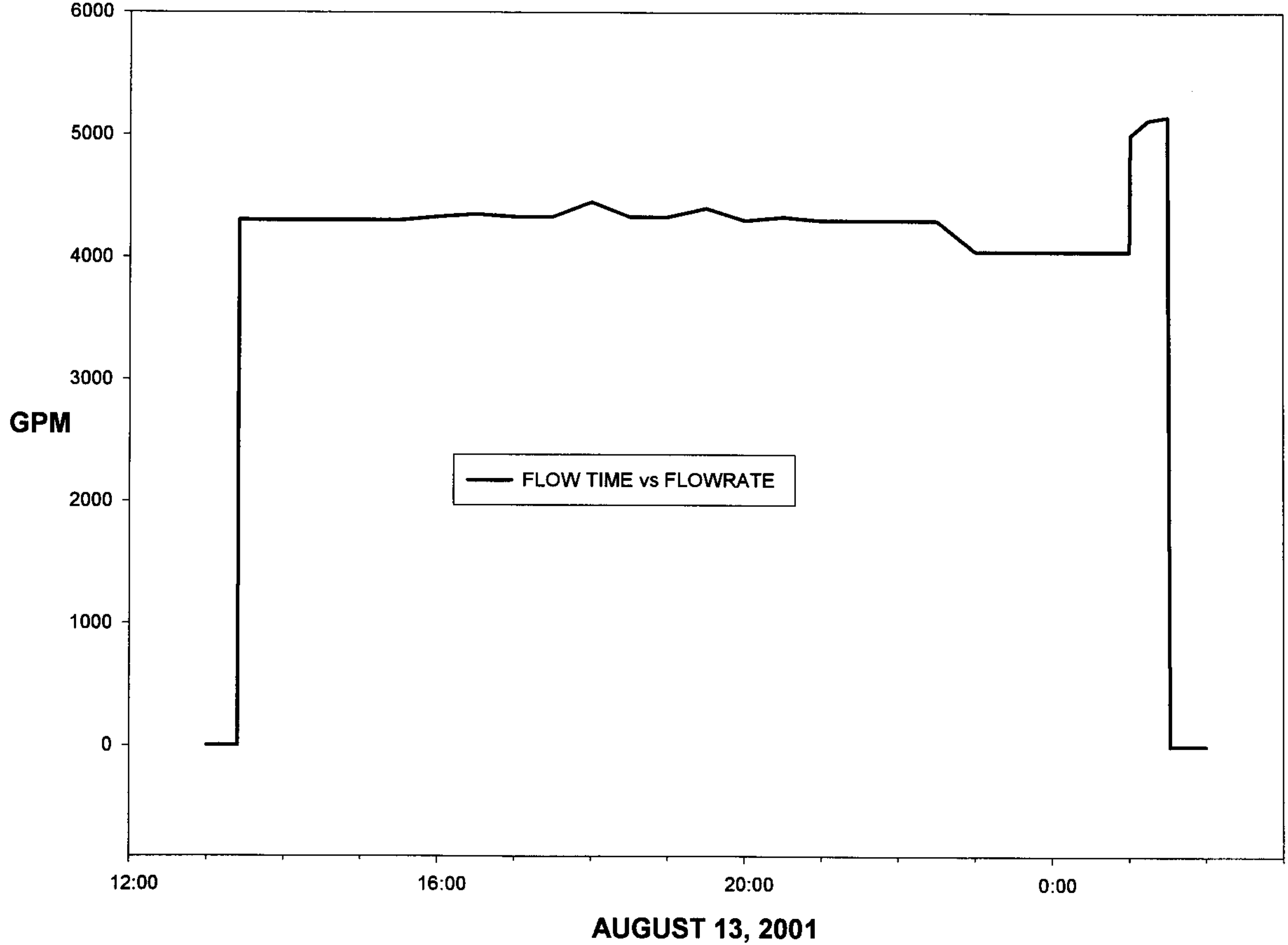

COOPER CITY INJECTION WELL #1
ANNULAR PRESSURE
PRESSURE (PSI)
120
100
80
60
40
20
0
HRMIT TIME vs ANNULAR
08/12/01
08/13/01
08/14/01
08/15/01
DATE & TIME

COOPER CITY INJECTION WELL #1
MONITOR WELL PRESSURE




COOPER CITY INJECTION WELL #1
BAROMETRIC PRESSURE
INCHES Hg
30.25
30.20
30.15
30.10
30.05
30.00
29.95
29.90
HRMIT TIME vs BAROMETRIC
08/12/2001
08/13/2001
08/14/2001
08/15/2001
DATE & TIME

COOPER CITY INJECTION WELL #1
INJECTION PHASE FLOWRATE



CITY of COOPER CITY
INJECTION TEST DATA

Date/Time	Downhole Pressure (psi)	Downhole Temperature (deg F)	Wellhead Pressure (psi)	Upper Monitor Pressure (psi)	Lower Monitor Pressure (psi)	Barometric Pressure (inchs Hg)	Annular Pressure (psi)
8/11/01 13:04:00	59.76	58.76	0.261	17.026	2.473	30.121	83.549
8/11/01 13:06:00	59.76	58.76	0.242	17.028	2.473	30.125	83.536
8/11/01 13:07:00	59.76	58.76	0.242	17.03	2.473	30.133	83.523
8/11/01 13:08:00	59.76	58.76	0.242	17.03	2.475	30.141	83.504
8/11/01 13:09:00	59.76	58.76	0.236	17.03	2.473	30.141	83.492
8/11/01 13:10:00	59.76	58.76	0.236	17.03	2.475	30.145	83.479
8/11/01 13:12:00	59.76	58.76	0.242	17.032	2.475	30.147	83.466
8/11/01 13:13:00	59.77	58.76	0.236	17.032	2.475	30.145	83.447
8/11/01 13:14:00	59.77	58.76	0.236	17.032	2.473	30.149	83.435
8/11/01 13:15:00	59.77	58.76	0.236	17.034	2.473	30.145	83.422
8/11/01 13:16:00	59.78	58.76	0.236	17.038	2.475	30.147	83.409
8/11/01 13:18:00	59.78	58.76	0.236	17.04	2.477	30.151	83.397
8/11/01 13:19:00	59.77	58.76	0.236	17.04	2.475	30.151	83.39
8/11/01 13:20:00	59.77	58.76	0.242	17.041	2.471	30.147	83.378
8/11/01 13:21:00	59.77	58.76	0.236	17.055	2.471	30.147	83.365
8/11/01 13:22:00	59.77	58.76	0.236	17.064	2.475	30.145	83.359
8/11/01 13:24:00	59.76	58.76	0.242	17.06	2.479	30.147	83.346
8/11/01 13:25:00	59.76	58.76	0.248	17.064	2.488	30.147	83.333
8/11/01 13:26:00	59.76	58.76	0.255	17.069	2.494	30.145	83.327
8/11/01 13:27:00	59.76	58.75	0.255	17.058	2.494	30.145	83.321
8/11/01 13:28:00	59.76	58.75	0.255	17.047	2.488	30.145	83.314
8/11/01 13:30:00	59.76	58.75	0.255	17.038	2.484	30.143	83.308
8/11/01 13:31:00	59.75	58.75	0.255	17.032	2.482	30.143	83.302
8/11/01 13:32:00	59.75	58.75	0.255	17.028	2.481	30.147	83.295
8/11/01 13:33:00	59.75	58.75	0.255	17.026	2.479	30.147	83.289
8/11/01 13:34:00	59.74	58.75	0.248	17.025	2.479	30.147	83.283
8/11/01 13:36:00	59.74	58.75	0.248	17.025	2.477	30.149	83.276
8/11/01 13:37:00	59.74	58.75	0.248	17.025	2.477	30.145	83.27
8/11/01 13:38:00	59.74	58.75	0.248	17.025	2.477	30.145	83.264
8/11/01 13:39:00	59.74	58.75	0.242	17.026	2.475	30.151	83.257
8/11/01 13:40:00	59.74	58.76	0.242	17.028	2.475	30.147	83.245
8/11/01 13:42:00	59.74	58.76	0.236	17.026	2.475	30.153	83.238
8/11/01 13:43:00	59.75	58.76	0.236	17.026	2.473	30.149	83.232
8/11/01 13:44:00	59.75	58.76	0.236	17.026	2.475	30.149	83.232
8/11/01 13:45:00	59.75	58.75	0.236	17.026	2.473	30.151	83.226
8/11/01 13:46:00	59.76	58.75	0.236	17.026	2.473	30.149	83.219
8/11/01 13:48:00	59.76	58.75	0.23	17.026	2.473	30.149	83.213
8/11/01 13:49:00	59.76	58.75	0.23	17.03	2.475	30.149	83.213
8/11/01 13:50:00	59.76	58.75	0.23	17.028	2.475	30.147	83.207
8/11/01 13:51:00	59.76	58.75	0.224	17.03	2.473	30.149	83.2
8/11/01 13:52:00	59.76	58.75	0.224	17.028	2.473	30.149	83.194
8/11/01 13:54:00	59.75	58.76	0.217	17.028	2.473	30.149	83.194
8/11/01 13:55:00	59.75	58.76	0.217	17.028	2.475	30.149	83.188
8/11/01 13:56:00	59.75	58.76	0.217	17.028	2.473	30.149	83.181
8/11/01 13:57:00	59.75	58.76	0.217	17.026	2.473	30.151	83.175
8/11/01 13:58:00	59.75	58.76	0.211	17.026	2.473	30.151	83.169
8/11/01 14:00:00	59.74	58.76	0.211	17.026	2.473	30.155	83.162
8/11/01 14:01:00	59.74	58.76	0.211	17.028	2.475	30.153	83.156
8/11/01 14:02:00	59.75	58.76	0.205	17.026	2.477	30.155	83.143
8/11/01 14:03:00	59.75	58.76	0.205	17.028	2.479	30.155	83.15
8/11/01 14:04:00	59.75	58.76	0.205	17.028	2.479	30.157	83.137
8/11/01 14:06:00	59.75	58.76	0.199	17.026	2.479	30.153	83.131
8/11/01 14:07:00	59.75	58.76	0.199	17.028	2.477	30.155	83.124
8/11/01 14:08:00	59.75	58.76	0.199	17.028	2.479	30.157	83.124
8/11/01 14:09:00	59.75	58.76	0.199	17.03	2.479	30.153	83.118
8/11/01 14:10:00	59.76	58.76	0.199	17.03	2.479	30.151	83.118
8/11/01 14:12:00	59.76	58.75	0.192	17.03	2.479	30.153	83.112
8/11/01 14:13:00	59.76	58.76	0.192	17.03	2.479	30.155	83.105
8/11/01 14:14:00	59.76	58.76	0.192	17.032	2.479	30.151	83.099
8/11/01 14:15:00	59.75	58.76	0.192	17.03	2.479	30.151	83.099
8/11/01 14:16:00	59.75	58.76	0.192	17.032	2.479	30.153	83.093
8/11/01 14:18:00	59.75	58.76	0.192	17.032	2.481	30.151	83.093
8/11/01 14:19:00	59.75	58.76	0.192	17.032	2.481	30.151	83.086
8/11/01 14:20:00	59.75	58.76	0.192	17.03	2.479	30.151	83.08
8/11/01 14:21:00	59.75	58.76	0.192	17.032	2.479	30.151	83.074
8/11/01 14:22:00	59.75	58.76	0.186	17.032	2.479	30.149	83.074
8/11/01 14:24:00	59.76	58.76	0.186	17.034	2.481	30.151	83.067
8/11/01 14:25:00	59.76	58.76	0.186	17.032	2.481	30.153	83.067
8/11/01 14:26:00	59.76	58.76	0.18	17.034	2.481	30.149	83.061
8/11/01 14:27:00	59.77	58.75	0.18	17.036	2.479	30.151	83.055
8/11/01 14:28:00	59.77	58.75	0.18	17.036	2.479	30.151	83.048
8/11/01 14:30:00	59.77	58.75	0.18	17.036	2.481	30.151	83.048
8/11/01 14:31:00	59.77	58.75	0.18	17.038	2.479	30.151	83.042
8/11/01 14:32:00	59.77	58.75	0.174	17.038	2.479	30.155	83.036
8/11/01 14:33:00	59.77	58.75	0.18	17.038	2.479	30.151	83.036
8/11/01 14:34:00	59.77	58.75	0.18	17.038	2.481	30.153	83.029
8/11/01 14:36:00	59.77	58.75	0.18	17.038	2.479	30.155	83.029
8/11/01 14:37:00	59.76	58.76	0.174	17.034	2.477	30.155	83.023
8/11/01 14:38:00	59.76	58.76	0.174	17.036	2.479	30.151	83.017
8/11/01 14:39:00	59.76	58.76	0.174	17.036	2.477	30.155	83.017
8/11/01 14:40:00	59.76	58.76	0.174	17.036	2.479	30.157	83.01
8/11/01 14:42:00	59.76	58.76	0.174	17.043	2.479	30.159	83.01
8/11/01 14:43:00	59.75	58.76	0.174	17.041	2.479	30.155	83.01
8/11/01 14:44:00	59.75	58.76	0.174	17.03	2.477	30.157	83.004
8/11/01 14:45:00	59.75	58.76	0.168	17.028	2.477	30.159	83.004
8/11/01 14:46:00	59.75	58.76	0.174	17.026	2.477	30.159	83.01
8/11/01 14:48:00	59.75	58.76	0.174	17.026	2.475	30.159	83.004
8/11/01 14:49:00	59.75	58.76	0.168	17.026	2.475	30.161	83.004
8/11/01 14:50:00	59.76	58.76	0.168	17.026	2.475	30.159	82.998
8/11/01 14:51:00	59.76	58.76	0.168	17.026	2.475	30.161	82.998
8/11/01 14:52:00	59.77	58.76	0.168	17.028	2.477	30.161	82.991
8/11/01 14:54:00	59.77	58.76	0.168	17.028	2.477	30.161	82.991
8/11/01 14:55:00	59.77	58.75	0.168	17.03	2.475	30.155	82.985
8/11/01 14:56:00	59.77	58.75	0.161	17.034	2.475	30.157	82.985
8/11/01 14:57:00	59.76	58.75	0.161	17.053	2.473	30.159	82.979
8/11/01 14:58:00	59.76	58.75	0.161	17.077	2.475	30.155	82.972
8/11/01 15:00:00	59.76	58.75	0.168	17.075	2.477	30.155	82.96
8/11/01 15:01:00	59.76	58.75	0.174	17.075	2.481	30.153	82.953
8/11/01 15:02:00	59.76	58.75	0.168	17.06	2.481	30.157	82.947
8/11/01 15:03:00	59.77	58.75	0.174	17.068	2.486	30.157	82.941
8/11/01 15:04:00	59.77	58.75	0.174	17.071	2.49	30.159	82.941
8/11/01 15:06:00	59.77	58.75	0.174	17.071	2.49	30.155	82.934
8/11/01 15:07:00	59.77	58.75	0.174	17.066	2.488	30.157	82.928
8/11/01 15:08:00	59.77	58.75	0.18	17.055	2.488	30.157	82.928
8/11/01 15:09:00	59.76	58.75	0.18	17.073	2.492	30.159	82.928
8/11/01 15:10:00	59.76	58.75	0.18	17.055	2.486	30.159	82.928
8/11/01 15:12:00	59.76	58.75	0.174	17.049	2.484	30.155	82.922
8/11/01 15:13:00	59.77	58.75	0.18	17.051	2.49	30.155	82.922
8/11/01 15:14:00	59.77	58.75	0.18	17.04	2.484	30.157	82.922
8/11/01 15:15:00	59.77	58.74	0.18	17.028	2.482	30.155	82.922
8/11/01 15:16:00	59.78	58.74	0.18	17.023	2.481	30.157	82.922
8/11/01 15:18:00	59.78	58.74	0.18	17.03	2.482	30.153	82.922
8/11/01 15:19:00	59.77	58.74	0.18	17.047	2.484	30.155	82.922
8/11/01 15:20:00	59.77	58.75	0.18	17.058	2.488	30.153	82.915
8/11/01 15:21:00	59.77	58.75	0.192	17.066	2.497	30.155	82.909
8/11/01 15:22:00	59.76	58.75	0.192	17.056	2.495	30.151	82.909
8/11/01 15:24:00	59.76	58.75	0.186	17.051	2.49	30.149	82.903
8/11/01 15:25:00	59.76	58.75	0.192	17.053	2.486	30.147	82.903
8/11/01 15:26:00	59.76	58.75	0.199	17.066	2.492	30.147	82.896
8/11/01 15:27:00	59.77	58.75	0.199	17.055	2.495	30.143	82.896
8/11/01 15:28:00	59.77	58.75	0.199	17.069	2.497	30.141	82.89
8/11/01 15:30:00	59.77	58.75	0.205	17.058	2.501	30.137	82.89
8/11/01 15:31:00	59.77	58.75	0.211	17.06	2.507	30.137	82.89
8/11/01 15:32:00	59.77	58.75	0.211	17.06	2.488	30.133	82.884
8/11/01 15:33:00	59.77	58.75	0.217	17.049	2.494	30.135	82.877
8/11/01 15:34:00	59.77	58.75	0.217	17.032	2.494	30.133	82.877
8/11/01 15:36:00	59.77	58.75	0.211	17.023	2.488	30.133	82.877
8/11/01 15:37:00	59.77	58.75	0.211	17.023	2.486	30.131	82.884
8/11/01 15:38:00	59.77	58.75	0.211	17.025	2.484	30.131	82.884
8/11/01 15:39:00	59.77	58.75	0.211	17.026	2.482	30.129	82.884
8/11/01 15:40:00	59.77	58.75	0.211	17.026	2.482	30.125	82.89
8/11/01 15:42:00	59.77	58.75	0.211	17.026	2.484	30.121	82.89
8/11/01 15:43:00	59.77	58.75	0.211	17.028	2.484	30.123	82.89
8/11/01 15:44:00	59.76	58.75	0.217	17.03	2.484	30.121	82.89
8/11/01 15:45:00	59.76	58.75	0.211	17.03	2.484	30.119	82.89
8/11/01 15:46:00	59.76	58.75	0.211	17.03	2.484	30.121	82.896
8/11/01 15:48:00	59.76	58.75	0.211	17.03	2.484	30.117	82.896
8/11/01 15:49:00	59.76	58.75	0.211	17.032	2.484	30.117	82.89
8/11/01 15:50:00	59.76	58.75	0.205	17.03	2.484	30.114	82.89
8/11/01 15:51:00	59.76	58.75	0.205	17.032	2.484	30.119	82.89
8/11/01 15:52:00	59.76	58.75	0.205	17.03	2.484	30.11	82.89
8/11/01 15:54:00	59.76	58.75	0.199	17.032	2.486	30.114	82.89
8/11/01 15:55:00	59.76	58.75	0.199	17.032	2.486	30.114	82.89
8/11/01 15:56:00	59.76	58.75	0.199	17.034	2.486	30.11	82.89
8/11/01 15:57:00	59.76	58.75	0.199	17.036	2.488	30.11	82.89
8/11/01 15:58:00	59.76	58.75	0.199	17.036	2.486	30.108	82.89
8/11/01 16:00:00	59.76	58.75	0.192	17.036	2.488	30.106	82.89
8/11/01 16:01:00	59.76	58.75	0.192	17.038	2.488	30.108	82.884
8/11/01 16:02:00	59.76	58.75	0.192	17.036	2.488	30.108	82.877
8/11/01 16:03:00	59.76	58.75	0.192	17.038	2.488	30.108	82.877
8/11/01 16:04:00	59.76	58.75	0.186	17.038	2.488	30.11	82.877
8/11/01 16:06:00	59.76	58.75	0.186	17.038	2.488	30.11	82.871
8/11/01 16:07:00	59.76	58.75	0.186	17.038	2.488	30.11	82.871
8/11/01 16:08:00	59.76	58.75	0.186	17.038	2.488	30.108	82.871
8/11/01 16:09:00	59.76	58.75	0.186	17.038	2.488	30.11	82.865
8/11/01 16:10:00	59.77	58.75	0.186	17.04	2.488	30.108	82.865
8/11/01 16:12:00	59.77	58.75	0.186	17.04	2.49	30.112	82.865
8/11/01 16:13:00	59.77	58.75	0.18	17.04	2.49	30.104	82.858
8/11/01 16:14:00	59.77	58.75	0.18	17.041	2.49	30.104	82.858
8/11/01 16:15:00	59.77	58.75	0.186	17.041	2.492	30.102	82.852
8/11/01 16:16:00	59.77	58.74	0.18	17.041	2.492	30.098	82.852
8/11/01 16:18:00	59.77	58.75	0.186	17.041	2.492	30.098	82.852
8/11/01 16:19:00	59.77	58.75	0.186	17.043	2.494	30.1	82.846
8/11/01 16:20:00	59.77	58.75	0.18	17.043	2.494	30.094	82.846
8/11/01 16:21:00	59.77	58.75	0.174	17.045	2.494	30.096	82.846
8/11/01 16:22:00	59.77	58.75	0.18	17.045	2.494	30.098	82.839
8/11/01 16:24:00	59.77	58.75	0.18	17.047	2.494	30.096	82.839
8/11/01 16:25:00	59.76	58.75	0.174	17.049	2.495	30.094	82.839
8/11/01 16:26:00	59.76	58.75	0.174	17.051	2.495	30.1	82.833
8/11/01 16:27:00	59.76	58.75	0.18	17.053	2.495	30.094	82.833
8/11/01 16:28:00	59.76	58.75	0.18	17.058	2.497	30.094	82.827
8/11/01 16:30:00	59.75	58.75	0.18	17.064	2.497	30.094	82.827
8/11/01 16:31:00	59.76	58.75	0.18	17.066	2.495	30.094	82.827
8/11/01 16:32:00	59.76	58.75	0.18	17.066	2.497	30.096	82.82
8/11/01 16:33:00	59.76	58.75	0.18	17.069	2.497	30.094	82.82
8/11/01 16:34:00	59.76	58.75	0.174	17.075	2.497	30.096	82.82
8/11/01 16:36:00	59.76	58.75	0.174	17.079	2.497	30.1	82.814
8/11/01 16:37:00	59.76	58.75	0.18	17.081	2.497	30.096	82.814
8/11/01 16:38:00	59.77	58.75	0.18	17.084	2.495	30.096	82.814
8/11/01 16:39:00	59.77	58.75	0.18	17.083	2.495	30.102	82.808
8/11/01 16:40:00	59.77	58.75	0.18	17.084	2.495	30.098	82.808
8/11/01 16:42:00	59.77	58.75	0.174	17.09	2.495	30.098	82.808
8/11/01 16:43:00	59.77	58.75	0.18	17.107	2.497	30.096	82.808
8/11/01 16:44:00	59.77	58.75	0.18	17.09	2.499	30.092	82.801
8/11/01 16:45:00	59.77	58.75	0.18	17.098	2.497	30.092	82.808
8/11/01 16:46:00	59.77	58.75	0.18	17.084	2.499	30.088	82.808
8/11/01 16:48:00	59.77	58.75	0.18	17.099	2.505	30.092	82.808
8/11/01 16:49:00	59.77	58.75	0.186	17.096	2.508	30.09	82.801
8/11/01 16:50:00	59.77	58.75	0.186	17.092	2.503	30.09	82.801
8/11/01 16:51:00	59.77	58.75	0.186	17.092	2.503	30.09	82.801
8/11/01 16:52:00	59.77	58.75	0.186	17.088	2.501	30.094	82.801
8/11/01 16:54:00	59.77	58.76	0.186	17.088	2.501	30.092	82.795
8/11/01 16:55:00	59.77	58.76	0.186	17.086	2.501	30.094	82.795
8/11/01 16:56:00	59.77	58.76	0.192	17.084	2.501	30.094	82.795
8/11/01 16:57:00	59.77	58.76	0.186	17.071	2.499	30.092	82.795
8/11/01 16:58:00	59.76	58.76	0.186	17.064	2.495	30.092	82.795
8/11/01 17:00:00	59.76	58.76	0.186	17.056	2.494	30.094	82.782
8/11/01 17:01:00	59.76	58.76	0.186	17.049	2.494	30.094	82.789
8/11/01 17:02:00	59.76	58.76	0.186	17.045	2.492	30.094	82.789
8/11/01 17:03:00	59.76	58.76	0.186	17.043	2.492	30.098	82.782
8/11/01 17:04:00	59.76	58.76	0.18	17.041	2.492	30.098	82.782
8/11/01 17:06:00	59.76	58.76	0.18	17.041	2.492	30.094	82.782
8/11/01 17:07:00	59.77	58.76	0.18	17.041	2.494	30.096	82.782
8/11/01 17:08:00	59.77	58.76	0.18	17.041	2.495	30.092	82.776
8/11/01 17:09:00	59.77	58.76	0.18	17.043	2.497	30.092	82.776
8/11/01 17:10:00	59.78	58.76	0.18	17.043	2.495	30.092	82.77
8/11/01 17:12:00	59.78	58.76	0.18	17.041	2.494	30.092	82.77
8/11/01 17:13:00	59.78	58.76	0.18	17.041	2.492	30.092	82.77

CITY of COOPER CITY
INJECTION TEST DATA

Date/Time	Downhole Pressure (psi)	Downhole Temperature (deg F)	Wellhead Pressure (psi)	Upper Monitor Pressure (psi)	Lower Monitor Pressure (psi)	Barometric Pressure (inchs Hg)	Annular Pressure (psi)
8/11/01 17:14:00	59.78	58.76	0.18	17.041	2.492	30.096	82.77
8/11/01 17:15:00	59.76	58.76	0.18	17.045	2.497	30.096	82.77
8/11/01 17:16:00	59.77	58.75	0.18	17.045	2.501	30.098	82.77
8/11/01 17:18:00	59.77	58.75	0.18	17.045	2.501	30.098	82.763
8/11/01 17:19:00	59.77	58.75	0.18	17.043	2.503	30.098	82.763
8/11/01 17:20:00	59.76	58.75	0.18	17.045	2.508	30.1	82.763
8/11/01 17:21:00	59.76	58.75	0.18	17.045	2.508	30.1	82.757
8/11/01 17:22:00	59.76	58.75	0.18	17.043	2.503	30.102	82.757
8/11/01 17:24:00	59.75	58.75	0.174	17.043	2.499	30.102	82.757
8/11/01 17:25:00	59.75	58.75	0.174	17.043	2.505	30.102	82.757
8/11/01 17:26:00	59.75	58.75	0.174	17.043	2.503	30.102	82.757
8/11/01 17:27:00	59.75	58.75	0.174	17.043	2.507	30.102	82.751
8/11/01 17:28:00	59.75	58.75	0.174	17.043	2.503	30.102	82.751
8/11/01 17:30:00	59.75	58.75	0.174	17.041	2.499	30.104	82.751
8/11/01 17:31:00	59.75	58.75	0.174	17.041	2.495	30.098	82.757
8/11/01 17:32:00	59.75	58.75	0.174	17.04	2.494	30.1	82.751
8/11/01 17:33:00	59.75	58.75	0.174	17.041	2.492	30.102	82.751
8/11/01 17:34:00	59.75	58.75	0.174	17.041	2.492	30.1	82.745
8/11/01 17:36:00	59.75	58.75	0.174	17.041	2.49	30.104	82.745
8/11/01 17:37:00	59.75	58.75	0.168	17.04	2.492	30.102	82.745
8/11/01 17:38:00	59.75	58.75	0.168	17.041	2.492	30.102	82.745
8/11/01 17:39:00	59.75	58.75	0.168	17.04	2.492	30.104	82.745
8/11/01 17:40:00	59.75	58.74	0.168	17.04	2.494	30.102	82.745
8/11/01 17:42:00	59.75	58.74	0.168	17.04	2.495	30.106	82.738
8/11/01 17:43:00	59.75	58.74	0.168	17.04	2.494	30.102	82.738
8/11/01 17:44:00	59.76	58.74	0.174	17.041	2.495	30.104	82.738
8/11/01 17:45:00	59.76	58.74	0.174	17.04	2.495	30.102	82.738
8/11/01 17:46:00	59.76	58.74	0.168	17.041	2.497	30.106	82.732
8/11/01 17:48:00	59.77	58.74	0.168	17.043	2.503	30.106	82.732
8/11/01 17:49:00	59.77	58.75	0.168	17.045	2.507	30.104	82.732
8/11/01 17:50:00	59.77	58.75	0.168	17.045	2.507	30.106	82.732
8/11/01 17:51:00	59.77	58.75	0.168	17.045	2.505	30.108	82.726
8/11/01 17:52:00	59.77	58.75	0.168	17.043	2.501	30.11	82.726
8/11/01 17:54:00	59.77	58.75	0.168	17.041	2.499	30.112	82.726
8/11/01 17:55:00	59.77	58.75	0.168	17.041	2.497	30.117	82.726
8/11/01 17:56:00	59.77	58.75	0.168	17.04	2.501	30.11	82.719
8/11/01 17:57:00	59.77	58.75	0.168	17.045	2.505	30.117	82.719
8/11/01 17:58:00	59.77	58.75	0.168	17.043	2.501	30.11	82.719
8/11/01 18:00:00	59.77	58.75	0.168	17.041	2.501	30.112	82.719
8/11/01 18:01:00	59.77	58.75	0.161	17.041	2.503	30.112	82.719
8/11/01 18:02:00	59.77	58.75	0.161	17.041	2.501	30.11	82.719
8/11/01 18:03:00	59.77	58.75	0.161	17.041	2.497	30.11	82.719
8/11/01 18:04:00	59.77	58.75	0.168	17.041	2.497	30.112	82.719
8/11/01 18:06:00	59.77	58.75	0.161	17.04	2.497	30.114	82.713
8/11/01 18:07:00	59.77	58.75	0.161	17.04	2.497	30.112	82.713
8/11/01 18:08:00	59.76	58.75	0.155	17.04	2.495	30.114	82.713
8/11/01 18:09:00	59.76	58.75	0.161	17.04	2.497	30.117	82.713
8/11/01 18:10:00	59.76	58.75	0.161	17.04	2.497	30.114	82.713
8/11/01 18:12:00	59.76	58.75	0.161	17.04	2.499	30.119	82.713
8/11/01 18:13:00	59.76	58.75	0.149	17.04	2.499	30.119	82.713
8/11/01 18:14:00	59.76	58.76	0.149	17.038	2.499	30.117	82.707
8/11/01 18:15:00	59.76	58.76	0.149	17.04	2.497	30.114	82.707
8/11/01 18:16:00	59.76	58.76	0.149	17.04	2.497	30.117	82.7
8/11/01 18:18:00	59.76	58.76	0.149	17.038	2.495	30.121	82.7
8/11/01 18:19:00	59.76	58.76	0.149	17.038	2.494	30.123	82.7
8/11/01 18:20:00	59.76	58.75	0.143	17.038	2.492	30.117	82.694
8/11/01 18:21:00	59.76	58.75	0.143	17.038	2.492	30.121	82.694
8/11/01 18:22:00	59.75	58.75	0.143	17.038	2.492	30.121	82.694
8/11/01 18:24:00	59.75	58.74	0.137	17.038	2.492	30.121	82.694
8/11/01 18:25:00	59.76	58.74	0.137	17.036	2.49	30.123	82.688
8/11/01 18:26:00	59.76	58.74	0.137	17.036	2.488	30.123	82.688
8/11/01 18:27:00	59.76	58.74	0.137	17.036	2.488	30.125	82.681
8/11/01 18:28:00	59.76	58.74	0.137	17.036	2.488	30.125	82.688
8/11/01 18:30:00	59.76	58.74	0.137	17.036	2.492	30.125	82.681
8/11/01 18:31:00	59.76	58.74	0.137	17.036	2.49	30.123	82.675
8/11/01 18:32:00	59.76	58.74	0.13	17.036	2.49	30.125	82.675
8/11/01 18:33:00	59.76	58.75	0.13	17.038	2.494	30.123	82.675
8/11/01 18:34:00	59.76	58.75	0.13	17.038	2.492	30.123	82.675
8/11/01 18:36:00	59.76	58.75	0.13	17.038	2.495	30.121	82.669
8/11/01 18:37:00	59.76	58.75	0.13	17.038	2.495	30.123	82.669
8/11/01 18:38:00	59.76	58.75	0.13	17.041	2.497	30.121	82.669
8/11/01 18:39:00	59.76	58.75	0.13	17.041	2.497	30.117	82.669
8/11/01 18:40:00	59.76	58.75	0.13	17.041	2.497	30.123	82.669
8/11/01 18:42:00	59.76	58.75	0.13	17.041	2.497	30.123	82.662
8/11/01 18:43:00	59.76	58.75	0.13	17.041	2.495	30.125	82.669
8/11/01 18:44:00	59.76	58.75	0.13	17.041	2.495	30.123	82.669
8/11/01 18:45:00	59.76	58.75	0.13	17.041	2.495	30.125	82.669
8/11/01 18:46:00	59.76	58.75	0.124	17.041	2.497	30.123	82.662
8/11/01 18:48:00	59.75	58.75	0.124	17.041	2.495	30.125	82.662
8/11/01 18:49:00	59.75	58.75	0.124	17.041	2.495	30.125	82.656
8/11/01 18:50:00	59.75	58.75	0.124	17.041	2.495	30.123	82.656
8/11/01 18:51:00	59.74	58.75	0.124	17.041	2.495	30.127	82.656
8/11/01 18:52:00	59.74	58.75	0.124	17.041	2.495	30.125	82.65
8/11/01 18:54:00	59.74	58.75	0.124	17.041	2.495	30.125	82.65
8/11/01 18:55:00	59.74	58.75	0.124	17.041	2.495	30.127	82.65
8/11/01 18:56:00	59.74	58.75	0.124	17.041	2.494	30.123	82.643
8/11/01 18:57:00	59.74	58.75	0.118	17.041	2.492	30.125	82.643
8/11/01 18:58:00	59.74	58.75	0.112	17.041	2.492	30.129	82.643
8/11/01 19:00:00	59.74	58.75	0.112	17.041	2.494	30.129	82.637
8/11/01 19:01:00	59.74	58.75	0.112	17.04	2.494	30.127	82.637
8/11/01 19:02:00	59.75	58.75	0.112	17.041	2.494	30.127	82.637
8/11/01 19:03:00	59.75	58.75	0.112	17.041	2.494	30.129	82.637
8/11/01 19:04:00	59.75	58.75	0.112	17.041	2.495	30.127	82.631
8/11/01 19:06:00	59.76	58.75	0.112	17.041	2.497	30.125	82.631
8/11/01 19:07:00	59.76	58.75	0.112	17.041	2.495	30.127	82.631
8/11/01 19:08:00	59.76	58.75	0.106	17.043	2.495	30.123	82.631
8/11/01 19:09:00	59.76	58.75	0.106	17.043	2.497	30.127	82.624
8/11/01 19:10:00	59.76	58.75	0.106	17.043	2.495	30.123	82.631
8/11/01 19:12:00	59.76	58.75	0.112	17.043	2.497	30.121	82.624
8/11/01 19:13:00	59.76	58.75	0.106	17.043	2.495	30.121	82.631
8/11/01 19:14:00	59.76	58.75	0.106	17.045	2.495	30.123	82.631
8/11/01 19:15:00	59.76	58.75	0.112	17.043	2.497	30.121	82.624
8/11/01 19:16:00	59.76	58.75	0.106	17.047	2.497	30.121	82.624
8/11/01 19:18:00	59.76	58.75	0.106	17.047	2.497	30.121	82.624

Date/Time	Downhole Pressure (psi)	Downhole Temperature (deg F)	Wellhead Pressure (psi)	Upper Monitor Pressure (psi)	Lower Monitor Pressure (psi)	Barometric Pressure (inchs Hg)	Annular Pressure (psi)
8/11/01 19:19:00	59.76	58.75	0.106	17.045	2.497	30.119	82.624
8/11/01 19:20:00	59.76	58.75	0.124	17.043	2.499	30.127	82.612
8/11/01 19:21:00	59.76	58.75	0.118	17.043	2.499	30.11	82.612
8/11/01 19:22:00	59.76	58.75	0.124	17.043	2.499	30.1	82.605
8/11/01 19:24:00	59.76	58.75	0.13	17.045	2.501	30.096	82.605
8/11/01 19:25:00	59.76	58.75	0.099	17.045	2.501	30.106	82.612
8/11/01 19:26:00	59.76	58.75	0.099	17.045	2.499	30.11	82.605
8/11/01 19:27:00	59.76	58.75	0.099	17.045	2.499	30.114	82.605
8/11/01 19:28:00	59.76	58.75	0.099	17.045	2.499	30.117	82.605
8/11/01 19:30:00	59.76	58.75	0.099	17.043	2.499	30.121	82.599
8/11/01 19:31:00	59.76	58.75	0.093	17.043	2.497	30.123	82.599
8/11/01 19:32:00	59.76	58.75	0.099	17.043	2.497	30.125	82.593
8/11/01 19:33:00	59.76	58.75	0.093	17.041	2.497	30.125	82.599
8/11/01 19:34:00	59.75	58.75	0.093	17.045	2.499	30.131	82.593
8/11/01 19:36:00	59.75	58.75	0.093	17.045	2.499	30.127	82.593
8/11/01 19:37:00	59.75	58.75	0.093	17.043	2.499	30.135	82.593
8/11/01 19:38:00	59.75	58.75	0.093	17.045	2.501	30.131	82.586
8/11/01 19:39:00	59.75	58.75	0.093	17.045	2.501	30.133	82.586
8/11/01 19:40:00	59.75	58.75	0.093	17.045	2.501	30.133	82.586
8/11/01 19:42:00	59.75	58.75	0.093	17.043	2.501	30.137	82.586
8/11/01 19:43:00	59.75	58.75	0.099	17.043	2.499	30.139	82.58
8/11/01 19:44:00	59.75	58.75	0.093	17.043	2.499	30.135	82.58
8/11/01 19:45:00	59.75	58.75	0.093	17.043	2.501	30.139	82.574
8/11/01 19:46:00	59.75	58.75	0.093	17.045	2.501	30.137	82.574
8/11/01 19:48:00	59.75	58.75	0.093	17.043	2.501	30.143	82.574
8/11/01 19:49:00	59.75	58.75	0.093	17.045	2.501	30.139	82.574
8/11/01 19:50:00	59.75	58.75	0.087	17.043	2.501	30.139	82.567
8/11/01 19:51:00	59.75	58.75	0.087	17.045	2.501	30.139	82.567
8/11/01 19:52:00	59.75	58.75	0.087	17.045	2.499	30.141	82.567
8/11/01 19:54:00	59.76	58.75	0.087	17.045	2.499	30.139	82.567
8/11/01 19:55:00	59.76	58.75	0.087	17.045	2.499	30.141	82.567
8/11/01 19:56:00	59.76	58.75	0.087	17.045	2.499	30.145	82.567
8/11/01 19:57:00	59.76	58.75	0.087	17.045	2.499	30.141	82.567
8/11/01 19:58:00	59.76	58.75	0.087	17.043	2.499	30.141	82.567
8/11/01 20:00:00	59.77	58.75	0.087	17.045	2.499	30.139	82.561
8/11/01 20:01:00	59.77	58.75	0.087	17.045	2.501	30.143	82.561
8/11/01 20:02:00	59.77	58.75	0.087	17.043	2.501	30.141	82.561
8/11/01 20:03:00	59.77	58.75	0.087	17.045	2.501	30.143	82.561
8/11/01 20:04:00	59.76	58.75	0.087	17.045	2.501	30.141	82.555
8/11/01 20:06:00	59.76	58.75	0.087	17.045	2.501	30.139	82.555
8/11/01 20:07:00	59.76	58.75	0.087	17.045	2.501	30.139	82.555
8/11/01 20:08:00	59.76	58.75	0.087	17.045	2.499	30.139	82.548
8/11/01 20:09:00	59.75	58.75	0.081	17.043	2.499	30.141	82.548
8/11/01 20:10:00	59.75	58.75	0.081	17.047	2.499	30.143	82.548
8/11/01 20:12:00	59.75	58.75	0.081	17.043	2.501	30.143	82.548
8/11/01 20:13:00	59.75	58.75	0.081	17.047	2.501	30.139	82.548
8/11/01 20:14:00	59.75	58.75	0.081	17.047	2.501	30.141	82.542
8/11/01 20:15:00	59.75	58.75	0.081	17.045	2.501	30.143	82.542
8/11/01 20:16:00	59.75	58.75	0.081	17.045	2.501	30.141	82.542
8/11/01 20:18:00	59.75	58.75	0.081	17.045	2.501	30.143	82.536
8/11/01 20:19:00	59.75	58.75	0.081	17.047	2.503	30.137	82.536
8/11/01 20:20:00	59.75	58.75	0.081	17.047	2.505	30.139	82.536
8/11/01 20:21:00	59.75	58.75	0.081	17.047	2.507	30.137	82.536
8/11/01 20:22:00	59.75	58.75	0.081	17.049	2.507	30.141	82.536
8/11/01 20:24:00	59.75	58.75	0.081	17.049	2.508	30.139	82.529
8/11/01 20:25:00	59.75	58.75	0.081	17.049	2.508	30.139	82.529
8/11/01 20:26:00	59.76	58.75	0.081	17.049	2.508	30.139	82.529
8/11/01 20:27:00	59.76	58.75	0.081	17.051	2.508	30.139	82.523
8/11/01 20:28:00	59.77	58.75	0.081	17.051	2.505	30.143	82.523
8/11/01 20:30:00	59.77	58.75	0.081	17.051	2.501	30.145	82.523
8/11/01 20:31:00	59.76	58.75	0.081	17.051	2.499	30.145	82.523
8/11/01 20:32:00	59.76	58.75	0.081	17.051	2.495	30.141	82.523
8/11/01 20:33:00	59.76	58.75	0.081	17.049	2.495	30.141	82.517
8/11/01 20:34:00	59.75	58.75	0.081	17.049	2.495	30.143	82.523
8/11/01 20:36:00	59.75	58.75	0.081	17.049	2.495	30.147	82.523
8/11/01 20:37:00	59.75	58.75	0.081	17.049	2.494	30.143	82.523
8/11/01 20:38:00	59.75	58.75	0.081	17.049	2.494	30.145	82.517
8/11/01 20:39:00	59.75	58.75	0.081	17.049	2.494	30.143	82.517
8/11/01 20:40:00	59.75	58.75	0.081	17.049	2.495	30.143	82.517
8/11/01 20:42:00	59.75	58.75	0.081	17.049	2.494	30.143	82.51
8/11/01 20:43:00	59.75	58.75	0.081	17.049	2.494	30.143	82.51
8/11/01 20:44:00	59.75	58.75	0.081	17.049	2.492	30.149	82.51
8/11/01 20:45:00	59.75	58.75	0.068	17.049	2.492	30.147	82.51
8/11/01 20:46:00	59.75	58.75	0.081	17.047	2.492	30.147	82.504
8/11/01 20:48:00	59.75	58.75	0.075	17.047	2.492	30.149	82.504
8/11/01 20:49:00	59.75	58.75	0.075	17.047	2.49	30.145	82.504
8/11/01 20:50:00	59.75	58.75	0.075	17.045	2.49	30.151	82.498
8/11/01 20:51:00	59.75	58.75	0.068	17.045	2.488	30.151	82.504
8/11/01 20:52:00	59.75	58.75	0.068	17.045	2.488	30.153	82.498
8/11/01 20:54:00	59.75	58.75	0.068	17.045	2.486	30.153	82.498
8/11/01 20:55:00	59.75	58.75	0.068	17.043	2.488	30.153	82.491
8/11/01 20:56:00	59.75	58.75	0.068	17.045	2.486	30.149	82.498
8/11/01 20:57:00	59.76	58.75	0.068	17.045	2.486	30.149	82.491
8/11/01 20:58:00	59.76	58.75	0.068	17.043	2.486	30.153	82.491
8/11/01 21:00:00	59.76	58.75	0.068	17.043	2.486	30.153	82.491
8/11/01 21:01:00	59.76	58.75	0.068	17.045	2.488	30.151	82.491
8/11/01 21:02:00	59.76	58.75	0.068	17.043	2.488	30.157	82.485
8/11/01 21:03:00	59.76	58.75	0.068	17.043	2.488	30.153	82.485
8/11/01 21:04:00	59.76	58.75	0.068	17.043	2.488	30.153	82.479
8/11/01 21:06:00	59.76	58.75	0.068	17.043	2.488	30.153	82.479
8/11/01 21:07:00	59.76	58.75	0.062	17.043	2.486	30.153	82.479
8/11/01 21:08:00	59.76	58.75	0.068	17.043	2.488	30.153	82.479
8/11/01 21:09:00	59.75	58.75	0.068	17.043	2.488	30.157	82.479
8/11/01 21:10:00	59.75	58.75	0.068	17.043	2.488	30.153	82.479
8/11/01 21:12:00	59.75	58.75	0.062	17.043	2.488	30.155	82.472
8/11/01 21:13:00	59.75	58.75	0.068	17.043	2.488	30.159	82.472
8/11/01 21:14:00	59.75	58.75	0.068	17.043	2.488	30.159	82.472
8/11/01 21:15:00	59.75	58.75	0.062	17.043	2.49	30.153	82.466
8/11/01 21:16:00	59.75	58.75	0.062	17.043	2.49	30.157	82.466
8/11/01 21:18:00	59.75	58.75	0.062	17.043	2.492	30.153	82.466
8/11/01 21:19:00	59.75	58.75	0.062	17.043	2.492	30.157	82.466
8/11/01 21:20:00	59.75	58.75	0.062	17.043	2.494	30.155	82.466
8/11/01 21:21:00	59.75	58.75	0.062	17.043	2.495	30.157	82.466
8/11/01 21:22:00	59.75	58.75	0.062	17.047	2.495	30.155	82.46

CITY of COOPER CITY
INJECTION TEST DATA

Date/Time	Downhole Pressure (psi)	Downhole Temperature (deg F)	Wellhead Pressure (psi)	Upper Monitor Pressure (psi)	Lower Monitor Pressure (psi)	Barometric Pressure (inchs Hg)	Annular Pressure (psi)
8/11/01 21:24:00	59.74	58.74	0.062	17.047	2.495	30.155	82.46
8/11/01 21:25:00	59.75	58.74	0.068	17.047	2.495	30.157	82.46
8/11/01 21:26:00	59.75	58.74	0.062	17.047	2.495	30.159	82.46
8/11/01 21:27:00	59.75	58.74	0.062	17.045	2.495	30.157	82.453
8/11/01 21:28:00	59.75	58.74	0.062	17.047	2.495	30.157	82.453
8/11/01 21:30:00	59.75	58.75	0.062	17.045	2.497	30.157	82.453
8/11/01 21:31:00	59.75	58.75	0.062	17.047	2.499	30.161	82.453
8/11/01 21:32:00	59.75	58.75	0.062	17.047	2.497	30.159	82.46
8/11/01 21:33:00	59.75	58.75	0.062	17.045	2.499	30.159	82.447
8/11/01 21:34:00	59.75	58.75	0.062	17.047	2.499	30.161	82.453
8/11/01 21:36:00	59.75	58.75	0.062	17.047	2.499	30.159	82.453
8/11/01 21:37:00	59.75	58.75	0.062	17.047	2.499	30.159	82.453
8/11/01 21:38:00	59.75	58.75	0.062	17.047	2.499	30.159	82.447
8/11/01 21:39:00	59.76	58.75	0.062	17.047	2.499	30.157	82.447
8/11/01 21:40:00	59.76	58.75	0.062	17.047	2.497	30.157	82.447
8/11/01 21:42:00	59.76	58.75	0.062	17.047	2.497	30.159	82.447
8/11/01 21:43:00	59.76	58.75	0.062	17.047	2.497	30.159	82.447
8/11/01 21:44:00	59.76	58.75	0.062	17.047	2.497	30.155	82.447
8/11/01 21:45:00	59.76	58.75	0.062	17.047	2.497	30.161	82.441
8/11/01 21:46:00	59.76	58.75	0.062	17.047	2.497	30.157	82.441
8/11/01 21:48:00	59.76	58.75	0.062	17.047	2.497	30.161	82.441
8/11/01 21:49:00	59.75	58.74	0.062	17.047	2.497	30.161	82.441
8/11/01 21:50:00	59.75	58.74	0.062	17.047	2.497	30.157	82.441
8/11/01 21:51:00	59.75	58.74	0.062	17.047	2.499	30.157	82.434
8/11/01 21:52:00	59.75	58.74	0.056	17.047	2.499	30.157	82.434
8/11/01 21:54:00	59.75	58.74	0.062	17.047	2.499	30.159	82.434
8/11/01 21:55:00	59.75	58.74	0.062	17.047	2.499	30.157	82.434
8/11/01 21:56:00	59.75	58.74	0.062	17.049	2.499	30.157	82.434
8/11/01 21:57:00	59.75	58.74	0.062	17.049	2.501	30.159	82.428
8/11/01 21:58:00	59.75	58.74	0.062	17.049	2.501	30.157	82.428
8/11/01 22:00:00	59.75	58.75	0.056	17.049	2.501	30.155	82.428
8/11/01 22:01:00	59.75	58.75	0.056	17.047	2.499	30.159	82.428
8/11/01 22:02:00	59.75	58.75	0.056	17.049	2.499	30.163	82.422
8/11/01 22:03:00	59.76	58.75	0.05	17.047	2.499	30.159	82.422
8/11/01 22:04:00	59.76	58.75	0.056	17.049	2.501	30.163	82.422
8/11/01 22:06:00	59.76	58.75	0.05	17.047	2.501	30.157	82.422
8/11/01 22:07:00	59.76	58.75	0.056	17.047	2.501	30.161	82.415
8/11/01 22:08:00	59.76	58.75	0.05	17.049	2.501	30.163	82.415
8/11/01 22:09:00	59.76	58.75	0.05	17.049	2.501	30.163	82.415
8/11/01 22:10:00	59.75	58.74	0.05	17.049	2.501	30.161	82.409
8/11/01 22:12:00	59.75	58.74	0.056	17.049	2.501	30.161	82.409
8/11/01 22:13:00	59.75	58.74	0.05	17.049	2.501	30.159	82.415
8/11/01 22:14:00	59.75	58.74	0.05	17.049	2.501	30.159	82.409
8/11/01 22:15:00	59.75	58.74	0.05	17.049	2.501	30.163	82.409
8/11/01 22:16:00	59.75	58.74	0.05	17.049	2.501	30.163	82.409
8/11/01 22:18:00	59.74	58.74	0.05	17.049	2.501	30.165	82.403
8/11/01 22:19:00	59.74	58.74	0.05	17.049	2.501	30.161	82.409
8/11/01 22:20:00	59.74	58.74	0.05	17.049	2.501	30.163	82.403
8/11/01 22:21:00	59.74	58.74	0.056	17.049	2.501	30.161	82.403
8/11/01 22:22:00	59.74	58.74	0.05	17.049	2.501	30.163	82.403
8/11/01 22:24:00	59.74	58.75	0.05	17.049	2.501	30.159	82.396
8/11/01 22:25:00	59.75	58.75	0.05	17.049	2.501	30.163	82.396
8/11/01 22:26:00	59.75	58.75	0.05	17.049	2.503	30.163	82.396
8/11/01 22:27:00	59.76	58.75	0.05	17.049	2.501	30.163	82.39
8/11/01 22:28:00	59.76	58.75	0.05	17.049	2.503	30.167	82.39
8/11/01 22:30:00	59.76	58.75	0.05	17.049	2.503	30.169	82.39
8/11/01 22:31:00	59.76	58.75	0.05	17.049	2.501	30.167	82.384
8/11/01 22:32:00	59.75	58.75	0.05	17.049	2.503	30.167	82.384
8/11/01 22:33:00	59.75	58.74	0.05	17.049	2.503	30.167	82.384
8/11/01 22:34:00	59.75	58.74	0.05	17.049	2.503	30.169	82.384
8/11/01 22:36:00	59.74	58.74	0.05	17.049	2.503	30.167	82.377
8/11/01 22:37:00	59.74	58.74	0.05	17.049	2.503	30.167	82.377
8/11/01 22:38:00	59.74	58.74	0.05	17.047	2.503	30.169	82.377
8/11/01 22:39:00	59.74	58.74	0.05	17.047	2.501	30.174	82.377
8/11/01 22:40:00	59.74	58.74	0.05	17.047	2.501	30.171	82.371
8/11/01 22:42:00	59.75	58.74	0.05	17.047	2.499	30.174	82.371
8/11/01 22:43:00	59.75	58.74	0.05	17.047	2.503	30.174	82.371
8/11/01 22:44:00	59.75	58.74	0.05	17.047	2.503	30.18	82.371
8/11/01 22:45:00	59.75	58.74	0.05	17.049	2.499	30.174	82.365
8/11/01 22:46:00	59.76	58.74	0.05	17.051	2.503	30.178	82.358
8/11/01 22:48:00	59.76	58.74	0.05	17.051	2.503	30.174	82.365
8/11/01 22:49:00	59.75	58.74	0.05	17.051	2.503	30.174	82.358
8/11/01 22:50:00	59.75	58.74	0.05	17.051	2.501	30.178	82.358
8/11/01 22:51:00	59.75	58.74	0.05	17.051	2.501	30.171	82.352
8/11/01 22:52:00	59.75	58.74	0.05	17.049	2.505	30.174	82.352
8/11/01 22:54:00	59.75	58.74	0.05	17.051	2.501	30.178	82.358
8/11/01 22:55:00	59.75	58.74	0.05	17.051	2.505	30.174	82.358
8/11/01 22:56:00	59.75	58.74	0.05	17.051	2.505	30.18	82.358
8/11/01 22:57:00	59.75	58.74	0.05	17.051	2.503	30.178	82.358
8/11/01 22:58:00	59.75	58.74	0.05	17.049	2.503	30.184	82.352
8/11/01 23:00:00	59.75	58.74	0.05	17.051	2.503	30.18	82.352
8/11/01 23:01:00	59.75	58.74	0.05	17.051	2.503	30.176	82.352
8/11/01 23:02:00	59.75	58.74	0.05	17.051	2.503	30.178	82.352
8/11/01 23:03:00	59.75	58.74	0.05	17.051	2.503	30.182	82.346
8/11/01 23:04:00	59.75	58.74	0.05	17.051	2.503	30.178	82.346
8/11/01 23:06:00	59.75	58.74	0.05	17.051	2.503	30.174	82.346
8/11/01 23:07:00	59.75	58.74	0.05	17.053	2.505	30.176	82.346
8/11/01 23:08:00	59.75	58.74	0.05	17.051	2.505	30.18	82.346
8/11/01 23:09:00	59.76	58.74	0.05	17.053	2.505	30.176	82.339
8/11/01 23:10:00	59.76	58.74	0.05	17.053	2.505	30.182	82.346
8/11/01 23:12:00	59.76	58.74	0.05	17.053	2.505	30.18	82.346
8/11/01 23:13:00	59.76	58.74	0.05	17.053	2.503	30.182	82.346
8/11/01 23:14:00	59.75	58.74	0.05	17.053	2.503	30.178	82.339
8/11/01 23:15:00	59.75	58.74	0.05	17.053	2.503	30.18	82.346
8/11/01 23:16:00	59.75	58.74	0.05	17.053	2.505	30.182	82.339
8/11/01 23:18:00	59.74	58.74	0.05	17.053	2.503	30.18	82.339
8/11/01 23:19:00	59.74	58.74	0.05	17.053	2.503	30.182	82.339
8/11/01 23:20:00	59.74	58.74	0.05	17.053	2.503	30.18	82.333
8/11/01 23:21:00	59.74	58.74	0.05	17.051	2.503	30.182	82.333
8/11/01 23:22:00	59.73	58.74	0.05	17.053	2.501	30.182	82.333
8/11/01 23:24:00	59.73	58.74	0.05	17.051	2.501	30.182	82.327
8/11/01 23:25:00	59.73	58.74	0.05	17.051	2.501	30.186	82.333
8/11/01 23:26:00	59.73	58.74	0.05	17.051	2.501	30.184	82.327
8/11/01 23:27:00	59.73	58.74	0.05	17.051	2.501	30.182	82.327

Date/Time	Downhole Pressure (psi)	58.75 58.75 58.75	Wellhead Pressure (psi)	Upper Monitor Pressure (psi)	Lower Monitor Pressure (psi)	Barometric Pressure (incns Hg)	Annular Pressure (psi)
8/11/01 23:28:00	59.73	58.74	0.05	17.051	2.501	30.186	82.327
8/11/01 23:30:00	59.73	58.74	0.05	17.051	2.501	30.184	82.32
8/11/01 23:31:00	59.74	58.74	0.05	17.051	2.501	30.186	82.32
8/11/01 23:32:00	59.74	58.74	0.05	17.051	2.503	30.186	82.32
8/11/01 23:33:00	59.74	58.74	0.05	17.051	2.503	30.188	82.314
8/11/01 23:34:00	59.74	58.74	0.05	17.051	2.501	30.188	82.314
8/11/01 23:36:00	59.74	58.74	0.05	17.051	2.501	30.188	82.314
8/11/01 23:37:00	59.74	58.74	0.05	17.051	2.501	30.188	82.314
8/11/01 23:38:00	59.74	58.74	0.05	17.051	2.501	30.19	82.314
8/11/01 23:39:00	59.74	58.74	0.05	17.051	2.503	30.192	82.308
8/11/01 23:40:00	59.74	58.74	0.05	17.049	2.501	30.19	82.301
8/11/01 23:42:00	59.75	58.74	0.05	17.051	2.501	30.188	82.301
8/11/01 23:43:00	59.75	58.74	0.05	17.051	2.503	30.192	82.301
8/11/01 23:44:00	59.75	58.74	0.05	17.051	2.503	30.192	82.301
8/11/01 23:45:00	59.75	58.74	0.056	17.049	2.501	30.196	82.301
8/11/01 23:46:00	59.75	58.74	0.056	17.051	2.499	30.192	82.301
8/11/01 23:48:00	59.75	58.75	0.05	17.049	2.499	30.198	82.295
8/11/01 23:49:00	59.75	58.75	0.05	17.049	2.499	30.198	82.295
8/11/01 23:50:00	59.75	58.75	0.05	17.049	2.497	30.198	82.295
8/11/01 23:51:00	59.75	58.75	0.05	17.049	2.497	30.198	82.295
8/11/01 23:52:00	59.75	58.75	0.05	17.049	2.497	30.2	82.295
8/11/01 23:54:00	59.75	58.74	0.05	17.047	2.495	30.198	82.289
8/11/01 23:55:00	59.75	58.74	0.05	17.047	2.495	30.2	82.289
8/11/01 23:56:00	59.75	58.74	0.05	17.047	2.495	30.2	82.289
8/11/01 23:57:00	59.75	58.74	0.043	17.047	2.495	30.2	82.289
8/11/01 23:58:00	59.74	58.74	0.056	17.045	2.495	30.204	82.289
8/12/01	59.74	58.74	0.043	17.047	2.495	30.202	82.289
8/12/01 00:01:00	59.74	58.74	0.056	17.047	2.495	30.2	82.282
8/12/01 00:02:00	59.74	58.74	0.043	17.045	2.495	30.206	82.282
8/12/01 00:03:00	59.74	58.73	0.043	17.045	2.495	30.206	82.282
8/12/01 00:04:00	59.74	58.73	0.056	17.045	2.495	30.206	82.282
8/12/01 00:06:00	59.75	58.73	0.043	17.045	2.495	30.204	82.276
8/12/01 00:07:00	59.75	58.73	0.043	17.045	2.495	30.208	82.276
8/12/01 00:08:00	59.75	58.74	0.043	17.045	2.494	30.212	82.276
8/12/01 00:09:00	59.75	58.74	0.043	17.043	2.494	30.21	82.276
8/12/01 00:10:00	59.76	58.74	0.043	17.045	2.495	30.21	82.276
8/12/01 00:12:00	59.76	58.74	0.043	17.045	2.495	30.212	82.27
8/12/01 00:13:00	59.76	58.74	0.05	17.045	2.495	30.208	82.27
8/12/01 00:14:00	59.76	58.74	0.05	17.045	2.494	30.208	82.27
8/12/01 00:15:00	59.76	58.74	0.05	17.043	2.494	30.206	82.27
8/12/01 00:16:00	59.76	58.74	0.043	17.043	2.494	30.206	82.27
8/12/01 00:18:00	59.76	58.74	0.05	17.043	2.494	30.212	82.27
8/12/01 00:19:00	59.76	58.74	0.043	17.043	2.494	30.208	82.263
8/12/01 00:20:00	59.76	58.74	0.043	17.041	2.492	30.212	82.263
8/12/01 00:21:00	59.76	58.74	0.05	17.041	2.49	30.214	82.263
8/12/01 00:22:00	59.76	58.74	0.043	17.041	2.49	30.216	82.257
8/12/01 00:24:00	59.76	58.74	0.05	17.041	2.49	30.214	82.251
8/12/01 00:25:00	59.76	58.74	0.05	17.041	2.492	30.216	82.251
8/12/01 00:26:00	59.76	58.74	0.05	17.041	2.49	30.216	82.251
8/12/01 00:27:00	59.76	58.74	0.05	17.041	2.492	30.214	82.244
8/12/01 00:28:00	59.76	58.74	0.05	17.04	2.492	30.214	82.244
8/12/01 00:30:00	59.76	58.74	0.05	17.041	2.49	30.214	82.244
8/12/01 00:31:00	59.75	58.74	0.05	17.041	2.49	30.216	82.244
8/12/01 00:32:00	59.75	58.74	0.05	17.041	2.488	30.214	82.244
8/12/01 00:33:00	59.75	58.74	0.05	17.041	2.49	30.216	82.244
8/12/01 00:34:00	59.75	58.74	0.05	17.04	2.492	30.214	82.244
8/12/01 00:36:00	59.74	58.74	0.05	17.04	2.492	30.216	82.238
8/12/01 00:37:00	59.74	58.74	0.05	17.041	2.49	30.214	82.238
8/12/01 00:38:00	59.74	58.74	0.05	17.041	2.49	30.218	82.238
8/12/01 00:39:00	59.74	58.74	0.056	17.041	2.49	30.216	82.238
8/12/01 00:40:00	59.74	58.74	0.05	17.04	2.49	30.218	82.238
8/12/01 00:42:00	59.74	58.74	0.05	17.04	2.49	30.216	82.238
8/12/01 00:43:00	59.74	58.74	0.05	17.04	2.49	30.216	82.238
8/12/01 00:44:00	59.75	58.74	0.05	17.041	2.49	30.22	82.238
8/12/01 00:45:00	59.75	58.74	0.05	17.041	2.49	30.216	82.232
8/12/01 00:46:00	59.75	58.74	0.056	17.041	2.49	30.216	82.232
8/12/01 00:48:00	59.75	58.74	0.056	17.04	2.49	30.214	82.232
8/12/01 00:49:00	59.75	58.74	0.056	17.041	2.49	30.216	82.232
8/12/01 00:50:00	59.75	58.74	0.056	17.041	2.49	30.214	82.232
8/12/01 00:51:00	59.75	58.74	0.056	17.041	2.49	30.216	82.225
8/12/01 00:52:00	59.75	58.74	0.056	17.04	2.49	30.218	82.225
8/12/01 00:54:00	59.75	58.74	0.056	17.04	2.488	30.218	82.225
8/12/01 00:55:00	59.75	58.74	0.056	17.04	2.488	30.216	82.225
8/12/01 00:56:00	59.75	58.74	0.056	17.04	2.486	30.218	82.225
8/12/01 00:57:00	59.75	58.74	0.056	17.04	2.488	30.218	82.219
8/12/01 00:58:00	59.76	58.74	0.056	17.04	2.486	30.22	82.219
8/12/01 01:00:00	59.76	58.74	0.056	17.04	2.486	30.22	82.219
8/12/01 01:01:00	59.76	58.74	0.056	17.04	2.486	30.216	82.219
8/12/01 01:02:00	59.76	58.74	0.056	17.04	2.488	30.216	82.219
8/12/01 01:03:00	59.76	58.74	0.056	17.041	2.488	30.216	82.219
8/12/01 01:04:00	59.76	58.73	0.056	17.04	2.49	30.216	82.219
8/12/01 01:06:00	59.76	58.73	0.056	17.041	2.49	30.218	82.219
8/12/01 01:07:00	59.76	58.73	0.056	17.041	2.492	30.218	82.213
8/12/01 01:08:00	59.75	58.73	0.062	17.041	2.494	30.216	82.219
8/12/01 01:09:00	59.75	58.73	0.062	17.041	2.495	30.22	82.213
8/12/01 01:10:00	59.75	58.73	0.062	17.04	2.495	30.218	82.213
8/12/01 01:12:00	59.75	58.73	0.056	17.041	2.495	30.218	82.213
8/12/01 01:13:00	59.75	58.73	0.056	17.041	2.495	30.216	82.206
8/12/01 01:14:00	59.75	58.73	0.062	17.04	2.495	30.22	82.206
8/12/01 01:15:00	59.75	58.73	0.062	17.041	2.494	30.218	82.206
8/12/01 01:16:00	59.75	58.73	0.056	17.041	2.495	30.216	82.206
8/12/01 01:18:00	59.76	58.73	0.062	17.041	2.495	30.216	82.2
8/12/01 01:19:00	59.76	58.74	0.062	17.041	2.494	30.216	82.2
8/12/01 01:20:00	59.76	58.74	0.062	17.041	2.494	30.218	82.2
8/12/01 01:21:00	59.76	58.74	0.062	17.041	2.494	30.22	82.2
8/12/01 01:22:00	59.76	58.74	0.062	17.041	2.494	30.216	82.2
8/12/01 01:24:00	59.76	58.74	0.062	17.041	2.494	30.218	82.2
8/12/01 01:25:00	59.76	58.74	0.062	17.041	2.494	30.218	82.2
8/12/01 01:26:00	59.76	58.75	0.062	17.041	2.494	30.216	82.194
8/12/01 01:27:00	59.76	58.75	0.062	17.041	2.494	30.218	82.194
8/12/01 01:28:00	59.76	58.75	0.062	17.041	2.494	30.216	82.194
8/12/01 01:30:00	59.76	58.75	0.062	17.041	2.494	30.216	82.194
8/12/01 01:31:00	59.76	58.75	0.062	17.041	2.494	30.218	82.194
8/12/01 01:32:00	59.76	58.75	0.062	17.041	2.494	30.212	82.194

CITY of COOPER CITY
INJECTION TEST DATA

Date/Time	Downhole Pressure (psi)	Downhole Temperature (deg F)	Wellhead Pressure (psi)	Upper Monitor Pressure (psi)	Lower Monitor Pressure (psi)	Barometric Pressure (inchs Hg)	Annular Pressure (psi)
8/12/01 01:33:00	59.76	58.75	0.068	17.041	2.495	30.214	82.187
8/12/01 01:34:00	59.76	58.75	0.062	17.043	2.495	30.214	82.194
8/12/01 01:36:00	59.75	58.75	0.068	17.043	2.494	30.218	82.187
8/12/01 01:37:00	59.75	58.75	0.068	17.043	2.495	30.218	82.187
8/12/01 01:38:00	59.75	58.75	0.068	17.043	2.494	30.212	82.187
8/12/01 01:39:00	59.75	58.75	0.062	17.043	2.495	30.216	82.187
8/12/01 01:40:00	59.75	58.75	0.068	17.041	2.494	30.218	82.187
8/12/01 01:42:00	59.75	58.75	0.068	17.041	2.495	30.218	82.187
8/12/01 01:43:00	59.75	58.75	0.068	17.041	2.494	30.212	82.181
8/12/01 01:44:00	59.75	58.75	0.068	17.041	2.494	30.212	82.181
8/12/01 01:45:00	59.75	58.74	0.068	17.041	2.494	30.216	82.181
8/12/01 01:46:00	59.75	58.74	0.068	17.041	2.494	30.214	82.181
8/12/01 01:48:00	59.75	58.74	0.068	17.043	2.494	30.216	82.175
8/12/01 01:49:00	59.75	58.74	0.068	17.043	2.494	30.22	82.175
8/12/01 01:50:00	59.75	58.74	0.068	17.041	2.492	30.216	82.175
8/12/01 01:51:00	59.76	58.74	0.068	17.041	2.492	30.218	82.175
8/12/01 01:52:00	59.76	58.73	0.068	17.041	2.492	30.218	82.175
8/12/01 01:54:00	59.76	58.73	0.068	17.041	2.49	30.22	82.168
8/12/01 01:55:00	59.76	58.73	0.068	17.04	2.49	30.224	82.175
8/12/01 01:56:00	59.76	58.73	0.068	17.041	2.488	30.22	82.168
8/12/01 01:57:00	59.76	58.73	0.068	17.04	2.49	30.22	82.168
8/12/01 01:58:00	59.76	58.73	0.068	17.04	2.49	30.216	82.168
8/12/01 02:00:00	59.76	58.73	0.068	17.04	2.49	30.222	82.162
8/12/01 02:01:00	59.76	58.73	0.068	17.04	2.488	30.22	82.168
8/12/01 02:02:00	59.76	58.73	0.068	17.04	2.488	30.222	82.168
8/12/01 02:03:00	59.75	58.73	0.068	17.04	2.49	30.22	82.162
8/12/01 02:04:00	59.75	58.73	0.068	17.04	2.49	30.222	82.162
8/12/01 02:06:00	59.75	58.73	0.068	17.04	2.488	30.22	82.162
8/12/01 02:07:00	59.75	58.73	0.068	17.04	2.49	30.224	82.162
8/12/01 02:08:00	59.75	58.73	0.075	17.04	2.49	30.222	82.162
8/12/01 02:09:00	59.75	58.74	0.068	17.04	2.49	30.222	82.162
8/12/01 02:10:00	59.75	58.74	0.075	17.04	2.49	30.22	82.162
8/12/01 02:12:00	59.75	58.74	0.075	17.04	2.492	30.224	82.156
8/12/01 02:13:00	59.75	58.74	0.075	17.04	2.49	30.22	82.156
8/12/01 02:14:00	59.75	58.74	0.075	17.04	2.49	30.226	82.156
8/12/01 02:15:00	59.75	58.74	0.068	17.04	2.49	30.226	82.156
8/12/01 02:16:00	59.75	58.74	0.075	17.04	2.488	30.224	82.156
8/12/01 02:18:00	59.75	58.74	0.075	17.04	2.488	30.224	82.156
8/12/01 02:19:00	59.75	58.74	0.075	17.04	2.488	30.22	82.156
8/12/01 02:20:00	59.76	58.74	0.075	17.04	2.49	30.22	82.149
8/12/01 02:21:00	59.76	58.74	0.075	17.04	2.49	30.22	82.149
8/12/01 02:22:00	59.76	58.74	0.075	17.04	2.49	30.222	82.149
8/12/01 02:24:00	59.76	58.74	0.075	17.04	2.49	30.222	82.149
8/12/01 02:25:00	59.75	58.74	0.075	17.04	2.49	30.222	82.149
8/12/01 02:26:00	59.75	58.74	0.075	17.04	2.49	30.222	82.149
8/12/01 02:27:00	59.75	58.74	0.075	17.04	2.49	30.222	82.143
8/12/01 02:28:00	59.75	58.74	0.075	17.04	2.492	30.22	82.143
8/12/01 02:30:00	59.75	58.73	0.075	17.04	2.492	30.218	82.143
8/12/01 02:31:00	59.75	58.73	0.075	17.04	2.492	30.216	82.143
8/12/01 02:32:00	59.76	58.73	0.075	17.041	2.494	30.22	82.143
8/12/01 02:33:00	59.76	58.73	0.081	17.041	2.494	30.212	82.143
8/12/01 02:34:00	59.76	58.73	0.075	17.041	2.495	30.218	82.143
8/12/01 02:36:00	59.76	58.73	0.081	17.041	2.495	30.216	82.137
8/12/01 02:37:00	59.75	58.73	0.075	17.041	2.495	30.216	82.137
8/12/01 02:38:00	59.75	58.73	0.075	17.043	2.494	30.214	82.137
8/12/01 02:39:00	59.75	58.73	0.081	17.041	2.495	30.214	82.137
8/12/01 02:40:00	59.74	58.73	0.081	17.043	2.494	30.216	82.137
8/12/01 02:42:00	59.74	58.73	0.081	17.043	2.494	30.216	82.13
8/12/01 02:43:00	59.74	58.74	0.081	17.043	2.494	30.214	82.13
8/12/01 02:44:00	59.74	58.74	0.081	17.041	2.495	30.214	82.13
8/12/01 02:45:00	59.74	58.74	0.081	17.043	2.494	30.218	82.13
8/12/01 02:46:00	59.74	58.74	0.081	17.041	2.494	30.218	82.13
8/12/01 02:48:00	59.74	58.74	0.081	17.041	2.492	30.218	82.124
8/12/01 02:49:00	59.74	58.74	0.081	17.041	2.492	30.218	82.13
8/12/01 02:50:00	59.74	58.74	0.081	17.041	2.492	30.22	82.124
8/12/01 02:51:00	59.75	58.74	0.081	17.041	2.494	30.22	82.124
8/12/01 02:52:00	59.75	58.74	0.081	17.041	2.494	30.218	82.124
8/12/01 02:54:00	59.75	58.74	0.081	17.041	2.492	30.218	82.124
8/12/01 02:55:00	59.75	58.74	0.081	17.041	2.494	30.22	82.124
8/12/01 02:56:00	59.74	58.74	0.081	17.041	2.494	30.22	82.118
8/12/01 02:57:00	59.74	58.74	0.081	17.041	2.494	30.218	82.118
8/12/01 02:58:00	59.74	58.74	0.081	17.041	2.492	30.218	82.118
8/12/01 03:00:00	59.74	58.74	0.081	17.041	2.492	30.218	82.118
8/12/01 03:01:00	59.75	58.74	0.081	17.041	2.492	30.22	82.118
8/12/01 03:02:00	59.75	58.74	0.081	17.041	2.492	30.218	82.118
8/12/01 03:03:00	59.75	58.74	0.081	17.041	2.492	30.218	82.111
8/12/01 03:04:00	59.76	58.74	0.081	17.041	2.492	30.218	82.118
8/12/01 03:06:00	59.76	58.74	0.081	17.041	2.492	30.218	82.118
8/12/01 03:07:00	59.76	58.74	0.087	17.041	2.492	30.216	82.111
8/12/01 03:08:00	59.75	58.74	0.081	17.041	2.494	30.214	82.111
8/12/01 03:09:00	59.75	58.74	0.081	17.041	2.494	30.218	82.111
8/12/01 03:10:00	59.75	58.74	0.081	17.041	2.494	30.216	82.111
8/12/01 03:12:00	59.75	58.74	0.087	17.041	2.494	30.216	82.111
8/12/01 03:13:00	59.75	58.74	0.087	17.041	2.495	30.22	82.105
8/12/01 03:14:00	59.75	58.74	0.081	17.041	2.494	30.222	82.105
8/12/01 03:15:00	59.76	58.74	0.081	17.041	2.494	30.222	82.105
8/12/01 03:16:00	59.76	58.74	0.081	17.041	2.495	30.22	82.105
8/12/01 03:18:00	59.76	58.74	0.081	17.041	2.494	30.218	82.105
8/12/01 03:19:00	59.76	58.74	0.081	17.041	2.494	30.216	82.099
8/12/01 03:20:00	59.76	58.74	0.081	17.041	2.494	30.22	82.105
8/12/01 03:21:00	59.76	58.74	0.081	17.041	2.494	30.22	82.099
8/12/01 03:22:00	59.76	58.74	0.081	17.041	2.495	30.218	82.099
8/12/01 03:24:00	59.76	58.74	0.087	17.045	2.495	30.218	82.099
8/12/01 03:25:00	59.76	58.74	0.087	17.045	2.495	30.22	82.099
8/12/01 03:26:00	59.76	58.74	0.081	17.045	2.494	30.218	82.099
8/12/01 03:27:00	59.76	58.74	0.087	17.041	2.494	30.218	82.092
8/12/01 03:28:00	59.76	58.74	0.081	17.043	2.494	30.216	82.092
8/12/01 03:30:00	59.76	58.74	0.087	17.043	2.494	30.22	82.092
8/12/01 03:31:00	59.75	58.74	0.087	17.043	2.494	30.218	82.086
8/12/01 03:32:00	59.75	58.74	0.087	17.043	2.494	30.216	82.092
8/12/01 03:33:00	59.75	58.74	0.087	17.043	2.492	30.218	82.092
8/12/01 03:34:00	59.75	58.74	0.087	17.043	2.492	30.22	82.092
8/12/01 03:36:00	59.75	58.74	0.087	17.043	2.492	30.218	82.086
8/12/01 03:37:00	59.75	58.74	0.087	17.043	2.494	30.22	82.086

Date/Time	Downhole Pressure (psi)	Downhole Temperature (deg F)	Wellhead Pressure (psi)	Upper Monitor Pressure (psi)	Lower Monitor Pressure (psi)	Barometric Pressure (inchs Hg)	Annular Pressure (psi)
8/12/01 03:38:00	59.75	58.74	0.087	17.045	2.492	30.218	82.086
8/12/01 03:39:00	59.75	58.74	0.087	17.043	2.494	30.216	82.086
8/12/01 03:40:00	59.75	58.74	0.087	17.043	2.492	30.214	82.086
8/12/01 03:42:00	59.74	58.74	0.087	17.043	2.494	30.216	82.086
8/12/01 03:43:00	59.74	58.74	0.087	17.045	2.494	30.216	82.086
8/12/01 03:44:00	59.73	58.73	0.087	17.043	2.494	30.214	82.08
8/12/01 03:45:00	59.73	58.73	0.087	17.043	2.494	30.216	82.086
8/12/01 03:46:00	59.73	58.73	0.087	17.043	2.494	30.214	82.08
8/12/01 03:48:00	59.72	58.73	0.087	17.045	2.494	30.214	82.08
8/12/01 03:49:00	59.72	58.73	0.087	17.045	2.494	30.212	82.08
8/12/01 03:50:00	59.72	58.73	0.087	17.045	2.494	30.216	82.08
8/12/01 03:51:00	59.73	58.73	0.087	17.045	2.494	30.212	82.08
8/12/01 03:52:00	59.73	58.73	0.087	17.043	2.494	30.212	82.08
8/12/01 03:54:00	59.72	58.73	0.087	17.045	2.494	30.21	82.08
8/12/01 03:55:00	59.72	58.73	0.093	17.045	2.494	30.212	82.073
8/12/01 03:56:00	59.72	58.73	0.087	17.045	2.495	30.214	82.073
8/12/01 03:57:00	59.72	58.73	0.093	17.045	2.495	30.21	82.073
8/12/01 03:58:00	59.72	58.73	0.093	17.045	2.495	30.214	82.073
8/12/01 04:00:00	59.72	58.73	0.087	17.045	2.495	30.212	82.073
8/12/01 04:01:00	59.73	58.73	0.093	17.045	2.495	30.21	82.073
8/12/01 04:02:00	59.73	58.74	0.087	17.045	2.494	30.21	82.073
8/12/01 04:03:00	59.74	58.74	0.093	17.043	2.494	30.212	82.067
8/12/01 04:04:00	59.74	58.74	0.093	17.045	2.494	30.212	82.067
8/12/01 04:06:00	59.75	58.74	0.087	17.043	2.492	30.212	82.067
8/12/01 04:07:00	59.75	58.74	0.087	17.045	2.492	30.21	82.067
8/12/01 04:08:00	59.76	58.74	0.087	17.043	2.492	30.212	82.067
8/12/01 04:09:00	59.76	58.74	0.093	17.045	2.492	30.21	82.067
8/12/01 04:10:00	59.76	58.75	0.087	17.045	2.494	30.212	82.067
8/12/01 04:12:00	59.76	58.75	0.093	17.045	2.494	30.21	82.067
8/12/01 04:13:00	59.76	58.75	0.093	17.045	2.494	30.206	82.067
8/12/01 04:14:00	59.76	58.75	0.093	17.045	2.495	30.214	82.061
8/12/01 04:15:00	59.76	58.75	0.093	17.045	2.495	30.212	82.061
8/12/01 04:16:00	59.76	58.75	0.093	17.045	2.495	30.21	82.061
8/12/01 04:18:00	59.75	58.75	0.093	17.045	2.495	30.21	82.061
8/12/01 04:19:00	59.75	58.74	0.093	17.043	2.497	30.208	82.054
8/12/01 04:20:00	59.75	58.74	0.093	17.045	2.497	30.21	82.054
8/12/01 04:21:00	59.75	58.74	0.093	17.045	2.497	30.21	82.054
8/12/01 04:22:00	59.74	58.74	0.093	17.045	2.497	30.21	82.054
8/12/01 04:24:00	59.74	58.74	0.093	17.045	2.497	30.21	82.054
8/12/01 04:25:00	59.75	58.74	0.093	17.045	2.497	30.206	82.054
8/12/01 04:26:00	59.75	58.74	0.093	17.045	2.497	30.206	82.048
8/12/01 04:27:00	59.75	58.74	0.093	17.047	2.499	30.21	82.048
8/12/01 04:28:00	59.75	58.74	0.093	17.045	2.499	30.208	82.048
8/12/01 04:30:00	59.75	58.74	0.093	17.047	2.499	30.208	82.048
8/12/01 04:31:00	59.75	58.74	0.093	17.047	2.497	30.206	82.048
8/12/01 04:32:00	59.74	58.74	0.093	17.047	2.497	30.208	82.048
8/12/01 04:33:00	59.74	58.74	0.093	17.047	2.497	30.208	82.048
8/12/01 04:34:00	59.74	58.74	0.093	17.045	2.495	30.206	82.048
8/12/01 04:36:00	59.73	58.74	0.093	17.045	2.495	30.21	82.048
8/12/01 04:37:00	59.73	58.74	0.093	17.045	2.494	30.206	82.042
8/12/01 04:38:00	59.73	58.74	0.093	17.045	2.494	30.206	82.042
8/12/01 04:39:00	59.73	58.74	0.093	17.045	2.495	30.208	82.042
8/12/01 04:40:00	59.74	58.75	0.093	17.045	2.494	30.206	82.042
8/12/01 04:42:00	59.74	58.75	0.093	17.047	2.494	30.204	82.042
8/12/01 04:43:00	59.74	58.75	0.093	17.047	2.494	30.204	82.042
8/12/01 04:44:00	59.74	58.74	0.093	17.045	2.494	30.204	82.035
8/12/01 04:45:00	59.74	58.74	0.093	17.045	2.494	30.206	82.042
8/12/01 04:46:00	59.73	58.74	0.093	17.045	2.495	30.206	82.035
8/12/01 04:48:00	59.73	58.74	0.093	17.045	2.495	30.206	82.035
8/12/01 04:49:00	59.73	58.74	0.093	17.045	2.494	30.202	82.035
8/12/01 04:50:00	59.73	58.74	0.099	17.045	2.495	30.206	82.035
8/12/01 04:51:00	59.73	58.73	0.093	17.045	2.495	30.204	82.035
8/12/01 04:52:00	59.73	58.73	0.093	17.045	2.495	30.206	82.035
8/12/01 04:54:00	59.73	58.73	0.099	17.045	2.495	30.202	82.029
8/12/01 04:55:00	59.74	58.73	0.093	17.045	2.495	30.204	82.029
8/12/01 04:56:00	59.74	58.73	0.093	17.045	2.497	30.204	82.029
8/12/01 04:57:00	59.74	58.73	0.099	17.047	2.497	30.2	82.029
8/12/01 04:58:00	59.74	58.73	0.099	17.045	2.497	30.204	82.029
8/12/01 05:00:00	59.75	58.73	0.099	17.045	2.499	30.202	82.023
8/12/01 05:01:00	59.75	58.73	0.093	17.047	2.499	30.204	82.023
8/12/01 05:02:00	59.75	58.73	0.093	17.047	2.499	30.206	82.029
8/12/01 05:03:00	59.76	58.74	0.093	17.049	2.501	30.2	82.023
8/12/01 05:04:00	59.76	58.74	0.099	17.047	2.499	30.202	82.023
8/12/01 05:06:00	59.76	58.74	0.099	17.049	2.499	30.202	82.023
8/12/01 05:07:00	59.76	58.74	0.099	17.047	2.501	30.2	82.023
8/12/01 05:08:00	59.77	58.73	0.099	17.047	2.499	30.204	82.023
8/12/01 05:09:00	59.77	58.73	0.099	17.047	2.497	30.198	82.016
8/12/01 05:10:00	59.77	58.73	0.099	17.047	2.497	30.202	82.016
8/12/01 05:12:00	59.77	58.73	0.099	17.047	2.497	30.2	82.016
8/12/01 05:13:00	59.76	58.73	0.099	17.047	2.497	30.196	82.016
8/12/01 05:14:00	59.76	58.74	0.099	17.047	2.497	30.2	82.016
8/12/01 05:15:00	59.75	58.74	0.106	17.047	2.497	30.198	82.016
8/12/01 05:16:00	59.75	58.74	0.099	17.047	2.497	30.202	82.016
8/12/01 05:18:00	59.75	58.74	0.099	17.047	2.495	30.198	82.01
8/12/01 05:19:00	59.75	58.74	0.099	17.047	2.495	30.202	82.01
8/12/01 05:20:00	59.75	58.74	0.099	17.047	2.495	30.2	82.01
8/12/01 05:21:00	59.75	58.73	0.099	17.045	2.492	30.204	82.01
8/12/01 05:22:00	59.75	58.73	0.099	17.047	2.495	30.204	82.01
8/12/01 05:24:00	59.76	58.73	0.099	17.047	2.495	30.198	82.01
8/12/01 05:25:00	59.76	58.73	0.099	17.047	2.495	30.204	82.01
8/12/01 05:26:00	59.76	58.73	0.099	17.047	2.495	30.2	82.01
8/12/01 05:27:00	59.76	58.73	0.099	17.045	2.497	30.2	82.01
8/12/01 05:28:00	59.76	58.73	0.099	17.047	2.495	30.2	82.004
8/12/01 05:30:00	59.76	58.73	0.099	17.047	2.497	30.202	82.004
8/12/01 05:31:00	59.76	58.74	0.099	17.047	2.497	30.2	82.004
8/12/01 05:32:00	59.76	58.74	0.099	17.047	2.495	30.202	82.004
8/12/01 05:33:00	59.75	58.74	0.099	17.045	2.497	30.204	81.998
8/12/01 05:34:00	59.75	58.74	0.099	17.047	2.497	30.202	81.998
8/12/01 05:36:00	59.75	58.74	0.099	17.047	2.497	30.202	81.998
8/12/01 05:37:00	59.75	58.74	0.099	17.045	2.497	30.2	81.998
8/12/01 05:38:00	59.75	58.74	0.099	17.045	2.497	30.202	81.998
8/12/01 05:39:00	59.75	58.74	0.099	17.045	2.497	30.202	81.998
8/12/01 05:40:00	59.75	58.74	0.099	17.047	2.497	30.204	81.991
8/12/01 05:42:00	59.75	58.74	0.093	17.047	2.497	30.204	81.991

CITY of COOPER CITY
INJECTION TEST DATA

Date/Time	Downhole Pressure (psi)	Downhole Temperature (deg F)	Wellhead Pressure (psi)	Upper Monitor Pressure (psi)	Lower Monitor Pressure (psi)	Barometric Pressure (inchs Hg)	Annular Pressure (psi)
8/12/01 05:43:00	59.75	58.74	0.099	17.047	2.499	30.204	81.991
8/12/01 05:44:00	59.75	58.73	0.099	17.047	2.499	30.204	81.991
8/12/01 05:45:00	59.75	58.73	0.099	17.047	2.499	30.202	81.991
8/12/01 05:46:00	59.75	58.73	0.099	17.047	2.499	30.202	81.991
8/12/01 05:48:00	59.75	58.73	0.099	17.047	2.499	30.2	81.985
8/12/01 05:49:00	59.75	58.73	0.099	17.047	2.499	30.202	81.985
8/12/01 05:50:00	59.75	58.73	0.099	17.047	2.499	30.204	81.985
8/12/01 05:51:00	59.75	58.73	0.099	17.047	2.499	30.2	81.985
8/12/01 05:52:00	59.75	58.73	0.099	17.047	2.499	30.202	81.985
8/12/01 05:54:00	59.75	58.73	0.099	17.047	2.499	30.2	81.985
8/12/01 05:55:00	59.75	58.73	0.099	17.047	2.501	30.206	81.985
8/12/01 05:56:00	59.76	58.73	0.099	17.047	2.499	30.202	81.985
8/12/01 05:57:00	59.76	58.73	0.099	17.049	2.501	30.198	81.972
8/12/01 05:58:00	59.76	58.73	0.093	17.049	2.501	30.2	81.972
8/12/01 06:00:00	59.76	58.73	0.099	17.049	2.501	30.2	81.966
8/12/01 06:01:00	59.76	58.73	0.099	17.049	2.501	30.2	81.979
8/12/01 06:02:00	59.76	58.73	0.099	17.051	2.499	30.2	81.966
8/12/01 06:03:00	59.75	58.73	0.099	17.051	2.497	30.2	81.979
8/12/01 06:04:00	59.75	58.73	0.099	17.051	2.494	30.198	81.966
8/12/01 06:06:00	59.75	58.73	0.099	17.051	2.494	30.198	81.966
8/12/01 06:07:00	59.75	58.74	0.099	17.051	2.49	30.198	81.966
8/12/01 06:08:00	59.75	58.74	0.099	17.051	2.492	30.196	81.966
8/12/01 06:09:00	59.75	58.74	0.099	17.053	2.49	30.198	81.966
8/12/01 06:10:00	59.75	58.74	0.099	17.053	2.49	30.196	81.966
8/12/01 06:12:00	59.76	58.74	0.099	17.053	2.49	30.198	81.96
8/12/01 06:13:00	59.76	58.74	0.099	17.053	2.488	30.196	81.96
8/12/01 06:14:00	59.76	58.74	0.106	17.053	2.488	30.194	81.96
8/12/01 06:15:00	59.76	58.74	0.099	17.053	2.488	30.194	81.96
8/12/01 06:16:00	59.76	58.74	0.106	17.053	2.486	30.196	81.96
8/12/01 06:18:00	59.76	58.74	0.099	17.051	2.486	30.194	81.96
8/12/01 06:19:00	59.76	58.74	0.106	17.053	2.486	30.196	81.96
8/12/01 06:20:00	59.76	58.74	0.099	17.051	2.484	30.202	81.953
8/12/01 06:21:00	59.76	58.74	0.099	17.051	2.484	30.196	81.953
8/12/01 06:22:00	59.75	58.74	0.099	17.053	2.484	30.2	81.953
8/12/01 06:24:00	59.75	58.74	0.099	17.053	2.484	30.202	81.953
8/12/01 06:25:00	59.75	58.74	0.099	17.053	2.484	30.2	81.953
8/12/01 06:26:00	59.75	58.74	0.099	17.053	2.484	30.2	81.953
8/12/01 06:27:00	59.75	58.74	0.099	17.053	2.484	30.198	81.947
8/12/01 06:28:00	59.75	58.74	0.099	17.055	2.484	30.202	81.947
8/12/01 06:30:00	59.75	58.74	0.099	17.055	2.484	30.2	81.947
8/12/01 06:31:00	59.75	58.74	0.099	17.056	2.482	30.204	81.941
8/12/01 06:32:00	59.76	58.74	0.099	17.056	2.482	30.2	81.947
8/12/01 06:33:00	59.76	58.74	0.099	17.056	2.482	30.2	81.941
8/12/01 06:34:00	59.76	58.74	0.106	17.056	2.482	30.2	81.941
8/12/01 06:36:00	59.76	58.74	0.099	17.056	2.484	30.198	81.941
8/12/01 06:37:00	59.76	58.73	0.106	17.058	2.488	30.198	81.941
8/12/01 06:38:00	59.76	58.73	0.099	17.055	2.488	30.2	81.941
8/12/01 06:39:00	59.75	58.73	0.099	17.053	2.488	30.202	81.934
8/12/01 06:40:00	59.75	58.73	0.106	17.047	2.481	30.198	81.934
8/12/01 06:42:00	59.75	58.73	0.099	17.045	2.477	30.202	81.934
8/12/01 06:43:00	59.75	58.73	0.099	17.041	2.473	30.202	81.934
8/12/01 06:44:00	59.74	58.73	0.099	17.04	2.473	30.206	81.934
8/12/01 06:45:00	59.74	58.73	0.099	17.038	2.471	30.208	81.934
8/12/01 06:46:00	59.74	58.73	0.099	17.038	2.471	30.204	81.934
8/12/01 06:48:00	59.73	58.73	0.099	17.038	2.475	30.204	81.928
8/12/01 06:49:00	59.74	58.73	0.099	17.038	2.475	30.204	81.934
8/12/01 06:50:00	59.74	58.73	0.099	17.038	2.475	30.204	81.928
8/12/01 06:51:00	59.74	58.74	0.099	17.038	2.475	30.204	81.934
8/12/01 06:52:00	59.74	58.74	0.099	17.038	2.475	30.204	81.928
8/12/01 06:54:00	59.74	58.74	0.099	17.038	2.475	30.206	81.934
8/12/01 06:55:00	59.74	58.74	0.099	17.038	2.475	30.204	81.934
8/12/01 06:56:00	59.75	58.74	0.093	17.038	2.477	30.2	81.928
8/12/01 06:57:00	59.75	58.74	0.099	17.038	2.475	30.2	81.928
8/12/01 06:58:00	59.75	58.74	0.093	17.038	2.477	30.2	81.928
8/12/01 07:00:00	59.75	58.74	0.099	17.04	2.477	30.2	81.928
8/12/01 07:01:00	59.75	58.74	0.099	17.04	2.481	30.198	81.928
8/12/01 07:02:00	59.74	58.74	0.099	17.04	2.481	30.198	81.928
8/12/01 07:03:00	59.74	58.74	0.099	17.041	2.482	30.194	81.928
8/12/01 07:04:00	59.73	58.74	0.093	17.041	2.482	30.198	81.928
8/12/01 07:06:00	59.73	58.74	0.093	17.041	2.484	30.196	81.928
8/12/01 07:07:00	59.74	58.74	0.093	17.041	2.484	30.196	81.922
8/12/01 07:08:00	59.74	58.74	0.093	17.041	2.484	30.2	81.922
8/12/01 07:09:00	59.74	58.74	0.093	17.041	2.484	30.198	81.922
8/12/01 07:10:00	59.74	58.74	0.093	17.041	2.484	30.196	81.922
8/12/01 07:12:00	59.75	58.74	0.093	17.041	2.486	30.196	81.922
8/12/01 07:13:00	59.75	58.74	0.093	17.041	2.486	30.194	81.922
8/12/01 07:14:00	59.75	58.74	0.093	17.041	2.486	30.194	81.915
8/12/01 07:15:00	59.76	58.74	0.093	17.041	2.488	30.194	81.915
8/12/01 07:16:00	59.76	58.73	0.093	17.041	2.488	30.196	81.915
8/12/01 07:18:00	59.76	58.73	0.093	17.041	2.488	30.194	81.915
8/12/01 07:19:00	59.76	58.73	0.087	17.041	2.488	30.196	81.909
8/12/01 07:20:00	59.76	58.73	0.087	17.041	2.488	30.198	81.909
8/12/01 07:21:00	59.76	58.73	0.087	17.043	2.49	30.196	81.909
8/12/01 07:22:00	59.76	58.73	0.087	17.043	2.49	30.194	81.909
8/12/01 07:24:00	59.76	58.73	0.087	17.043	2.49	30.196	81.903
8/12/01 07:25:00	59.76	58.73	0.087	17.043	2.492	30.196	81.903
8/12/01 07:26:00	59.76	58.73	0.087	17.043	2.492	30.196	81.903
8/12/01 07:27:00	59.76	58.74	0.087	17.043	2.494	30.19	81.903
8/12/01 07:28:00	59.75	58.74	0.087	17.043	2.492	30.19	81.903
8/12/01 07:30:00	59.75	58.74	0.087	17.043	2.492	30.192	81.903
8/12/01 07:31:00	59.75	58.74	0.087	17.043	2.49	30.192	81.896
8/12/01 07:32:00	59.75	58.74	0.087	17.043	2.49	30.192	81.896
8/12/01 07:33:00	59.75	58.74	0.087	17.043	2.492	30.192	81.896
8/12/01 07:34:00	59.75	58.74	0.081	17.045	2.492	30.192	81.896
8/12/01 07:36:00	59.75	58.74	0.087	17.045	2.492	30.194	81.896
8/12/01 07:37:00	59.75	58.74	0.087	17.045	2.494	30.19	81.896
8/12/01 07:38:00	59.75	58.73	0.081	17.045	2.494	30.194	81.896
8/12/01 07:39:00	59.75	58.73	0.081	17.045	2.492	30.192	81.89
8/12/01 07:40:00	59.75	58.73	0.081	17.045	2.494	30.192	81.89
8/12/01 07:42:00	59.75	58.73	0.081	17.045	2.494	30.192	81.89
8/12/01 07:43:00	59.75	58.73	0.081	17.045	2.494	30.194	81.884
8/12/01 07:44:00	59.75	58.73	0.081	17.045	2.494	30.19	81.884
8/12/01 07:45:00	59.76	58.73	0.081	17.045	2.494	30.19	81.884
8/12/01 07:46:00	59.76	58.73	0.081	17.045	2.494	30.19	81.884
8/12/01 07:48:00	59.76	58.74	0.081	17.047	2.494	30.19	81.884
8/12/01 07:49:00	59.76	58.74	0.081	17.047	2.494	30.192	81.884
8/12/01 07:50:00	59.76	58.74	0.081	17.045	2.497	30.19	81.877
8/12/01 07:51:00	59.75	58.74	0.081	17.047	2.494	30.19	81.877
8/12/01 07:52:00	59.75	58.74	0.081	17.047	2.497	30.192	81.877
8/12/01 07:54:00	59.75	58.74	0.081	17.047	2.494	30.19	81.877
8/12/01 07:55:00	59.75	58.74	0.081	17.045	2.494	30.194	81.877
8/12/01 07:56:00	59.74	58.73	0.075	17.045	2.494	30.192	81.877
8/12/01 07:57:00	59.74	58.73	0.075	17.045	2.492	30.192	81.871
8/12/01 07:58:00	59.73	58.73	0.075	17.045	2.49	30.196	81.871
8/12/01 08:00:00	59.73	58.73	0.081	17.045	2.492	30.192	81.871
8/12/01 08:01:00	59.73	58.73	0.075	17.045	2.494	30.196	81.871
8/12/01 08:02:00	59.74	58.73	0.081	17.045	2.494	30.192	81.871
8/12/01 08:03:00	59.74	58.73	0.081	17.045	2.494	30.19	81.865
8/12/01 08:04:00	59.74	58.74	0.081	17.047	2.495	30.194	81.865
8/12/01 08:06:00	59.74	58.74	0.075	17.047	2.495	30.194	81.865
8/12/01 08:07:00	59.74	58.74	0.075	17.047	2.495	30.194	81.858
8/12/01 08:08:00	59.74	58.74	0.075	17.045	2.494	30.196	81.858
8/12/01 08:09:00	59.74	58.74	0.075	17.045	2.494	30.196	81.858
8/12/01 08:10:00	59.75	58.74	0.081	17.045	2.494	30.196	81.858
8/12/01 08:12:00	59.75	58.74	0.075	17.045	2.494	30.196	81.858
8/12/01 08:13:00	59.75	58.74	0.075	17.045	2.494	30.194	81.858
8/12/01 08:14:00	59.75	58.74	0.075	17.045	2.494	30.194	81.858
8/12/01 08:15:00	59.75	58.74	0.075	17.045	2.494	30.192	81.852
8/12/01 08:16:00	59.75	58.74	0.075	17.045	2.494	30.194	81.852
8/12/01 08:18:00	59.75	58.74	0.075	17.045	2.494	30.192	81.852
8/12/01 08:19:00	59.75	58.73	0.075	17.047	2.494	30.194	81.852
8/12/01 08:20:00	59.75	58.73	0.075	17.049	2.495	30.196	81.852
8/12/01 08:21:00	59.74	58.73	0.075	17.049	2.499	30.192	81.852
8/12/01 08:22:00	59.74	58.73	0.068	17.049	2.499	30.194	81.852
8/12/01 08:24:00	59.74	58.73	0.075	17.049	2.499	30.19	81.852
8/12/01 08:25:00	59.74	58.73	0.075	17.049	2.499	30.192	81.846
8/12/01 08:26:00	59.74	58.73	0.075	17.049	2.499	30.196	81.846
8/12/01 08:27:00	59.73	58.73	0.068	17.049	2.497	30.196	81.846
8/12/01 08:28:00	59.73	58.73	0.075	17.049	2.495	30.196	81.846
8/12/01 08:30:00	59.73	58.73	0.068	17.049	2.495	30.198	81.846
8/12/01 08:31:00	59.73	58.73	0.068	17.047	2.494	30.202	81.839
8/12/01 08:32:00	59.73	58.73	0.068	17.047	2.494	30.198	81.839
8/12/01 08:33:00	59.74	58.73	0.075	17.047	2.494	30.194	81.839
8/12/01 08:34:00	59.74	58.73	0.068	17.047	2.494	30.198	81.839
8/12/01 08:36:00	59.74	58.73	0.068	17.047	2.494	30.198	81.839
8/12/01 08:37:00	59.74	58.73	0.068	17.049	2.495	30.194	81.833
8/12/01 08:38:00	59.74	58.73	0.068	17.049	2.497	30.196	81.833
8/12/01 08:39:00	59.74	58.73	0.068	17.049	2.497	30.198	81.833
8/12/01 08:40:00	59.75	58.73	0.068	17.051	2.501	30.192	81.833
8/12/01 08:42:00	59.75	58.73	0.075	17.053	2.501	30.194	81.827
8/12/01 08:43:00	59.75	58.73	0.068	17.053	2.501	30.192	81.827
8/12/01 08:44:00	59.75	58.73	0.068	17.053	2.501	30.194	81.827
8/12/01 08:45:00	59.75	58.73	0.075	17.055	2.501	30.196	81.827
8/12/01 08:46:00	59.75	58.73	0.068	17.058	2.501	30.194	81.827
8/12/01 08:48:00	59.75	58.73	0.068	17.058	2.495	30.198	81.82
8/12/01 08:49:00	59.75	58.73	0.068	17.058	2.494	30.194	81.82
8/12/01 08:50:00	59.74	58.73	0.068	17.058	2.49	30.194	81.82
8/12/01 08:51:00	59.74	58.73	0.068	17.056	2.488	30.196	81.82
8/12/01 08:52:00	59.74	58.73	0.068	17.055	2.486	30.194	81.82
8/12/01 08:54:00	59.74	58.73	0.068	17.053	2.484	30.2	81.814
8/12/01 08:55:00	59.74	58.73	0.068	17.053	2.484	30.198	81.814
8/12/01 08:56:00	59.74	58.73	0.068	17.049	2.482	30.198	81.814
8/12/01 08:57:00	59.74	58.73	0.068	17.047	2.482	30.2	81.814
8/12/01 08:58:00	59.74	58.73	0.068	17.045	2.481	30.2	81.814
8/12/01 09:00:00	59.75	58.73	0.068	17.045	2.482	30.2	81.814
8/12/01 09:01:00	59.75	58.73	0.068	17.045	2.482	30.204	81.814
8/12/01 09:02:00	59.75	58.73	0.068	17.045	2.482	30.2	81.808
8/12/01 09:03:00	59.75	58.73	0.068	17.045	2.484	30.202	81.808
8/12/01 09:04:00	59.75	58.73	0.068	17.045	2.482	30.2	81.808
8/12/01 09:06:00	59.75	58.73	0.068	17.045	2.482	30.202	81.801
8/12/01 09:07:00	59.75	58.73	0.068	17.045	2.482	30.198	81.808
8/12/01 09:08:00	59.75	58.73	0.068	17.045	2.482	30.198	81.808
8/12/01 09:09:00	59.75	58.73	0.068	17.047	2.482	30.2	81.808
8/12/01 09:10:00	59.75	58.73	0.068	17.047	2.481	30.198	81.801
8/12/01 09:12:00	59.75	58.73	0.068	17.045	2.481	30.202	81.801
8/12/01 09:13:00	59.75	58.73	0.068	17.047	2.481	30.198	81.801
8/12/01 09:14:00	59.75	58.73	0.068	17.045	2.481	30.198	81.801
8/12/01 09:15:00	59.75	58.73	0.062	17.047	2.481	30.2	81.801
8/12/01 09:16:00	59.75	58.73	0.068	17.045	2.481	30.202	81.795
8/12/01 09:18:00	59.75	58.73	0.062	17.045	2.479	30.2	81.795
8/12/01 09:19:00	59.74	58.73	0.068	17.045	2.479	30.2	81.795
8/12/01 09:20:00	59.74	58.72	0.068	17.045	2.479	30.202	81.795
8/12/01 09:21:00	59.74	58.72	0.062	17.045	2.479	30.2	81.795
8/12/01 09:22:00	59.74	58.72	0.062	17.045	2.479	30.202	81.789
8/12/01 09:24:00	59.74	58.72	0.062	17.045	2.477	30.198	81.789
8/12/01 09:25:00	59.75	58.72	0.062	17.045	2.477	30.202	81.789
8/12/01 09:26:00	59.75	58.73	0.062	17.045	2.477	30.202	81.789
8/12/01 09:27:00	59.75	58.73	0.062	17.045	2.477	30.202	81.789
8/12/01 09:28:00	59.75	58.73	0.062	17.043	2.475	30.204	81.789
8/12/01 09:30:00	59.75	58.73	0.062	17.043	2.477	30.206	81.782
8/12/01 09:31:00	59.75	58.73	0.062	17.043	2.479	30.204	81.782
8/12/01 09:32:00	59.75	58.73	0.062	17.041	2.479	30.204	81.782
8/12/01 09:33:00	59.75	58.73	0.062	17.041	2.481	30.204	81.782
8/12/01 09:34:00	59.75	58.73	0.062	17.041	2.481	30.208	81.782
8/12/01 09:36:00	59.75	58.73	0.062	17.041	2.481	30.206	81.782
8/12/01 09:37:00	59.75	58.73	0.062	17.041	2.482	30.208	81.77
8/12/01 09:38:00	59.75	58.73	0.062	17.041	2.482	30.208	81.782
8/12/01 09:39:00	59.75	58.74	0.062	17.041	2.482	30.21	81.77
8/12/01 09:40:00	59.75	58.74	0.062	17.04	2.482	30.206	81.77
8/12/01 09:42:00	59.75	58.74	0.062	17.04	2.482	30.208	81.77
8/12/01 09:43:00	59.75	58.74	0.062	17.04	2.484	30.21	81.763
8/12/01 09:44:00	59.75	58.74	0.062	17.04	2.482	30.208	81.77
8/12/01 09:45:00	59.74	58.74	0.056	17.04	2.484	30.208	81.763
8/12/01 09:46:00	59.74	58.74	0.062	17.04	2.484	30.21	81.763
8/12/01 09:48:00	59.74	58.74	0.056	17.041	2.486	30.212	81.763
8/12/01 09:49:00	59.73	58.73	0.062	17.041	2.486	30.21	81.763
8/12/01 09:50:00	59.73	58.73	0.062	17.04	2.486	30.208	81.763
8/12/01 09:51:00	59.73	58.73	0.062	17.041	2.486	30.21	81.763

CITY of COOPER CITY
INJECTION TEST DATA

Date/Time	Downhole Pressure (psi)	Downhole Temperature (deg F)	Wellhead Pressure (psi)	Upper Monitor Pressure (psi)	Lower Monitor Pressure (psi)	Barometric Pressure (inchs Hg)	Annular Pressure (psi)
8/12/01 09:52:00	59.73	58.73	0.062	17.04	2.486	30.212	81.757
8/12/01 09:54:00	59.73	58.73	0.056	17.04	2.488	30.21	81.757
8/12/01 09:55:00	59.73	58.73	0.062	17.04	2.488	30.21	81.757
8/12/01 09:56:00	59.74	58.73	0.056	17.04	2.486	30.214	81.757
8/12/01 09:57:00	59.74	58.74	0.056	17.04	2.488	30.214	81.757
8/12/01 09:58:00	59.74	58.74	0.056	17.04	2.486	30.212	81.751
8/12/01 10:00:00	59.75	58.74	0.056	17.04	2.486	30.21	81.751
8/12/01 10:01:00	59.75	58.74	0.056	17.04	2.486	30.214	81.751
8/12/01 10:02:00	59.75	58.74	0.05	17.04	2.486	30.216	81.751
8/12/01 10:03:00	59.75	58.74	0.05	17.038	2.486	30.214	81.751
8/12/01 10:04:00	59.75	58.74	0.05	17.04	2.486	30.216	81.744
8/12/01 10:06:00	59.75	58.74	0.05	17.038	2.486	30.22	81.744
8/12/01 10:07:00	59.75	58.73	0.05	17.038	2.486	30.218	81.744
8/12/01 10:08:00	59.75	58.73	0.05	17.038	2.484	30.216	81.744
8/12/01 10:09:00	59.75	58.73	0.05	17.038	2.484	30.214	81.744
8/12/01 10:10:00	59.75	58.73	0.05	17.038	2.484	30.214	81.738
8/12/01 10:12:00	59.75	58.73	0.05	17.038	2.486	30.216	81.738
8/12/01 10:13:00	59.75	58.73	0.05	17.04	2.486	30.216	81.744
8/12/01 10:14:00	59.75	58.73	0.05	17.04	2.488	30.216	81.738
8/12/01 10:15:00	59.75	58.73	0.05	17.04	2.488	30.212	81.738
8/12/01 10:16:00	59.75	58.73	0.05	17.04	2.488	30.216	81.738
8/12/01 10:18:00	59.75	58.73	0.05	17.04	2.49	30.212	81.738
8/12/01 10:19:00	59.75	58.73	0.05	17.041	2.49	30.212	81.738
8/12/01 10:20:00	59.75	58.73	0.05	17.041	2.49	30.212	81.738
8/12/01 10:21:00	59.75	58.73	0.05	17.043	2.49	30.212	81.738
8/12/01 10:22:00	59.75	58.73	0.05	17.041	2.49	30.212	81.738
8/12/01 10:24:00	59.75	58.73	0.062	17.041	2.488	30.212	81.732
8/12/01 10:25:00	59.75	58.73	0.05	17.04	2.488	30.214	81.732
8/12/01 10:26:00	59.75	58.73	0.05	17.04	2.486	30.216	81.732
8/12/01 10:27:00	59.75	58.73	0.05	17.038	2.484	30.212	81.732
8/12/01 10:28:00	59.75	58.73	0.05	17.038	2.484	30.216	81.732
8/12/01 10:30:00	59.75	58.73	0.05	17.036	2.484	30.216	81.732
8/12/01 10:31:00	59.75	58.73	0.05	17.038	2.482	30.218	81.725
8/12/01 10:32:00	59.75	58.73	0.05	17.038	2.484	30.216	81.725
8/12/01 10:33:00	59.75	58.73	0.05	17.036	2.482	30.218	81.725
8/12/01 10:34:00	59.75	58.73	0.05	17.038	2.484	30.22	81.725
8/12/01 10:36:00	59.75	58.73	0.05	17.038	2.486	30.218	81.725
8/12/01 10:37:00	59.75	58.73	0.05	17.038	2.486	30.218	81.725
8/12/01 10:38:00	59.76	58.73	0.05	17.038	2.486	30.216	81.719
8/12/01 10:39:00	59.76	58.73	0.05	17.038	2.486	30.222	81.719
8/12/01 10:40:00	59.76	58.73	0.05	17.038	2.486	30.22	81.719
8/12/01 10:42:00	59.76	58.73	0.05	17.038	2.484	30.218	81.719
8/12/01 10:43:00	59.76	58.73	0.05	17.038	2.486	30.22	81.719
8/12/01 10:44:00	59.76	58.73	0.05	17.038	2.486	30.22	81.719
8/12/01 10:45:00	59.76	58.74	0.05	17.038	2.484	30.22	81.719
8/12/01 10:46:00	59.75	58.74	0.05	17.038	2.484	30.226	81.713
8/12/01 10:48:00	59.75	58.74	0.05	17.038	2.484	30.224	81.713
8/12/01 10:49:00	59.75	58.74	0.05	17.038	2.484	30.222	81.713
8/12/01 10:50:00	59.75	58.74	0.05	17.038	2.486	30.222	81.706
8/12/01 10:51:00	59.75	58.74	0.05	17.04	2.488	30.224	81.706
8/12/01 10:52:00	59.75	58.74	0.043	17.041	2.488	30.226	81.706
8/12/01 10:54:00	59.75	58.74	0.05	17.041	2.488	30.226	81.706
8/12/01 10:55:00	59.75	58.74	0.05	17.043	2.488	30.226	81.706
8/12/01 10:56:00	59.75	58.74	0.043	17.045	2.486	30.222	81.706
8/12/01 10:57:00	59.75	58.73	0.056	17.045	2.484	30.224	81.7
8/12/01 10:58:00	59.75	58.73	0.056	17.047	2.481	30.222	81.7
8/12/01 11:00:00	59.75	58.73	0.056	17.047	2.479	30.226	81.7
8/12/01 11:01:00	59.75	58.73	0.056	17.047	2.477	30.228	81.7
8/12/01 11:02:00	59.75	58.73	0.056	17.047	2.475	30.226	81.7
8/12/01 11:03:00	59.75	58.73	0.056	17.047	2.475	30.228	81.694
8/12/01 11:04:00	59.75	58.73	0.056	17.045	2.473	30.231	81.694
8/12/01 11:06:00	59.75	58.73	0.056	17.047	2.475	30.231	81.694
8/12/01 11:07:00	59.75	58.73	0.056	17.047	2.475	30.228	81.694
8/12/01 11:08:00	59.76	58.73	0.056	17.051	2.473	30.233	81.694
8/12/01 11:09:00	59.76	58.73	0.056	17.051	2.473	30.228	81.694
8/12/01 11:10:00	59.76	58.73	0.056	17.051	2.471	30.231	81.687
8/12/01 11:12:00	59.77	58.73	0.062	17.053	2.471	30.228	81.694
8/12/01 11:13:00	59.77	58.73	0.056	17.049	2.471	30.231	81.687
8/12/01 11:14:00	59.77	58.73	0.056	17.051	2.473	30.228	81.687
8/12/01 11:15:00	59.77	58.73	0.062	17.051	2.475	30.231	81.687
8/12/01 11:16:00	59.77	58.73	0.062	17.053	2.477	30.233	81.687
8/12/01 11:18:00	59.77	58.73	0.056	17.055	2.473	30.233	81.681
8/12/01 11:19:00	59.77	58.73	0.062	17.055	2.471	30.233	81.687
8/12/01 11:20:00	59.77	58.72	0.062	17.055	2.475	30.228	81.681
8/12/01 11:21:00	59.77	58.72	0.062	17.056	2.479	30.233	81.687
8/12/01 11:22:00	59.77	58.72	0.062	17.055	2.482	30.231	81.681
8/12/01 11:24:00	59.77	58.72	0.062	17.058	2.486	30.233	81.681
8/12/01 11:25:00	59.77	58.72	0.068	17.056	2.486	30.233	81.681
8/12/01 11:26:00	59.77	58.72	0.062	17.058	2.484	30.237	81.681
8/12/01 11:27:00	59.77	58.72	0.068	17.056	2.484	30.233	81.681
8/12/01 11:28:00	59.77	58.73	0.068	17.058	2.484	30.233	81.681
8/12/01 11:30:00	59.76	58.73	0.068	17.06	2.484	30.233	81.681
8/12/01 11:31:00	59.76	58.73	0.068	17.062	2.482	30.237	81.681
8/12/01 11:32:00	59.76	58.73	0.068	17.066	2.481	30.237	81.675
8/12/01 11:33:00	59.76	58.72	0.068	17.064	2.475	30.237	81.675
8/12/01 11:34:00	59.75	58.72	0.075	17.071	2.477	30.235	81.675
8/12/01 11:36:00	59.75	58.72	0.068	17.077	2.479	30.235	81.675
8/12/01 11:37:00	59.75	58.73	0.075	17.084	2.479	30.231	81.662
8/12/01 11:38:00	59.75	58.73	0.075	17.094	2.479	30.235	81.662
8/12/01 11:39:00	59.75	58.73	0.093	17.103	2.477	30.241	81.662
8/12/01 11:40:00	59.75	58.73	0.081	17.111	2.477	30.249	81.662
8/12/01 11:42:00	59.75	58.73	0.106	17.118	2.475	30.241	81.662
8/12/01 11:43:00	59.75	58.73	0.112	17.122	2.481	30.237	81.649
8/12/01 11:44:00	59.75	58.73	0.087	17.124	2.486	30.216	81.656
8/12/01 11:45:00	59.75	58.73	0.081	17.126	2.488	30.224	81.656
8/12/01 11:46:00	59.75	58.73	0.087	17.126	2.488	30.226	81.656
8/12/01 11:48:00	59.75	58.74	0.087	17.131	2.484	30.228	81.656
8/12/01 11:49:00	59.75	58.74	0.087	17.135	2.482	30.226	81.649
8/12/01 11:50:00	59.76	58.74	0.087	17.148	2.482	30.226	81.649
8/12/01 11:51:00	59.76	58.74	0.093	17.159	2.481	30.228	81.649
8/12/01 11:52:00	59.76	58.74	0.093	17.169	2.481	30.228	81.649
8/12/01 11:54:00	59.76	58.74	0.093	17.18	2.481	30.228	81.649
8/12/01 11:55:00	59.76	58.74	0.099	17.189	2.484	30.226	81.649
8/12/01 11:56:00	59.76	58.73	0.093	17.199	2.482	30.228	81.649
8/12/01 11:57:00	59.76	58.73	0.099	17.212	2.479	30.231	81.643
8/12/01 11:58:00	59.76	58.73	0.099	17.218	2.477	30.224	81.649
8/12/01 12:00:00	59.75	58.73	0.106	17.225	2.482	30.228	81.649
8/12/01 12:01:00	59.76	58.74	0.106	17.225	2.482	30.226	81.643
8/12/01 12:02:00	59.76	58.74	0.106	17.212	2.486	30.233	81.643
8/12/01 12:03:00	59.76	58.74	0.106	17.212	2.481	30.228	81.643
8/12/01 12:04:00	59.76	58.74	0.106	17.212	2.481	30.226	81.643
8/12/01 12:06:00	59.76	58.74	0.106	17.208	2.481	30.228	81.656
8/12/01 12:07:00	59.76	58.74	0.112	17.208	2.482	30.233	81.649
8/12/01 12:08:00	59.76	58.73	0.112	17.208	2.482	30.231	81.649
8/12/01 12:09:00	59.76	58.73	0.118	17.204	2.481	30.231	81.649
8/12/01 12:10:00	59.76	58.73	0.112	17.203	2.479	30.231	81.649
8/12/01 12:12:00	59.76	58.73	0.118	17.199	2.481	30.231	81.649
8/12/01 12:13:00	59.76	58.73	0.118	17.203	2.481	30.228	81.649
8/12/01 12:14:00	59.76	58.73	0.124	17.201	2.482	30.228	81.649
8/12/01 12:15:00	59.76	58.74	0.118	17.178	2.482	30.228	81.649
8/12/01 12:16:00	59.76	58.74	0.124	17.148	2.477	30.226	81.649
8/12/01 12:18:00	59.76	58.74	0.118	17.12	2.475	30.231	81.649
8/12/01 12:19:00	59.76	58.74	0.124	17.096	2.471	30.228	81.649
8/12/01 12:20:00	59.76	58.73	0.118	17.073	2.462	30.228	81.643
8/12/01 12:21:00	59.76	58.73	0.118	17.062	2.46	30.226	81.643
8/12/01 12:22:00	59.76	58.73	0.118	17.055	2.458	30.231	81.649
8/12/01 12:24:00	59.76	58.73	0.118	17.053	2.458	30.226	81.643
8/12/01 12:25:00	59.77	58.73	0.118	17.047	2.458	30.231	81.643
8/12/01 12:26:00	59.77	58.73	0.124	17.045	2.458	30.228	81.637
8/12/01 12:27:00	59.77	58.73	0.124	17.041	2.458	30.228	81.637
8/12/01 12:28:00	59.77	58.73	0.124	17.038	2.456	30.231	81.637
8/12/01 12:30:00	59.77	58.73	0.118	17.034	2.456	30.231	81.637
8/12/01 12:31:00	59.77	58.73	0.118	17.03	2.456	30.231	81.637
8/12/01 12:32:00	59.77	58.73	0.124	17.028	2.456	30.228	81.637
8/12/01 12:33:00	59.78	58.73	0.118	17.026	2.458	30.231	81.63
8/12/01 12:34:00	59.78	58.73	0.118	17.026	2.458	30.233	81.63
8/12/01 12:36:00	59.78	58.73	0.118	17.025	2.46	30.231	81.637
8/12/01 12:37:00	59.78	58.73	0.118	17.026	2.464	30.228	81.637
8/12/01 12:38:00	59.78	58.73	0.118	17.028	2.468	30.231	81.63
8/12/01 12:39:00	59.78	58.73	0.118	17.026	2.466	30.228	81.63
8/12/01 12:40:00	59.78	58.73	0.118	17.026	2.466	30.231	81.63
8/12/01 12:42:00	59.77	58.73	0.118	17.025	2.466	30.228	81.63
8/12/01 12:43:00	59.77	58.73	0.118	17.025	2.466	30.228	81.63
8/12/01 12:44:00	59.77	58.73	0.118	17.023	2.466	30.231	81.63
8/12/01 12:45:00	59.76	58.73	0.124	17.023	2.466	30.228	81.63
8/12/01 12:46:00	59.76	58.73	0.118	17.023	2.468	30.228	81.624
8/12/01 12:48:00	59.76	58.73	0.118	17.023	2.468	30.228	81.624
8/12/01 12:49:00	59.76	58.73	0.118	17.023	2.469	30.231	81.624
8/12/01 12:50:00	59.76	58.73	0.118	17.025	2.473	30.231	81.624
8/12/01 12:51:00	59.76	58.73	0.13	17.025	2.475	30.228	81.624
8/12/01 12:52:00	59.76	58.73	0.118	17.025	2.473	30.235	81.624
8/12/01 12:54:00	59.76	58.73	0.13	17.023	2.471	30.233	81.624
8/12/01 12:55:00	59.76	58.73	0.118	17.021	2.469	30.233	81.624
8/12/01 12:56:00	59.75	58.72	0.118	17.021	2.469	30.231	81.624
8/12/01 12:57:00	59.75	58.72	0.13	17.021	2.468	30.235	81.624
8/12/01 12:58:00	59.75	58.72	0.118	17.021	2.469	30.231	81.624
8/12/01 13:00:00	59.75	58.72	0.13	17.021	2.471	30.233	81.624
8/12/01 13:01:00	59.75	58.72	0.13	17.021	2.473	30.231	81.624
8/12/01 13:02:00	59.75	58.72	0.13	17.023	2.475	30.233	81.618
8/12/01 13:03:00	59.75	58.72	0.13	17.021	2.475	30.233	81.618
8/12/01 13:04:00	59.75	58.72	0.13	17.023	2.481	30.233	81.618
8/12/01 13:06:00	59.76	58.72	0.13	17.025	2.486	30.235	81.611
8/12/01 13:07:00	59.76	58.72	0.13	17.026	2.484	30.239	81.618
8/12/01 13:08:00	59.76	58.72	0.13	17.026	2.484	30.231	81.611
8/12/01 13:09:00	59.76	58.72	0.13	17.03	2.481	30.233	81.611
8/12/01 13:10:00	59.76	58.72	0.137	17.032	2.481	30.231	81.611
8/12/01 13:12:00	59.76	58.72	0.137	17.04	2.482	30.231	81.611
8/12/01 13:13:00	59.76	58.72	0.137	17.041	2.484	30.228	81.611
8/12/01 13:14:00	59.76	58.73	0.143	17.053	2.481	30.228	81.611
8/12/01 13:15:00	59.76	58.73	0.143	17.053	2.481	30.231	81.611
8/12/01 13:16:00	59.76	58.73	0.143	17.058	2.482	30.231	81.611
8/12/01 13:18:00	59.76	58.73	0.143	17.068	2.482	30.231	81.605
8/12/01 13:19:00	59.76	58.73	0.149	17.075	2.481	30.228	81.605
8/12/01 13:20:00	59.76	58.72	0.149	17.086	2.488	30.233	81.605
8/12/01 13:21:00	59.76	58.72	0.155	17.101	2.492	30.233	81.605
8/12/01 13:22:00	59.76	58.72	0.155	17.12	2.49	30.233	81.605
8/12/01 13:24:00	59.77	58.72	0.155	17.143	2.492	30.231	81.605
8/12/01 13:25:00	59.77	58.72	0.161	17.163	2.492	30.235	81.599
8/12/01 13:26:00	59.77	58.72	0.161	17.174	2.488	30.233	81.599
8/12/01 13:27:00	59.77	58.72	0.161	17.186	2.486	30.231	81.599
8/12/01 13:28:00	59.77	58.72	0.168	17.201	2.486	30.235	81.599
8/12/01 13:30:00	59.77	58.72	0.168	17.203	2.488	30.237	81.599
8/12/01 13:31:00	59.77	58.72	0.168	17.203	2.488	30.233	81.599
8/12/01 13:32:00	59.77	58.72	0.174	17.197	2.486	30.231	81.599
8/12/01 13:33:00	59.77	58.72	0.174	17.195	2.486	30.235	81.599
8/12/01 13:34:00	59.77	58.72	0.18	17.195	2.486	30.231	81.599
8/12/01 13:36:00	59.77	58.72	0.18	17.195	2.482	30.233	81.599
8/12/01 13:37:00	59.77	58.72	0.18	17.193	2.479	30.231	81.599
8/12/01 13:38:00	59.77	58.72	0.18	17.195	2.479	30.231	81.599
8/12/01 13:39:00	59.77	58.72	0.186	17.191	2.479	30.231	81.605
8/12/01 13:40:00	59.77	58.72	0.192	17.193	2.475	30.231	81.605
8/12/01 13:42:00	59.77	58.72	0.192	17.184	2.471	30.231	81.605
8/12/01 13:43:00	59.77	58.72	0.192	17.173	2.471	30.228	81.605
8/12/01 13:44:00	59.77	58.72	0.192	17.176	2.473	30.228	81.605
8/12/01 13:45:00	59.77	58.72	0.205	17.173	2.475	30.231	81.605
8/12/01 13:46:00	59.77	58.72	0.205	17.18	2.477	30.222	81.605
8/12/01 13:48:00	59.77	58.72	0.205	17.189	2.484	30.226	81.599
8/12/01 13:49:00	59.77	58.72	0.205	17.189	2.484	30.226	81.599
8/12/01 13:50:00	59.77	58.72	0.211	17.191	2.482	30.222	81.605
8/12/01 13:51:00	59.77	58.72	0.211	17.176	2.475	30.228	81.605
8/12/01 13:52:00	59.77	58.72	0.211	17.171	2.475	30.228	81.599
8/12/01 13:54:00	59.77	58.72	0.217	17.161	2.477	30.226	81.605
8/12/01 13:55:00	59.77	58.72	0.217	17.159	2.477	30.228	81.605
8/12/01 13:56:00	59.77	58.72	0.217	17.163	2.481	30.226	81.605
8/12/01 13:57:00	59.77	58.72	0.224	17.169	2.481	30.224	81.605
8/12/01 13:58:00	59.77	58.72	0.224	17.159	2.479	30.222	81.605
8/12/01 14:00:00	59.77	58.72	0.224	17.169	2.482	30.224	81.605
8/12/01 14:01:00	59.77	58.72	0.224	17.176	2.482	30.222	81.599

CITY of COOPER CITY
INJECTION TEST DATA

Date/Time	Downhole Pressure (psi)	Downhole Temperature (deg F)	Wellhead Pressure (psi)	Upper Monitor Pressure (psi)	Lower Monitor Pressure (psi)	Barometric Pressure (inchs Hg)	Annular Pressure (psi)
8/12/01 14:02:00	59.77	58.72	0.23	17.184	2.484	30.224	81.605
8/12/01 14:03:00	59.77	58.72	0.23	17.176	2.477	30.224	81.605
8/12/01 14:04:00	59.77	58.72	0.23	17.163	2.473	30.222	81.605
8/12/01 14:06:00	59.77	58.72	0.236	17.171	2.473	30.224	81.605
8/12/01 14:07:00	59.77	58.72	0.242	17.169	2.473	30.218	81.605
8/12/01 14:08:00	59.77	58.72	0.242	17.159	2.471	30.224	81.611
8/12/01 14:09:00	59.77	58.73	0.242	17.15	2.473	30.218	81.611
8/12/01 14:10:00	59.77	58.73	0.242	17.146	2.473	30.216	81.611
8/12/01 14:12:00	59.77	58.73	0.248	17.139	2.473	30.218	81.611
8/12/01 14:13:00	59.77	58.73	0.242	17.137	2.471	30.216	81.618
8/12/01 14:14:00	59.77	58.73	0.248	17.137	2.471	30.218	81.605
8/12/01 14:15:00	59.77	58.72	0.242	17.146	2.469	30.22	81.611
8/12/01 14:16:00	59.77	58.72	0.248	17.152	2.469	30.22	81.605
8/12/01 14:18:00	59.76	58.72	0.255	17.154	2.469	30.22	81.611
8/12/01 14:19:00	59.76	58.72	0.255	17.169	2.473	30.22	81.611
8/12/01 14:20:00	59.76	58.72	0.255	17.176	2.475	30.22	81.611
8/12/01 14:21:00	59.76	58.72	0.255	17.169	2.473	30.222	81.611
8/12/01 14:22:00	59.75	58.72	0.255	17.171	2.473	30.22	81.611
8/12/01 14:24:00	59.75	58.72	0.261	17.161	2.471	30.218	81.611
8/12/01 14:25:00	59.75	58.72	0.261	17.174	2.473	30.218	81.618
8/12/01 14:26:00	59.75	58.72	0.267	17.174	2.473	30.218	81.605
8/12/01 14:27:00	59.75	58.72	0.267	17.158	2.471	30.216	81.611
8/12/01 14:28:00	59.75	58.72	0.273	17.148	2.469	30.218	81.611
8/12/01 14:30:00	59.75	58.72	0.273	17.144	2.471	30.216	81.611
8/12/01 14:31:00	59.75	58.72	0.273	17.158	2.473	30.216	81.618
8/12/01 14:32:00	59.74	58.72	0.273	17.165	2.475	30.216	81.618
8/12/01 14:33:00	59.74	58.72	0.279	17.161	2.473	30.214	81.624
8/12/01 14:34:00	59.74	58.72	0.279	17.171	2.471	30.216	81.624
8/12/01 14:36:00	59.74	58.72	0.279	17.159	2.475	30.212	81.618
8/12/01 14:37:00	59.74	58.72	0.279	17.144	2.473	30.216	81.624
8/12/01 14:38:00	59.74	58.72	0.279	17.131	2.471	30.216	81.624
8/12/01 14:39:00	59.74	58.72	0.279	17.129	2.473	30.214	81.618
8/12/01 14:40:00	59.74	58.72	0.286	17.137	2.477	30.216	81.624
8/12/01 14:42:00	59.75	58.72	0.286	17.111	2.469	30.214	81.624
8/12/01 14:43:00	59.75	58.72	0.286	17.114	2.473	30.216	81.624
8/12/01 14:44:00	59.76	58.72	0.286	17.098	2.473	30.218	81.624
8/12/01 14:45:00	59.76	58.72	0.286	17.075	2.46	30.214	81.63
8/12/01 14:46:00	59.76	58.72	0.292	17.055	2.455	30.212	81.624
8/12/01 14:48:00	59.77	58.72	0.292	17.047	2.453	30.212	81.63
8/12/01 14:49:00	59.77	58.72	0.292	17.051	2.456	30.214	81.63
8/12/01 14:50:00	59.77	58.72	0.292	17.055	2.468	30.214	81.63
8/12/01 14:51:00	59.77	58.72	0.292	17.058	2.475	30.216	81.63
8/12/01 14:52:00	59.77	58.72	0.292	17.077	2.482	30.212	81.624
8/12/01 14:54:00	59.78	58.71	0.298	17.096	2.479	30.212	81.624
8/12/01 14:55:00	59.78	58.71	0.298	17.114	2.481	30.208	81.624
8/12/01 14:56:00	59.78	58.71	0.298	17.135	2.479	30.214	81.624
8/12/01 14:57:00	59.78	58.71	0.298	17.141	2.479	30.21	81.624
8/12/01 14:58:00	59.78	58.71	0.298	17.15	2.481	30.21	81.624
8/12/01 15:00:00	59.78	58.71	0.304	17.165	2.482	30.208	81.624
8/12/01 15:01:00	59.78	58.71	0.304	17.18	2.486	30.208	81.63
8/12/01 15:02:00	59.78	58.71	0.304	17.18	2.486	30.208	81.63
8/12/01 15:03:00	59.78	58.71	0.304	17.178	2.482	30.21	81.63
8/12/01 15:04:00	59.78	58.71	0.31	17.174	2.479	30.212	81.63
8/12/01 15:06:00	59.77	58.71	0.31	17.174	2.479	30.212	81.63
8/12/01 15:07:00	59.77	58.71	0.31	17.176	2.481	30.21	81.63
8/12/01 15:08:00	59.77	58.71	0.317	17.18	2.479	30.21	81.624
8/12/01 15:09:00	59.77	58.71	0.317	17.182	2.482	30.212	81.624
8/12/01 15:10:00	59.77	58.71	0.317	17.159	2.473	30.212	81.63
8/12/01 15:12:00	59.77	58.71	0.323	17.163	2.468	30.21	81.63
8/12/01 15:13:00	59.77	58.71	0.329	17.165	2.477	30.212	81.63
8/12/01 15:14:00	59.77	58.72	0.329	17.12	2.473	30.206	81.63
8/12/01 15:15:00	59.77	58.72	0.323	17.081	2.458	30.206	81.637
8/12/01 15:16:00	59.77	58.72	0.323	17.075	2.46	30.206	81.637
8/12/01 15:18:00	59.77	58.72	0.329	17.081	2.466	30.206	81.637
8/12/01 15:19:00	59.77	58.72	0.329	17.111	2.477	30.21	81.637
8/12/01 15:20:00	59.77	58.72	0.329	17.099	2.468	30.206	81.643
8/12/01 15:21:00	59.77	58.72	0.329	17.098	2.468	30.204	81.643
8/12/01 15:22:00	59.77	58.72	0.335	17.118	2.481	30.202	81.643
8/12/01 15:24:00	59.78	58.72	0.329	17.128	2.482	30.202	81.643
8/12/01 15:25:00	59.78	58.72	0.335	17.111	2.479	30.202	81.637
8/12/01 15:26:00	59.78	58.72	0.335	17.105	2.479	30.202	81.637
8/12/01 15:27:00	59.78	58.72	0.335	17.101	2.479	30.204	81.637
8/12/01 15:28:00	59.78	58.72	0.341	17.114	2.484	30.2	81.637
8/12/01 15:30:00	59.78	58.72	0.341	17.131	2.484	30.202	81.637
8/12/01 15:31:00	59.77	58.72	0.341	17.133	2.482	30.202	81.643
8/12/01 15:32:00	59.77	58.72	0.341	17.128	2.481	30.2	81.643
8/12/01 15:33:00	59.77	58.72	0.341	17.122	2.482	30.198	81.643
8/12/01 15:34:00	59.77	58.72	0.348	17.135	2.479	30.196	81.649
8/12/01 15:36:00	59.77	58.72	0.348	17.116	2.482	30.196	81.643
8/12/01 15:37:00	59.77	58.72	0.348	17.113	2.482	30.2	81.643
8/12/01 15:38:00	59.76	58.73	0.348	17.118	2.481	30.196	81.643
8/12/01 15:39:00	59.76	58.73	0.354	17.139	2.481	30.198	81.649
8/12/01 15:40:00	59.76	58.73	0.36	17.126	2.479	30.198	81.643
8/12/01 15:42:00	59.76	58.73	0.36	17.116	2.479	30.2	81.643
8/12/01 15:43:00	59.76	58.73	0.36	17.101	2.479	30.196	81.643
8/12/01 15:44:00	59.76	58.73	0.36	17.09	2.479	30.196	81.649
8/12/01 15:45:00	59.76	58.73	0.36	17.079	2.477	30.194	81.649
8/12/01 15:46:00	59.76	58.73	0.36	17.077	2.475	30.194	81.649
8/12/01 15:48:00	59.76	58.73	0.36	17.09	2.481	30.194	81.649
8/12/01 15:49:00	59.76	58.72	0.366	17.084	2.479	30.196	81.649
8/12/01 15:50:00	59.76	58.72	0.366	17.083	2.477	30.192	81.656
8/12/01 15:51:00	59.76	58.72	0.366	17.079	2.477	30.196	81.649
8/12/01 15:52:00	59.76	58.72	0.372	17.103	2.481	30.192	81.649
8/12/01 15:54:00	59.76	58.72	0.366	17.116	2.486	30.192	81.656
8/12/01 15:55:00	59.76	58.72	0.366	17.124	2.484	30.19	81.662
8/12/01 15:56:00	59.76	58.72	0.372	17.131	2.482	30.196	81.656
8/12/01 15:57:00	59.77	58.72	0.372	17.133	2.481	30.192	81.662
8/12/01 15:58:00	59.77	58.72	0.372	17.135	2.481	30.19	81.656
8/12/01 16:00:00	59.77	58.72	0.372	17.124	2.481	30.19	81.656
8/12/01 16:01:00	59.76	58.72	0.372	17.12	2.479	30.19	81.656
8/12/01 16:02:00	59.76	58.72	0.379	17.066	2.482	30.192	81.662
8/12/01 16:03:00	59.76	58.72	0.379	17.049	2.469	30.192	81.662
8/12/01 16:04:00	59.76	58.72	0.372	17.026	2.458	30.19	81.662
8/12/01 16:06:00	59.76	58.72	0.372	17.028	2.462	30.19	81.662

Date/Time	Downhole Pressure (psi)	Downhole Temperature (deg F)	Wellhead Pressure (psi)	Upper Monitor Pressure (psi)	Lower Monitor Pressure (psi)	Barometric Pressure (inchs Hg)	Annular Pressure (psi)
8/12/01 16:07:00	59.76	58.72	0.366	17.026	2.466	30.188	81.662
8/12/01 16:08:00	59.76	58.73	0.372	17.026	2.464	30.188	81.668
8/12/01 16:09:00	59.76	58.73	0.372	17.026	2.466	30.188	81.668
8/12/01 16:10:00	59.76	58.73	0.379	17.038	2.475	30.188	81.668
8/12/01 16:12:00	59.76	58.73	0.379	17.053	2.486	30.186	81.668
8/12/01 16:13:00	59.76	58.73	0.385	17.073	2.494	30.186	81.668
8/12/01 16:14:00	59.76	58.73	0.385	17.043	2.473	30.188	81.668
8/12/01 16:15:00	59.76	58.73	0.379	17.028	2.464	30.188	81.668
8/12/01 16:16:00	59.76	58.73	0.379	17.041	2.477	30.188	81.668
8/12/01 16:18:00	59.76	58.73	0.385	17.056	2.49	30.186	81.668
8/12/01 16:19:00	59.76	58.73	0.379	17.062	2.488	30.188	81.668
8/12/01 16:20:00	59.76	58.73	0.379	17.069	2.482	30.186	81.668
8/12/01 16:21:00	59.76	58.73	0.385	17.084	2.486	30.186	81.668
8/12/01 16:22:00	59.76	58.73	0.385	17.09	2.488	30.188	81.668
8/12/01 16:24:00	59.76	58.72	0.385	17.088	2.484	30.19	81.668
8/12/01 16:25:00	59.75	58.72	0.385	17.09	2.486	30.188	81.675
8/12/01 16:26:00	59.75	58.72	0.385	17.116	2.484	30.184	81.668
8/12/01 16:27:00	59.75	58.72	0.385	17.118	2.484	30.188	81.675
8/12/01 16:28:00	59.74	58.72	0.385	17.09	2.482	30.184	81.675
8/12/01 16:30:00	59.74	58.72	0.385	17.079	2.484	30.188	81.675
8/12/01 16:31:00	59.75	58.72	0.391	17.066	2.482	30.182	81.675
8/12/01 16:32:00	59.75	58.72	0.391	17.09	2.49	30.182	81.675
8/12/01 16:33:00	59.75	58.71	0.391	17.101	2.484	30.18	81.681
8/12/01 16:34:00	59.76	58.71	0.391	17.109	2.484	30.18	81.681
8/12/01 16:36:00	59.76	58.71	0.391	17.116	2.486	30.178	81.681
8/12/01 16:37:00	59.76	58.71	0.391	17.126	2.486	30.18	81.681
8/12/01 16:38:00	59.76	58.71	0.391	17.141	2.486	30.178	81.675
8/12/01 16:39:00	59.76	58.71	0.391	17.165	2.492	30.176	81.675
8/12/01 16:40:00	59.76	58.72	0.397	17.182	2.497	30.174	81.681
8/12/01 16:42:00	59.77	58.72	0.397	17.165	2.492	30.178	81.681
8/12/01 16:43:00	59.77	58.72	0.397	17.122	2.488	30.178	81.681
8/12/01 16:44:00	59.77	58.72	0.397	17.058	2.482	30.18	81.681
8/12/01 16:45:00	59.77	58.72	0.397	17.03	2.469	30.178	81.687
8/12/01 16:46:00	59.77	58.72	0.391	17.013	2.462	30.176	81.681
8/12/01 16:48:00	59.76	58.72	0.385	17.015	2.466	30.176	81.687
8/12/01 16:49:00	59.76	58.72	0.391	17.025	2.477	30.176	81.687
8/12/01 16:50:00	59.76	58.72	0.397	17.028	2.482	30.176	81.687
8/12/01 16:51:00	59.76	58.72	0.391	17.021	2.479	30.176	81.687
8/12/01 16:52:00	59.76	58.72	0.391	17.028	2.484	30.169	81.694
8/12/01 16:54:00	59.75	58.72	0.391	17.026	2.486	30.171	81.687
8/12/01 16:55:00	59.75	58.72	0.391	17.036	2.49	30.171	81.687
8/12/01 16:56:00	59.75	58.72	0.391	17.047	2.488	30.171	81.687
8/12/01 16:57:00	59.75	58.72	0.404	17.058	2.494	30.169	81.694
8/12/01 16:58:00	59.75	58.72	0.391	17.034	2.475	30.171	81.687
8/12/01 17:00:00	59.75	58.72	0.404	17.03	2.475	30.174	81.694
8/12/01 17:01:00	59.75	58.72	0.404	17.038	2.479	30.171	81.694
8/12/01 17:02:00	59.75	58.72	0.404	17.028	2.475	30.169	81.694
8/12/01 17:03:00	59.75	58.72	0.397	17.019	2.469	30.171	81.694
8/12/01 17:04:00	59.75	58.72	0.397	17.03	2.477	30.171	81.687
8/12/01 17:06:00	59.75	58.72	0.397	17.045	2.486	30.169	81.687
8/12/01 17:07:00	59.75	58.72	0.397	17.043	2.482	30.171	81.687
8/12/01 17:08:00	59.75	58.72	0.404	17.045	2.481	30.171	81.694
8/12/01 17:09:00	59.75	58.72	0.404	17.051	2.482	30.171	81.687
8/12/01 17:10:00	59.74	58.72	0.404	17.03	2.473	30.171	81.694
8/12/01 17:12:00	59.74	58.72	0.397	17.019	2.468	30.169	81.694
8/12/01 17:13:00	59.75	58.72	0.391	17.008	2.46	30.165	81.694
8/12/01 17:14:00	59.75	58.72	0.397	17.021	2.469	30.167	81.694
8/12/01 17:15:00	59.75	58.72	0.397	17.028	2.477	30.167	81.7
8/12/01 17:16:00	59.75	58.72	0.397	17.036	2.481	30.169	81.694
8/12/01 17:18:00	59.75	58.72	0.397	17.047	2.484	30.169	81.694
8/12/01 17:19:00	59.74	58.72	0.397	17.058	2.481	30.169	81.7
8/12/01 17:20:00	59.74	58.72	0.397	17.075	2.482	30.169	81.694
8/12/01 17:21:00	59.74	58.72	0.397	17.077	2.482	30.174	81.7
8/12/01 17:22:00	59.74	58.72	0.404	17.069	2.479	30.171	81.7
8/12/01 17:24:00	59.74	58.72	0.404	17.051	2.475	30.169	81.7
8/12/01 17:25:00	59.74	58.72	0.404	17.068	2.486	30.169	81.7
8/12/01 17:26:00	59.74	58.72	0.404	17.081	2.492	30.169	81.7
8/12/01 17:27:00	59.74	58.71	0.404	17.073	2.486	30.167	81.706
8/12/01 17:28:00	59.74	58.71	0.404	17.083	2.492	30.167	81.7
8/12/01 17:30:00	59.74	58.71	0.404	17.122	2.488	30.165	81.706
8/12/01 17:31:00	59.74	58.71	0.404	17.141	2.49	30.165	81.7
8/12/01 17:32:00	59.75	58.71	0.41	17.182	2.49	30.165	81.706
8/12/01 17:33:00	59.75	58.71	0.404	17.15	2.494	30.167	81.7
8/12/01 17:34:00	59.75	58.72	0.41	17.12	2.49	30.167	81.706
8/12/01 17:36:00	59.75	58.72	0.404	17.109	2.49	30.161	81.7
8/12/01 17:37:00	59.75	58.72	0.41	17.114	2.488	30.169	81.706
8/12/01 17:38:00	59.75	58.72	0.404	17.109	2.488	30.167	81.706
8/12/01 17:39:00	59.75	58.72	0.41	17.122	2.492	30.169	81.7
8/12/01 17:40:00	59.75	58.72	0.404	17.09	2.488	30.167	81.7
8/12/01 17:42:00	59.75	58.72	0.41	17.079	2.488	30.165	81.706
8/12/01 17:43:00	59.75	58.72	0.404	17.092	2.488	30.167	81.694
8/12/01 17:44:00	59.75	58.72	0.41	17.071	2.486	30.169	81.7
8/12/01 17:45:00	59.75	58.72	0.41	17.064	2.488	30.165	81.7
8/12/01 17:46:00	59.75	58.72	0.41	17.086	2.494	30.165	81.706
8/12/01 17:48:00	59.74	58.72	0.41	17.041	2.484	30.165	81.706
8/12/01 17:49:00	59.74	58.72	0.404	17.041	2.486	30.165	81.706
8/12/01 17:50:00	59.74	58.72	0.41	17.066	2.488	30.161	81.706
8/12/01 17:51:00	59.74	58.72	0.41	17.071	2.488	30.161	81.706
8/12/01 17:52:00	59.74	58.72	0.41	17.062	2.499	30.161	81.706
8/12/01 17:54:00	59.74	58.72	0.41	17.047	2.49	30.161	81.706
8/12/01 17:55:00	59.74	58.72	0.41	17.03	2.481	30.163	81.706
8/12/01 17:56:00	59.74	58.72	0.41	17.028	2.481	30.165	81.713
8/12/01 17:57:00	59.74	58.72	0.41	17.026	2.479	30.159	81.713
8/12/01 17:58:00	59.74	58.73	0.41	17.028	2.481	30.159	81.713
8/12/01 18:00:00	59.74	58.73	0.404	17.04	2.49	30.161	81.713
8/12/01 18:01:00	59.74	58.73	0.41	17.041	2.49	30.157	81.719
8/12/01 18:02:00	59.74	58.73	0.41	17.025	2.477	30.157	81.719
8/12/01 18:03:00	59.74	58.73	0.404	17.017	2.473	30.155	81.719
8/12/01 18:04:00	59.74	58.73	0.397	17.015	2.475	30.155	81.725
8/12/01 18:06:00	59.74	58.73	0.404	17.023	2.481	30.161	81.725
8/12/01 18:07:00	59.74	58.73	0.397	17.025	2.477	30.159	81.725
8/12/01 18:08:00	59.75	58.73	0.397	17.015	2.469	30.157	81.725
8/12/01 18:09:00	59.75	58.73	0.397	17.013	2.468	30.161	81.725
8/12/01 18:10:00	59.75	58.73	0.397	17.023	2.475	30.157	81.732

CITY of COOPER CITY
INJECTION TEST DATA

Date/Time	Downhole Pressure (psi)	Downhole Temperature (deg F)	Wellhead Pressure (psi)	Upper Monitor Pressure (psi)	Lower Monitor Pressure (psi)	Barometric Pressure (inchs Hg)	Annular Pressure (psi)
8/12/01 18:12:00	59.75	58.73	0.397	17.032	2.488	30.163	81.725
8/12/01 18:13:00	59.75	58.73	0.397	17.034	2.495	30.161	81.725
8/12/01 18:14:00	59.76	58.73	0.397	17.04	2.495	30.157	81.725
8/12/01 18:15:00	59.76	58.73	0.397	17.04	2.495	30.157	81.725
8/12/01 18:16:00	59.76	58.73	0.397	17.036	2.488	30.159	81.725
8/12/01 18:18:00	59.76	58.72	0.397	17.047	2.495	30.157	81.725
8/12/01 18:19:00	59.76	58.72	0.397	17.04	2.492	30.159	81.725
8/12/01 18:20:00	59.76	58.72	0.397	17.053	2.495	30.157	81.725
8/12/01 18:21:00	59.76	58.72	0.397	17.058	2.494	30.159	81.725
8/12/01 18:22:00	59.75	58.72	0.397	17.055	2.488	30.155	81.732
8/12/01 18:24:00	59.75	58.71	0.397	17.062	2.49	30.159	81.732
8/12/01 18:25:00	59.75	58.71	0.397	17.068	2.492	30.153	81.732
8/12/01 18:26:00	59.75	58.71	0.397	17.075	2.49	30.155	81.732
8/12/01 18:27:00	59.75	58.71	0.397	17.084	2.486	30.161	81.732
8/12/01 18:28:00	59.75	58.71	0.397	17.101	2.492	30.159	81.732
8/12/01 18:30:00	59.75	58.71	0.397	17.126	2.49	30.159	81.732
8/12/01 18:31:00	59.75	58.71	0.397	17.129	2.49	30.153	81.732
8/12/01 18:32:00	59.75	58.71	0.397	17.122	2.484	30.157	81.732
8/12/01 18:33:00	59.75	58.71	0.397	17.169	2.492	30.155	81.732
8/12/01 18:34:00	59.75	58.71	0.397	17.156	2.49	30.157	81.732
8/12/01 18:36:00	59.75	58.71	0.404	17.109	2.477	30.155	81.725
8/12/01 18:37:00	59.75	58.71	0.397	17.105	2.477	30.159	81.732
8/12/01 18:38:00	59.75	58.71	0.397	17.111	2.481	30.153	81.732
8/12/01 18:39:00	59.75	58.71	0.404	17.113	2.484	30.159	81.732
8/12/01 18:40:00	59.75	58.71	0.404	17.188	2.501	30.157	81.725
8/12/01 18:42:00	59.75	58.71	0.404	17.184	2.497	30.159	81.725
8/12/01 18:43:00	59.76	58.71	0.404	17.152	2.492	30.155	81.725
8/12/01 18:44:00	59.76	58.71	0.416	17.075	2.482	30.159	81.732
8/12/01 18:45:00	59.76	58.71	0.404	17.038	2.473	30.159	81.732
8/12/01 18:46:00	59.76	58.71	0.397	17.023	2.468	30.159	81.732
8/12/01 18:48:00	59.77	58.71	0.397	17.023	2.471	30.157	81.732
8/12/01 18:49:00	59.77	58.71	0.397	17.019	2.471	30.159	81.732
8/12/01 18:50:00	59.76	58.72	0.397	17.021	2.473	30.157	81.738
8/12/01 18:51:00	59.76	58.72	0.404	17.019	2.473	30.155	81.738
8/12/01 18:52:00	59.76	58.72	0.391	17.025	2.481	30.155	81.738
8/12/01 18:54:00	59.76	58.72	0.391	17.026	2.484	30.157	81.738
8/12/01 18:55:00	59.76	58.72	0.391	17.026	2.484	30.153	81.744
8/12/01 18:56:00	59.76	58.72	0.397	17.036	2.492	30.157	81.738
8/12/01 18:57:00	59.76	58.72	0.397	17.036	2.488	30.155	81.744
8/12/01 18:58:00	59.76	58.72	0.397	17.04	2.495	30.151	81.744
8/12/01 19:00:00	59.76	58.72	0.397	17.04	2.495	30.151	81.744
8/12/01 19:01:00	59.76	58.72	0.397	17.047	2.497	30.151	81.744
8/12/01 19:02:00	59.76	58.72	0.397	17.047	2.499	30.151	81.744
8/12/01 19:03:00	59.76	58.72	0.397	17.04	2.495	30.153	81.744
8/12/01 19:04:00	59.75	58.72	0.404	17.032	2.486	30.151	81.744
8/12/01 19:06:00	59.75	58.72	0.397	17.025	2.481	30.155	81.744
8/12/01 19:07:00	59.75	58.72	0.397	17.019	2.475	30.149	81.751
8/12/01 19:08:00	59.75	58.72	0.391	17.023	2.477	30.149	81.744
8/12/01 19:09:00	59.74	58.72	0.391	17.015	2.477	30.149	81.751
8/12/01 19:10:00	59.74	58.72	0.391	17.023	2.486	30.149	81.751
8/12/01 19:12:00	59.74	58.72	0.391	17.032	2.49	30.149	81.744
8/12/01 19:13:00	59.74	58.72	0.391	17.045	2.499	30.149	81.751
8/12/01 19:14:00	59.74	58.72	0.385	17.043	2.499	30.149	81.751
8/12/01 19:15:00	59.74	58.72	0.385	17.041	2.497	30.151	81.744
8/12/01 19:16:00	59.75	58.72	0.385	17.036	2.49	30.153	81.744
8/12/01 19:18:00	59.75	58.72	0.385	17.03	2.486	30.153	81.744
8/12/01 19:19:00	59.75	58.71	0.379	17.028	2.481	30.155	81.744
8/12/01 19:20:00	59.75	58.71	0.379	17.025	2.475	30.153	81.751
8/12/01 19:21:00	59.75	58.71	0.372	17.023	2.473	30.155	81.751
8/12/01 19:22:00	59.75	58.71	0.366	17.025	2.473	30.151	81.751
8/12/01 19:24:00	59.75	58.71	0.366	17.025	2.475	30.147	81.751
8/12/01 19:25:00	59.75	58.71	0.36	17.025	2.477	30.153	81.751
8/12/01 19:26:00	59.75	58.71	0.36	17.021	2.477	30.153	81.757
8/12/01 19:27:00	59.75	58.71	0.36	17.023	2.479	30.155	81.751
8/12/01 19:28:00	59.75	58.71	0.354	17.04	2.486	30.155	81.763
8/12/01 19:30:00	59.75	58.71	0.36	17.055	2.497	30.159	81.757
8/12/01 19:31:00	59.75	58.71	0.36	17.083	2.49	30.155	81.751
8/12/01 19:32:00	59.75	58.71	0.354	17.124	2.492	30.155	81.744
8/12/01 19:33:00	59.75	58.71	0.36	17.158	2.499	30.153	81.744
8/12/01 19:34:00	59.75	58.71	0.354	17.154	2.49	30.157	81.744
8/12/01 19:36:00	59.75	58.71	0.354	17.191	2.494	30.155	81.738
8/12/01 19:37:00	59.75	58.71	0.354	17.214	2.495	30.155	81.738
8/12/01 19:38:00	59.75	58.71	0.36	17.214	2.494	30.157	81.738
8/12/01 19:39:00	59.75	58.71	0.354	17.208	2.501	30.155	81.738
8/12/01 19:40:00	59.75	58.71	0.36	17.203	2.503	30.155	81.738
8/12/01 19:42:00	59.75	58.71	0.36	17.189	2.505	30.155	81.738
8/12/01 19:43:00	59.75	58.71	0.36	17.133	2.503	30.157	81.738
8/12/01 19:44:00	59.75	58.71	0.36	17.069	2.488	30.155	81.738
8/12/01 19:45:00	59.75	58.71	0.354	17.086	2.488	30.159	81.738
8/12/01 19:46:00	59.75	58.72	0.36	17.144	2.49	30.155	81.738
8/12/01 19:48:00	59.75	58.72	0.36	17.204	2.494	30.155	81.738
8/12/01 19:49:00	59.75	58.71	0.36	17.208	2.497	30.155	81.738
8/12/01 19:50:00	59.75	58.71	0.36	17.199	2.494	30.153	81.738
8/12/01 19:51:00	59.75	58.71	0.36	17.199	2.495	30.155	81.738
8/12/01 19:52:00	59.76	58.71	0.36	17.203	2.495	30.151	81.738
8/12/01 19:54:00	59.76	58.71	0.36	17.204	2.495	30.151	81.738
8/12/01 19:55:00	59.76	58.71	0.366	17.201	2.494	30.151	81.738
8/12/01 19:56:00	59.76	58.71	0.366	17.105	2.499	30.151	81.744
8/12/01 19:57:00	59.76	58.71	0.36	17.062	2.486	30.151	81.744
8/12/01 19:58:00	59.76	58.71	0.36	17.068	2.49	30.147	81.744
8/12/01 20:00:00	59.76	58.71	0.36	17.094	2.49	30.149	81.744
8/12/01 20:01:00	59.76	58.71	0.36	17.083	2.492	30.151	81.744
8/12/01 20:02:00	59.76	58.71	0.36	17.101	2.492	30.149	81.744
8/12/01 20:03:00	59.76	58.71	0.36	17.073	2.49	30.149	81.744
8/12/01 20:04:00	59.75	58.71	0.36	17.096	2.49	30.151	81.744
8/12/01 20:06:00	59.75	58.71	0.36	17.129	2.492	30.147	81.744
8/12/01 20:07:00	59.75	58.71	0.36	17.141	2.497	30.147	81.751
8/12/01 20:08:00	59.75	58.71	0.36	17.098	2.492	30.151	81.751
8/12/01 20:09:00	59.75	58.71	0.36	17.113	2.492	30.151	81.751
8/12/01 20:10:00	59.75	58.71	0.36	17.103	2.492	30.149	81.757
8/12/01 20:12:00	59.75	58.71	0.36	17.062	2.494	30.147	81.751
8/12/01 20:13:00	59.75	58.71	0.36	17.047	2.494	30.149	81.757
8/12/01 20:14:00	59.75	58.71	0.36	17.053	2.495	30.145	81.757
8/12/01 20:15:00	59.75	58.71	0.354	17.049	2.495	30.147	81.757

Date/Time	Downhole Pressure (psi)	Downhole Temperature (deg F)	Wellhead Pressure (psi)	Upper Monitor Pressure (psi)	Lower Monitor Pressure (psi)	Barometric Pressure (inchs Hg)	Annular Pressure (psi)
8/12/01 20:16:00	59.75	58.71	0.354	17.058	2.494	30.147	81.757
8/12/01 20:18:00	59.75	58.71	0.36	17.056	2.494	30.141	81.751
8/12/01 20:19:00	59.75	58.71	0.354	17.051	2.495	30.147	81.751
8/12/01 20:20:00	59.75	58.71	0.354	17.053	2.494	30.143	81.751
8/12/01 20:21:00	59.75	58.71	0.354	17.056	2.495	30.145	81.757
8/12/01 20:22:00	59.75	58.72	0.354	17.079	2.494	30.143	81.757
8/12/01 20:24:00	59.75	58.72	0.354	17.084	2.497	30.147	81.757
8/12/01 20:25:00	59.75	58.72	0.354	17.081	2.499	30.141	81.763
8/12/01 20:26:00	59.75	58.72	0.354	17.066	2.497	30.145	81.77
8/12/01 20:27:00	59.75	58.72	0.354	17.055	2.494	30.141	81.77
8/12/01 20:28:00	59.75	58.72	0.348	17.058	2.497	30.143	81.77
8/12/01 20:30:00	59.75	58.72	0.354	17.047	2.495	30.145	81.776
8/12/01 20:31:00	59.75	58.72	0.348	17.051	2.495	30.141	81.776
8/12/01 20:32:00	59.75	58.72	0.348	17.049	2.495	30.137	81.782
8/12/01 20:33:00	59.75	58.72	0.348	17.053	2.497	30.141	81.782
8/12/01 20:34:00	59.75	58.72	0.348	17.051	2.497	30.141	81.789
8/12/01 20:36:00	59.75	58.72	0.348	17.055	2.497	30.137	81.782
8/12/01 20:37:00	59.75	58.72	0.348	17.056	2.501	30.139	81.782
8/12/01 20:38:00	59.75	58.72	0.348	17.049	2.497	30.135	81.789
8/12/01 20:39:00	59.75	58.72	0.348	17.04	2.497	30.137	81.789
8/12/01 20:40:00	59.75	58.72	0.348	17.032	2.495	30.135	81.789
8/12/01 20:42:00	59.75	58.72	0.348	17.032	2.499	30.135	81.795
8/12/01 20:43:00	59.76	58.72	0.341	17.034	2.495	30.135	81.795
8/12/01 20:44:00	59.76	58.72	0.341	17.032	2.499	30.137	81.795
8/12/01 20:45:00	59.76	58.72	0.341	17.032	2.495	30.137	81.795
8/12/01 20:46:00	59.76	58.72	0.341	17.036	2.499	30.137	81.795
8/12/01 20:48:00	59.76	58.72	0.341	17.032	2.499	30.133	81.795
8/12/01 20:49:00	59.76	58.72	0.341	17.026	2.499	30.135	81.801
8/12/01 20:50:00	59.76	58.72	0.335	17.03	2.499	30.135	81.801
8/12/01 20:51:00	59.76	58.72	0.335	17.032	2.499	30.137	81.801
8/12/01 20:52:00	59.76	58.73	0.335	17.03	2.499	30.131	81.801
8/12/01 20:54:00	59.76	58.73	0.335	17.036	2.499	30.135	81.808
8/12/01 20:55:00	59.76	58.73	0.335	17.038	2.501	30.135	81.808
8/12/01 20:56:00	59.75	58.73	0.335	17.034	2.501	30.133	81.808
8/12/01 20:57:00	59.75	58.72	0.329	17.034	2.501	30.129	81.808
8/12/01 20:58:00	59.75	58.72	0.329	17.03	2.501	30.135	81.808
8/12/01 21:00:00	59.75	58.72	0.329	17.03	2.501	30.135	81.808
8/12/01 21:01:00	59.75	58.72	0.329	17.032	2.501	30.133	81.808
8/12/01 21:02:00	59.75	58.72	0.329	17.036	2.501	30.131	81.814
8/12/01 21:03:00	59.75	58.72	0.323	17.032	2.501	30.135	81.808
8/12/01 21:04:00	59.75	58.72	0.323	17.038	2.501	30.131	81.808
8/12/01 21:06:00	59.75	58.72	0.323	17.047	2.503	30.133	81.808
8/12/01 21:07:00	59.75	58.72	0.329	17.053	2.503	30.129	81.808
8/12/01 21:08:00	59.75	58.72	0.323	17.062	2.503	30.131	81.808
8/12/01 21:09:00	59.75	58.71	0.329	17.081	2.508	30.133	81.814
8/12/01 21:10:00	59.75	58.71	0.323	17.069	2.508	30.129	81.814
8/12/01 21:12:00	59.75	58.71	0.323	17.056	2.507	30.129	81.814
8/12/01 21:13:00	59.75	58.71	0.323	17.053	2.505	30.131	81.814
8/12/01 21:14:00	59.75	58.71	0.323	17.064	2.508	30.129	81.814
8/12/01 21:15:00	59.75	58.71	0.323	17.069	2.507	30.129	81.814
8/12/01 21:16:00	59.75	58.71	0.323	17.053	2.505	30.129	81.814
8/12/01 21:18:00	59.75	58.71	0.323	17.047	2.503	30.129	81.82
8/12/01 21:19:00	59.75	58.71	0.323	17.047	2.503	30.127	81.814
8/12/01 21:20:00	59.75	58.71	0.323	17.043	2.503	30.129	81.814
8/12/01 21:21:00	59.75	58.71	0.317	17.047	2.503	30.129	81.814
8/12/01 21:22:00	59.76	58.72	0.317	17.056	2.505	30.127	81.814
8/12/01 21:24:00	59.76	58.72	0.323	17.041	2.505	30.125	81.814
8/12/01 21:25:00	59.76	58.72	0.317	17.03	2.499	30.129	81.814
8/12/01 21:26:00	59.76	58.71	0.317	17.03	2.499	30.127	81.814
8/12/01 21:27:00	59.76	58.71	0.317	17.034	2.501	30.125	81.814
8/12/01 21:28:00	59.76	58.71	0.317	17.032	2.503	30.127	81.814
8/12/01 21:30:00	59.76	58.71	0.317	17.028	2.501	30.127	81.814
8/12/01 21:31:00	59.76	58.71	0.31	17.028	2.501	30.127	81.814
8/12/01 21:32:00	59.76	58.72	0.31	17.028	2.501	30.123	81.814
8/12/01 21:33:00	59.76	58.72	0.31	17.028	2.501	30.127	81.82
8/12/01 21:34:00	59.76	58.72	0.31	17.03	2.501	30.123	81.814
8/12/01 21:36:00	59.76	58.72	0.304	17.03	2.501	30.129	81.814
8/12/01 21:37:00	59.76	58.72	0.31	17.036	2.503	30.125	81.82
8/12/01 21:38:00	59.76	58.72	0.31	17.04	2.507	30.121	81.82
8/12/01 21:39:00	59.76	58.72	0.304	17.03	2.503	30.123	81.82
8/12/01 21:40:00	59.75	58.72	0.304	17.03	2.501	30.123	81.82
8/12/01 21:42:00	59.75	58.71	0.304	17.028	2.501	30.121	81.82
8/12/01 21:43:00	59.75	58.71	0.304	17.03	2.501	30.123	81.82
8/12/01 21:44:00	59.75	58.71	0.298	17.032	2.501	30.127	81.82
8/12/01 21:45:00	59.75	58.71	0.304	17.038	2.503	30.123	81.82
8/12/01 21:46:00	59.75	58.71	0.304	17.04	2.505	30.125	81.82
8/12/01 21:48:00	59.75	58.71	0.298	17.045	2.505	30.123	81.82
8/12/01 21:49:00	59.75	58.71	0.298	17.053	2.507	30.125	81.814
8/12/01 21:50:00	59.75	58.71	0.298	17.043	2.505	30.125	81.814
8/12/01 21:51:00	59.75	58.71	0.298	17.04	2.505	30.127	81.82
8/12/01 21:52:00	59.75	58.71	0.298	17.041	2.507	30.125	81.82
8/12/01 21:54:00	59.75	58.71	0.298	17.045	2.508	30.129	81.82
8/12/01 21:55:00	59.75	58.71	0.298	17.038	2.507	30.129	81.82
8/12/01 21:56:00	59.75	58.71	0.298	17.034	2.503	30.127	81.82
8/12/01 21:57:00	59.75	58.71	0.298	17.036	2.505	30.121	81.82
8/12/01 21:58:00	59.75	58.71	0.298	17.034	2.503	30.125	81.82
8/12/01 22:00:00	59.75	58.71	0.298	17.038	2.505	30.123	81.82
8/12/01 22:01:00	59.75	58.71	0.292	17.045	2.507	30.125	81.82
8/12/01 22:02:00	59.76	58.71	0.298	17.043	2.507	30.123	81.827
8/12/01 22:03:00	59.76	58.71	0.298	17.043	2.507	30.125	81.827
8/12/01 22:04:00	59.76	58.71	0.298	17.038	2.507	30.123	81.827
8/12/01 22:06:00	59.76	58.71	0.292	17.041	2.508	30.123	81.827
8/12/01 22:07:00	59.76	58.71	0.298	17.041	2.508	30.123	81.833
8/12/01 22:08:00	59.76	58.71	0.292	17.036	2.505	30.121	81.827
8/12/01 22:09:00	59.75	58.71	0.292	17.034	2.505	30.123	81.827
8/12/01 22:10:00	59.75	58.71	0.292	17.036	2.507	30.121	81.827
8/12/01 22:12:00	59.75	58.72	0.286	17.034	2.505	30.125	81.827
8/12/01 22:13:00	59.75	58.72	0.279	17.034	2.503	30.121	81.827
8/12/01 22:14:00	59.75	58.72	0.279	17.038	2.499	30.121	81.827
8/12/01 22:15:00	59.75	58.72	0.273	17.03	2.494	30.123	81.827
8/12/01 22:16:00	59.75	58.72	0.273	17.036	2.497	30.125	81.827
8/12/01 22:18:00	59.75	58.72	0.273	17.049	2.505	30.123	81.827
8/12/01 22:19:00	59.75	58.72	0.279	17.051	2.507	30.123	81.827
8/12/01 22:20:00	59.75	58.72	0.273	17.053	2.501	30.123	81.827

CITY of COOPER CITY
INJECTION TEST DATA

Date/Time	Downhole Pressure (psi)	Downhole Temperature (deg F)	Wellhead Pressure (psi)	Upper Monitor Pressure (psi)	Lower Monitor Pressure (psi)	Barometric Pressure (inchs Hg)	Annular Pressure (psi)
8/12/01 22:21:00	59.75	58.72	0.273	17.055	2.501	30.127	81.827
8/12/01 22:22:00	59.75	58.72	0.273	17.056	2.505	30.123	81.82
8/12/01 22:24:00	59.75	58.72	0.273	17.062	2.507	30.123	81.82
8/12/01 22:25:00	59.75	58.72	0.273	17.064	2.508	30.125	81.82
8/12/01 22:26:00	59.75	58.72	0.273	17.075	2.51	30.125	81.82
8/12/01 22:27:00	59.76	58.72	0.273	17.086	2.512	30.127	81.827
8/12/01 22:28:00	59.76	58.71	0.273	17.094	2.514	30.123	81.827
8/12/01 22:30:00	59.76	58.71	0.273	17.101	2.514	30.123	81.82
8/12/01 22:31:00	59.76	58.71	0.273	17.114	2.512	30.123	81.82
8/12/01 22:32:00	59.76	58.71	0.273	17.126	2.51	30.123	81.82
8/12/01 22:33:00	59.76	58.71	0.273	17.131	2.508	30.123	81.82
8/12/01 22:34:00	59.76	58.71	0.273	17.141	2.508	30.121	81.82
8/12/01 22:36:00	59.76	58.71	0.273	17.146	2.505	30.121	81.82
8/12/01 22:37:00	59.75	58.71	0.273	17.15	2.503	30.123	81.82
8/12/01 22:38:00	59.75	58.71	0.273	17.165	2.503	30.123	81.82
8/12/01 22:39:00	59.75	58.71	0.273	17.161	2.503	30.127	81.827
8/12/01 22:40:00	59.75	58.71	0.273	17.169	2.501	30.123	81.827
8/12/01 22:42:00	59.74	58.71	0.273	17.105	2.505	30.123	81.827
8/12/01 22:43:00	59.74	58.71	0.273	17.055	2.497	30.123	81.827
8/12/01 22:44:00	59.74	58.71	0.267	17.036	2.488	30.121	81.827
8/12/01 22:45:00	59.74	58.71	0.267	17.034	2.486	30.121	81.827
8/12/01 22:46:00	59.74	58.71	0.261	17.034	2.488	30.123	81.827
8/12/01 22:48:00	59.74	58.71	0.261	17.036	2.495	30.121	81.827
8/12/01 22:49:00	59.74	58.71	0.261	17.036	2.501	30.123	81.827
8/12/01 22:50:00	59.74	58.71	0.255	17.04	2.503	30.123	81.82
8/12/01 22:51:00	59.74	58.71	0.255	17.043	2.503	30.123	81.82
8/12/01 22:52:00	59.74	58.71	0.248	17.041	2.505	30.121	81.82
8/12/01 22:54:00	59.73	58.71	0.248	17.043	2.505	30.125	81.82
8/12/01 22:55:00	59.74	58.71	0.248	17.04	2.501	30.125	81.82
8/12/01 22:56:00	59.74	58.71	0.242	17.04	2.501	30.123	81.82
8/12/01 22:57:00	59.74	58.71	0.242	17.04	2.503	30.123	81.82
8/12/01 22:58:00	59.74	58.71	0.242	17.038	2.503	30.123	81.82
8/12/01 23:00:00	59.74	58.71	0.248	17.045	2.505	30.121	81.82
8/12/01 23:01:00	59.74	58.71	0.248	17.047	2.507	30.123	81.82
8/12/01 23:02:00	59.74	58.71	0.242	17.04	2.505	30.125	81.82
8/12/01 23:03:00	59.74	58.71	0.242	17.043	2.505	30.125	81.814
8/12/01 23:04:00	59.74	58.71	0.242	17.041	2.505	30.123	81.82
8/12/01 23:06:00	59.74	58.71	0.236	17.049	2.503	30.129	81.814
8/12/01 23:07:00	59.74	58.71	0.242	17.056	2.505	30.125	81.814
8/12/01 23:08:00	59.73	58.71	0.236	17.056	2.505	30.127	81.814
8/12/01 23:09:00	59.73	58.71	0.23	17.053	2.505	30.125	81.814
8/12/01 23:10:00	59.73	58.71	0.23	17.051	2.507	30.129	81.814
8/12/01 23:12:00	59.73	58.72	0.23	17.041	2.507	30.123	81.82
8/12/01 23:13:00	59.73	58.72	0.23	17.038	2.505	30.125	81.82
8/12/01 23:14:00	59.73	58.72	0.23	17.038	2.505	30.127	81.82
8/12/01 23:15:00	59.73	58.72	0.23	17.038	2.503	30.121	81.82
8/12/01 23:16:00	59.73	58.72	0.224	17.04	2.503	30.125	81.82
8/12/01 23:18:00	59.74	58.72	0.224	17.04	2.503	30.125	81.814
8/12/01 23:19:00	59.74	58.72	0.224	17.04	2.503	30.129	81.814
8/12/01 23:20:00	59.74	58.72	0.23	17.043	2.503	30.125	81.814
8/12/01 23:21:00	59.74	58.72	0.23	17.045	2.503	30.127	81.814
8/12/01 23:22:00	59.74	58.72	0.23	17.047	2.505	30.125	81.814
8/12/01 23:24:00	59.74	58.71	0.23	17.051	2.503	30.129	81.814
8/12/01 23:25:00	59.74	58.71	0.23	17.047	2.503	30.129	81.814
8/12/01 23:26:00	59.74	58.71	0.23	17.047	2.503	30.125	81.814
8/12/01 23:27:00	59.74	58.71	0.23	17.045	2.501	30.129	81.814
8/12/01 23:28:00	59.74	58.71	0.23	17.049	2.501	30.125	81.808
8/12/01 23:30:00	59.74	58.71	0.23	17.053	2.503	30.127	81.808
8/12/01 23:31:00	59.74	58.71	0.23	17.062	2.503	30.127	81.808
8/12/01 23:32:00	59.74	58.71	0.23	17.064	2.505	30.129	81.808
8/12/01 23:33:00	59.74	58.71	0.23	17.06	2.505	30.127	81.808
8/12/01 23:34:00	59.74	58.71	0.224	17.058	2.505	30.131	81.808
8/12/01 23:36:00	59.74	58.71	0.23	17.06	2.505	30.129	81.808
8/12/01 23:37:00	59.74	58.71	0.224	17.064	2.505	30.129	81.808
8/12/01 23:38:00	59.74	58.72	0.23	17.064	2.505	30.125	81.801
8/12/01 23:39:00	59.74	58.72	0.23	17.064	2.505	30.127	81.801
8/12/01 23:40:00	59.74	58.72	0.224	17.06	2.505	30.131	81.795
8/12/01 23:42:00	59.74	58.72	0.224	17.055	2.503	30.129	81.795
8/12/01 23:43:00	59.74	58.72	0.224	17.055	2.505	30.127	81.801
8/12/01 23:44:00	59.74	58.72	0.224	17.047	2.503	30.131	81.801
8/12/01 23:45:00	59.74	58.72	0.217	17.041	2.501	30.127	81.801
8/12/01 23:46:00	59.74	58.71	0.217	17.041	2.503	30.127	81.801
8/12/01 23:48:00	59.74	58.71	0.224	17.043	2.503	30.131	81.795
8/12/01 23:49:00	59.75	58.71	0.217	17.041	2.503	30.129	81.795
8/12/01 23:50:00	59.75	58.71	0.217	17.041	2.501	30.131	81.795
8/12/01 23:51:00	59.75	58.71	0.211	17.041	2.501	30.127	81.789
8/12/01 23:52:00	59.75	58.71	0.211	17.043	2.503	30.127	81.789
8/12/01 23:54:00	59.75	58.71	0.211	17.045	2.505	30.129	81.789
8/12/01 23:55:00	59.75	58.71	0.211	17.045	2.503	30.127	81.789
8/12/01 23:56:00	59.75	58.71	0.211	17.045	2.503	30.129	81.782
8/12/01 23:57:00	59.75	58.71	0.211	17.043	2.499	30.125	81.782
8/12/01 23:58:00	59.75	58.71	0.205	17.041	2.497	30.131	81.782
8/13/01	59.75	58.71	0.205	17.041	2.499	30.129	81.782
8/13/01 00:01:00	59.75	58.71	0.192	17.041	2.503	30.131	81.782
8/13/01 00:02:00	59.75	58.71	0.192	17.045	2.505	30.131	81.776
8/13/01 00:03:00	59.75	58.71	0.186	17.045	2.507	30.131	81.776
8/13/01 00:04:00	59.75	58.71	0.192	17.047	2.508	30.129	81.77
8/13/01 00:06:00	59.75	58.71	0.192	17.045	2.505	30.131	81.77
8/13/01 00:07:00	59.75	58.71	0.186	17.043	2.505	30.131	81.77
8/13/01 00:08:00	59.75	58.71	0.186	17.045	2.508	30.131	81.77
8/13/01 00:09:00	59.75	58.71	0.186	17.049	2.507	30.133	81.763
8/13/01 00:10:00	59.75	58.71	0.186	17.055	2.507	30.131	81.77
8/13/01 00:12:00	59.75	58.71	0.186	17.055	2.507	30.133	81.77
8/13/01 00:13:00	59.75	58.71	0.186	17.047	2.507	30.131	81.763
8/13/01 00:14:00	59.75	58.71	0.18	17.045	2.505	30.131	81.757
8/13/01 00:15:00	59.75	58.71	0.18	17.045	2.507	30.133	81.757
8/13/01 00:16:00	59.75	58.71	0.18	17.045	2.505	30.131	81.751
8/13/01 00:18:00	59.75	58.71	0.18	17.047	2.507	30.131	81.757
8/13/01 00:19:00	59.75	58.71	0.18	17.053	2.507	30.131	81.751
8/13/01 00:20:00	59.75	58.71	0.18	17.053	2.507	30.131	81.751
8/13/01 00:21:00	59.75	58.71	0.18	17.056	2.507	30.133	81.751
8/13/01 00:22:00	59.75	58.71	0.174	17.064	2.508	30.127	81.744
8/13/01 00:24:00	59.75	58.71	0.174	17.058	2.507	30.129	81.744
8/13/01 00:25:00	59.75	58.72	0.174	17.055	2.507	30.131	81.744

Date/Time	Downhole Pressure (psi)	Downhole Temperature (deg F)	Wellhead Pressure (psi)	Upper Monitor Pressure (psi)	Lower Monitor Pressure (psi)	Barometric Pressure (inchs Hg)	Annular Pressure (psi)
8/13/01 00:26:00	59.74	58.72	0.174	17.06	2.508	30.133	81.744
8/13/01 00:27:00	59.74	58.72	0.174	17.053	2.507	30.129	81.738
8/13/01 00:28:00	59.74	58.72	0.168	17.047	2.505	30.137	81.738
8/13/01 00:30:00	59.74	58.72	0.174	17.045	2.505	30.133	81.732
8/13/01 00:31:00	59.74	58.72	0.168	17.045	2.505	30.133	81.732
8/13/01 00:32:00	59.74	58.72	0.168	17.047	2.505	30.135	81.732
8/13/01 00:33:00	59.74	58.72	0.168	17.051	2.507	30.131	81.725
8/13/01 00:34:00	59.74	58.72	0.168	17.049	2.508	30.129	81.725
8/13/01 00:36:00	59.74	58.72	0.168	17.047	2.507	30.133	81.732
8/13/01 00:37:00	59.74	58.72	0.168	17.047	2.507	30.133	81.725
8/13/01 00:38:00	59.74	58.72	0.155	17.047	2.505	30.131	81.725
8/13/01 00:39:00	59.74	58.72	0.168	17.049	2.508	30.135	81.725
8/13/01 00:40:00	59.74	58.72	0.161	17.049	2.505	30.135	81.725
8/13/01 00:42:00	59.74	58.71	0.155	17.047	2.505	30.133	81.725
8/13/01 00:43:00	59.74	58.71	0.155	17.047	2.507	30.137	81.719
8/13/01 00:44:00	59.75	58.71	0.155	17.049	2.507	30.135	81.719
8/13/01 00:45:00	59.75	58.71	0.155	17.049	2.507	30.135	81.719
8/13/01 00:46:00	59.75	58.71	0.155	17.051	2.507	30.135	81.713
8/13/01 00:48:00	59.75	58.71	0.155	17.055	2.508	30.133	81.713
8/13/01 00:49:00	59.75	58.71	0.155	17.049	2.508	30.133	81.713
8/13/01 00:50:00	59.74	58.71	0.149	17.047	2.508	30.135	81.713
8/13/01 00:51:00	59.74	58.71	0.155	17.051	2.51	30.137	81.706
8/13/01 00:52:00	59.74	58.71	0.149	17.047	2.507	30.137	81.706
8/13/01 00:54:00	59.74	58.71	0.149	17.045	2.507	30.137	81.706
8/13/01 00:55:00	59.74	58.71	0.149	17.045	2.507	30.133	81.7
8/13/01 00:56:00	59.74	58.71	0.149	17.043	2.507	30.135	81.7
8/13/01 00:57:00	59.74	58.71	0.149	17.043	2.507	30.133	81.7
8/13/01 00:58:00	59.74	58.7	0.149	17.045	2.505	30.133	81.694
8/13/01 01:00:00	59.74	58.71	0.143	17.045	2.505	30.139	81.7
8/13/01 01:01:00	59.74	58.71	0.143	17.045	2.505	30.137	81.7
8/13/01 01:02:00	59.74	58.71	0.143	17.045	2.505	30.137	81.694
8/13/01 01:03:00	59.74	58.71	0.143	17.045	2.505	30.137	81.694
8/13/01 01:04:00	59.74	58.71	0.143	17.045	2.505	30.135	81.687
8/13/01 01:06:00	59.74	58.71	0.143	17.045	2.505	30.139	81.687
8/13/01 01:07:00	59.74	58.71	0.137	17.045	2.505	30.137	81.687
8/13/01 01:08:00	59.74	58.71	0.143	17.045	2.503	30.139	81.687
8/13/01 01:09:00	59.74	58.71	0.143	17.045	2.501	30.139	81.681
8/13/01 01:10:00	59.74	58.71	0.137	17.045	2.501	30.141	81.681
8/13/01 01:12:00	59.74	58.71	0.137	17.045	2.499	30.139	81.681
8/13/01 01:13:00	59.74	58.71	0.137	17.045	2.499	30.137	81.681
8/13/01 01:14:00	59.74	58.71	0.124	17.045	2.495	30.139	81.675
8/13/01 01:15:00	59.74	58.71	0.124	17.045	2.495	30.145	81.675
8/13/01 01:16:00	59.74	58.71	0.124	17.045	2.495	30.141	81.668
8/13/01 01:18:00	59.74	58.71	0.124	17.045	2.495	30.143	81.675
8/13/01 01:19:00	59.74	58.71	0.124	17.045	2.494	30.143	81.662
8/13/01 01:20:00	59.74	58.71	0.124	17.045	2.495	30.145	81.675
8/13/01 01:21:00	59.74	58.71	0.118	17.045	2.495	30.145	81.668
8/13/01 01:22:00	59.74	58.71	0.118	17.045	2.497	30.145	81.668
8/13/01 01:24:00	59.74	58.71	0.118	17.045	2.495	30.147	81.668
8/13/01 01:25:00	59.74	58.71	0.118	17.045	2.497	30.149	81.668
8/13/01 01:26:00	59.74	58.71	0.118	17.045	2.497	30.147	81.662
8/13/01 01:27:00	59.74	58.71	0.112	17.045	2.497	30.145	81.662
8/13/01 01:28:00	59.74	58.71	0.118	17.047	2.499	30.151	81.662
8/13/01 01:30:00	59.74	58.71	0.112	17.047	2.499	30.147	81.656
8/13/01 01:31:00	59.74	58.71	0.112	17.047	2.499	30.151	81.656
8/13/01 01:32:00	59.74	58.71	0.112	17.047	2.499	30.151	81.656
8/13/01 01:33:00	59.74	58.71	0.112	17.047	2.499	30.151	81.656
8/13/01 01:34:00	59.74	58.71	0.106	17.047	2.499	30.153	81.649
8/13/01 01:36:00	59.74	58.71	0.106	17.047	2.499	30.153	81.649
8/13/01 01:37:00	59.74	58.71	0.106	17.047	2.499	30.153	81.643
8/13/01 01:38:00	59.74	58.71	0.106	17.047	2.501	30.153	81.643
8/13/01 01:39:00	59.74	58.7	0.106	17.047	2.503	30.153	81.643
8/13/01 01:40:00	59.74	58.7	0.099	17.047	2.503	30.155	81.649
8/13/01 01:42:00	59.74	58.7	0.099	17.047	2.503	30.155	81.643
8/13/01 01:43:00	59.75	58.7	0.093	17.047	2.501	30.157	81.643
8/13/01 01:44:00	59.75	58.71	0.093	17.047	2.505	30.157	81.643
8/13/01 01:45:00	59.75	58.71	0.087	17.047	2.501	30.159	81.643
8/13/01 01:46:00	59.75	58.71	0.087	17.047	2.501	30.161	81.637
8/13/01 01:48:00	59.75	58.71	0.087	17.047	2.501	30.161	81.637
8/13/01 01:49:00	59.75	58.71	0.087	17.045	2.501	30.163	81.63
8/13/01 01:50:00	59.75	58.72	0.087	17.045	2.501	30.159	81.63
8/13/01 01:51:00	59.75	58.72	0.087	17.047	2.501	30.159	81.63
8/13/01 01:52:00	59.75	58.72	0.087	17.047	2.501	30.161	81.63
8/13/01 01:54:00	59.75	58.72	0.087	17.047	2.503	30.161	81.624
8/13/01 01:55:00	59.75	58.72	0.081	17.047	2.503	30.163	81.624
8/13/01 01:56:00	59.75	58.72	0.081	17.047	2.503	30.159	81.624
8/13/01 01:57:00	59.74	58.72	0.087	17.047	2.503	30.161	81.618
8/13/01 01:58:00	59.74	58.71	0.081	17.047	2.503	30.161	81.618
8/13/01 02:00:00	59.74	58.71	0.081	17.049	2.503	30.159	81.618
8/13/01 02:01:00	59.74	58.71	0.081	17.049	2.505	30.157	81.618
8/13/01 02:02:00	59.74	58.71	0.081	17.049	2.503	30.157	81.618
8/13/01 02:03:00	59.74	58.72	0.081	17.049	2.505	30.161	81.624
8/13/01 02:04:00	59.74	58.72	0.081	17.049	2.505	30.159	81.618
8/13/01 02:06:00	59.74	58.72	0.081	17.049	2.503	30.161	81.618
8/13/01 02:07:00	59.74	58.72	0.081	17.049	2.503	30.161	81.618
8/13/01 02:08:00	59.73	58.71	0.075	17.049	2.503	30.159	81.611
8/13/01 02:09:00	59.73	58.71	0.075	17.049	2.503	30.163	81.611
8/13/01 02:10:00	59.73	58.71	0.075	17.049	2.505	30.165	81.605
8/13/01 02:12:00	59.73	58.71	0.075	17.049	2.505	30.163	81.605
8/13/01 02:13:00	59.73	58.71	0.075	17.049	2.503	30.161	81.605
8/13/01 02:14:00	59.73	58.71	0.075	17.051	2.505	30.163	81.605
8/13/01 02:15:00	59.73	58.71	0.068	17.049	2.505	30.161	81.605
8/13/01 02:16:00	59.73	58.71	0.068	17.049	2.505	30.163	81.599
8/13/01 02:18:00	59.73	58.71	0.068	17.049	2.507	30.163	81.599
8/13/01 02:19:00	59.73	58.71	0.068	17.049	2.505	30.163	81.599
8/13/01 02:20:00	59.73	58.71	0.068	17.049	2.505	30.167	81.599
8/13/01 02:21:00	59.73	58.71	0.062	17.049	2.505	30.167	81.592
8/13/01 02:22:00	59.74	58.71	0.062	17.049	2.505	30.163	81.592
8/13/01 02:24:00	59.74	58.71	0.062	17.049	2.505	30.165	81.592
8/13/01 02:25:00	59.74	58.71	0.062	17.049	2.507	30.165	81.599
8/13/01 02:26:00	59.74	58.71	0.062	17.049	2.505	30.169	81.592
8/13/01 02:27:00	59.74	58.71	0.062	17.049	2.505	30.167	81.592
8/13/01 02:28:00	59.74	58.71	0.062	17.049	2.505	30.169	81.592
8/13/01 02:30:00	59.74	58.71	0.062	17.049	2.505	30.174	81.586

CITY of COOPER CITY
INJECTION TEST DATA

Date/Time	Downhole Pressure (psi)	Downhole Temperature (deg F)	Wellhead Pressure (psi)	Upper Monitor Pressure (psi)	Lower Monitor Pressure (psi)	Barometric Pressure (inchs Hg)	Annular Pressure (psi)
8/13/01 02:31:00	59.74	58.71	0.062	17.049	2.505	30.171	81.586
8/13/01 02:32:00	59.74	58.71	0.062	17.049	2.505	30.171	81.586
8/13/01 02:33:00	59.74	58.71	0.056	17.049	2.505	30.174	81.58
8/13/01 02:34:00	59.74	58.71	0.062	17.049	2.505	30.174	81.58
8/13/01 02:36:00	59.74	58.71	0.056	17.051	2.505	30.176	81.58
8/13/01 02:37:00	59.74	58.71	0.056	17.051	2.507	30.174	81.58
8/13/01 02:38:00	59.74	58.71	0.056	17.051	2.507	30.174	81.573
8/13/01 02:39:00	59.74	58.71	0.056	17.051	2.505	30.176	81.573
8/13/01 02:40:00	59.74	58.71	0.062	17.051	2.505	30.171	81.573
8/13/01 02:42:00	59.74	58.7	0.062	17.051	2.507	30.169	81.573
8/13/01 02:43:00	59.74	58.7	0.056	17.051	2.507	30.174	81.573
8/13/01 02:44:00	59.74	58.7	0.056	17.051	2.505	30.174	81.573
8/13/01 02:45:00	59.74	58.7	0.056	17.051	2.505	30.178	81.567
8/13/01 02:46:00	59.74	58.7	0.056	17.051	2.507	30.176	81.567
8/13/01 02:48:00	59.74	58.7	0.056	17.051	2.507	30.178	81.567
8/13/01 02:49:00	59.74	58.71	0.056	17.051	2.507	30.174	81.561
8/13/01 02:50:00	59.74	58.71	0.056	17.051	2.507	30.174	81.561
8/13/01 02:51:00	59.74	58.71	0.056	17.051	2.507	30.171	81.561
8/13/01 02:52:00	59.74	58.71	0.056	17.051	2.507	30.176	81.561
8/13/01 02:54:00	59.74	58.71	0.056	17.051	2.507	30.176	81.561
8/13/01 02:55:00	59.74	58.71	0.056	17.051	2.507	30.178	81.554
8/13/01 02:56:00	59.74	58.71	0.056	17.051	2.507	30.178	81.561
8/13/01 02:57:00	59.74	58.71	0.062	17.049	2.507	30.184	81.548
8/13/01 02:58:00	59.74	58.71	0.081	17.051	2.507	30.176	81.548
8/13/01 03:00:00	59.74	58.71	0.075	17.051	2.507	30.169	81.548
8/13/01 03:01:00	59.74	58.71	0.075	17.047	2.507	30.165	81.542
8/13/01 03:02:00	59.74	58.71	0.05	17.051	2.507	30.169	81.548
8/13/01 03:03:00	59.74	58.71	0.05	17.049	2.507	30.176	81.548
8/13/01 03:04:00	59.74	58.71	0.05	17.049	2.505	30.178	81.548
8/13/01 03:06:00	59.74	58.71	0.05	17.049	2.505	30.178	81.542
8/13/01 03:07:00	59.74	58.71	0.05	17.051	2.505	30.178	81.542
8/13/01 03:08:00	59.74	58.71	0.05	17.049	2.507	30.184	81.542
8/13/01 03:09:00	59.74	58.71	0.05	17.051	2.505	30.184	81.535
8/13/01 03:10:00	59.74	58.71	0.05	17.049	2.505	30.184	81.535
8/13/01 03:12:00	59.74	58.71	0.05	17.049	2.505	30.18	81.535
8/13/01 03:13:00	59.74	58.71	0.043	17.049	2.507	30.184	81.535
8/13/01 03:14:00	59.74	58.71	0.043	17.049	2.503	30.188	81.535
8/13/01 03:15:00	59.74	58.71	0.043	17.049	2.507	30.184	81.529
8/13/01 03:16:00	59.74	58.71	0.043	17.049	2.503	30.184	81.535
8/13/01 03:18:00	59.74	58.71	0.043	17.049	2.503	30.188	81.535
8/13/01 03:19:00	59.74	58.71	0.043	17.049	2.503	30.186	81.535
8/13/01 03:20:00	59.75	58.71	0.043	17.049	2.505	30.184	81.529
8/13/01 03:21:00	59.75	58.71	0.043	17.051	2.505	30.186	81.529
8/13/01 03:22:00	59.75	58.71	0.043	17.049	2.505	30.186	81.529
8/13/01 03:24:00	59.75	58.71	0.043	17.049	2.505	30.186	81.523
8/13/01 03:25:00	59.75	58.71	0.043	17.049	2.505	30.188	81.523
8/13/01 03:26:00	59.75	58.71	0.043	17.049	2.505	30.188	81.523
8/13/01 03:27:00	59.75	58.71	0.043	17.047	2.505	30.188	81.523
8/13/01 03:28:00	59.75	58.71	0.043	17.047	2.505	30.186	81.516
8/13/01 03:30:00	59.75	58.71	0.043	17.047	2.505	30.19	81.516
8/13/01 03:31:00	59.75	58.71	0.043	17.049	2.503	30.186	81.516
8/13/01 03:32:00	59.75	58.71	0.043	17.049	2.505	30.188	81.516
8/13/01 03:33:00	59.75	58.7	0.043	17.049	2.505	30.188	81.51
8/13/01 03:34:00	59.75	58.7	0.043	17.049	2.505	30.19	81.51
8/13/01 03:36:00	59.75	58.7	0.043	17.051	2.503	30.188	81.51
8/13/01 03:37:00	59.75	58.7	0.043	17.051	2.503	30.19	81.51
8/13/01 03:38:00	59.75	58.7	0.043	17.051	2.505	30.192	81.51
8/13/01 03:39:00	59.75	58.7	0.037	17.051	2.505	30.192	81.504
8/13/01 03:40:00	59.75	58.7	0.043	17.051	2.505	30.192	81.504
8/13/01 03:42:00	59.74	58.7	0.043	17.051	2.505	30.194	81.504
8/13/01 03:43:00	59.74	58.7	0.043	17.051	2.505	30.192	81.504
8/13/01 03:44:00	59.74	58.7	0.043	17.051	2.503	30.192	81.504
8/13/01 03:45:00	59.74	58.7	0.043	17.049	2.503	30.192	81.497
8/13/01 03:46:00	59.74	58.7	0.043	17.051	2.505	30.194	81.497
8/13/01 03:48:00	59.74	58.7	0.043	17.051	2.505	30.194	81.491
8/13/01 03:49:00	59.74	58.7	0.043	17.051	2.505	30.192	81.504
8/13/01 03:50:00	59.74	58.7	0.043	17.051	2.505	30.194	81.504
8/13/01 03:51:00	59.74	58.7	0.043	17.051	2.505	30.194	81.504
8/13/01 03:52:00	59.75	58.71	0.043	17.051	2.505	30.196	81.497
8/13/01 03:54:00	59.75	58.71	0.043	17.051	2.505	30.192	81.497
8/13/01 03:55:00	59.75	58.71	0.043	17.051	2.505	30.196	81.497
8/13/01 03:56:00	59.75	58.71	0.043	17.051	2.505	30.194	81.497
8/13/01 03:57:00	59.75	58.71	0.043	17.051	2.505	30.196	81.491
8/13/01 03:58:00	59.75	58.71	0.043	17.051	2.505	30.192	81.491
8/13/01 04:00:00	59.74	58.71	0.043	17.051	2.505	30.196	81.491
8/13/01 04:01:00	59.75	58.71	0.043	17.049	2.505	30.2	81.485
8/13/01 04:02:00	59.75	58.71	0.043	17.051	2.505	30.2	81.485
8/13/01 04:03:00	59.75	58.71	0.043	17.051	2.505	30.198	81.491
8/13/01 04:04:00	59.75	58.71	0.037	17.051	2.503	30.2	81.485
8/13/01 04:06:00	59.75	58.71	0.037	17.051	2.505	30.2	81.485
8/13/01 04:07:00	59.74	58.7	0.031	17.049	2.503	30.202	81.478
8/13/01 04:08:00	59.74	58.7	0.037	17.049	2.503	30.204	81.478
8/13/01 04:09:00	59.74	58.7	0.037	17.049	2.503	30.2	81.478
8/13/01 04:10:00	59.74	58.7	0.037	17.049	2.505	30.204	81.472
8/13/01 04:12:00	59.74	58.7	0.037	17.049	2.503	30.208	81.472
8/13/01 04:13:00	59.74	58.7	0.031	17.049	2.503	30.208	81.472
8/13/01 04:14:00	59.74	58.7	0.031	17.049	2.503	30.208	81.472
8/13/01 04:15:00	59.74	58.7	0.037	17.049	2.503	30.204	81.466
8/13/01 04:16:00	59.75	58.71	0.037	17.051	2.503	30.208	81.472
8/13/01 04:18:00	59.75	58.71	0.037	17.049	2.503	30.206	81.466
8/13/01 04:19:00	59.75	58.71	0.037	17.049	2.503	30.206	81.466
8/13/01 04:20:00	59.75	58.71	0.037	17.049	2.503	30.208	81.466
8/13/01 04:21:00	59.75	58.71	0.037	17.049	2.503	30.21	81.466
8/13/01 04:22:00	59.75	58.71	0.037	17.047	2.503	30.208	81.459
8/13/01 04:24:00	59.75	58.7	0.037	17.047	2.503	30.212	81.459
8/13/01 04:25:00	59.75	58.7	0.031	17.049	2.503	30.214	81.459
8/13/01 04:26:00	59.74	58.7	0.037	17.049	2.503	30.21	81.459
8/13/01 04:27:00	59.74	58.7	0.031	17.049	2.503	30.214	81.459
8/13/01 04:28:00	59.74	58.7	0.031	17.049	2.503	30.21	81.453
8/13/01 04:30:00	59.74	58.7	0.037	17.049	2.503	30.212	81.453
8/13/01 04:31:00	59.74	58.7	0.037	17.051	2.503	30.208	81.453
8/13/01 04:32:00	59.74	58.7	0.037	17.051	2.505	30.21	81.447
8/13/01 04:33:00	59.74	58.71	0.037	17.051	2.503	30.212	81.447
8/13/01 04:34:00	59.74	58.71	0.037	17.053	2.503	30.212	81.447
8/13/01 04:36:00	59.74	58.71	0.037	17.053	2.503	30.21	81.447
8/13/01 04:37:00	59.74	58.71	0.037	17.053	2.503	30.212	81.447
8/13/01 04:38:00	59.74	58.7	0.037	17.053	2.503	30.212	81.447
8/13/01 04:39:00	59.74	58.7	0.037	17.053	2.503	30.218	81.44
8/13/01 04:40:00	59.74	58.7	0.037	17.053	2.501	30.214	81.44
8/13/01 04:42:00	59.74	58.7	0.037	17.053	2.501	30.214	81.44
8/13/01 04:43:00	59.74	58.7	0.037	17.053	2.501	30.216	81.44
8/13/01 04:44:00	59.74	58.7	0.037	17.053	2.499	30.216	81.434
8/13/01 04:45:00	59.74	58.7	0.037	17.053	2.499	30.218	81.434
8/13/01 04:46:00	59.74	58.7	0.037	17.053	2.501	30.212	81.434
8/13/01 04:48:00	59.74	58.7	0.037	17.053	2.501	30.216	81.434
8/13/01 04:49:00	59.74	58.7	0.037	17.051	2.501	30.22	81.428
8/13/01 04:50:00	59.74	58.7	0.037	17.051	2.499	30.214	81.434
8/13/01 04:51:00	59.74	58.7	0.037	17.049	2.499	30.22	81.428
8/13/01 04:52:00	59.74	58.7	0.037	17.049	2.501	30.22	81.428
8/13/01 04:54:00	59.74	58.71	0.037	17.049	2.497	30.22	81.428
8/13/01 04:55:00	59.74	58.71	0.037	17.049	2.501	30.22	81.428
8/13/01 04:56:00	59.74	58.71	0.037	17.049	2.497	30.22	81.421
8/13/01 04:57:00	59.74	58.71	0.043	17.049	2.501	30.218	81.421
8/13/01 04:58:00	59.74	58.71	0.037	17.049	2.497	30.216	81.421
8/13/01 05:00:00	59.74	58.71	0.037	17.049	2.497	30.218	81.421
8/13/01 05:01:00	59.74	58.71	0.043	17.049	2.497	30.222	81.421
8/13/01 05:02:00	59.74	58.71	0.043	17.053	2.497	30.216	81.421
8/13/01 05:03:00	59.74	58.71	0.043	17.053	2.497	30.218	81.415
8/13/01 05:04:00	59.74	58.71	0.043	17.051	2.497	30.22	81.415
8/13/01 05:06:00	59.74	58.71	0.043	17.051	2.495	30.218	81.415
8/13/01 05:07:00	59.74	58.71	0.043	17.051	2.495	30.22	81.421
8/13/01 05:08:00	59.75	58.71	0.043	17.051	2.495	30.218	81.421
8/13/01 05:09:00	59.75	58.71	0.043	17.051	2.495	30.222	81.421
8/13/01 05:10:00	59.75	58.71	0.043	17.051	2.495	30.22	81.415
8/13/01 05:12:00	59.75	58.71	0.043	17.051	2.495	30.222	81.415
8/13/01 05:13:00	59.75	58.71	0.043	17.051	2.495	30.22	81.415
8/13/01 05:14:00	59.75	58.71	0.043	17.053	2.497	30.218	81.415
8/13/01 05:15:00	59.75	58.71	0.043	17.053	2.495	30.224	81.415
8/13/01 05:16:00	59.74	58.71	0.043	17.053	2.495	30.222	81.409
8/13/01 05:18:00	59.74	58.71	0.043	17.053	2.497	30.222	81.409
8/13/01 05:19:00	59.75	58.71	0.043	17.051	2.497	30.222	81.409
8/13/01 05:20:00	59.75	58.71	0.043	17.051	2.495	30.222	81.409
8/13/01 05:21:00	59.75	58.71	0.043	17.051	2.495	30.222	81.402
8/13/01 05:22:00	59.75	58.71	0.043	17.053	2.495	30.222	81.402
8/13/01 05:24:00	59.75	58.71	0.05	17.053	2.495	30.224	81.402
8/13/01 05:25:00	59.75	58.71	0.043	17.053	2.497	30.22	81.402
8/13/01 05:26:00	59.75	58.71	0.043	17.053	2.497	30.222	81.402
8/13/01 05:27:00	59.75	58.71	0.05	17.053	2.495	30.224	81.402
8/13/01 05:28:00	59.75	58.71	0.05	17.053	2.497	30.224	81.396
8/13/01 05:30:00	59.75	58.7	0.05	17.053	2.497	30.224	81.402
8/13/01 05:31:00	59.75	58.7	0.05	17.053	2.497	30.222	81.396
8/13/01 05:32:00	59.75	58.7	0.05	17.053	2.497	30.222	81.396
8/13/01 05:33:00	59.74	58.71	0.05	17.053	2.497	30.218	81.396
8/13/01 05:34:00	59.74	58.71	0.05	17.053	2.497	30.222	81.396
8/13/01 05:36:00	59.74	58.71	0.05	17.053	2.497	30.22	81.396
8/13/01 05:37:00	59.74	58.71	0.05	17.055	2.499	30.224	81.39
8/13/01 05:38:00	59.74	58.71	0.05	17.055	2.499	30.222	81.39
8/13/01 05:39:00	59.74	58.71	0.056	17.055	2.497	30.222	81.39
8/13/01 05:40:00	59.74	58.71	0.05	17.055	2.499	30.22	81.39
8/13/01 05:42:00	59.74	58.71	0.05	17.055	2.499	30.222	81.39
8/13/01 05:43:00	59.75	58.71	0.056	17.055	2.497	30.222	81.39
8/13/01 05:44:00	59.75	58.71	0.056	17.055	2.497	30.224	81.396
8/13/01 05:45:00	59.75	58.71	0.056	17.055	2.499	30.224	81.396
8/13/01 05:46:00	59.75	58.71	0.05	17.055	2.497	30.22	81.396
8/13/01 05:48:00	59.75	58.71	0.056	17.055	2.499	30.222	81.39
8/13/01 05:49:00	59.75	58.71	0.056	17.055	2.499	30.226	81.39
8/13/01 05:50:00	59.75	58.71	0.056	17.055	2.497	30.224	81.39
8/13/01 05:51:00	59.75	58.71	0.056	17.055	2.497	30.222	81.39
8/13/01 05:52:00	59.76	58.71	0.056	17.055	2.499	30.224	81.39
8/13/01 05:54:00	59.76	58.71	0.056	17.055	2.497	30.224	81.39
8/13/01 05:55:00	59.76	58.71	0.056	17.053	2.499	30.226	81.383
8/13/01 05:56:00	59.76	58.71	0.056	17.053	2.499	30.226	81.39
8/13/01 05:57:00	59.76	58.71	0.056	17.053	2.497	30.222	81.383
8/13/01 05:58:00	59.76	58.71	0.056	17.053	2.497	30.226	81.383
8/13/01 06:00:00	59.76	58.71	0.056	17.053	2.497	30.228	81.383
8/13/01 06:01:00	59.76	58.71	0.056	17.053	2.495	30.226	81.383
8/13/01 06:02:00	59.76	58.71	0.056	17.055	2.497	30.22	81.383
8/13/01 06:03:00	59.76	58.71	0.056	17.055	2.497	30.226	81.383
8/13/01 06:04:00	59.75	58.7	0.062	17.055	2.497	30.222	81.377
8/13/01 06:06:00	59.75	58.71	0.056	17.053	2.497	30.222	81.377
8/13/01 06:07:00	59.75	58.71	0.056	17.053	2.499	30.222	81.383
8/13/01 06:08:00	59.75	58.71	0.062	17.053	2.497	30.226	81.377
8/13/01 06:09:00	59.75	58.71	0.062	17.053	2.497	30.222	81.377
8/13/01 06:10:00	59.75	58.71	0.062	17.051	2.497	30.224	81.377
8/13/01 06:12:00	59.75	58.71	0.062	17.051	2.497	30.226	81.377
8/13/01 06:13:00	59.75	58.71	0.062	17.051	2.497	30.224	81.371
8/13/01 06:14:00	59.76	58.71	0.062	17.053	2.497	30.228	81.371
8/13/01 06:15:00	59.76	58.71	0.062	17.053	2.497	30.228	81.371
8/13/01 06:16:00	59.76	58.71	0.062	17.053	2.497	30.228	81.371
8/13/01 06:18:00	59.76	58.71	0.062	17.051	2.497	30.228	81.371
8/13/01 06:19:00	59.75	58.71	0.062	17.051	2.495	30.228	81.371
8/13/01 06:20:00	59.75	58.71	0.062	17.051	2.497	30.233	81.364
8/13/01 06:21:00	59.75	58.71	0.062	17.051	2.495	30.226	81.364
8/13/01 06:22:00	59.75	58.72	0.062	17.051	2.495	30.228	81.364
8/13/01 06:24:00	59.75	58.72	0.062	17.049	2.495	30.233	81.364
8/13/01 06:25:00	59.75	58.72	0.062	17.049	2.495	30.228	81.364
8/13/01 06:26:00	59.75	58.72	0.062	17.049	2.497	30.228	81.358
8/13/01 06:27:00	59.75	58.72	0.062	17.049	2.495	30.228	81.364
8/13/01 06:28:00	59.75	58.72	0.062	17.051	2.497	30.228	81.358
8/13/01 06:30:00	59.75	58.72	0.062	17.049	2.497	30.226	81.358
8/13/01 06:31:00	59.75	58.72	0.062	17.049	2.497	30.231	81.358
8/13/01 06:32:00	59.75	58.71	0.062	17.049	2.497	30.226	81.358
8/13/01 06:33:00	59.75	58.71	0.068	17.049	2.497	30.228	81.352
8/13/01 06:34:00	59.75	58.71	0.068	17.049	2.497	30.228	81.352
8/13/01 06:36:00	59.74	58.71	0.068	17.049	2.497	30.222	81.352
8/13/01 06:37:00	59.74	58.71	0.068	17.049	2.497	30.228	81.352
8/13/01 06:38:00	59.74	58.71	0.068	17.049	2.497	30.226	81.352
8/13/01 06:39:00	59.74	58.71	0.068	17.049	2.497	30.228	81.352

CITY of COOPER CITY
INJECTION TEST DATA

Date/Time	Downhole Pressure (psi)	Downhole Temperature (deg F)	Wellhead Pressure (psi)	Upper Monitor Pressure (psi)	Lower Monitor Pressure (psi)	Barometric Pressure (inchs Hg)	Annular Pressure (psi)
8/13/01 06:40:00	59.73	58.7	0.068	17.049	2.497	30.228	81.352
8/13/01 06:42:00	59.73	58.7	0.068	17.049	2.497	30.231	81.352
8/13/01 06:43:00	59.73	58.7	0.068	17.047	2.497	30.231	81.352
8/13/01 06:44:00	59.73	58.7	0.068	17.047	2.497	30.231	81.352
8/13/01 06:45:00	59.73	58.7	0.068	17.047	2.497	30.228	81.346
8/13/01 06:46:00	59.73	58.7	0.068	17.047	2.497	30.228	81.346
8/13/01 06:48:00	59.73	58.69	0.068	17.047	2.497	30.231	81.346
8/13/01 06:49:00	59.73	58.69	0.068	17.047	2.497	30.233	81.346
8/13/01 06:50:00	59.73	58.7	0.068	17.047	2.497	30.231	81.346
8/13/01 06:51:00	59.73	58.7	0.068	17.047	2.497	30.228	81.346
8/13/01 06:52:00	59.73	58.7	0.068	17.047	2.497	30.231	81.346
8/13/01 06:54:00	59.73	58.7	0.068	17.047	2.497	30.233	81.346
8/13/01 06:55:00	59.73	58.7	0.068	17.047	2.497	30.226	81.339
8/13/01 06:56:00	59.73	58.7	0.068	17.047	2.497	30.226	81.339
8/13/01 06:57:00	59.73	58.7	0.075	17.047	2.497	30.228	81.339
8/13/01 06:58:00	59.73	58.7	0.068	17.047	2.499	30.228	81.339
8/13/01 07:00:00	59.73	58.7	0.075	17.047	2.499	30.226	81.339
8/13/01 07:01:00	59.73	58.7	0.075	17.047	2.499	30.224	81.346
8/13/01 07:02:00	59.73	58.7	0.075	17.049	2.499	30.224	81.339
8/13/01 07:03:00	59.73	58.7	0.075	17.047	2.499	30.226	81.339
8/13/01 07:04:00	59.73	58.7	0.075	17.049	2.499	30.228	81.339
8/13/01 07:06:00	59.73	58.7	0.075	17.049	2.499	30.226	81.339
8/13/01 07:07:00	59.73	58.7	0.075	17.049	2.499	30.224	81.339
8/13/01 07:08:00	59.74	58.7	0.075	17.049	2.499	30.224	81.339
8/13/01 07:09:00	59.74	58.7	0.081	17.049	2.501	30.224	81.339
8/13/01 07:10:00	59.74	58.7	0.075	17.051	2.501	30.224	81.339
8/13/01 07:12:00	59.74	58.7	0.075	17.049	2.501	30.224	81.339
8/13/01 07:13:00	59.74	58.7	0.075	17.049	2.501	30.226	81.333
8/13/01 07:14:00	59.75	58.7	0.081	17.049	2.501	30.226	81.339
8/13/01 07:15:00	59.75	58.7	0.081	17.049	2.501	30.228	81.333
8/13/01 07:16:00	59.75	58.71	0.081	17.049	2.499	30.224	81.333
8/13/01 07:18:00	59.75	58.7	0.081	17.049	2.501	30.224	81.333
8/13/01 07:19:00	59.75	58.7	0.081	17.051	2.499	30.222	81.333
8/13/01 07:20:00	59.75	58.7	0.081	17.051	2.501	30.224	81.327
8/13/01 07:21:00	59.75	58.7	0.081	17.051	2.501	30.224	81.333
8/13/01 07:22:00	59.75	58.7	0.081	17.051	2.501	30.222	81.327
8/13/01 07:24:00	59.75	58.69	0.081	17.053	2.501	30.222	81.327
8/13/01 07:25:00	59.74	58.69	0.081	17.051	2.501	30.222	81.327
8/13/01 07:26:00	59.74	58.7	0.081	17.051	2.501	30.224	81.327
8/13/01 07:27:00	59.74	58.7	0.081	17.049	2.501	30.222	81.327
8/13/01 07:28:00	59.74	58.7	0.081	17.051	2.501	30.226	81.327
8/13/01 07:30:00	59.74	58.7	0.081	17.049	2.501	30.222	81.32
8/13/01 07:31:00	59.74	58.7	0.081	17.051	2.501	30.224	81.314
8/13/01 07:32:00	59.74	58.7	0.081	17.049	2.501	30.226	81.314
8/13/01 07:33:00	59.74	58.7	0.087	17.049	2.501	30.226	81.314
8/13/01 07:34:00	59.74	58.7	0.087	17.049	2.501	30.226	81.314
8/13/01 07:36:00	59.74	58.7	0.081	17.049	2.501	30.222	81.314
8/13/01 07:37:00	59.74	58.7	0.087	17.049	2.503	30.224	81.314
8/13/01 07:38:00	59.74	58.7	0.087	17.051	2.501	30.224	81.314
8/13/01 07:39:00	59.74	58.7	0.087	17.051	2.501	30.226	81.314
8/13/01 07:40:00	59.74	58.7	0.087	17.051	2.501	30.222	81.314
8/13/01 07:42:00	59.74	58.71	0.087	17.051	2.503	30.222	81.308
8/13/01 07:43:00	59.74	58.71	0.087	17.051	2.503	30.224	81.314
8/13/01 07:44:00	59.74	58.71	0.087	17.051	2.501	30.22	81.308
8/13/01 07:45:00	59.74	58.71	0.087	17.051	2.503	30.222	81.308
8/13/01 07:46:00	59.74	58.71	0.087	17.053	2.503	30.22	81.308
8/13/01 07:48:00	59.74	58.71	0.087	17.053	2.503	30.22	81.308
8/13/01 07:49:00	59.74	58.71	0.087	17.053	2.503	30.22	81.308
8/13/01 07:50:00	59.74	58.71	0.087	17.053	2.503	30.218	81.308
8/13/01 07:51:00	59.74	58.71	0.087	17.053	2.503	30.222	81.308
8/13/01 07:52:00	59.74	58.71	0.087	17.053	2.503	30.218	81.308
8/13/01 07:54:00	59.74	58.71	0.087	17.051	2.503	30.22	81.308
8/13/01 07:55:00	59.74	58.71	0.093	17.051	2.503	30.218	81.308
8/13/01 07:56:00	59.74	58.7	0.087	17.051	2.503	30.216	81.308
8/13/01 07:57:00	59.74	58.7	0.093	17.051	2.503	30.222	81.301
8/13/01 07:58:00	59.74	58.7	0.093	17.051	2.501	30.218	81.301
8/13/01 08:00:00	59.74	58.7	0.087	17.051	2.501	30.216	81.301
8/13/01 08:01:00	59.74	58.7	0.093	17.051	2.501	30.218	81.301
8/13/01 08:02:00	59.74	58.7	0.087	17.051	2.503	30.22	81.301
8/13/01 08:03:00	59.74	58.7	0.093	17.051	2.503	30.216	81.301
8/13/01 08:04:00	59.74	58.7	0.093	17.051	2.503	30.214	81.301
8/13/01 08:06:00	59.74	58.71	0.093	17.051	2.503	30.216	81.301
8/13/01 08:07:00	59.74	58.71	0.093	17.051	2.503	30.218	81.301
8/13/01 08:08:00	59.74	58.71	0.093	17.051	2.503	30.218	81.295
8/13/01 08:09:00	59.74	58.71	0.093	17.051	2.503	30.218	81.301
8/13/01 08:10:00	59.74	58.71	0.093	17.051	2.503	30.216	81.301
8/13/01 08:12:00	59.74	58.71	0.093	17.051	2.503	30.216	81.295
8/13/01 08:13:00	59.74	58.71	0.093	17.051	2.501	30.218	81.295
8/13/01 08:14:00	59.74	58.71	0.093	17.051	2.501	30.218	81.295
8/13/01 08:15:00	59.74	58.71	0.087	17.051	2.503	30.22	81.295
8/13/01 08:16:00	59.74	58.71	0.087	17.051	2.503	30.218	81.295
8/13/01 08:18:00	59.74	58.71	0.087	17.051	2.503	30.22	81.295
8/13/01 08:19:00	59.75	58.71	0.087	17.051	2.503	30.22	81.295
8/13/01 08:20:00	59.75	58.71	0.099	17.049	2.503	30.216	81.295
8/13/01 08:21:00	59.75	58.71	0.087	17.049	2.503	30.22	81.295
8/13/01 08:22:00	59.75	58.71	0.087	17.049	2.501	30.22	81.295
8/13/01 08:24:00	59.75	58.71	0.099	17.049	2.501	30.22	81.289
8/13/01 08:25:00	59.75	58.71	0.087	17.049	2.503	30.22	81.295
8/13/01 08:26:00	59.75	58.71	0.093	17.049	2.501	30.216	81.295
8/13/01 08:27:00	59.75	58.71	0.093	17.049	2.503	30.216	81.289
8/13/01 08:28:00	59.75	58.71	0.093	17.051	2.503	30.218	81.289
8/13/01 08:30:00	59.75	58.71	0.093	17.051	2.503	30.216	81.289
8/13/01 08:31:00	59.75	58.71	0.093	17.051	2.503	30.216	81.289
8/13/01 08:32:00	59.75	58.71	0.093	17.051	2.503	30.216	81.289
8/13/01 08:33:00	59.75	58.71	0.093	17.051	2.503	30.216	81.289
8/13/01 08:34:00	59.75	58.71	0.093	17.051	2.503	30.212	81.289
8/13/01 08:36:00	59.75	58.71	0.093	17.051	2.503	30.22	81.289
8/13/01 08:37:00	59.75	58.7	0.093	17.051	2.505	30.212	81.289
8/13/01 08:38:00	59.75	58.7	0.093	17.053	2.505	30.214	81.282
8/13/01 08:39:00	59.75	58.7	0.093	17.053	2.505	30.214	81.282
8/13/01 08:40:00	59.75	58.7	0.093	17.053	2.505	30.21	81.282
8/13/01 08:42:00	59.75	58.7	0.093	17.053	2.505	30.212	81.282
8/13/01 08:43:00	59.75	58.7	0.093	17.056	2.505	30.212	81.282
8/13/01 08:44:00	59.75	58.7	0.093	17.056	2.505	30.208	81.282

Date/Time	Downhole Pressure (psi)	Downhole Temperature (deg F)	Wellhead Pressure (psi)	Upper Monitor Pressure (psi)	Lower Monitor Pressure (psi)	Barometric Pressure (inchs Hg)	Annular Pressure (psi)
8/13/01 08:45:00	59.75	58.7	0.093	17.056	2.505	30.204	81.282
8/13/01 08:46:00	59.75	58.7	0.093	17.056	2.505	30.208	81.282
8/13/01 08:48:00	59.75	58.7	0.093	17.056	2.507	30.208	81.282
8/13/01 08:49:00	59.75	58.7	0.093	17.055	2.505	30.208	81.276
8/13/01 08:50:00	59.75	58.7	0.093	17.056	2.507	30.208	81.276
8/13/01 08:51:00	59.75	58.7	0.093	17.055	2.507	30.204	81.276
8/13/01 08:52:00	59.75	58.7	0.093	17.055	2.507	30.204	81.276
8/13/01 08:54:00	59.74	58.7	0.093	17.058	2.507	30.208	81.282
8/13/01 08:55:00	59.75	58.7	0.093	17.056	2.507	30.21	81.276
8/13/01 08:56:00	59.75	58.71	0.099	17.058	2.507	30.208	81.276
8/13/01 08:57:00	59.75	58.71	0.093	17.056	2.507	30.208	81.276
8/13/01 08:58:00	59.75	58.71	0.093	17.056	2.505	30.208	81.276
8/13/01 09:00:00	59.75	58.71	0.093	17.056	2.507	30.21	81.27
8/13/01 09:01:00	59.75	58.71	0.099	17.055	2.507	30.208	81.27
8/13/01 09:02:00	59.75	58.71	0.093	17.055	2.505	30.208	81.276
8/13/01 09:03:00	59.75	58.71	0.099	17.055	2.507	30.208	81.27
8/13/01 09:04:00	59.75	58.71	0.093	17.055	2.505	30.21	81.27
8/13/01 09:06:00	59.75	58.7	0.093	17.055	2.505	30.206	81.27
8/13/01 09:07:00	59.75	58.71	0.093	17.053	2.505	30.21	81.27
8/13/01 09:08:00	59.75	58.71	0.099	17.053	2.507	30.21	81.263
8/13/01 09:09:00	59.75	58.71	0.093	17.053	2.505	30.208	81.263
8/13/01 09:10:00	59.75	58.71	0.099	17.055	2.505	30.206	81.263
8/13/01 09:12:00	59.75	58.71	0.093	17.055	2.505	30.208	81.263
8/13/01 09:13:00	59.74	58.71	0.099	17.055	2.507	30.204	81.263
8/13/01 09:14:00	59.74	58.71	0.099	17.055	2.507	30.208	81.263
8/13/01 09:15:00	59.74	58.71	0.099	17.055	2.508	30.206	81.263
8/13/01 09:16:00	59.74	58.71	0.093	17.056	2.508	30.202	81.263
8/13/01 09:18:00	59.74	58.71	0.099	17.056	2.508	30.204	81.263
8/13/01 09:19:00	59.74	58.71	0.099	17.058	2.508	30.204	81.263
8/13/01 09:20:00	59.74	58.71	0.099	17.056	2.508	30.204	81.257
8/13/01 09:21:00	59.74	58.7	0.099	17.056	2.508	30.204	81.257
8/13/01 09:22:00	59.74	58.7	0.099	17.058	2.508	30.204	81.263
8/13/01 09:24:00	59.74	58.7	0.099	17.058	2.508	30.202	81.263
8/13/01 09:25:00	59.74	58.71	0.099	17.058	2.508	30.204	81.263
8/13/01 09:26:00	59.74	58.71	0.106	17.058	2.508	30.2	81.257
8/13/01 09:27:00	59.74	58.71	0.106	17.058	2.508	30.204	81.257
8/13/01 09:28:00	59.74	58.71	0.099	17.058	2.508	30.2	81.257
8/13/01 09:30:00	59.74	58.71	0.099	17.058	2.508	30.2	81.257
8/13/01 09:31:00	59.74	58.71	0.099	17.058	2.508	30.198	81.257
8/13/01 09:32:00	59.74	58.71	0.106	17.058	2.508	30.198	81.251
8/13/01 09:33:00	59.74	58.71	0.106	17.058	2.508	30.2	81.251
8/13/01 09:34:00	59.75	58.71	0.106	17.058	2.508	30.2	81.251
8/13/01 09:36:00	59.75	58.71	0.106	17.058	2.508	30.202	81.251
8/13/01 09:37:00	59.75	58.71	0.099	17.058	2.51	30.202	81.251
8/13/01 09:38:00	59.75	58.71	0.099	17.06	2.51	30.2	81.251
8/13/01 09:39:00	59.75	58.71	0.099	17.06	2.51	30.2	81.251
8/13/01 09:40:00	59.75	58.71	0.099	17.062	2.512	30.202	81.251
8/13/01 09:42:00	59.74	58.71	0.099	17.062	2.512	30.2	81.251
8/13/01 09:43:00	59.74	58.71	0.106	17.064	2.514	30.196	81.251
8/13/01 09:44:00	59.74	58.71	0.106	17.066	2.512	30.196	81.251
8/13/01 09:45:00	59.74	58.71	0.106	17.066	2.514	30.198	81.244
8/13/01 09:46:00	59.74	58.71	0.106	17.066	2.514	30.198	81.244
8/13/01 09:48:00	59.74	58.71	0.106	17.066	2.514	30.194	81.244
8/13/01 09:49:00	59.74	58.71	0.106	17.066	2.514	30.196	81.244
8/13/01 09:50:00	59.74	58.71	0.106	17.068	2.514	30.198	81.244
8/13/01 09:51:00	59.74	58.71	0.106	17.068	2.516	30.196	81.244
8/13/01 09:52:00	59.74	58.71	0.106	17.068	2.514	30.198	81.244
8/13/01 09:54:00	59.73	58.71	0.106	17.068	2.514	30.194	81.244
8/13/01 09:55:00	59.73	58.71	0.106	17.068	2.514	30.194	81.238
8/13/01 09:56:00	59.73	58.71	0.106	17.066	2.512	30.196	81.238
8/13/01 09:57:00	59.73	58.71	0.106	17.066	2.512	30.2	81.238
8/13/01 09:58:00	59.73	58.71	0.106	17.066	2.512	30.196	81.238
8/13/01 10:00:00	59.73	58.71	0.112	17.066	2.51	30.194	81.238
8/13/01 10:01:00	59.73	58.71	0.106	17.066	2.51	30.196	81.238
8/13/01 10:02:00	59.73	58.71	0.106	17.064	2.51	30.196	81.238
8/13/01 10:03:00	59.73	58.71	0.106	17.066	2.508	30.196	81.238
8/13/01 10:04:00	59.73	58.71	0.106	17.062	2.508	30.192	81.238
8/13/01 10:06:00	59.73	58.7	0.106	17.062	2.508	30.192	81.238
8/13/01 10:07:00	59.73	58.7	0.106	17.06	2.508	30.192	81.238
8/13/01 10:08:00	59.73	58.7	0.106	17.06	2.507	30.192	81.238
8/13/01 10:09:00	59.73	58.7	0.106	17.06	2.507	30.192	81.238
8/13/01 10:10:00	59.73	58.7	0.112	17.06	2.507	30.19	81.232
8/13/01 10:12:00	59.74	58.7	0.112	17.06	2.505	30.194	81.238
8/13/01 10:13:00	59.74	58.71	0.112	17.06	2.505	30.194	81.232
8/13/01 10:14:00	59.74	58.71	0.106	17.06	2.503	30.192	81.238
8/13/01 10:15:00	59.74	58.71	0.112	17.06	2.503	30.188	81.232
8/13/01 10:16:00	59.74	58.71	0.112	17.06	2.503	30.192	81.232
8/13/01 10:18:00	59.74	58.72	0.112	17.06	2.503	30.192	81.232
8/13/01 10:19:00	59.74	58.71	0.112	17.06	2.503	30.188	81.232
8/13/01 10:20:00	59.74	58.71	0.112	17.06	2.503	30.188	81.232
8/13/01 10:21:00	59.74	58.71	0.112	17.06	2.505	30.188	81.225
8/13/01 10:22:00	59.74	58.71	0.112	17.06	2.507	30.186	81.232
8/13/01 10:24:00	59.74	58.71	0.112	17.06	2.507	30.184	81.225
8/13/01 10:25:00	59.74	58.71	0.112	17.06	2.508	30.186	81.225
8/13/01 10:26:00	59.74	58.71	0.112	17.062	2.508	30.188	81.225
8/13/01 10:27:00	59.74	58.71	0.112	17.062	2.508	30.186	81.225
8/13/01 10:28:00	59.74	58.71	0.112	17.062	2.508	30.188	81.225
8/13/01 10:30:00	59.74	58.71	0.112	17.064	2.508	30.188	81.225
8/13/01 10:31:00	59.74	58.71	0.112	17.064	2.508	30.188	81.225
8/13/01 10:32:00	59.74	58.71	0.112	17.064	2.508	30.19	81.225
8/13/01 10:33:00	59.74	58.71	0.112	17.064	2.508	30.188	81.225
8/13/01 10:34:00	59.74	58.71	0.112	17.064	2.507	30.186	81.219
8/13/01 10:36:00	59.74	58.71	0.112	17.064	2.508	30.19	81.219
8/13/01 10:37:00	59.74	58.71	0.112	17.064	2.508	30.188	81.219
8/13/01 10:38:00	59.74	58.71	0.112	17.064	2.508	30.188	81.219
8/13/01 10:39:00	59.74	58.71	0.112	17.064	2.508	30.186	81.219
8/13/01 10:40:00	59.74	58.71	0.112	17.064	2.508	30.186	81.219
8/13/01 10:42:00	59.74	58.71	0.112	17.066	2.508	30.186	81.219
8/13/01 10:43:00	59.74	58.71	0.112	17.066	2.51	30.188	81.219
8/13/01 10:44:00	59.74	58.71	0.112	17.066	2.508	30.188	81.219
8/13/01 10:45:00	59.74	58.71	0.112	17.068	2.508	30.19	81.219
8/13/01 10:46:00	59.74	58.71	0.112	17.066	2.51	30.186	81.213
8/13/01 10:48:00	59.74	58.71	0.112	17.068	2.51	30.186	81.213
8/13/01 10:49:00	59.74	58.71	0.112	17.068	2.51	30.186	81.213

CITY of COOPER CITY
INJECTION TEST DATA

Date/Time	Downhole Pressure (psi)	Downhole Temperature (deg F)	Wellhead Pressure (psi)	Upper Monitor Pressure (psi)	Lower Monitor Pressure (psi)	Barometric Pressure (inchs Hg)	Annular Pressure (psi)
8/13/01 10:50:00	59.74	58.71	0.112	17.068	2.51	30.186	81.213
8/13/01 10:51:00	59.74	58.71	0.112	17.069	2.51	30.186	81.213
8/13/01 10:52:00	59.74	58.71	0.112	17.069	2.51	30.19	81.213
8/13/01 10:54:00	59.74	58.71	0.112	17.071	2.51	30.184	81.213
8/13/01 10:55:00	59.74	58.71	0.112	17.071	2.51	30.186	81.213
8/13/01 10:56:00	59.74	58.7	0.112	17.071	2.51	30.188	81.206
8/13/01 10:57:00	59.74	58.7	0.112	17.071	2.51	30.184	81.206
8/13/01 10:58:00	59.74	58.7	0.112	17.073	2.51	30.186	81.206
8/13/01 11:00:00	59.74	58.7	0.112	17.073	2.512	30.182	81.206
8/13/01 11:01:00	59.74	58.7	0.112	17.071	2.512	30.186	81.206
8/13/01 11:02:00	59.74	58.7	0.118	17.071	2.512	30.182	81.206
8/13/01 11:03:00	59.74	58.7	0.112	17.071	2.512	30.182	81.206
8/13/01 11:04:00	59.74	58.71	0.112	17.071	2.512	30.182	81.206
8/13/01 11:06:00	59.74	58.7	0.118	17.073	2.512	30.184	81.2
8/13/01 11:07:00	59.74	58.7	0.112	17.071	2.512	30.182	81.2
8/13/01 11:08:00	59.74	58.7	0.118	17.071	2.512	30.18	81.2
8/13/01 11:09:00	59.74	58.7	0.112	17.071	2.51	30.184	81.2
8/13/01 11:10:00	59.74	58.69	0.118	17.071	2.512	30.18	81.2
8/13/01 11:12:00	59.74	58.69	0.118	17.073	2.51	30.182	81.2
8/13/01 11:13:00	59.74	58.7	0.118	17.073	2.512	30.182	81.2
8/13/01 11:14:00	59.74	58.7	0.118	17.073	2.512	30.182	81.2
8/13/01 11:15:00	59.74.	58.7	0.112	17.073	2.512	30.182	81.2
8/13/01 11:16:00	59.74	58.7	0.118	17.073	2.512	30.18	81.2
8/13/01 11:18:00	59.74	58.71	0.118	17.073	2.514	30.18	81.2
8/13/01 11:19:00	59.74	58.71	0.118	17.073	2.512	30.178	81.194
8/13/01 11:20:00	59.73	58.71	0.118	17.073	2.512	30.178	81.2
8/13/01 11:21:00	59.73	58.71	0.118	17.071	2.512	30.174	81.194
8/13/01 11:22:00	59.73	58.71	0.118	17.071	2.512	30.171	81.2
8/13/01 11:24:00	59.74	58.71	0.118	17.071	2.512	30.178	81.2
8/13/01 11:25:00	59.74	58.71	0.118	17.069	2.512	30.176	81.194
8/13/01 11:26:00	59.74	58.71	0.118	17.069	2.512	30.178	81.194
8/13/01 11:27:00	59.74	58.71	0.118	17.069	2.512	30.18	81.194
8/13/01 11:28:00	59.74	58.71	0.118	17.068	2.514	30.176	81.194
8/13/01 11:30:00	59.75	58.71	0.118	17.068	2.514	30.174	81.194
8/13/01 11:31:00	59.75	58.71	0.118	17.068	2.514	30.176	81.187
8/13/01 11:32:00	59.75	58.71	0.118	17.068	2.514	30.176	81.194
8/13/01 11:33:00	59.75	58.71	0.118	17.068	2.514	30.176	81.194
8/13/01 11:34:00	59.75	58.71	0.118	17.068	2.514	30.176	81.194
8/13/01 11:36:00	59.75	58.71	0.118	17.068	2.514	30.171	81.187
8/13/01 11:37:00	59.75	58.71	0.118	17.068	2.516	30.174	81.187
8/13/01 11:38:00	59.75	58.71	0.118	17.068	2.514	30.176	81.187
8/13/01 11:39:00	59.75	58.71	0.118	17.068	2.516	30.174	81.194
8/13/01 11:40:00	59.75	58.71	0.118	17.068	2.516	30.176	81.187
8/13/01 11:42:00	59.75	58.7	0.118	17.068	2.514	30.171	81.187
8/13/01 11:43:00	59.75	58.7	0.118	17.066	2.514	30.174	81.187
8/13/01 11:44:00	59.74	58.7	0.118	17.066	2.514	30.174	81.187
8/13/01 11:45:00	59.74	58.7	0.118	17.066	2.516	30.178	81.187
8/13/01 11:46:00	59.74	58.7	0.118	17.066	2.516	30.171	81.181
8/13/01 11:48:00	59.74	58.7	0.118	17.066	2.514	30.176	81.181
8/13/01 11:49:00	59.74	58.7	0.118	17.066	2.514	30.176	81.181
8/13/01 11:50:00	59.74	58.7	0.118	17.068	2.514	30.174	81.181
8/13/01 11:51:00	59.74	58.7	0.118	17.068	2.516	30.171	81.181
8/13/01 11:52:00	59.74	58.7	0.118	17.068	2.514	30.174	81.181
8/13/01 11:54:00	59.74	58.7	0.118	17.068	2.516	30.176	81.181
8/13/01 11:55:00	59.74	58.7	0.118	17.068	2.514	30.174	81.175
8/13/01 11:56:00	59.74	58.7	0.118	17.068	2.516	30.174	81.175
8/13/01 11:57:00	59.73	58.7	0.118	17.068	2.516	30.178	81.175
8/13/01 11:58:00	59.73	58.7	0.118	17.069	2.516	30.176	81.175
8/13/01 12:00:00	59.73	58.7	0.118	17.069	2.516	30.174	81.175
8/13/01 12:01:00	59.73	58.7	0.118	17.069	2.518	30.174	81.175
8/13/01 12:02:00	59.74	58.7	0.118	17.071	2.516	30.167	81.175
8/13/01 12:03:00	59.74	58.71	0.118	17.071	2.518	30.171	81.175
8/13/01 12:04:00	59.74	58.71	0.118	17.071	2.518	30.171	81.175
8/13/01 12:06:00	59.74	58.71	0.118	17.071	2.518	30.169	81.168
8/13/01 12:07:00	59.74	58.71	0.118	17.071	2.52	30.169	81.175
8/13/01 12:08:00	59.74	58.71	0.118	17.069	2.52	30.169	81.175
8/13/01 12:09:00	59.74	58.71	0.118	17.071	2.52	30.171	81.168
8/13/01 12:10:00	59.74	58.71	0.118	17.071	2.52	30.171	81.168
8/13/01 12:12:00	59.73	58.71	0.118	17.073	2.518	30.171	81.162
8/13/01 12:13:00	59.73	58.71	0.118	17.071	2.518	30.176	81.168
8/13/01 12:14:00	59.73	58.71	0.118	17.071	2.516	30.174	81.168
8/13/01 12:15:00	59.73	58.71	0.118	17.071	2.516	30.169	81.162
8/13/01 12:16:00	59.73	58.71	0.118	17.071	2.514	30.174	81.162
8/13/01 12:18:00	59.73	58.71	0.118	17.071	2.512	30.174	81.162
8/13/01 12:19:00	59.73	58.71	0.118	17.071	2.512	30.176	81.162
8/13/01 12:20:00	59.73	58.71	0.118	17.071	2.512	30.171	81.162
8/13/01 12:21:00	59.73	58.71	0.118	17.071	2.51	30.171	81.162
8/13/01 12:22:00	59.73	58.71	0.112	17.071	2.508	30.176	81.162
8/13/01 12:24:00	59.73	58.71	0.118	17.071	2.508	30.174	81.162
8/13/01 12:25:00	59.73	58.71	0.112	17.071	2.508	30.171	81.162
8/13/01 12:26:00	59.74	58.71	0.118	17.071	2.508	30.174	81.162
8/13/01 12:27:00	59.74	58.71	0.118	17.071	2.507	30.178	81.156
8/13/01 12:28:00	59.74	58.71	0.112	17.073	2.507	30.178	81.156
8/13/01 12:30:00	59.74	58.71	0.118	17.071	2.505	30.176	81.156
8/13/01 12:31:00	59.74	58.71	0.118	17.069	2.503	30.174	81.156
8/13/01 12:32:00	59.74	58.71	0.118	17.069	2.503	30.174	81.156
8/13/01 12:33:00	59.74	58.71	0.118	17.069	2.503	30.176	81.156
8/13/01 12:34:00	59.74	58.7	0.118	17.069	2.505	30.176	81.156
8/13/01 12:36:00	59.74	58.7	0.118	17.069	2.505	30.174	81.156
8/13/01 12:37:00	59.75	58.71	0.118	17.069	2.507	30.178	81.156
8/13/01 12:38:00	59.75	58.71	0.118	17.068	2.507	30.171	81.149
8/13/01 12:39:00	59.75	58.71	0.118	17.068	2.507	30.176	81.156
8/13/01 12:40:00	59.75	58.71	0.118	17.068	2.507	30.176	81.156
8/13/01 12:42:00	59.75	58.71	0.118	17.068	2.508	30.169	81.149
8/13/01 12:43:00	59.75	58.71	0.118	17.068	2.508	30.174	81.149
8/13/01 12:44:00	59.75	58.71	0.118	17.068	2.508	30.171	81.149
8/13/01 12:45:00	59.75	58.71	0.112	17.068	2.508	30.171	81.149
8/13/01 12:46:00	59.74	58.71	0.112	17.066	2.507	30.171	81.143
8/13/01 12:48:00	59.75	58.76	0.112	17.066	2.508	30.174	81.143
8/13/01 12:49:00	59.75	58.82	0.112	17.066	2.508	30.176	81.143
8/13/01 12:50:00	59.75	58.88	0.118	17.066	2.508	30.171	81.143
8/13/01 12:51:00	59.75	58.94	0.118	17.066	2.508	30.171	81.143
8/13/01 12:52:00	59.75	58.99	0.118	17.066	2.508	30.174	81.143
8/13/01 12:54:00	59.89	59.19	0.112	17.068	2.508	30.176	81.143
8/13/01 12:55:00	60.02	59.34	0.112	17.068	2.51	30.171	81.143
8/13/01 12:56:00	60.16	59.48	0.118	17.069	2.51	30.171	81.143
8/13/01 12:57:00	60.3	59.63	0.118	17.069	2.51	30.171	81.137
8/13/01 12:58:00	60.43	59.77	0.118	17.069	2.51	30.171	81.143
8/13/01 13:00:00	60.7	60.04	0.112	17.069	2.51	30.171	81.137
8/13/01 13:01:00	60.83	60.17	0.112	17.069	2.51	30.174	81.137
8/13/01 13:02:00	60.96	60.29	0.112	17.069	2.508	30.174	81.137
8/13/01 13:03:00	61.09	60.41	0.112	17.069	2.51	30.174	81.137
8/13/01 13:04:00	61.22	60.54	0.112	17.069	2.51	30.171	81.137
8/13/01 13:06:00	61.47	60.78	0.112	17.071	2.51	30.176	81.137
8/13/01 13:07:00	61.58	60.9	0.112	17.071	2.51	30.176	81.137
8/13/01 13:08:00	61.69	61.02	0.112	17.071	2.508	30.169	81.137
8/13/01 13:09:00	61.81	61.14	0.112	17.071	2.508	30.174	81.137
8/13/01 13:10:00	61.92	61.26	0.112	17.069	2.508	30.174	81.13
8/13/01 13:12:00	62.14	61.52	0.112	17.071	2.508	30.174	81.13
8/13/01 13:13:00	62.26	61.65	0.112	17.071	2.508	30.178	81.13
8/13/01 13:14:00	62.37	61.79	0.112	17.071	2.508	30.174	81.13
8/13/01 13:15:00	62.48	61.93	0.112	17.073	2.51	30.178	81.13
8/13/01 13:16:00	62.59	62.06	0.112	17.073	2.51	30.174	81.124
8/13/01 13:18:00	63.96	64.5	0.112	17.077	2.508	30.174	81.124
8/13/01 13:19:00	65.23	66.8	0.112	17.077	2.51	30.174	81.13
8/13/01 13:20:00	66.49	69.1	0.112	17.077	2.51	30.171	81.124
8/13/01 13:21:00	67.75	71.4	0.118	17.077	2.51	30.169	81.13
8/13/01 13:22:00	69.01	73.7	0.112	17.077	2.51	30.171	81.124
8/13/01 13:24:00	72.34	77.21	0.112	17.073	2.51	30.169	81.124
8/13/01 13:25:00	74.41	78.41	0.112	17.073	2.512	30.169	81.124
8/13/01 13:26:00	76.47	79.61	0.112	17.073	2.51	30.169	81.124
8/13/01 13:27:00	78.54	80.82	0.112	17.073	2.51	30.169	81.124
8/13/01 13:28:00	80.6	82.02	0.112	17.073	2.512	30.167	81.124
8/13/01 13:30:00	83.01	83.39	0.112	17.073	2.512	30.169	81.124
8/13/01 13:31:00	83.35	83.55	0.112	17.077	2.51	30.169	81.118
8/13/01 13:32:00	83.7	83.72	0.112	17.077	2.512	30.176	81.118
8/13/01 13:33:00	84.04	83.88	0.112	17.077	2.512	30.171	81.118
8/13/01 13:34:00	84.38	84.04	0.118	17.077	2.51	30.169	81.111
8/13/01 13:36:00	84.85	84.29	0.112	17.077	2.512	30.171	81.111
8/13/01 13:37:00	84.97	84.38	0.112	17.077	2.51	30.171	81.111
8/13/01 13:38:00	85.09	84.47	0.112	17.077	2.51	30.176	81.111
8/13/01 13:39:00	85.21	84.56	0.112	17.073	2.51	30.174	81.111
8/13/01 13:40:00	85.33	84.66	0.112	17.071	2.512	30.176	81.118
8/13/01 13:42:00	85.53	84.81	0.112	17.075	2.51	30.176	81.111
8/13/01 13:43:00	85.6	84.87	0.112	17.071	2.512	30.171	81.111
8/13/01 13:44:00	85.68	84.93	0.112	17.071	2.512	30.176	81.111
8/13/01 13:45:00	85.76	84.98	0.106	17.075	2.512	30.178	81.111
8/13/01 13:46:00	85.83	85.04	0.112	17.075	2.512	30.176	81.111
8/13/01 13:48:00	85.96	85.15	0.112	17.075	2.512	30.176	81.105
8/13/01 13:49:00	86.01	85.2	0.112	17.075	2.512	30.176	81.099
8/13/01 13:50:00	86.07	85.25	0.106	17.075	2.512	30.176	81.105
8/13/01 13:51:00	86.12	85.3	0.106	17.075	2.512	30.18	81.105
8/13/01 13:52:00	86.17	85.35	0.112	17.075	2.512	30.178	81.105
8/13/01 13:54:00	86.27	85.44	0.106	17.077	2.514	30.178	81.105
8/13/01 13:55:00	86.32	85.49	0.112	17.075	2.512	30.176	81.105
8/13/01 13:56:00	86.37	85.53	0.112	17.075	2.512	30.178	81.099
8/13/01 13:57:00	86.41	85.58	0.112	17.071	2.512	30.171	81.105
8/13/01 13:58:00	86.46	85.63	0.106	17.071	2.512	30.178	81.099
8/13/01 14:00:00	86.55	85.71	0.112	17.069	2.512	30.178	81.099
8/13/01 14:01:00	86.59	85.75	0.112	17.071	2.512	30.178	81.099
8/13/01 14:02:00	86.63	85.79	0.106	17.069	2.512	30.178	81.099
8/13/01 14:03:00	86.68	85.83	0.106	17.069	2.51	30.18	81.099
8/13/01 14:04:00	86.72	85.87	0.106	17.069	2.51	30.178	81.099
8/13/01 14:06:00	86.79	85.95	0.106	17.068	2.51	30.18	81.099
8/13/01 14:07:00	86.83	85.98	0.106	17.068	2.508	30.178	81.099
8/13/01 14:08:00	86.86	86.02	0.106	17.068	2.507	30.18	81.099
8/13/01 14:09:00	86.9	86.05	0.106	17.068	2.507	30.178	81.099
8/13/01 14:10:00	86.94	86.08	0.106	17.068	2.507	30.178	81.092
8/13/01 14:12:00	87	86.15	0.106	17.068	2.505	30.178	81.092
8/13/01 14:13:00	87.03	86.18	0.106	17.068	2.507	30.176	81.092
8/13/01 14:14:00	87.07	86.21	0.106	17.066	2.503	30.176	81.092
8/13/01 14:15:00	87.1	86.24	0.112	17.066	2.505	30.174	81.092
8/13/01 14:16:00	87.13	86.27	0.106	17.066	2.505	30.174	81.092
8/13/01 14:18:00	87.19	86.34	0.106	17.066	2.505	30.18	81.092
8/13/01 14:19:00	87.22	86.38	0.112	17.066	2.503	30.176	81.092
8/13/01 14:20:00	87.24	86.42	0.112	17.066	2.501	30.176	81.092
8/13/01 14:21:00	87.27	86.46	0.106	17.066	2.501	30.178	81.092
8/13/01 14:22:00	87.3	86.5	0.106	17.064	2.499	30.176	81.092
8/13/01 14:24:00	87.36	86.57	0.106	17.064	2.495	30.178	81.092
8/13/01 14:25:00	87.38	86.6	0.106	17.064	2.495	30.176	81.086
8/13/01 14:26:00	87.41	86.63	0.106	17.064	2.495	30.176	81.086
8/13/01 14:27:00	87.44	86.65	0.106	17.064	2.495	30.176	81.086
8/13/01 14:28:00	87.47	86.68	0.106	17.064	2.499	30.176	81.086
8/13/01 14:30:00	87.53	86.72	0.106	17.064	2.499	30.176	81.086
8/13/01 14:31:00	87.56	86.72	0.106	17.064	2.501	30.178	81.086
8/13/01 14:32:00	87.59	86.73	0.106	17.064	2.501	30.18	81.086
8/13/01 14:33:00	87.63	86.74	0.106	17.066	2.501	30.182	81.08
8/13/01 14:34:00	87.66	86.75	0.106	17.066	2.501	30.184	81.08
8/13/01 14:36:00	87.71	86.77	0.106	17.066	2.501	30.18	81.08
8/13/01 14:37:00	87.72	86.79	0.099	17.066	2.499	30.184	81.08
8/13/01 14:38:00	87.74	86.8	0.106	17.064	2.501	30.184	81.08
8/13/01 14:39:00	87.75	86.82	0.106	17.064	2.499	30.182	81.08
8/13/01 14:40:00	87.77	86.83	0.099	17.064	2.501	30.182	81.073
8/13/01 14:42:00	87.8	86.86	0.106	17.064	2.501	30.182	81.073
8/13/01 14:43:00	87.81	86.88	0.099	17.064	2.499	30.186	81.073
8/13/01 14:44:00	87.83	86.9	0.099	17.064	2.501	30.182	81.073
8/13/01 14:45:00	87.85	86.92	0.099	17.064	2.501	30.188	81.073
8/13/01 14:46:00	87.86	86.93	0.099	17.064	2.501	30.188	81.073
8/13/01 14:48:00	87.89	86.96	0.106	17.064	2.501	30.188	81.067
8/13/01 14:49:00	87.9	86.96	0.099	17.066	2.499	30.188	81.067
8/13/01 14:50:00	87.91	86.97	0.099	17.066	2.501	30.186	81.067
8/13/01 14:51:00	87.92	86.98	0.099	17.066	2.501	30.188	81.067
8/13/01 14:52:00	87.92	86.99	0.099	17.068	2.501	30.186	81.067
8/13/01 14:54:00	87.94	87	0.099	17.066	2.501	30.186	81.067
8/13/01 14:55:00	87.95	87	0.099	17.066	2.503	30.184	81.067
8/13/01 14:56:00	87.95	87.01	0.099	17.066	2.503	30.186	81.067
8/13/01 14:57:00	87.96	87.01	0.099	17.066	2.501	30.184	81.067
8/13/01 14:58:00	87.96	87.01	0.099	17.064	2.501	30.19	81.067

CITY of COOPER CITY
INJECTION TEST DATA

Date/Time	Downhole Pressure (psi)	Downhole Temperature (deg F)	Wellhead Pressure (psi)	Upper Monitor Pressure (psi)	Lower Monitor Pressure (psi)	Barometric Pressure (inchs Hg)	Annular Pressure (psi)
8/13/01 15:00:00	87.97	87.02	0.099	17.064	2.501	30.188	81.067
8/13/01 15:01:00	87.98	87.02	0.099	17.064	2.501	30.186	81.061
8/13/01 15:02:00	87.98	87.02	0.099	17.064	2.501	30.188	81.061
8/13/01 15:03:00	87.98	87.02	0.099	17.064	2.501	30.186	81.061
8/13/01 15:04:00	87.99	87.03	0.099	17.064	2.501	30.19	81.061
8/13/01 15:06:00	87.99	87.03	0.099	17.064	2.501	30.188	81.061
8/13/01 15:07:00	88	87.04	0.099	17.066	2.501	30.186	81.061
8/13/01 15:08:00	88	87.04	0.099	17.066	2.501	30.19	81.061
8/13/01 15:09:00	88	87.04	0.099	17.068	2.501	30.19	81.061
8/13/01 15:10:00	88	87.05	0.099	17.068	2.503	30.192	81.054
8/13/01 15:12:00	88.01	87.05	0.099	17.068	2.503	30.19	81.054
8/13/01 15:13:00	88.01	87.06	0.099	17.068	2.503	30.192	81.054
8/13/01 15:14:00	88.02	87.06	0.099	17.069	2.503	30.192	81.054
8/13/01 15:15:00	88.02	87.07	0.099	17.069	2.503	30.19	81.054
8/13/01 15:16:00	88.03	87.07	0.093	17.069	2.503	30.19	81.054
8/13/01 15:18:00	88.03	87.08	0.099	17.069	2.503	30.188	81.054
8/13/01 15:19:00	88.03	87.08	0.099	17.068	2.505	30.188	81.048
8/13/01 15:20:00	88.03	87.08	0.099	17.068	2.503	30.192	81.054
8/13/01 15:21:00	88.03	87.08	0.099	17.068	2.503	30.192	81.048
8/13/01 15:22:00	88.03	87.08	0.099	17.068	2.503	30.192	81.048
8/13/01 15:24:00	88.03	87.08	0.099	17.068	2.503	30.192	81.048
8/13/01 15:25:00	88.03	87.08	0.093	17.069	2.503	30.192	81.048
8/13/01 15:26:00	88.03	87.08	0.099	17.069	2.505	30.188	81.042
8/13/01 15:27:00	88.04	87.08	0.099	17.069	2.503	30.19	81.042
8/13/01 15:28:00	88.04	87.08	0.099	17.073	2.505	30.192	81.048
8/13/01 15:30:00	88.04	87.09	0.099	17.073	2.505	30.192	81.048
8/13/01 15:31:00	88.04	87.09	0.099	17.073	2.505	30.19	81.042
8/13/01 15:32:00	88.05	87.09	0.099	17.073	2.505	30.192	81.042
8/13/01 15:33:00	88.05	87.1	0.099	17.073	2.505	30.192	81.042
8/13/01 15:34:00	88.05	87.1	0.099	17.073	2.505	30.192	81.042
8/13/01 15:36:00	88.06	87.1	0.099	17.073	2.505	30.192	81.042
8/13/01 15:37:00	88.06	87.11	0.099	17.073	2.505	30.19	81.035
8/13/01 15:38:00	88.06	87.11	0.099	17.075	2.503	30.192	81.042
8/13/01 15:39:00	88.06	87.11	0.099	17.073	2.501	30.192	81.042
8/13/01 15:40:00	88.06	87.11	0.099	17.075	2.501	30.192	81.035
8/13/01 15:42:00	88.06	87.11	0.099	17.075	2.497	30.192	81.035
8/13/01 15:43:00	88.07	87.12	0.099	17.075	2.497	30.192	81.035
8/13/01 15:44:00	88.07	87.12	0.099	17.077	2.495	30.19	81.035
8/13/01 15:45:00	88.07	87.12	0.106	17.077	2.495	30.19	81.035
8/13/01 15:46:00	88.07	87.12	0.106	17.079	2.495	30.19	81.035
8/13/01 15:48:00	88.08	87.13	0.106	17.081	2.495	30.19	81.035
8/13/01 15:49:00	88.08	87.14	0.106	17.079	2.494	30.192	81.035
8/13/01 15:50:00	88.09	87.14	0.106	17.081	2.494	30.188	81.029
8/13/01 15:51:00	88.09	87.15	0.106	17.081	2.492	30.188	81.029
8/13/01 15:52:00	88.09	87.15	0.106	17.083	2.492	30.19	81.029
8/13/01 15:54:00	88.1	87.16	0.106	17.084	2.494	30.192	81.029
8/13/01 15:55:00	88.11	87.17	0.106	17.086	2.494	30.188	81.029
8/13/01 15:56:00	88.11	87.17	0.106	17.086	2.495	30.186	81.029
8/13/01 15:57:00	88.12	87.18	0.106	17.088	2.499	30.186	81.029
8/13/01 15:58:00	88.12	87.18	0.106	17.088	2.499	30.188	81.029
8/13/01 16:00:00	88.13	87.19	0.106	17.09	2.499	30.19	81.029
8/13/01 16:01:00	88.13	87.19	0.112	17.09	2.495	30.188	81.029
8/13/01 16:02:00	88.14	87.19	0.106	17.092	2.495	30.19	81.023
8/13/01 16:03:00	88.14	87.19	0.106	17.094	2.495	30.19	81.023
8/13/01 16:04:00	88.14	87.2	0.106	17.098	2.499	30.192	81.023
8/13/01 16:06:00	88.15	87.2	0.112	17.096	2.499	30.194	81.029
8/13/01 16:07:00	88.15	87.2	0.112	17.098	2.503	30.188	81.023
8/13/01 16:08:00	88.15	87.21	0.112	17.099	2.507	30.192	81.023
8/13/01 16:09:00	88.15	87.21	0.112	17.105	2.508	30.188	81.023
8/13/01 16:10:00	88.16	87.21	0.112	17.114	2.512	30.188	81.023
8/13/01 16:12:00	88.16	87.22	0.112	17.12	2.508	30.188	81.023
8/13/01 16:13:00	88.17	87.22	0.112	17.126	2.505	30.188	81.016
8/13/01 16:14:00	88.17	87.22	0.112	17.131	2.503	30.188	81.023
8/13/01 16:15:00	88.17	87.23	0.118	17.133	2.499	30.188	81.01
8/13/01 16:16:00	88.17	87.23	0.118	17.143	2.501	30.188	81.01
8/13/01 16:18:00	88.17	87.23	0.118	17.159	2.501	30.188	81.01
8/13/01 16:19:00	88.17	87.23	0.118	17.178	2.501	30.19	81.01
8/13/01 16:20:00	88.17	87.23	0.118	17.193	2.501	30.19	81.01
8/13/01 16:21:00	88.17	87.23	0.118	17.216	2.503	30.194	81.01
8/13/01 16:22:00	88.17	87.23	0.118	17.242	2.508	30.19	81.004
8/13/01 16:24:00	88.18	87.23	0.118	17.266	2.512	30.19	81.004
8/13/01 16:25:00	88.18	87.24	0.118	17.291	2.512	30.192	81.004
8/13/01 16:26:00	88.18	87.24	0.124	17.277	2.508	30.19	81.004
8/13/01 16:27:00	88.18	87.25	0.124	17.276	2.507	30.19	81.004
8/13/01 16:28:00	88.19	87.25	0.124	17.276	2.505	30.188	81.004
8/13/01 16:30:00	88.19	87.26	0.13	17.283	2.503	30.188	80.997
8/13/01 16:31:00	88.2	87.26	0.149	17.268	2.501	30.192	81.004
8/13/01 16:32:00	88.2	87.27	0.149	17.279	2.499	30.188	81.004
8/13/01 16:33:00	88.21	87.27	0.149	17.272	2.501	30.188	81.004
8/13/01 16:34:00	88.21	87.27	0.149	17.268	2.503	30.19	80.997
8/13/01 16:36:00	88.22	87.28	0.155	17.277	2.507	30.188	80.997
8/13/01 16:37:00	88.22	87.28	0.155	17.266	2.51	30.188	80.997
8/13/01 16:38:00	88.22	87.28	0.155	17.276	2.508	30.186	80.997
8/13/01 16:39:00	88.22	87.28	0.155	17.274	2.508	30.188	80.997
8/13/01 16:40:00	88.22	87.28	0.155	17.27	2.508	30.188	80.997
8/13/01 16:42:00	88.23	87.28	0.155	17.259	2.507	30.188	80.997
8/13/01 16:43:00	88.22	87.28	0.149	17.27	2.503	30.186	80.997
8/13/01 16:44:00	88.22	87.28	0.155	17.266	2.501	30.188	80.997
8/13/01 16:45:00	88.22	87.28	0.18	17.277	2.499	30.202	80.985
8/13/01 16:46:00	88.22	87.27	0.174	17.276	2.503	30.194	80.978
8/13/01 16:48:00	88.22	87.27	0.174	17.255	2.503	30.184	80.991
8/13/01 16:49:00	88.22	87.28	0.149	17.264	2.503	30.165	80.991
8/13/01 16:50:00	88.22	87.28	0.149	17.274	2.503	30.176	80.991
8/13/01 16:51:00	88.23	87.28	0.149	17.255	2.503	30.178	80.991
8/13/01 16:52:00	88.23	87.28	0.149	17.257	2.499	30.176	80.991
8/13/01 16:54:00	88.23	87.28	0.143	17.251	2.499	30.178	80.991
8/13/01 16:55:00	88.22	87.28	0.143	17.259	2.497	30.18	80.991
8/13/01 16:56:00	88.22	87.28	0.149	17.261	2.495	30.184	80.991
8/13/01 16:57:00	88.22	87.28	0.143	17.264	2.494	30.184	80.991
8/13/01 16:58:00	88.22	87.28	0.143	17.266	2.494	30.188	80.991
8/13/01 17:00:00	88.22	87.28	0.143	17.259	2.49	30.188	80.985
8/13/01 17:01:00	88.22	87.28	0.143	17.259	2.49	30.186	80.978
8/13/01 17:02:00	88.22	87.28	0.149	17.262	2.49	30.192	80.978
8/13/01 17:03:00	88.22	87.28	0.143	17.264	2.49	30.19	80.978
8/13/01 17:04:00	88.22	87.28	0.143	17.264	2.488	30.186	80.978
8/13/01 17:06:00	88.23	87.28	0.149	17.251	2.488	30.19	80.978
8/13/01 17:07:00	88.23	87.29	0.149	17.261	2.488	30.188	80.978
8/13/01 17:08:00	88.24	87.29	0.155	17.259	2.49	30.188	80.978
8/13/01 17:09:00	88.24	87.29	0.149	17.266	2.49	30.186	80.978
8/13/01 17:10:00	88.24	87.3	0.149	17.266	2.49	30.184	80.978
8/13/01 17:12:00	88.25	87.3	0.149	17.261	2.492	30.186	80.978
8/13/01 17:13:00	88.25	87.3	0.149	17.262	2.492	30.184	80.985
8/13/01 17:14:00	88.25	87.3	0.149	17.251	2.494	30.186	80.985
8/13/01 17:15:00	88.25	87.3	0.149	17.253	2.494	30.182	80.985
8/13/01 17:16:00	88.25	87.31	0.149	17.262	2.497	30.184	80.978
8/13/01 17:18:00	88.25	87.31	0.149	17.262	2.497	30.18	80.978
8/13/01 17:19:00	88.26	87.31	0.149	17.251	2.499	30.18	80.978
8/13/01 17:20:00	88.26	87.31	0.149	17.255	2.501	30.18	80.978
8/13/01 17:21:00	88.26	87.31	0.149	17.266	2.503	30.186	80.978
8/13/01 17:22:00	88.26	87.32	0.149	17.262	2.503	30.182	80.978
8/13/01 17:24:00	88.26	87.32	0.149	17.262	2.503	30.182	80.978
8/13/01 17:25:00	88.26	87.32	0.149	17.253	2.501	30.184	80.978
8/13/01 17:26:00	88.26	87.32	0.149	17.255	2.503	30.184	80.978
8/13/01 17:27:00	88.26	87.32	0.143	17.259	2.503	30.18	80.985
8/13/01 17:28:00	88.26	87.32	0.149	17.251	2.499	30.184	80.978
8/13/01 17:30:00	88.26	87.32	0.149	17.257	2.495	30.182	80.978
8/13/01 17:31:00	88.27	87.32	0.149	17.259	2.494	30.182	80.978
8/13/01 17:32:00	88.27	87.32	0.149	17.234	2.488	30.188	80.978
8/13/01 17:33:00	88.27	87.33	0.149	17.225	2.488	30.18	80.985
8/13/01 17:34:00	88.28	87.33	0.149	17.218	2.488	30.186	80.985
8/13/01 17:36:00	88.28	87.33	0.149	17.216	2.488	30.184	80.978
8/13/01 17:37:00	88.28	87.34	0.149	17.212	2.488	30.182	80.978
8/13/01 17:38:00	88.28	87.34	0.149	17.216	2.488	30.184	80.978
8/13/01 17:39:00	88.28	87.34	0.149	17.218	2.486	30.186	80.985
8/13/01 17:40:00	88.29	87.34	0.149	17.231	2.49	30.18	80.978
8/13/01 17:42:00	88.29	87.34	0.155	17.24	2.492	30.18	80.978
8/13/01 17:43:00	88.29	87.34	0.155	17.253	2.494	30.182	80.985
8/13/01 17:44:00	88.29	87.34	0.155	17.255	2.495	30.184	80.985
8/13/01 17:45:00	88.29	87.34	0.155	17.242	2.495	30.182	80.985
8/13/01 17:46:00	88.28	87.33	0.155	17.247	2.497	30.18	80.985
8/13/01 17:48:00	88.28	87.33	0.149	17.255	2.501	30.178	80.985
8/13/01 17:49:00	88.28	87.33	0.149	17.257	2.501	30.178	80.985
8/13/01 17:50:00	88.28	87.32	0.149	17.257	2.501	30.18	80.985
8/13/01 17:51:00	88.27	87.32	0.149	17.24	2.499	30.176	80.985
8/13/01 17:52:00	88.27	87.32	0.149	17.246	2.499	30.18	80.985
8/13/01 17:54:00	88.27	87.31	0.149	17.249	2.499	30.178	80.985
8/13/01 17:55:00	88.27	87.31	0.149	17.244	2.497	30.18	80.985
8/13/01 17:56:00	88.26	87.31	0.149	17.253	2.494	30.174	80.978
8/13/01 17:57:00	88.26	87.3	0.149	17.257	2.492	30.176	80.978
8/13/01 17:58:00	88.26	87.3	0.149	17.257	2.492	30.178	80.985
8/13/01 18:00:00	88.25	87.3	0.149	17.247	2.492	30.176	80.985
8/13/01 18:01:00	88.25	87.3	0.149	17.24	2.49	30.18	80.978
8/13/01 18:02:00	88.25	87.3	0.149	17.242	2.49	30.174	80.985
8/13/01 18:03:00	88.25	87.29	0.149	17.231	2.488	30.176	80.985
8/13/01 18:04:00	88.25	87.29	0.149	17.219	2.488	30.176	80.985
8/13/01 18:06:00	88.24	87.29	0.149	17.232	2.49	30.176	80.985
8/13/01 18:07:00	88.24	87.29	0.149	17.238	2.49	30.178	80.985
8/13/01 18:08:00	88.24	87.3	0.149	17.244	2.492	30.176	80.991
8/13/01 18:09:00	88.24	87.3	0.149	17.244	2.49	30.178	80.978
8/13/01 18:10:00	88.24	87.3	0.149	17.251	2.488	30.176	80.978
8/13/01 18:12:00	88.25	87.3	0.149	17.244	2.497	30.174	80.985
8/13/01 18:13:00	88.25	87.3	0.143	17.244	2.495	30.176	80.978
8/13/01 18:14:00	88.25	87.3	0.155	17.251	2.495	30.171	80.985
8/13/01 18:15:00	88.25	87.29	0.155	17.255	2.495	30.174	80.985
8/13/01 18:16:00	88.25	87.29	0.149	17.249	2.497	30.174	80.991
8/13/01 18:18:00	88.25	87.29	0.149	17.244	2.495	30.171	80.985
8/13/01 18:19:00	88.24	87.28	0.155	17.244	2.497	30.171	80.991
8/13/01 18:20:00	88.24	87.28	0.149	17.257	2.501	30.174	80.991
8/13/01 18:21:00	88.23	87.27	0.149	17.246	2.501	30.174	80.991
8/13/01 18:22:00	88.23	87.27	0.149	17.249	2.505	30.169	80.991
8/13/01 18:24:00	88.22	87.25	0.155	17.247	2.497	30.174	80.991
8/13/01 18:25:00	88.21	87.25	0.149	17.236	2.492	30.169	80.985
8/13/01 18:26:00	88.21	87.24	0.149	17.231	2.492	30.171	80.985
8/13/01 18:27:00	88.2	87.24	0.149	17.244	2.494	30.169	80.985
8/13/01 18:28:00	88.2	87.23	0.149	17.251	2.497	30.169	80.991
8/13/01 18:30:00	88.18	87.22	0.149	17.253	2.492	30.171	80.991
8/13/01 18:31:00	88.18	87.21	0.149	17.246	2.49	30.171	80.991
8/13/01 18:32:00	88.17	87.21	0.149	17.216	2.484	30.171	80.997
8/13/01 18:33:00	88.17	87.2	0.149	17.193	2.482	30.171	80.997
8/13/01 18:34:00	88.16	87.19	0.149	17.178	2.481	30.167	80.997
8/13/01 18:36:00	88.15	87.18	0.155	17.191	2.484	30.167	80.997
8/13/01 18:37:00	88.15	87.17	0.149	17.184	2.482	30.167	80.997
8/13/01 18:38:00	88.14	87.17	0.155	17.206	2.486	30.165	80.985
8/13/01 18:39:00	88.13	87.16	0.155	17.225	2.486	30.163	81.004
8/13/01 18:40:00	88.13	87.16	0.155	17.232	2.484	30.165	81.004
8/13/01 18:42:00	88.12	87.15	0.161	17.221	2.482	30.161	80.997
8/13/01 18:43:00	88.11	87.15	0.161	17.206	2.479	30.163	81.004
8/13/01 18:44:00	88.11	87.14	0.161	17.184	2.479	30.161	81.004
8/13/01 18:45:00	88.11	87.14	0.161	17.15	2.477	30.159	81.004
8/13/01 18:46:00	88.11	87.14	0.161	17.139	2.477	30.163	81.01
8/13/01 18:48:00	88.1	87.13	0.161	17.131	2.477	30.163	81.01
8/13/01 18:49:00	88.09	87.12	0.161	17.122	2.479	30.159	81.01
8/13/01 18:50:00	88.09	87.12	0.161	17.118	2.481	30.161	81.01
8/13/01 18:51:00	88.08	87.11	0.168	17.111	2.481	30.159	81.01
8/13/01 18:52:00	88.07	87.1	0.161	17.113	2.484	30.157	81.016
8/13/01 18:54:00	88.06	87.09	0.161	17.118	2.492	30.157	81.016
8/13/01 18:55:00	88.06	87.08	0.161	17.152	2.494	30.159	81.016
8/13/01 18:56:00	88.05	87.08	0.161	17.182	2.495	30.155	81.016
8/13/01 18:57:00	88.05	87.07	0.161	17.208	2.497	30.155	81.01
8/13/01 18:58:00	88.04	87.06	0.161	17.247	2.505	30.153	81.016
8/13/01 19:00:00	88.03	87.05	0.155	17.246	2.512	30.153	81.01
8/13/01 19:01:00	88.03	87.05	0.155	17.259	2.514	30.153	81.01
8/13/01 19:02:00	88.02	87.05	0.161	17.259	2.505	30.157	81.016
8/13/01 19:03:00	88.02	87.04	0.155	17.262	2.501	30.157	81.016
8/13/01 19:04:00	88.01	87.04	0.161	17.246	2.495	30.153	81.01
8/13/01 19:06:00	88	87.03	0.155	17.232	2.492	30.157	81.01
8/13/01 19:07:00	88	87.03	0.155	17.214	2.486	30.157	81.01
8/13/01 19:08:00	87.99	87.03	0.155	17.24	2.499	30.157	81.004

CITY of COOPER CITY
INJECTION TEST DATA

Date/Time	Downhole Pressure (psi)	Downhole Temperature (deg F)	Wellhead Pressure (psi)	Upper Monitor Pressure (psi)	Lower Monitor Pressure (psi)	Barometric Pressure (inchs Hg)	Annular Pressure (psi)
8/13/01 19:09	87.99	87.02	0.155	17.244	2.494	30.155	81.01
8/13/01 19:10:00	87.98	87.02	0.155	17.251	2.499	30.157	81.01
8/13/01 19:12:00	87.97	87.01	0.149	17.242	2.503	30.159	81.01
8/13/01 19:13:00	87.97	87.01	0.149	17.242	2.507	30.155	81.01
8/13/01 19:14:00	87.96	87.01	0.149	17.244	2.501	30.161	81.01
8/13/01 19:15:00	87.96	87	0.149	17.231	2.495	30.155	81.004
8/13/01 19:16:00	87.95	87	0.149	17.247	2.505	30.155	81.01
8/13/01 19:18:00	87.95	86.99	0.149	17.253	2.507	30.157	81.01
8/13/01 19:19:00	87.95	86.99	0.149	17.246	2.505	30.155	81.004
8/13/01 19:20:00	87.95	86.99	0.149	17.247	2.503	30.157	81.01
8/13/01 19:21:00	87.95	86.98	0.149	17.249	2.497	30.157	81.01
8/13/01 19:22:00	87.95	86.98	0.149	17.242	2.494	30.159	81.01
8/13/01 19:24:00	87.94	86.97	0.149	17.238	2.492	30.155	81.004
8/13/01 19:25:00	87.94	86.96	0.143	17.249	2.492	30.157	81.004
8/13/01 19:26:00	87.93	86.96	0.155	17.264	2.488	30.151	81.004
8/13/01 19:27:00	87.93	86.95	0.155	17.242	2.488	30.157	81.004
8/13/01 19:28:00	87.92	86.94	0.149	17.234	2.49	30.157	81.01
8/13/01 19:30:00	87.91	86.93	0.155	17.232	2.494	30.155	81.01
8/13/01 19:31:00	87.9	86.92	0.155	17.186	2.488	30.151	81.01
8/13/01 19:32:00	87.89	86.91	0.155	17.15	2.482	30.155	81.016
8/13/01 19:33:00	87.88	86.9	0.155	17.133	2.488	30.151	81.016
8/13/01 19:34:00	87.87	86.89	0.155	17.129	2.488	30.155	81.016
8/13/01 19:36:00	87.85	86.87	0.155	17.116	2.49	30.155	81.016
8/13/01 19:37:00	87.85	86.86	0.155	17.094	2.49	30.153	81.016
8/13/01 19:38:00	87.84	86.86	0.155	17.105	2.495	30.149	81.023
8/13/01 19:39:00	87.83	86.85	0.155	17.101	2.49	30.153	81.016
8/13/01 19:40:00	87.83	86.85	0.155	17.077	2.482	30.151	81.023
8/13/01 19:42:00	87.81	86.84	0.149	17.053	2.475	30.151	81.016
8/13/01 19:43:00	87.81	86.83	0.149	17.062	2.486	30.147	81.023
8/13/01 19:44:00	87.81	86.83	0.155	17.079	2.49	30.149	81.016
8/13/01 19:45:00	87.8	86.83	0.155	17.098	2.494	30.151	81.023
8/13/01 19:46:00	87.8	86.82	0.155	17.09	2.492	30.149	81.023
8/13/01 19:48:00	87.79	86.81	0.155	17.079	2.486	30.151	81.023
8/13/01 19:49:00	87.79	86.8	0.155	17.064	2.479	30.145	81.029
8/13/01 19:50:00	87.79	86.8	0.155	17.051	2.477	30.147	81.029
8/13/01 19:51:00	87.78	86.79	0.155	17.047	2.475	30.149	81.035
8/13/01 19:52:00	87.78	86.79	0.161	17.064	2.488	30.147	81.035
8/13/01 19:54:00	87.77	86.77	0.161	17.06	2.482	30.147	81.035
8/13/01 19:55:00	87.76	86.76	0.161	17.056	2.477	30.145	81.042
8/13/01 19:56:00	87.75	86.75	0.174	17.047	2.475	30.149	81.048
8/13/01 19:57:00	87.75	86.74	0.174	17.043	2.477	30.151	81.048
8/13/01 19:58:00	87.74	86.73	0.174	17.036	2.477	30.149	81.048
8/13/01 20:00:00	87.73	86.72	0.174	17.034	2.477	30.149	81.054
8/13/01 20:01:00	87.72	86.71	0.174	17.032	2.477	30.147	81.054
8/13/01 20:02:00	87.72	86.71	0.174	17.032	2.477	30.145	81.054
8/13/01 20:03:00	87.71	86.71	0.174	17.03	2.479	30.139	81.054
8/13/01 20:04:00	87.7	86.71	0.174	17.034	2.479	30.145	81.054
8/13/01 20:06:00	87.69	86.7	0.174	17.032	2.481	30.145	81.054
8/13/01 20:07:00	87.69	86.7	0.174	17.032	2.482	30.143	81.061
8/13/01 20:08:00	87.68	86.7	0.174	17.032	2.484	30.145	81.054
8/13/01 20:09:00	87.68	86.7	0.174	17.034	2.488	30.143	81.054
8/13/01 20:10:00	87.67	86.7	0.18	17.034	2.492	30.145	81.061
8/13/01 20:12:00	87.66	86.7	0.174	17.032	2.49	30.145	81.061
8/13/01 20:13:00	87.65	86.7	0.174	17.034	2.488	30.147	81.061
8/13/01 20:14:00	87.65	86.7	0.186	17.038	2.481	30.145	81.061
8/13/01 20:15:00	87.64	86.7	0.186	17.038	2.482	30.145	81.061
8/13/01 20:16:00	87.63	86.7	0.186	17.034	2.484	30.147	81.067
8/13/01 20:18:00	87.62	86.7	0.186	17.038	2.484	30.147	81.073
8/13/01 20:19:00	87.62	86.7	0.186	17.038	2.488	30.147	81.073
8/13/01 20:20:00	87.61	86.7	0.192	17.038	2.492	30.145	81.08
8/13/01 20:21:00	87.61	86.7	0.186	17.038	2.492	30.147	81.08
8/13/01 20:22:00	87.6	86.7	0.192	17.038	2.494	30.141	81.08
8/13/01 20:24:00	87.6	86.7	0.186	17.04	2.495	30.149	81.08
8/13/01 20:25:00	87.59	86.7	0.192	17.04	2.495	30.145	81.08
8/13/01 20:26:00	87.59	86.7	0.186	17.04	2.497	30.147	81.08
8/13/01 20:27:00	87.58	86.7	0.186	17.04	2.497	30.151	81.08
8/13/01 20:28:00	87.58	86.7	0.186	17.04	2.499	30.149	81.08
8/13/01 20:30:00	87.57	86.7	0.186	17.04	2.499	30.149	81.073
8/13/01 20:31:00	87.56	86.71	0.186	17.041	2.501	30.149	81.073
8/13/01 20:32:00	87.56	86.71	0.186	17.041	2.503	30.149	81.067
8/13/01 20:33:00	87.55	86.71	0.186	17.043	2.505	30.149	81.067
8/13/01 20:34:00	87.55	86.71	0.186	17.043	2.503	30.147	81.067
8/13/01 20:36:00	87.54	86.71	0.18	17.043	2.503	30.151	81.067
8/13/01 20:37:00	87.54	86.71	0.18	17.045	2.503	30.153	81.061
8/13/01 20:38:00	87.53	86.71	0.18	17.047	2.505	30.151	81.054
8/13/01 20:39:00	87.53	86.71	0.18	17.047	2.505	30.149	81.054
8/13/01 20:40:00	87.52	86.7	0.18	17.049	2.505	30.151	81.048
8/13/01 20:42:00	87.51	86.7	0.174	17.049	2.505	30.149	81.048
8/13/01 20:43:00	87.51	86.71	0.18	17.053	2.505	30.153	81.048
8/13/01 20:44:00	87.51	86.71	0.18	17.055	2.505	30.149	81.042
8/13/01 20:45:00	87.5	86.71	0.174	17.06	2.507	30.153	81.048
8/13/01 20:46:00	87.5	86.71	0.174	17.064	2.507	30.149	81.042
8/13/01 20:48:00	87.49	86.71	0.174	17.068	2.508	30.153	81.042
8/13/01 20:49:00	87.49	86.71	0.174	17.068	2.512	30.149	81.042
8/13/01 20:50:00	87.48	86.71	0.174	17.073	2.516	30.151	81.035
8/13/01 20:51:00	87.48	86.71	0.174	17.079	2.518	30.153	81.042
8/13/01 20:52:00	87.48	86.71	0.174	17.09	2.518	30.149	81.029
8/13/01 20:54:00	87.47	86.71	0.174	17.101	2.518	30.149	81.029
8/13/01 20:55:00	87.46	86.71	0.168	17.114	2.518	30.149	81.029
8/13/01 20:56:00	87.45	86.71	0.174	17.137	2.516	30.151	81.023
8/13/01 20:57:00	87.45	86.71	0.174	17.161	2.514	30.151	81.023
8/13/01 20:58:00	87.44	86.71	0.174	17.191	2.512	30.153	81.016
8/13/01 21:00:00	87.43	86.68	0.168	17.227	2.518	30.153	81.016
8/13/01 21:01:00	87.42	86.66	0.168	17.264	2.523	30.151	81.016
8/13/01 21:02:00	87.42	86.64	0.168	17.294	2.521	30.153	81.016
8/13/01 21:03:00	87.41	86.62	0.168	17.33	2.52	30.155	81.01
8/13/01 21:04:00	87.4	86.6	0.168	17.324	2.52	30.153	81.01
8/13/01 21:06:00	87.39	86.56	0.168	17.321	2.516	30.155	81.01
8/13/01 21:07:00	87.39	86.55	0.161	17.313	2.514	30.155	81.01
8/13/01 21:08:00	87.39	86.54	0.161	17.255	2.51	30.155	81.01
8/13/01 21:09:00	87.38	86.53	0.161	17.289	2.514	30.153	81.01
8/13/01 21:10:00	87.38	86.52	0.161	17.315	2.516	30.151	81.004
8/13/01 21:12:00	87.37	86.51	0.192	17.304	2.516	30.145	80.997
8/13/01 21:13:00	87.37	86.5	0.192	17.294	2.514	30.133	80.997
8/13/01 21:14:00	87.37	86.49	0.168	17.311	2.51	30.129	80.997
8/13/01 21:15:00	87.36	86.48	0.161	17.291	2.508	30.145	81.004
8/13/01 21:16:00	87.36	86.48	0.161	17.302	2.507	30.147	80.997
8/13/01 21:18:00	87.36	86.47	0.161	17.3	2.507	30.147	81.004
8/13/01 21:19:00	87.35	86.46	0.161	17.289	2.505	30.149	80.997
8/13/01 21:20:00	87.35	86.46	0.161	17.294	2.505	30.149	80.997
8/13/01 21:21:00	87.34	86.45	0.168	17.294	2.503	30.149	81.004
8/13/01 21:22:00	87.34	86.45	0.192	17.289	2.505	30.157	80.997
8/13/01 21:24:00	87.33	86.44	0.186	17.283	2.503	30.133	80.997
8/13/01 21:25:00	87.33	86.43	0.186	17.285	2.501	30.123	80.997
8/13/01 21:26:00	87.33	86.43	0.186	17.289	2.501	30.121	80.991
8/13/01 21:27:00	87.32	86.42	0.186	17.287	2.501	30.119	80.997
8/13/01 21:28:00	87.32	86.42	0.161	17.279	2.501	30.131	80.997
8/13/01 21:30:00	87.32	86.41	0.161	17.274	2.501	30.137	80.997
8/13/01 21:31:00	87.31	86.41	0.161	17.266	2.501	30.141	80.997
8/13/01 21:32:00	87.31	86.41	0.161	17.266	2.501	30.143	81.004
8/13/01 21:33:00	87.31	86.41	0.161	17.279	2.503	30.143	81.004
8/13/01 21:34:00	87.31	86.41	0.161	17.296	2.507	30.143	81.004
8/13/01 21:36:00	87.3	86.4	0.161	17.292	2.505	30.147	81.004
8/13/01 21:37:00	87.3	86.39	0.161	17.294	2.507	30.145	81.004
8/13/01 21:38:00	87.3	86.38	0.161	17.298	2.508	30.149	80.997
8/13/01 21:39:00	87.29	86.38	0.161	17.292	2.512	30.147	80.997
8/13/01 21:40:00	87.29	86.37	0.161	17.294	2.521	30.149	80.997
8/13/01 21:42:00	87.28	86.36	0.161	17.294	2.518	30.153	80.997
8/13/01 21:43:00	87.28	86.36	0.161	17.294	2.521	30.155	80.997
8/13/01 21:44:00	87.28	86.36	0.149	17.287	2.52	30.153	80.997
8/13/01 21:45:00	87.27	86.36	0.155	17.283	2.521	30.157	80.991
8/13/01 21:46:00	87.27	86.35	0.155	17.294	2.52	30.153	80.997
8/13/01 21:48:00	87.26	86.35	0.155	17.291	2.52	30.155	81.004
8/13/01 21:49:00	87.26	86.34	0.155	17.292	2.516	30.157	81.004
8/13/01 21:50:00	87.26	86.34	0.155	17.289	2.52	30.155	81.004
8/13/01 21:51:00	87.25	86.34	0.149	17.279	2.525	30.155	81.004
8/13/01 21:52:00	87.25	86.33	0.149	17.277	2.525	30.159	81.004
8/13/01 21:54:00	87.24	86.33	0.149	17.291	2.523	30.155	81.004
8/13/01 21:55:00	87.24	86.33	0.149	17.279	2.518	30.157	81.004
8/13/01 21:56:00	87.24	86.33	0.155	17.262	2.521	30.153	81.01
8/13/01 21:57:00	87.24	86.33	0.155	17.184	2.507	30.153	81.004
8/13/01 21:58:00	87.24	86.33	0.155	17.122	2.501	30.155	81.004
8/13/01 22:00:00	87.24	86.33	0.161	17.081	2.499	30.153	81.01
8/13/01 22:01:00	87.24	86.32	0.161	17.066	2.495	30.149	81.01
8/13/01 22:02:00	87.24	86.32	0.155	17.083	2.499	30.155	81.01
8/13/01 22:03:00	87.24	86.31	0.155	17.114	2.503	30.145	81.01
8/13/01 22:04:00	87.24	86.31	0.155	17.141	2.505	30.153	81.01
8/13/01 22:06:00	87.23	86.3	0.155	17.188	2.505	30.151	81.016
8/13/01 22:07:00	87.23	86.3	0.161	17.244	2.508	30.149	81.016
8/13/01 22:08:00	87.23	86.3	0.161	17.3	2.508	30.149	81.016
8/13/01 22:09:00	87.23	86.3	0.155	17.277	2.51	30.149	81.023
8/13/01 22:10:00	87.22	86.3	0.155	17.277	2.518	30.145	81.016
8/13/01 22:12:00	87.22	86.3	0.155	17.285	2.52	30.151	81.023
8/13/01 22:13:00	87.22	86.29	0.155	17.285	2.527	30.149	81.023
8/13/01 22:14:00	87.21	86.29	0.155	17.261	2.52	30.147	81.023
8/13/01 22:15:00	87.21	86.29	0.155	17.203	2.512	30.143	81.029
8/13/01 22:16:00	87.21	86.29	0.155	17.154	2.508	30.145	81.035
8/13/01 22:18:00	87.21	86.29	0.168	17.122	2.507	30.141	81.029
8/13/01 22:19:00	87.21	86.29	0.155	17.099	2.507	30.139	81.035
8/13/01 22:20:00	87.21	86.29	0.174	17.081	2.505	30.139	81.035
8/13/01 22:21:00	87.21	86.28	0.161	17.069	2.503	30.137	81.035
8/13/01 22:22:00	87.2	86.28	0.155	17.09	2.503	30.141	81.035
8/13/01 22:24:00	87.2	86.28	0.192	17.099	2.508	30.137	81.08
8/13/01 22:25:00	87.2	86.27	0.18	17.081	2.503	30.135	81.149
8/13/01 22:26:00	87.2	86.27	0.192	17.073	2.503	30.133	81.327
8/13/01 22:27:00	87.2	86.27	0.205	17.06	2.501	30.133	81.637
8/13/01 22:28:00	87.19	86.26	0.205	17.053	2.501	30.131	82.073
8/13/01 22:30:00	87.19	86.26	0.199	17.045	2.499	30.131	82.358
8/13/01 22:31:00	87.18	86.25	0.205	17.04	2.499	30.129	82.789
8/13/01 22:32:00	87.18	86.25	0.211	17.04	2.499	30.131	83.169
8/13/01 22:33:00	87.18	86.25	0.292	17.041	2.499	30.129	83.606
8/13/01 22:34:00	87.17	86.24	0.484	17.043	2.499	30.129	84.036
8/13/01 22:36:00	87.17	86.24	0.819	17.041	2.499	30.129	84.498
8/13/01 22:37:00	87.17	86.24	1.062	17.043	2.501	30.131	85.005
8/13/01 22:38:00	87.16	86.24	1.8	17.043	2.503	30.127	85.549
8/13/01 22:39:00	87.16	86.24	2.098	17.043	2.507	30.131	86.094
8/13/01 22:40:00	87.16	86.23	2.458	17.045	2.508	30.129	86.645
8/13/01 22:42:00	87.16	86.23	2.639	17.047	2.508	30.125	87.215
8/13/01 22:43:00	87.16	86.23	3.054	17.047	2.508	30.123	87.823
8/13/01 22:44:00	87.16	86.23	3.458	17.045	2.505	30.127	88.45
8/13/01 22:45:00	87.16	86.23	3.551	17.045	2.503	30.125	88.418
8/13/01 22:46:00	87.16	86.23	4.588	17.047	2.505	30.125	89.571
8/13/01 22:48:00	87.16	86.23	2.223	17.045	2.505	30.125	90.413
8/13/01 22:49:00	87.16	86.22	3.949	17.047	2.505	30.123	90.857
8/13/01 22:50:00	87.15	86.22	4.681	17.047	2.507	30.125	91.376
8/13/01 22:51:00	87.15	86.22	5.017	17.043	2.507	30.127	91.94
8/13/01 22:52:00	87.15	86.21	5.383	17.049	2.51	30.123	92.675
8/13/01 22:54:00	87.15	86.21	4.806	17.049	2.512	30.129	93.499
8/13/01 22:55:00	87.14	86.21	7.389	17.051	2.514	30.125	94.5
8/13/01 22:56:00	87.14	86.21	14.527	17.053	2.514	30.125	96.61
8/13/01 22:57:00	87.14	86.21	51.304	17.055	2.514	30.127	104.852
8/13/01 22:58:00	87.13	86.21	48.899	17.058	2.514	30.125	104.852
8/13/01 23:00:00	87.13	86.21	52.956	17.064	2.516	30.125	104.852
8/13/01 23:01:00	87.13	86.21	58.659	17.071	2.516	30.102	104.852
8/13/01 23:02:00	87.13	86.21	64.297	17.073	2.518	30.09	104.846
8/13/01 23:03:00	87.13	86.21	65.001	17.077	2.518	30.08	104.846
8/13/01 23:04:00	87.13	86.21	66.919	17.081	2.514	30.106	104.846
8/13/01 23:06:00	87.13	86.21	68.713	17.094	2.516	30.108	104.846
8/13/01 23:07:00	87.13	86.21	69.206	17.135	2.521	30.11	104.846
8/13/01 23:08:00	87.13	86.21	68.982	17.221	2.527	30.114	104.846
8/13/01 23:09:00	87.13	86.21	69.543	17.317	2.538	30.11	104.852
8/13/01 23:10:00	87.13	86.2	69.312	17.313	2.536	30.114	104.852
8/13/01 23:12:00	87.13	86.2	68.975	17.315	2.54	30.11	104.852
8/13/01 23:13:00	87.13	86.2	69.275	17.321	2.533	30.112	104.852
8/13/01 23:14:00	87.12	86.19	68.913	17.322	2.529	30.1	104.852
8/13/01 23:15:00	87.12	86.19	68.52	17.322	2.531	30.084	104.846
8/13/01 23:16:00	87.12	86.19	68.283	17.317	2.533	30.078	104.846
8/13/01 23:18:00	87.12	86.18	68.401	17.309	2.531	30.07	104.839

CITY of COOPER CITY
INJECTION TEST DATA

Date/Time	Downhole Pressure (psi)	Downhole Temperature (deg F)	Wellhead Pressure (psi)	Upper Monitor Pressure (psi)	Lower Monitor Pressure (psi)	Barometric Pressure (inchs Hg)	Annular Pressure (psi)
8/13/01 23:19:00	87.12	86.18	68.632	17.307	2.534	30.068	104.839
8/13/01 23:20:00	87.11	86.18	68.832	17.311	2.536	30.064	0.141
8/13/01 23:21:00	87.11	86.18	68.95	17.292	2.534	30.06	104.833
8/13/01 23:22:00	87.11	86.18	69.487	17.307	2.533	30.084	104.833
8/13/01 23:24:00	87.11	86.17	69.262	17.3	2.533	30.094	104.833
8/13/01 23:25:00	87.11	86.17	69.425	17.249	2.529	30.098	89.14
8/13/01 23:26:00	87.11	86.17	68.645	17.18	2.516	30.098	84.239
8/13/01 23:27:00	87.11	86.17	69.262	17.158	2.518	30.074	7.494
8/13/01 23:28:00	87.11	86.17	68.37	17.203	2.52	30.062	0.141
8/13/01 23:30:00	87.1	86.17	68.638	17.229	2.525	30.057	91.408
8/13/01 23:31:00	87.1	86.17	68.707	17.255	2.529	30.07	88.519
8/13/01 23:32:00	87.1	86.17	69.237	17.287	2.533	30.053	92.998
8/13/01 23:33:00	87.1	86.16	68.932	17.306	2.536	30.047	88.519
8/13/01 23:34:00	87.1	86.16	68.894	17.294	2.536	30.062	85.252
8/13/01 23:36:00	87.09	86.16	69.069	17.306	2.534	30.076	89.647
8/13/01 23:37:00	87.09	86.16	69.175	17.264	2.523	30.084	81.282
8/13/01 23:38:00	87.09	86.16	68.95	17.152	2.521	30.088	85.239
8/13/01 23:39:00	87.09	86.16	69.1	17.107	2.52	30.088	89.051
8/13/01 23:40:00	87.09	86.15	68.564	17.088	2.52	30.09	90.857
8/13/01 23:42:00	87.09	86.16	68.769	17.09	2.514	30.092	82.898
8/13/01 23:43:00	87.09	86.16	69.032	17.084	2.514	30.092	86.797
8/13/01 23:44:00	87.09	86.16	69.462	17.079	2.52	30.092	90.318
8/13/01 23:45:00	87.09	86.16	69.175	17.071	2.518	30.09	82.637
8/13/01 23:46:00	87.09	86.16	68.975	17.064	2.518	30.094	86.341
8/13/01 23:48:00	87.09	86.17	69.032	17.051	2.512	30.094	89.615
8/13/01 23:49:00	87.09	86.17	68.757	17.064	2.514	30.094	82.088
8/13/01 23:50:00	87.09	86.16	68.838	17.092	2.521	30.092	85.087
8/13/01 23:51:00	87.1	86.16	68.988	17.114	2.529	30.092	88.323
8/13/01 23:52:00	87.1	86.16	68.794	17.111	2.527	30.094	84.15
8/13/01 23:54:00	87.1	86.16	69.481	17.083	2.521	30.092	84.992
8/13/01 23:55:00	87.1	86.16	68.495	17.062	2.516	30.09	88.165
8/13/01 23:56:00	87.1	86.16	68.532	17.053	2.512	30.096	90.85
8/13/01 23:57:00	87.1	86.16	69.106	17.049	2.514	30.09	93.676
8/13/01 23:58:00	87.1	86.16	68.863	17.049	2.512	30.064	96.426
8/14/01	87.09	86.16	69.038	17.049	2.512	30.055	99.114
8/14/01 00:01:00	87.09	86.16	69.007	17.049	2.514	30.049	84.239
8/14/01 00:02:00	87.09	86.16	69.194	17.047	2.518	30.043	86.949
8/14/01 00:03:00	87.09	86.16	68.358	17.051	2.514	30.072	89.457
8/14/01 00:04:00	87.09	86.16	68.957	17.053	2.52	30.078	91.934
8/14/01 00:06:00	87.09	86.15	68.944	17.053	2.52	30.086	82.58
8/14/01 00:07:00	87.08	86.15	68.876	17.053	2.521	30.082	85.024
8/14/01 00:08:00	87.08	86.15	68.751	17.055	2.516	30.088	87.278
8/14/01 00:09:00	87.08	86.15	68.52	17.053	2.514	30.088	89.501
8/14/01 00:10:00	87.08	86.15	68.776	17.053	2.514	30.084	91.839
8/14/01 00:12:00	87.08	86.15	69.038	17.055	2.516	30.088	94.284
8/14/01 00:13:00	87.08	86.15	68.726	17.056	2.516	30.09	96.426
8/14/01 00:14:00	87.08	86.14	69.256	17.056	2.516	30.09	84.011
8/14/01 00:15:00	87.08	86.14	68.832	17.056	2.516	30.092	82.175
8/14/01 00:16:00	87.08	86.14	69.032	17.058	2.516	30.092	84.239
8/14/01 00:18:00	87.08	86.14	68.769	17.06	2.518	30.09	86.335
8/14/01 00:19:00	87.07	86.14	68.944	17.058	2.518	30.092	88.329
8/14/01 00:20:00	87.07	86.14	68.688	17.058	2.52	30.092	90.508
8/14/01 00:21:00	87.07	86.14	69.05	17.06	2.523	30.09	81.58
8/14/01 00:22:00	87.07	86.14	68.794	17.058	2.521	30.094	83.207
8/14/01 00:24:00	87.07	86.14	69.4	17.06	2.523	30.088	85.353
8/14/01 00:25:00	87.07	86.14	68.963	17.06	2.527	30.092	87.198
8/14/01 00:26:00	87.07	86.14	68.944	17.06	2.529	30.092	88.855
8/14/01 00:27:00	87.06	86.14	68.932	17.062	2.527	30.096	88.557
8/14/01 00:28:00	87.06	86.14	68.876	17.064	2.529	30.096	83.245
8/14/01 00:30:00	87.06	86.14	68.963	17.064	2.529	30.096	84.676
8/14/01 00:31:00	87.06	86.13	68.957	17.062	2.527	30.098	86.411
8/14/01 00:32:00	87.06	86.13	68.826	17.064	2.527	30.104	81.32
8/14/01 00:33:00	87.06	86.13	68.807	17.064	2.527	30.104	83.447
8/14/01 00:34:00	87.06	86.13	68.826	17.066	2.529	30.106	84.91
8/14/01 00:36:00	87.06	86.12	68.769	17.066	2.529	30.104	86.486
8/14/01 00:37:00	87.05	86.12	68.944	17.066	2.529	30.106	88.057
8/14/01 00:38:00	87.05	86.12	68.913	17.068	2.531	30.106	89.468
8/14/01 00:39:00	87.05	86.11	68.801	17.068	2.531	30.104	82.333
8/14/01 00:40:00	87.05	86.11	68.763	17.066	2.529	30.106	83.865
8/14/01 00:42:00	87.04	86.11	68.813	17.066	2.529	30.106	85.157
8/14/01 00:43:00	87.04	86.1	68.838	17.064	2.531	30.104	86.48
8/14/01 00:44:00	87.04	86.1	68.564	17.066	2.531	30.104	82.586
8/14/01 00:45:00	87.04	86.1	68.95	17.066	2.531	30.108	83.757
8/14/01 00:46:00	87.04	86.1	68.869	17.068	2.531	30.106	84.979
8/14/01 00:48:00	87.03	86.1	68.826	17.069	2.531	30.106	82.896
8/14/01 00:49:00	87.03	86.1	69.025	17.069	2.533	30.104	84.131
8/14/01 00:50:00	87.03	86.1	68.545	17.069	2.533	30.106	85.119
8/14/01 00:51:00	87.03	86.09	69.038	17.071	2.533	30.104	86.284
8/14/01 00:52:00	87.03	86.09	68.557	17.073	2.533	30.098	87.417
8/14/01 00:54:00	87.02	86.09	68.707	17.075	2.534	30.1	88.69
8/14/01 00:55:00	87.02	86.09	68.545	17.077	2.534	30.102	82.814
8/14/01 00:56:00	87.02	86.09	68.975	17.079	2.534	30.102	83.821
8/14/01 00:57:00	87.02	86.08	69.543	17.079	2.534	30.098	84.796
8/14/01 00:58:00	87.01	86.08	68.514	17.079	2.533	30.1	85.809
8/14/01 01:00:00	87.01	86.08	69.194	17.081	2.534	30.104	86.708
8/14/01 01:01:00	87.01	86.09	68.813	17.081	2.534	30.1	87.785
8/14/01 01:02:00	87.01	86.09	68.539	17.084	2.536	30.1	83.473
8/14/01 01:03:00	87.01	86.09	68.551	17.094	2.536	30.102	84.619
8/14/01 01:04:00	87.01	86.09	68.589	17.098	2.54	30.104	85.511
8/14/01 01:06:00	87.02	86.11	68.539	17.105	2.544	30.104	86.366
8/14/01 01:07:00	87.04	86.13	68.72	17.107	2.544	30.102	87.128
8/14/01 01:08:00	87.05	86.14	68.726	17.111	2.544	30.1	85.834
8/14/01 01:09:00	87.06	86.16	68.776	17.113	2.542	30.102	86.803
8/14/01 01:10:00	87.07	86.18	69.169	17.111	2.538	30.104	82.965
8/14/01 01:12:00	87.08	86.2	68.726	17.109	2.536	30.1	83.783
8/14/01 01:13:00	87.09	86.2	68.751	17.113	2.536	30.1	84.935
8/14/01 01:14:00	87.1	86.2	68.482	17.109	2.534	30.096	85.568
8/14/01 01:15:00	87.11	86.2	69.231	17.105	2.534	30.1	86.183
8/14/01 01:16:00	87.12	86.2	68.358	17.105	2.533	30.102	84.834
8/14/01 01:18:00	87.13	86.2	68.439	17.105	2.533	30.1	82.934
8/14/01 01:19:00	87.13	86.2	68.863	17.103	2.533	30.102	83.675
8/14/01 01:20:00	87.12	86.2	68.482	17.103	2.531	30.098	84.46
8/14/01 01:21:00	87.12	86.2	68.451	17.105	2.531	30.098	85.195
8/14/01 01:22:00	87.12	86.2	68.457	17.105	2.531	30.096	85.866
8/14/01 01:24:00	87.12	86.2	68.464	17.109	2.531	30.098	83.175
8/14/01 01:25:00	87.12	86.2	68.539	17.113	2.534	30.098	83.694
8/14/01 01:26:00	87.12	86.2	68.732	17.118	2.536	30.096	84.397
8/14/01 01:27:00	87.13	86.2	68.882	17.122	2.536	30.094	85.036
8/14/01 01:28:00	87.13	86.2	68.62	17.128	2.538	30.094	85.524
8/14/01 01:30:00	87.1	86.19	68.826	17.129	2.538	30.094	83.219
8/14/01 01:31:00	87.07	86.19	68.67	17.131	2.538	30.094	83.688
8/14/01 01:32:00	87.04	86.19	68.701	17.137	2.538	30.1	84.188
8/14/01 01:33:00	87.01	86.19	69.325	17.143	2.538	30.094	84.998
8/14/01 01:34:00	86.98	86.18	68.27	17.146	2.536	30.098	85.505
8/14/01 01:36:00	86.92	86.18	68.22	17.154	2.536	30.1	86.031
8/14/01 01:37:00	86.88	86.17	69.081	17.159	2.538	30.1	86.651
8/14/01 01:38:00	86.84	86.16	68.314	17.167	2.538	30.1	86.936
8/14/01 01:39:00	86.8	86.15	68.183	17.165	2.54	30.098	84.226
8/14/01 01:40:00	86.76	86.14	69.187	17.173	2.54	30.096	82.599
8/14/01 01:42:00	86.7	86.12	68.314	17.18	2.542	30.094	82.998
8/14/01 01:43:00	86.68	86.1	69.081	17.191	2.544	30.096	83.587
8/14/01 01:44:00	86.65	86.08	68.433	17.21	2.547	30.096	83.998
8/14/01 01:45:00	86.63	86.07	68.433	17.229	2.549	30.092	84.454
8/14/01 01:46:00	86.61	86.05	68.882	17.255	2.551	30.092	84.789
8/14/01 01:48:00	86.58	86.02	69.406	17.281	2.551	30.096	83.852
8/14/01 01:49:00	86.57	86	68.17	17.307	2.549	30.094	84.467
8/14/01 01:50:00	86.56	85.99	68.832	17.334	2.547	30.096	84.91
8/14/01 01:51:00	86.56	85.98	68.408	17.334	2.547	30.096	85.429
8/14/01 01:52:00	86.55	85.97	69.032	17.33	2.544	30.094	85.739
8/14/01 01:54:00	86.52	85.94	68.732	17.326	2.542	30.094	86.17
8/14/01 01:55:00	86.51	85.92	68.408	17.324	2.544	30.094	86.74
8/14/01 01:56:00	86.49	85.91	68.127	17.319	2.544	30.092	84.289
8/14/01 01:57:00	86.48	85.89	68.595	17.326	2.549	30.09	84.745
8/14/01 01:58:00	86.46	85.88	68.607	17.339	2.551	30.094	85.264
8/14/01 02:00:00	86.43	85.85	68.769	17.334	2.549	30.096	85.828
8/14/01 02:01:00	86.41	85.84	68.42	17.294	2.544	30.094	86.043
8/14/01 02:02:00	86.39	85.83	68.439	17.255	2.536	30.094	86.581
8/14/01 02:03:00	86.37	85.82	68.507	17.232	2.536	30.094	83.289
8/14/01 02:04:00	86.35	85.81	68.451	17.21	2.533	30.094	83.833
8/14/01 02:06:00	86.31	85.78	68.264	17.221	2.533	30.096	84.163
8/14/01 02:07:00	86.3	85.76	68.389	17.219	2.536	30.094	84.676
8/14/01 02:08:00	86.29	85.74	68.532	17.212	2.534	30.092	85.087
8/14/01 02:09:00	86.27	85.72	68.607	17.186	2.534	30.094	85.328
8/14/01 02:10:00	86.26	85.7	68.776	17.165	2.531	30.094	85.727
8/14/01 02:12:00	86.23	85.66	68.557	17.15	2.529	30.096	86.214
8/14/01 02:13:00	86.21	85.65	68.507	17.135	2.527	30.094	86.429
8/14/01 02:14:00	86.19	85.64	68.464	17.118	2.527	30.096	86.752
8/14/01 02:15:00	86.17	85.62	68.52	17.109	2.527	30.096	87.259
8/14/01 02:16:00	86.15	85.61	68.72	17.103	2.525	30.096	83.954
8/14/01 02:18:00	86.12	85.59	68.083	17.101	2.525	30.094	84.321
8/14/01 02:19:00	86.1	85.57	68.938	17.096	2.527	30.096	84.739
8/14/01 02:20:00	86.09	85.56	68.345	17.092	2.529	30.09	84.954
8/14/01 02:21:00	86.08	85.55	68.233	17.088	2.529	30.092	85.271
8/14/01 02:22:00	86.06	85.54	68.713	17.086	2.533	30.092	85.6
8/14/01 02:24:00	86.03	85.51	68.401	17.092	2.534	30.09	85.967
8/14/01 02:25:00	86.02	85.5	68.239	17.092	2.536	30.088	86.246
8/14/01 02:26:00	86	85.48	68.439	17.094	2.536	30.09	86.581
8/14/01 02:27:00	85.99	85.47	68.464	17.098	2.536	30.092	84.796
8/14/01 02:28:00	85.97	85.45	68.507	17.099	2.536	30.092	85.271
8/14/01 02:30:00	85.95	85.42	68.252	17.099	2.538	30.088	85.423
8/14/01 02:31:00	85.94	85.4	68.451	17.099	2.538	30.088	85.891
8/14/01 02:32:00	85.93	85.37	68.601	17.101	2.538	30.09	86.138
8/14/01 02:33:00	85.93	85.35	68.339	17.113	2.536	30.08	86.297
8/14/01 02:34:00	85.92	85.33	68.52	17.129	2.536	30.064	86.613
8/14/01 02:36:00	85.9	85.29	67.859	17.135	2.54	30.062	86.93
8/14/01 02:37:00	85.9	85.28	68.564	17.133	2.538	30.055	87.113
8/14/01 02:38:00	85.89	85.26	68.358	17.133	2.538	30.068	87.417
8/14/01 02:39:00	85.88	85.25	68.482	17.15	2.538	30.074	87.759
8/14/01 02:40:00	85.87	85.23	68.333	17.163	2.542	30.08	82.099
8/14/01 02:42:00	85.85	85.21	68.414	17.156	2.54	30.084	82.333
8/14/01 02:43:00	85.84	85.2	68.395	17.154	2.542	30.084	82.732
8/14/01 02:44:00	85.82	85.18	68.457	17.169	2.542	30.08	83.08
8/14/01 02:45:00	85.8	85.17	68.476	17.167	2.544	30.082	83.302
8/14/01 02:46:00	85.79	85.16	68.589	17.154	2.542	30.086	83.46
8/14/01 02:48:00	85.76	85.14	68.277	17.139	2.538	30.086	83.878
8/14/01 02:49:00	85.74	85.12	68.295	17.122	2.538	30.084	84.061
8/14/01 02:50:00	85.73	85.11	68.258	17.129	2.538	30.088	84.163
8/14/01 02:51:00	85.72	85.09	68.408	17.152	2.542	30.086	84.574
8/14/01 02:52:00	85.7	85.08	68.027	17.159	2.544	30.09	84.821
8/14/01 02:54:00	85.68	85.05	68.994	17.154	2.544	30.088	85.106
8/14/01 02:55:00	85.67	85.04	68.389	17.144	2.542	30.09	85.233
8/14/01 02:56:00	85.65	85.03	68.414	17.159	2.542	30.092	84.087
8/14/01 02:57:00	85.64	85.02	68.595	17.169	2.546	30.088	84.498
8/14/01 02:58:00	85.63	85	67.615	17.191	2.547	30.086	84.498
8/14/01 03:00:00	85.6	84.98	68.501	17.223	2.547	30.092	84.821
8/14/01 03:01:00	85.59	84.96	68.551	17.24	2.546	30.088	84.916
8/14/01 03:02:00	85.58	84.95	68.351	17.238	2.542	30.09	85.334
8/14/01 03:03:00	85.57	84.94	68.526	17.24	2.542	30.09	85.467
8/14/01 03:04:00	85.55	84.92	68.302	17.216	2.538	30.088	85.752
8/14/01 03:06:00	85.52	84.9	68.345	17.206	2.536	30.092	85.891
8/14/01 03:07:00	85.5	84.89	68.333	17.188	2.534	30.094	86.037
8/14/01 03:08:00	85.48	84.88	68.451	17.159	2.534	30.092	86.259
8/14/01 03:09:00	85.47	84.87	68.283	17.137	2.533	30.092	86.455
8/14/01 03:10:00	85.45	84.86	67.996	17.116	2.531	30.09	86.619
8/14/01 03:12:00	85.42	84.84	68.501	17.114	2.531	30.092	86.708
8/14/01 03:13:00	85.42	84.83	68.345	17.12	2.533	30.088	87.094
8/14/01 03:14:00	85.42	84.82	68.139	17.126	2.533	30.09	87.259
8/14/01 03:15:00	85.41	84.81	68.401	17.135	2.533	30.088	87.253
8/14/01 03:16:00	85.41	84.81	68.37	17.146	2.533	30.09	87.468
8/14/01 03:18:00	85.39	84.79	68.726	17.154	2.536	30.088	87.601
8/14/01 03:19:00	85.38	84.77	68.077	17.18	2.538	30.086	87.861
8/14/01 03:20:00	85.37	84.76	68.445	17.203	2.538	30.09	87.924
8/14/01 03:21:00	85.36	84.74	68.389	17.208	2.538	30.088	88.158
8/14/01 03:22:00	85.34	84.73	68.607	17.201	2.538	30.088	88.247
8/14/01 03:24:00	85.32	84.7	68.645	17.193	2.538	30.084	88.361
8/14/01 03:25:00	85.31	84.69	68.67	17.206	2.536	30.086	84.606
8/14/01 03:26:00	85.3	84.68	68.077	17.203	2.54	30.086	84.524
8/14/01 03:27:00	85.28	84.66	68.376	17.204	2.542	30.086	84.676

CITY of COOPER CITY
INJECTION TEST DATA

Date/Time	Downhole Pressure (psi)	Downhole Temperature (deg F)	Wellhead Pressure (psi)	Upper Monitor Pressure (psi)	Lower Monitor Pressure (psi)	Barometric Pressure (inchs Hg)	Annular Pressure (psi)
8/14/01 03:28:00	85.27	84.65	68.314	17.199	2.54	30.084	85.093
8/14/01 03:30:00	85.26	84.63	68.177	17.203	2.542	30.088	85.144
8/14/01 03:31:00	85.25	84.61	68.42	17.216	2.542	30.088	85.309
8/14/01 03:32:00	85.24	84.6	68.227	17.218	2.54	30.088	85.416
8/14/01 03:33:00	85.24	84.59	68.37	17.218	2.542	30.09	85.594
8/14/01 03:34:00	85.23	84.57	67.883	17.212	2.544	30.086	85.701
8/14/01 03:36:00	85.21	84.55	68.401	17.21	2.544	30.092	85.999
8/14/01 03:37:00	85.2	84.53	68.445	17.216	2.544	30.088	86.081
8/14/01 03:38:00	85.18	84.52	68.383	17.223	2.546	30.092	86.252
8/14/01 03:39:00	85.17	84.5	68.195	17.204	2.544	30.088	82.08
8/14/01 03:40:00	85.15	84.49	67.859	17.187	2.54	30.09	82.422
8/14/01 03:42:00	85.13	84.46	68.239	17.152	2.538	30.086	82.479
8/14/01 03:43:00	85.13	84.45	68.27	17.152	2.538	30.088	82.643
8/14/01 03:44:00	85.12	84.44	68.146	17.144	2.538	30.092	82.839
8/14/01 03:45:00	85.11	84.43	68.401	17.139	2.538	30.088	83.048
8/14/01 03:46:00	85.1	84.42	68.264	17.126	2.538	30.088	83.143
8/14/01 03:48:00	85.09	84.4	68.514	17.105	2.538	30.088	83.251
8/14/01 03:49:00	85.08	84.39	68.507	17.098	2.536	30.086	83.466
8/14/01 03:50:00	85.07	84.38	68.002	17.092	2.536	30.086	83.593
8/14/01 03:51:00	85.06	84.36	68.208	17.088	2.536	30.088	83.776
8/14/01 03:52:00	85.05	84.35	67.983	17.084	2.536	30.086	83.947
8/14/01 03:54:00	85.02	84.33	68.545	17.086	2.538	30.084	84.061
8/14/01 03:55:00	85	84.31	68.364	17.088	2.54	30.082	84.106
8/14/01 03:56:00	84.98	84.3	67.89	17.088	2.54	30.086	84.207
8/14/01 03:57:00	84.97	84.29	68.694	17.086	2.54	30.082	84.422
8/14/01 03:58:00	84.95	84.27	68.351	17.088	2.54	30.082	84.625
8/14/01 04:00:00	84.92	84.25	68.158	17.086	2.54	30.084	84.72
8/14/01 04:01:00	84.91	84.23	68.532	17.086	2.54	30.082	84.713
8/14/01 04:02:00	84.89	84.22	68.557	17.083	2.542	30.082	84.948
8/14/01 04:03:00	84.88	84.21	67.621	17.077	2.54	30.086	85.188
8/14/01 04:04:00	84.87	84.2	68.239	17.075	2.538	30.086	85.283
8/14/01 04:06:00	84.85	84.17	67.952	17.071	2.538	30.086	85.429
8/14/01 04:07:00	84.84	84.16	68.264	17.069	2.536	30.092	82.795
8/14/01 04:08:00	84.84	84.15	68.17	17.069	2.536	30.092	82.871
8/14/01 04:09:00	84.83	84.13	68.121	17.068	2.536	30.092	83.048
8/14/01 04:10:00	84.83	84.12	68.657	17.068	2.534	30.092	83.238
8/14/01 04:12:00	84.8	84.09	68.139	17.069	2.536	30.096	83.409
8/14/01 04:13:00	84.78	84.08	68.37	17.071	2.536	30.092	83.447
8/14/01 04:14:00	84.76	84.07	68.507	17.071	2.536	30.092	83.53
8/14/01 04:15:00	84.75	84.05	68.507	17.071	2.536	30.092	83.65
8/14/01 04:16:00	84.73	84.04	68.058	17.069	2.534	30.094	83.783
8/14/01 04:18:00	84.7	84.02	67.902	17.069	2.534	30.08	83.776
8/14/01 04:19:00	84.7	84	67.453	17.071	2.536	30.064	83.966
8/14/01 04:20:00	84.7	83.99	68.046	17.071	2.536	30.06	84.175
8/14/01 04:21:00	84.69	83.98	68.039	17.073	2.536	30.072	84.163
8/14/01 04:22:00	84.69	83.96	68.408	17.075	2.538	30.08	84.327
8/14/01 04:24:00	84.67	83.94	67.896	17.081	2.538	30.082	84.359
8/14/01 04:25:00	84.65	83.93	68.395	17.083	2.54	30.088	84.492
8/14/01 04:26:00	84.64	83.91	67.84	17.084	2.538	30.084	84.6
8/14/01 04:27:00	84.62	83.9	68.57	17.084	2.538	30.088	84.65
8/14/01 04:28:00	84.6	83.89	67.777	17.086	2.54	30.086	84.701
8/14/01 04:30:00	84.58	83.87	68.146	17.086	2.54	30.088	84.695
8/14/01 04:31:00	84.56	83.86	68.489	17.094	2.542	30.084	84.884
8/14/01 04:32:00	84.55	83.86	67.547	17.098	2.542	30.086	84.941
8/14/01 04:33:00	84.54	83.85	68.351	17.109	2.546	30.086	84.859
8/14/01 04:34:00	84.53	83.84	68.433	17.113	2.547	30.084	85.226
8/14/01 04:36:00	84.51	83.82	67.933	17.118	2.553	30.088	85.195
8/14/01 04:37:00	84.5	83.81	67.659	17.131	2.555	30.09	85.125
8/14/01 04:38:00	84.5	83.79	68.233	17.141	2.551	30.088	85.176
8/14/01 04:39:00	84.49	83.78	68.252	17.148	2.547	30.09	85.239
8/14/01 04:40:00	84.48	83.76	68.127	17.15	2.546	30.09	85.448
8/14/01 04:42:00	84.46	83.74	68.295	17.159	2.544	30.084	85.511
8/14/01 04:43:00	84.45	83.73	68.482	17.167	2.54	30.088	85.625
8/14/01 04:44:00	84.44	83.71	67.952	17.167	2.54	30.092	85.777
8/14/01 04:45:00	84.42	83.7	68.308	17.173	2.538	30.09	85.676
8/14/01 04:46:00	84.41	83.69	68.108	17.186	2.538	30.09	85.67
8/14/01 04:48:00	84.39	83.67	68.033	17.189	2.538	30.092	85.834
8/14/01 04:49:00	84.38	83.65	68.358	17.176	2.536	30.088	85.961
8/14/01 04:50:00	84.37	83.64	68.114	17.174	2.536	30.09	85.822
8/14/01 04:51:00	84.36	83.62	67.809	17.167	2.538	30.088	85.885
8/14/01 04:52:00	84.35	83.61	68.046	17.161	2.538	30.09	86.202
8/14/01 04:54:00	84.32	83.58	68.158	17.159	2.538	30.086	86.322
8/14/01 04:55:00	84.31	83.57	68.033	17.158	2.538	30.086	86.221
8/14/01 04:56:00	84.29	83.55	68.233	17.161	2.538	30.088	86.335
8/14/01 04:57:00	84.28	83.54	67.809	17.152	2.538	30.086	86.335
8/14/01 04:58:00	84.26	83.52	68.096	17.146	2.538	30.086	86.404
8/14/01 05:00:00	84.24	83.5	67.759	17.141	2.538	30.084	86.265
8/14/01 05:01:00	84.22	83.5	68.202	17.141	2.538	30.086	86.328
8/14/01 05:02:00	84.21	83.49	68.021	17.129	2.54	30.084	86.309
8/14/01 05:03:00	84.2	83.49	68.177	17.12	2.54	30.086	86.392
8/14/01 05:04:00	84.18	83.49	67.821	17.111	2.538	30.084	86.335
8/14/01 05:06:00	84.16	83.47	68.108	17.109	2.538	30.084	86.512
8/14/01 05:07:00	84.15	83.46	68.064	17.111	2.538	30.084	86.429
8/14/01 05:08:00	84.13	83.46	68.015	17.111	2.54	30.082	86.404
8/14/01 05:09:00	84.12	83.45	68.177	17.113	2.54	30.08	86.385
8/14/01 05:10:00	84.11	83.44	68.083	17.113	2.54	30.082	86.411
8/14/01 05:12:00	84.09	83.42	67.54	17.107	2.54	30.084	86.398
8/14/01 05:13:00	84.08	83.4	67.709	17.103	2.54	30.082	86.429
8/14/01 05:14:00	84.07	83.39	67.74	17.094	2.538	30.084	86.411
8/14/01 05:15:00	84.06	83.38	67.933	17.09	2.538	30.082	86.531
8/14/01 05:16:00	84.05	83.37	68.564	17.088	2.538	30.084	82.339
8/14/01 05:18:00	84.02	83.34	68.42	17.086	2.536	30.08	82.434
8/14/01 05:19:00	84.01	83.33	67.752	17.084	2.538	30.08	82.384
8/14/01 05:20:00	84	83.32	68.002	17.09	2.54	30.08	82.314
8/14/01 05:21:00	83.99	83.31	67.859	17.09	2.54	30.082	82.327
8/14/01 05:22:00	83.97	83.3	68.383	17.09	2.542	30.08	82.365
8/14/01 05:24:00	83.96	83.28	68.258	17.088	2.542	30.078	82.346
8/14/01 05:25:00	83.95	83.27	68.158	17.086	2.542	30.082	82.542
8/14/01 05:26:00	83.95	83.26	68.102	17.084	2.542	30.076	82.314
8/14/01 05:27:00	83.94	83.25	68.383	17.083	2.542	30.074	82.346
8/14/01 05:28:00	83.94	83.24	67.958	17.081	2.542	30.072	82.206
8/14/01 05:30:00	83.92	83.22	68.015	17.077	2.542	30.07	82.352
8/14/01 05:31:00	83.91	83.21	67.815	17.083	2.542	30.072	82.137
8/14/01 05:32:00	83.9	83.2	68.564	17.083	2.546	30.072	82.143

Date/Time	Downhole Pressure (psi)	Downhole Temperature (deg F)	Wellhead Pressure (psi)	Upper Monitor Pressure (psi)	Lower Monitor Pressure (psi)	Barometric Pressure (inchs Hg)	Annular Pressure (psi)
8/14/01 05:33:00	83.89	83.19	68.439	17.086	2.546	30.07	82.149
8/14/01 05:34:00	83.88	83.18	68.501	17.083	2.546	30.07	82.143
8/14/01 05:36:00	83.86	83.16	68.002	17.081	2.544	30.07	82.086
8/14/01 05:37:00	83.84	83.15	68.289	17.083	2.546	30.074	82.143
8/14/01 05:38:00	83.83	83.13	67.266	17.081	2.544	30.07	82.004
8/14/01 05:39:00	83.82	83.12	68.813	17.079	2.544	30.074	81.871
8/14/01 05:40:00	83.8	83.11	68.033	17.079	2.542	30.07	82.099
8/14/01 05:42:00	83.77	83.09	67.74	17.083	2.544	30.074	81.966
8/14/01 05:43:00	83.76	83.08	68.482	17.084	2.544	30.072	81.885
8/14/01 05:44:00	83.75	83.06	67.927	17.086	2.546	30.07	81.814
8/14/01 05:45:00	83.74	83.05	67.64	17.086	2.546	30.074	81.808
8/14/01 05:46:00	83.72	83.04	68.202	17.088	2.546	30.074	81.77
8/14/01 05:48:00	83.7	83.01	67.64	17.084	2.546	30.074	81.599
8/14/01 05:49:00	83.69	83	68.464	17.086	2.546	30.072	81.706
8/14/01 05:50:00	83.68	82.99	67.952	17.084	2.546	30.074	81.592
8/14/01 05:51:00	83.67	82.98	67.784	17.084	2.546	30.072	81.599
8/14/01 05:52:00	83.66	82.97	67.846	17.083	2.546	30.078	81.573
8/14/01 05:54:00	83.65	82.96	67.721	17.083	2.546	30.074	81.485
8/14/01 05:55:00	83.64	82.96	68.077	17.083	2.546	30.074	81.377
8/14/01 05:56:00	83.64	82.96	67.621	17.084	2.546	30.07	81.333
8/14/01 05:57:00	83.63	82.96	68.064	17.083	2.546	30.074	81.301
8/14/01 05:58:00	83.63	82.96	68.214	17.083	2.547	30.07	81.301
8/14/01 06:00:00	83.61	82.95	68.064	17.081	2.546	30.076	81.168
8/14/01 06:01:00	83.59	82.94	67.99	17.081	2.546	30.072	81.251
8/14/01 06:02:00	83.58	82.93	67.971	17.084	2.546	30.07	81.143
8/14/01 06:03:00	83.57	82.93	67.915	17.084	2.547	30.068	81.092
8/14/01 06:04:00	83.55	82.92	68.408	17.086	2.547	30.07	81.08
8/14/01 06:06:00	83.53	82.9	68.071	17.084	2.547	30.066	80.871
8/14/01 06:07:00	83.52	82.89	67.484	17.083	2.547	30.066	81.016
8/14/01 06:08:00	83.51	82.88	68.208	17.084	2.547	30.072	80.902
8/14/01 06:09:00	83.5	82.87	68.239	17.084	2.547	30.068	80.807
8/14/01 06:10:00	83.5	82.86	67.621	17.084	2.547	30.07	80.985
8/14/01 06:12:00	83.48	82.84	68.358	17.084	2.547	30.066	80.719
8/14/01 06:13:00	83.47	82.83	67.958	17.083	2.547	30.064	80.719
8/14/01 06:14:00	83.47	82.82	67.915	17.084	2.547	30.064	80.662
8/14/01 06:15:00	83.46	82.81	67.696	17.084	2.547	30.064	80.649
8/14/01 06:16:00	83.45	82.8	68.351	17.086	2.547	30.068	80.668
8/14/01 06:18:00	83.44	82.78	67.447	17.088	2.549	30.064	80.687
8/14/01 06:19:00	83.44	82.78	67.827	17.09	2.549	30.068	80.491
8/14/01 06:20:00	83.43	82.77	67.852	17.09	2.549	30.068	80.383
8/14/01 06:21:00	83.43	82.76	67.759	17.088	2.551	30.066	80.257
8/14/01 06:22:00	83.42	82.76	67.802	17.088	2.549	30.064	80.2
8/14/01 06:24:00	83.41	82.74	68.002	17.088	2.549	30.06	80.054
8/14/01 06:25:00	83.4	82.74	67.74	17.086	2.549	30.06	80.086
8/14/01 06:26:00	83.4	82.73	67.422	17.088	2.555	30.062	79.864
8/14/01 06:27:00	83.39	82.72	68.333	17.086	2.549	30.066	79.738
8/14/01 06:28:00	83.38	82.71	68.133	17.086	2.551	30.068	79.712
8/14/01 06:30:00	83.37	82.7	68.245	17.088	2.551	30.066	79.599
8/14/01 06:31:00	83.36	82.69	68.008	17.088	2.549	30.066	79.662
8/14/01 06:32:00	83.36	82.69	67.472	17.088	2.551	30.062	79.542
8/14/01 06:33:00	83.35	82.68	68.046	17.088	2.551	30.066	79.624
8/14/01 06:34:00	83.35	82.67	67.796	17.088	2.551	30.068	79.447
8/14/01 06:36:00	83.34	82.66	68.033	17.088	2.551	30.051	79.244
8/14/01 06:37:00	83.33	82.66	68.389	17.088	2.551	30.049	79.263
8/14/01 06:38:00	83.33	82.66	67.94	17.088	2.551	30.045	78.972
8/14/01 06:39:00	83.32	82.66	67.977	17.086	2.551	30.043	79.042
8/14/01 06:40:00	83.32	82.65	68.495	17.088	2.551	30.043	79.029
8/14/01 06:42:00	83.31	82.65	67.696	17.086	2.551	30.039	78.877
8/14/01 06:43:00	83.3	82.64	67.896	17.09	2.549	30.039	78.75
8/14/01 06:44:00	83.3	82.64	68.133	17.09	2.551	30.051	78.542
8/14/01 06:45:00	83.29	82.64	67.877	17.092	2.551	30.055	78.535
8/14/01 06:46:00	83.29	82.63	67.99	17.09	2.549	30.057	78.497
8/14/01 06:48:00	83.28	82.63	68.121	17.09	2.551	30.057	78.472
8/14/01 06:49:00	83.28	82.63	67.447	17.088	2.549	30.064	78.289
8/14/01 06:50:00	83.28	82.63	67.528	17.088	2.551	30.062	78.244
8/14/01 06:51:00	83.28	82.63	67.915	17.088	2.549	30.068	78.143
8/14/01 06:52:00	83.27	82.62	67.596	17.088	2.549	30.066	78.149
8/14/01 06:54:00	83.27	82.63	68.039	17.088	2.549	30.066	77.94
8/14/01 06:55:00	83.27	82.63	67.834	17.088	2.547	30.068	77.839
8/14/01 06:56:00	83.27	82.63	67.915	17.088	2.549	30.068	77.827
8/14/01 06:57:00	83.27	82.63	67.921	17.088	2.549	30.074	77.554
8/14/01 06:58:00	83.27	82.64	67.865	17.086	2.547	30.072	77.605
8/14/01 07:00:00	83.26	82.64	68.314	17.084	2.547	30.078	77.403
8/14/01 07:01:00	83.26	82.65	67.484	17.086	2.547	30.076	77.453
8/14/01 07:02:00	83.26	82.65	67.915	17.086	2.549	30.076	77.263
8/14/01 07:03:00	83.25	82.65	68.039	17.088	2.549	30.078	77.048
8/14/01 07:04:00	83.25	82.66	68.015	17.088	2.549	30.078	77.099
8/14/01 07:06:00	83.25	82.66	67.908	17.088	2.549	30.076	76.941
8/14/01 07:07:00	83.26	82.66	68.033	17.088	2.546	30.078	76.947
8/14/01 07:08:00	83.27	82.65	67.821	17.09	2.546	30.08	76.827
8/14/01 07:09:00	83.27	82.65	67.596	17.09	2.546	30.08	76.637
8/14/01 07:10:00	83.28	82.65	67.871	17.09	2.547	30.082	76.65
8/14/01 07:12:00	83.29	82.65	67.752	17.092	2.546	30.08	76.58
8/14/01 07:13:00	83.29	82.64	68.233	17.092	2.547	30.08	76.428
8/14/01 07:14:00	83.29	82.64	68.089	17.092	2.547	30.082	76.251
8/14/01 07:15:00	83.3	82.64	67.927	17.092	2.547	30.08	76.169
8/14/01 07:16:00	83.3	82.64	68.015	17.09	2.546	30.08	75.941
8/14/01 07:18:00	83.3	82.64	68.264	17.09	2.546	30.08	75.985
8/14/01 07:19:00	83.29	82.64	68.064	17.09	2.546	30.08	75.821
8/14/01 07:20:00	83.28	82.64	67.746	17.09	2.546	30.084	75.852
8/14/01 07:21:00	83.28	82.65	67.927	17.09	2.547	30.086	75.669
8/14/01 07:22:00	83.27	82.65	67.759	17.09	2.547	30.086	75.561
8/14/01 07:24:00	83.27	82.65	67.746	17.09	2.546	30.086	75.346
8/14/01 07:25:00	83.26	82.65	68.227	17.088	2.547	30.084	75.346
8/14/01 07:26:00	83.26	82.66	67.846	17.088	2.547	30.088	75.163
8/14/01 07:27:00	83.26	82.66	67.74	17.09	2.546	30.086	75.169
8/14/01 07:28:00	83.26	82.66	67.484	17.09	2.547	30.09	74.935
8/14/01 07:30:00	83.26	82.66	67.49	17.088	2.547	30.088	74.84
8/14/01 07:31:00	83.26	82.65	67.621	17.09	2.546	30.09	74.878
8/14/01 07:32:00	83.25	82.65	67.578	17.09	2.547	30.09	74.701
8/14/01 07:33:00	83.25	82.64	67.827	17.09	2.547	30.09	74.587
8/14/01 07:34:00	83.25	82.64	67.434	17.09	2.546	30.09	74.454
8/14/01 07:36:00	83.25	82.64	67.634	17.09	2.546	30.088	74.385
8/14/01 07:37:00	83.26	82.64	68.164	17.09	2.547	30.09	74.372

CITY of COOPER CITY
INJECTION TEST DATA

Date/Time	Downhole Pressure (psi)	Downhole Temperature (deg F)	Wellhead Pressure (psi)	Upper Monitor Pressure (psi)	Lower Monitor Pressure (psi)	Barometric Pressure (inchs Hg)	Annular Pressure (psi)
8/14/01 07:38:00	83.27	82.64	67.472	17.092	2.547	30.092	74.366
8/14/01 07:39:00	83.27	82.64	67.809	17.092	2.547	30.09	74.062
8/14/01 07:40:00	83.28	82.64	67.865	17.092	2.547	30.092	74.018
8/14/01 07:42:00	83.28	82.64	67.665	17.092	2.547	30.092	73.777
8/14/01 07:43:00	83.28	82.65	67.465	17.092	2.547	30.092	73.866
8/14/01 07:44:00	83.27	82.65	68.015	17.09	2.547	30.094	73.701
8/14/01 07:45:00	83.27	82.65	67.64	17.09	2.547	30.094	73.566
8/14/01 07:46:00	83.26	82.65	67.759	17.092	2.546	30.1	73.594
8/14/01 07:48:00	83.26	82.66	67.896	17.088	2.546	30.096	73.398
8/14/01 07:49:00	83.26	82.66	67.285	17.09	2.546	30.1	73.309
8/14/01 07:50:00	83.26	82.67	67.996	17.086	2.546	30.098	73.183
8/14/01 07:51:00	83.27	82.67	67.69	17.088	2.544	30.106	73.183
8/14/01 07:52:00	83.27	82.68	67.965	17.088	2.546	30.104	73.05
8/14/01 07:54:00	83.28	82.68	67.902	17.086	2.544	30.104	72.892
8/14/01 07:55:00	83.28	82.67	67.777	17.086	2.544	30.108	72.93
8/14/01 07:56:00	83.28	82.67	67.977	17.086	2.546	30.106	72.721
8/14/01 07:57:00	83.28	82.66	68.239	17.086	2.544	30.11	72.752
8/14/01 07:58:00	83.29	82.66	67.927	17.086	2.544	30.112	72.563
8/14/01 08:00:00	83.29	82.65	67.528	17.086	2.544	30.114	72.449
8/14/01 08:01:00	83.3	82.65	67.709	17.086	2.542	30.112	72.411
8/14/01 08:02:00	83.3	82.65	68.17	17.086	2.544	30.117	72.196
8/14/01 08:03:00	83.3	82.65	67.752	17.086	2.542	30.114	72.329
8/14/01 08:04:00	83.31	82.65	67.703	17.086	2.544	30.119	72.031
8/14/01 08:06:00	83.3	82.65	67.927	17.084	2.542	30.117	71.93
8/14/01 08:07:00	83.29	82.65	67.609	17.084	2.542	30.117	71.867
8/14/01 08:08:00	83.29	82.65	67.734	17.084	2.542	30.121	71.734
8/14/01 08:09:00	83.28	82.65	67.896	17.084	2.542	30.119	71.595
8/14/01 08:10:00	83.27	82.65	67.871	17.084	2.542	30.119	71.494
8/14/01 08:12:00	83.25	82.65	67.503	17.084	2.544	30.121	71.253
8/14/01 08:13:00	83.24	82.65	67.752	17.086	2.542	30.119	71.285
8/14/01 08:14:00	83.24	82.65	67.746	17.086	2.542	30.121	71.209
8/14/01 08:15:00	83.23	82.65	67.547	17.084	2.544	30.119	71.121
8/14/01 08:16:00	83.22	82.64	68.339	17.088	2.544	30.121	70.95
8/14/01 08:18:00	83.21	82.64	67.553	17.086	2.544	30.123	70.716
8/14/01 08:19:00	83.22	82.63	68.114	17.084	2.544	30.121	70.785
8/14/01 08:20:00	83.23	82.63	67.865	17.084	2.542	30.125	70.583
8/14/01 08:21:00	83.23	82.63	67.965	17.083	2.542	30.121	70.577
8/14/01 08:22:00	83.24	82.62	67.59	17.083	2.542	30.125	70.507
8/14/01 08:24:00	83.24	82.62	67.728	17.083	2.542	30.125	70.324
8/14/01 08:25:00	83.25	82.61	68.027	17.084	2.542	30.127	70.279
8/14/01 08:26:00	83.25	82.61	67.671	17.083	2.542	30.127	70.286
8/14/01 08:27:00	83.25	82.6	67.509	17.084	2.542	30.125	70.077
8/14/01 08:28:00	83.25	82.6	68.089	17.086	2.542	30.129	70.014
8/14/01 08:30:00	83.24	82.6	67.79	17.086	2.542	30.129	69.862
8/14/01 08:31:00	83.23	82.6	67.416	17.086	2.542	30.127	69.792
8/14/01 08:32:00	83.23	82.6	67.759	17.086	2.542	30.127	69.754
8/14/01 08:33:00	83.22	82.6	67.703	17.086	2.542	30.127	69.596
8/14/01 08:34:00	83.21	82.6	68.008	17.086	2.542	30.129	69.603
8/14/01 08:36:00	83.2	82.59	67.54	17.086	2.542	30.129	69.426
8/14/01 08:37:00	83.2	82.59	67.49	17.084	2.542	30.127	69.305
8/14/01 08:38:00	83.21	82.59	67.534	17.086	2.542	30.127	69.35
8/14/01 08:39:00	83.21	82.59	67.815	17.084	2.538	30.129	69.053
8/14/01 08:40:00	83.21	82.58	67.584	17.084	2.538	30.131	69.034
8/14/01 08:42:00	83.21	82.58	67.497	17.084	2.538	30.131	68.819
8/14/01 08:43:00	83.2	82.57	67.172	17.084	2.538	30.127	68.806
8/14/01 08:44:00	83.2	82.57	67.671	17.084	2.54	30.131	68.863
8/14/01 08:45:00	83.2	82.56	67.353	17.084	2.54	30.127	68.673
8/14/01 08:46:00	83.19	82.56	67.933	17.084	2.538	30.127	68.572
8/14/01 08:48:00	83.19	82.55	67.416	17.084	2.538	30.129	68.408
8/14/01 08:49:00	83.19	82.55	67.291	17.083	2.538	30.133	68.477
8/14/01 08:50:00	83.19	82.55	67.154	17.083	2.538	30.133	68.338
8/14/01 08:51:00	83.19	82.54	67.846	17.084	2.538	30.135	68.344
8/14/01 08:52:00	83.19	82.54	67.378	17.084	2.538	30.133	68.268
8/14/01 08:54:00	83.18	82.53	67.409	17.084	2.538	30.137	68.085
8/14/01 08:55:00	83.18	82.52	67.422	17.083	2.538	30.135	68.123
8/14/01 08:56:00	83.17	82.52	67.297	17.083	2.538	30.135	68.053
8/14/01 08:57:00	83.16	82.51	67.653	17.083	2.538	30.139	67.8
8/14/01 08:58:00	83.16	82.5	67.347	17.081	2.538	30.137	67.819
8/14/01 09:00:00	83.15	82.49	67.54	17.079	2.536	30.135	67.845
8/14/01 09:01:00	83.14	82.49	67.16	17.079	2.536	30.137	67.68
8/14/01 09:02:00	83.14	82.49	67.235	17.077	2.538	30.137	67.604
8/14/01 09:03:00	83.13	82.49	67.459	17.077	2.536	30.139	67.465
8/14/01 09:04:00	83.13	82.48	66.979	17.077	2.538	30.137	67.44
8/14/01 09:06:00	83.12	82.48	67.041	17.075	2.538	30.139	67.459
8/14/01 09:07:00	83.11	82.47	67.391	17.075	2.536	30.137	67.137
8/14/01 09:08:00	83.11	82.47	67.328	17.075	2.538	30.137	67.111
8/14/01 09:09:00	83.11	82.46	67.952	17.075	2.538	30.139	67.105
8/14/01 09:10:00	83.1	82.46	67.652	17.075	2.538	30.141	66.941
8/14/01 09:12:00	83.09	82.44	67.852	17.077	2.538	30.137	66.96
8/14/01 09:13:00	83.09	82.43	67.465	17.075	2.538	30.139	66.852
8/14/01 09:14:00	83.08	82.42	67.759	17.077	2.538	30.141	66.846
8/14/01 09:15:00	83.07	82.41	67.534	17.079	2.538	30.141	66.719
8/14/01 09:16:00	83.07	82.4	67.603	17.077	2.538	30.141	66.568
8/14/01 09:18:00	83.03	82.38	67.553	17.079	2.536	30.145	66.587
8/14/01 09:19:00	83	82.37	67.216	17.077	2.534	30.141	66.555
8/14/01 09:20:00	82.98	82.37	67.472	17.077	2.533	30.143	66.346
8/14/01 09:21:00	82.95	82.36	67.49	17.079	2.531	30.147	66.466
8/14/01 09:22:00	82.92	82.36	67.16	17.081	2.531	30.147	66.321
8/14/01 09:24:00	82.88	82.33	67.253	17.081	2.529	30.149	66.327
8/14/01 09:25:00	82.86	82.31	67.678	17.083	2.527	30.149	66.087
8/14/01 09:26:00	82.85	82.29	67.353	17.083	2.527	30.171	66.182
8/14/01 09:27:00	82.83	82.26	67.072	17.084	2.525	30.153	66.106
8/14/01 09:28:00	82.82	82.24	67.422	17.083	2.527	30.149	65.929
8/14/01 09:30:00	82.79	82.22	67.49	17.086	2.525	30.143	65.853
8/14/01 09:31:00	82.77	82.22	67.241	17.088	2.525	30.129	65.929
8/14/01 09:32:00	82.76	82.22	67.559	17.09	2.523	30.139	65.878
8/14/01 09:33:00	82.74	82.22	67.322	17.094	2.523	30.139	65.841
8/14/01 09:34:00	82.72	82.22	67.784	17.094	2.523	30.143	65.67
8/14/01 09:36:00	82.7	82.21	66.991	17.098	2.523	30.143	65.657
8/14/01 09:37:00	82.69	82.2	67.565	17.098	2.523	30.139	65.543
8/14/01 09:38:00	82.69	82.18	66.923	17.099	2.525	30.143	65.55
8/14/01 09:39:00	82.68	82.17	67.434	17.101	2.527	30.141	65.404
8/14/01 09:40:00	82.67	82.16	66.923	17.101	2.527	30.143	65.373
8/14/01 09:42:00	82.65	82.14	67.465	17.099	2.527	30.143	65.392
8/14/01 09:43:00	82.64	82.12	67.746	17.099	2.529	30.143	65.354
8/14/01 09:44:00	82.63	82.1	67.416	17.099	2.529	30.141	65.234
8/14/01 09:45:00	82.62	82.09	67.484	17.099	2.529	30.143	65.145
8/14/01 09:46:00	82.61	82.07	67.434	17.099	2.529	30.143	65.019
8/14/01 09:48:00	82.58	82.04	67.16	17.099	2.531	30.147	64.867
8/14/01 09:49:00	82.55	82.03	67.484	17.101	2.529	30.143	64.924
8/14/01 09:50:00	82.53	82.02	66.698	17.101	2.529	30.143	64.849
8/14/01 09:51:00	82.5	82.01	67.609	17.101	2.531	30.145	64.785
8/14/01 09:52:00	82.48	81.99	67.135	17.101	2.529	30.145	64.88
8/14/01 09:54:00	82.44	81.97	66.948	17.101	2.531	30.147	64.703
8/14/01 09:55:00	82.43	81.96	67.291	17.099	2.529	30.147	64.633
8/14/01 09:56:00	82.42	81.95	67.185	17.099	2.531	30.145	64.867
8/14/01 09:57:00	82.41	81.94	66.898	17.098	2.529	30.149	64.671
8/14/01 09:58:00	82.41	81.93	68.158	17.098	2.531	30.147	64.387
8/14/01 10:00:00	82.38	81.9	66.667	17.096	2.529	30.145	64.431
8/14/01 10:01:00	82.37	81.88	66.43	17.096	2.529	30.151	64.323
8/14/01 10:02:00	82.35	81.86	67.01	17.094	2.531	30.149	64.323
8/14/01 10:03:00	82.34	81.84	65.862	17.096	2.529	30.149	64.121
8/14/01 10:04:00	82.32	81.82	64.309	17.094	2.529	30.151	64.102
8/14/01 10:06:00	82.31	81.8	64.141	17.092	2.529	30.149	64.045
8/14/01 10:07:00	82.31	81.8	64.265	17.092	2.529	30.149	64.001
8/14/01 10:08:00	82.31	81.8	65.139	17.092	2.529	30.149	64.033
8/14/01 10:09:00	82.31	81.8	64.858	17.092	2.529	30.149	63.919
8/14/01 10:10:00	82.31	81.81	64.796	17.092	2.529	30.151	63.824
8/14/01 10:12:00	82.29	81.8	64.415	17.092	2.529	30.151	63.95
8/14/01 10:13:00	82.28	81.79	64.739	17.09	2.529	30.147	63.799
8/14/01 10:14:00	82.26	81.78	64.889	17.09	2.529	30.151	63.761
8/14/01 10:15:00	82.25	81.77	64.209	17.09	2.531	30.151	63.622
8/14/01 10:16:00	82.24	81.77	64.665	17.09	2.529	30.151	63.729
8/14/01 10:18:00	82.22	81.74	64.44	17.09	2.529	30.151	63.546
8/14/01 10:19:00	82.22	81.72	64.521	17.09	2.531	30.153	63.476
8/14/01 10:20:00	82.21	81.7	64.128	17.088	2.531	30.151	63.438
8/14/01 10:21:00	82.21	81.69	64.746	17.088	2.529	30.153	63.54
8/14/01 10:22:00	82.21	81.67	64.696	17.088	2.529	30.155	63.438
8/14/01 10:24:00	82.19	81.64	64.515	17.086	2.531	30.153	63.331
8/14/01 10:25:00	82.18	81.63	64.577	17.088	2.531	30.151	63.192
8/14/01 10:26:00	82.17	81.63	64.534	17.088	2.531	30.151	63.23
8/14/01 10:27:00	82.16	81.62	64.64	17.086	2.531	30.151	63.198
8/14/01 10:28:00	82.14	81.61	64.571	17.086	2.533	30.149	63.072
8/14/01 10:30:00	82.12	81.59	64.521	17.086	2.533	30.151	63.065
8/14/01 10:31:00	82.11	81.58	64.103	17.084	2.533	30.149	63.211
8/14/01 10:32:00	82.1	81.56	64.571	17.086	2.533	30.147	63.072
8/14/01 10:33:00	82.09	81.55	64.203	17.084	2.533	30.147	62.977
8/14/01 10:34:00	82.07	81.54	64.583	17.086	2.533	30.151	62.933
8/14/01 10:36:00	82.06	81.52	64.82	17.086	2.533	30.149	62.971
8/14/01 10:37:00	82.06	81.51	64.334	17.086	2.534	30.151	64.532
8/14/01 10:38:00	82.06	81.49	64.908	17.086	2.534	30.147	76.257
8/14/01 10:39:00	82.06	81.48	64.515	17.086	2.533	30.149	83.783
8/14/01 10:40:00	82.07	81.47	64.253	17.088	2.533	30.151	83.631
8/14/01 10:42:00	82.06	81.45	64.515	17.086	2.533	30.153	83.561
8/14/01 10:43:00	82.05	81.43	64.428	17.084	2.534	30.149	83.454
8/14/01 10:44:00	82.04	81.42	64.409	17.084	2.534	30.149	83.365
8/14/01 10:45:00	82.03	81.41	64.571	17.084	2.534	30.149	83.409
8/14/01 10:46:00	82.03	81.4	64.328	17.084	2.536	30.149	83.131
8/14/01 10:48:00	82	81.38	65.157	17.084	2.536	30.149	83.232
8/14/01 10:49:00	81.98	81.37	64.509	17.084	2.536	30.145	83.105
8/14/01 10:50:00	81.96	81.37	64.459	17.083	2.536	30.147	83.112
8/14/01 10:51:00	81.95	81.36	64.59	17.084	2.536	30.149	83.061
8/14/01 10:52:00	81.93	81.36	64.995	17.083	2.536	30.149	82.922
8/14/01 10:54:00	81.9	81.34	64.521	17.083	2.536	30.147	82.808
8/14/01 10:55:00	81.9	81.33	64.49	17.084	2.538	30.149	82.89
8/14/01 10:56:00	81.89	81.32	64.964	17.086	2.538	30.147	82.757
8/14/01 10:57:00	81.89	81.31	64.484	17.084	2.536	30.151	82.738
8/14/01 10:58:00	81.88	81.3	64.839	17.086	2.538	30.149	82.732
8/14/01 11:00:00	81.86	81.27	64.671	17.086	2.538	30.147	82.561
8/14/01 11:01:00	81.84	81.25	64.359	17.086	2.538	30.147	82.485
8/14/01 11:02:00	81.82	81.23	64.434	17.088	2.54	30.145	82.498
8/14/01 11:03:00	81.8	81.21	64.452	17.088	2.54	30.149	82.479
8/14/01 11:04:00	81.79	81.19	64.639	17.088	2.54	30.147	82.384
8/14/01 11:06:00	81.78	81.17	64.527	17.088	2.54	30.143	82.39
8/14/01 11:07:00	81.79	81.16	64.827	17.088	2.54	30.145	82.295
8/14/01 11:08:00	81.8	81.15	64.983	17.088	2.542	30.143	82.409
8/14/01 11:09:00	81.81	81.14	64.883	17.09	2.542	30.145	82.333
8/14/01 11:10:00	81.82	81.13	64.989	17.09	2.542	30.143	82.308
8/14/01 11:12:00	81.8	81.12	64.371	17.09	2.542	30.141	82.118
8/14/01 11:13:00	81.77	81.12	64.353	17.09	2.542	30.141	82.035
8/14/01 11:14:00	81.74	81.12	64.739	17.09	2.542	30.145	82.124
8/14/01 11:15:00	81.71	81.12	64.914	17.09	2.542	30.143	81.852
8/14/01 11:16:00	81.67	81.12	64.677	17.09	2.542	30.143	82.073
8/14/01 11:18:00	81.64	81.11	64.677	17.09	2.544	30.141	81.89
8/14/01 11:19:00	81.64	81.11	64.621	17.088	2.544	30.145	81.852
8/14/01 11:20:00	81.64	81.1	64.602	17.088	2.542	30.145	81.96
8/14/01 11:21:00	81.64	81.09	64.49	17.088	2.544	30.145	81.915
8/14/01 11:22:00	81.63	81.08	64.983	17.086	2.542	30.141	81.852
8/14/01 11:24:00	81.62	81.07	64.509	17.086	2.542	30.143	81.744
8/14/01 11:25:00	81.6	81.06	64.315	17.086	2.544	30.143	81.96
8/14/01 11:26:00	81.58	81.06	65.001	17.088	2.546	30.141	81.725
8/14/01 11:27:00	81.57	81.06	64.689	17.088	2.546	30.139	81.706
8/14/01 11:28:00	81.55	81.05	64.49	17.088	2.544	30.141	81.605
8/14/01 11:30:00	81.53	81.03	64.44	17.088	2.546	30.139	81.713
8/14/01 11:31:00	81.52	81.01	64.428	17.09	2.547	30.133	81.643
8/14/01 11:32:00	81.52	81	64.708	17.09	2.546	30.137	81.516
8/14/01 11:33:00	81.51	80.98	64.845	17.092	2.547	30.135	81.605
8/14/01 11:34:00	81.5	80.96	64.502	17.094	2.547	30.133	81.523
8/14/01 11:36:00	81.49	80.94	64.852	17.098	2.549	30.135	81.643
8/14/01 11:37:00	81.48	80.93	64.646	17.098	2.549	30.137	81.51
8/14/01 11:38:00	81.47	80.92	64.627	17.098	2.549	30.131	81.459
8/14/01 11:39:00	81.46	80.91	64.945	17.098	2.547	30.133	81.434
8/14/01 11:40:00	81.45	80.9	65.076	17.096	2.547	30.133	81.421
8/14/01 11:42:00	81.43	80.87	64.845	17.094	2.547	30.131	81.415
8/14/01 11:43:00	81.42	80.86	64.933	17.096	2.547	30.131	81.44
8/14/01 11:44:00	81.41	80.85	64.902	17.096	2.547	30.129	81.377
8/14/01 11:45:00	81.4	80.83	64.596	17.096	2.546	30.129	81.491
8/14/01 11:46:00	81.38	80.82	64.777	17.096	2.547	30.127	81.263

CITY of COOPER CITY
INJECTION TEST DATA

Date/Time	Downhole Pressure (psi)	Downhole Temperature (deg F)	Wellhead Pressure (psi)	Upper Monitor Pressure (psi)	Lower Monitor Pressure (psi)	Barometric Pressure (inchs Hg)	Annular Pressure (psi)
8/14/01 11:48:00	81.37	80.8	64.565	17.096	2.547	30.127	81.175
8/14/01 11:49:00	81.36	80.8	64.502	17.096	2.547	30.127	81.32
8/14/01 11:50:00	81.35	80.8	64.446	17.096	2.547	30.127	81.181
8/14/01 11:51:00	81.34	80.79	64.671	17.096	2.547	30.129	81.257
8/14/01 11:52:00	81.34	80.79	64.939	17.098	2.547	30.127	81.162
8/14/01 11:54:00	81.32	80.78	64.939	17.098	2.546	30.129	81.27
8/14/01 11:55:00	81.31	80.77	64.465	17.098	2.547	30.129	81.149
8/14/01 11:56:00	81.3	80.76	64.92	17.098	2.546	30.129	81.042
8/14/01 11:57:00	81.29	80.75	64.147	17.099	2.546	30.127	81.149
8/14/01 11:58:00	81.28	80.74	64.272	17.099	2.546	30.133	81.086
8/14/01 12:00:00	81.26	80.72	64.87	17.099	2.546	30.127	81.168
8/14/01 12:01:00	81.26	80.71	64.627	17.098	2.546	30.129	81.08
8/14/01 12:02:00	81.25	80.71	64.546	17.096	2.546	30.131	81.054
8/14/01 12:03:00	81.25	80.7	64.496	17.098	2.544	30.127	80.959
8/14/01 12:04:00	81.24	80.7	64.384	17.098	2.546	30.129	80.966
8/14/01 12:06:00	81.23	80.67	64.184	17.099	2.546	30.129	81.023
8/14/01 12:07:00	81.23	80.66	64.758	17.098	2.546	30.125	80.959
8/14/01 12:08:00	81.22	80.64	64.428	17.099	2.546	30.127	80.928
8/14/01 12:09:00	81.21	80.63	64.234	17.099	2.546	30.123	80.839
8/14/01 12:10:00	81.2	80.61	65.207	17.099	2.546	30.123	80.877
8/14/01 12:12:00	81.18	80.59	64.789	17.099	2.546	30.125	80.751
8/14/01 12:13:00	81.17	80.59	65.307	17.103	2.546	30.125	80.833
8/14/01 12:14:00	81.16	80.58	64.739	17.103	2.546	30.125	80.554
8/14/01 12:15:00	81.15	80.58	64.39	17.103	2.547	30.123	80.883
8/14/01 12:16:00	81.13	80.57	64.721	17.105	2.547	30.125	80.82
8/14/01 12:18:00	81.1	80.57	64.272	17.103	2.547	30.121	80.592
8/14/01 12:19:00	81.09	80.56	63.941	17.101	2.546	30.119	80.719
8/14/01 12:20:00	81.07	80.56	64.44	17.101	2.548	30.121	80.82
8/14/01 12:21:00	81.06	80.55	64.771	17.103	2.547	30.119	80.618
8/14/01 12:22:00	81.04	80.55	64.627	17.101	2.546	30.123	80.352
8/14/01 12:24:00	81.03	80.53	64.334	17.098	2.546	30.121	80.738
8/14/01 12:25:00	81.03	80.52	64.109	17.101	2.546	30.123	80.396
8/14/01 12:26:00	81.03	80.51	64.92	17.101	2.547	30.121	80.485
8/14/01 12:27:00	81.03	80.5	64.29	17.101	2.546	30.121	80.339
8/14/01 12:28:00	81.03	80.49	64.116	17.103	2.546	30.121	80.687
8/14/01 12:30:00	81.01	80.47	64.153	17.103	2.547	30.121	80.326
8/14/01 12:31:00	81	80.46	63.86	17.103	2.547	30.123	80.333
8/14/01 12:32:00	80.99	80.46	63.573	17.107	2.547	30.121	80.168
8/14/01 12:33:00	80.97	80.45	64.29	17.107	2.547	30.135	80.263
8/14/01 12:34:00	80.96	80.45	63.71	17.109	2.547	30.127	80.415
8/14/01 12:36:00	80.94	80.43	66.991	17.109	2.547	30.119	80.643
8/14/01 12:37:00	80.93	80.42	64.852	17.109	2.547	30.117	80.212
8/14/01 12:38:00	80.92	80.4	64.895	17.109	2.547	30.108	80.143
8/14/01 12:39:00	80.92	80.39	64.359	17.111	2.547	30.104	80.219
8/14/01 12:40:00	80.91	80.38	65.151	17.111	2.546	30.1	80.206
8/14/01 12:42:00	80.89	80.36	63.654	17.113	2.547	30.106	80.061
8/14/01 12:43:00	80.88	80.36	64.789	17.113	2.547	30.104	80.092
8/14/01 12:44:00	80.87	80.35	64.01	17.113	2.547	30.108	80.016
8/14/01 12:45:00	80.86	80.35	64.459	17.113	2.547	30.108	80.023
8/14/01 12:46:00	80.85	80.35	63.904	17.113	2.547	30.112	79.871
8/14/01 12:48:00	80.83	80.33	64.359	17.113	2.547	30.108	79.94
8/14/01 12:49:00	80.82	80.31	64.764	17.114	2.547	30.114	80.004
8/14/01 12:50:00	80.81	80.3	64.82	17.114	2.547	30.112	79.776
8/14/01 12:51:00	80.81	80.28	64.777	17.114	2.547	30.112	79.757
8/14/01 12:52:00	80.8	80.26	64.933	17.114	2.546	30.114	79.75
8/14/01 12:54:00	80.78	80.24	64.147	17.114	2.547	30.112	79.763
8/14/01 12:55:00	80.77	80.23	64.683	17.114	2.547	30.112	79.719
8/14/01 12:56:00	80.75	80.22	64.041	17.116	2.547	30.114	79.675
8/14/01 12:57:00	80.74	80.22	64.945	17.116	2.547	30.119	79.542
8/14/01 12:58:00	80.73	80.21	67.166	17.118	2.547	30.114	79.719
8/14/01 13:00:00	80.72	80.19	67.241	17.118	2.547	30.117	79.725
8/14/01 13:01:00	80.72	80.19	67.035	17.118	2.547	30.114	79.763
8/14/01 13:02:00	80.73	80.18	67.646	17.118	2.546	30.117	79.687
8/14/01 13:03:00	80.74	80.18	66.424	17.12	2.546	30.114	79.51
8/14/01 13:04:00	80.74	80.17	79.693	17.118	2.547	30.117	80.137
8/14/01 13:06:00	80.74	80.16	79.331	17.118	2.547	30.117	80.32
8/14/01 13:07:00	80.74	80.16	79.081	17.118	2.547	30.117	80.111
8/14/01 13:08:00	80.73	80.15	79.861	17.116	2.547	30.114	80.244
8/14/01 13:09:00	80.73	80.15	78.894	17.116	2.549	30.112	80.371
8/14/01 13:10:00	80.72	80.14	79.786	17.116	2.547	30.11	80.586
8/14/01 13:12:00	80.71	80.13	79.449	17.116	2.547	30.112	80.478
8/14/01 13:13:00	80.7	80.11	80.043	17.116	2.547	30.11	80.453
8/14/01 13:14:00	80.69	80.1	79.83	17.116	2.547	30.114	80.402
8/14/01 13:15:00	80.68	80.09	79.749	17.116	2.549	30.11	80.649
8/14/01 13:16:00	80.67	80.08	79.762	17.118	2.547	30.112	80.459
8/14/01 13:18:00	80.65	80.06	79.343	17.118	2.549	30.114	80.668
8/14/01 13:19:00	80.64	80.06	79.187	17.118	2.547	30.112	80.719
8/14/01 13:20:00	80.63	80.05	79.187	17.118	2.547	30.112	80.44
8/14/01 13:21:00	80.61	80.04	79.811	17.116	2.547	30.112	80.662
8/14/01 13:22:00	80.6	80.04	79.468	17.12	2.549	30.112	80.554
8/14/01 13:24:00	80.58	80.02	79.075	17.118	2.549	30.11	80.719
8/14/01 13:25:00	80.58	80.01	79.312	17.12	2.549	30.112	80.751
8/14/01 13:26:00	80.57	80	78.731	17.118	2.549	30.11	80.643
8/14/01 13:27:00	80.57	79.99	79.387	17.118	2.549	30.11	80.605
8/14/01 13:28:00	80.56	79.98	78.688	17.118	2.551	30.108	80.788
8/14/01 13:30:00	80.55	79.96	79.193	17.118	2.551	30.11	80.719
8/14/01 13:31:00	80.54	79.95	79	17.118	2.549	30.108	80.694
8/14/01 13:32:00	80.53	79.94	79.443	17.118	2.551	30.11	80.567
8/14/01 13:33:00	80.51	79.93	11.216	17.12	2.551	30.108	77.447
8/14/01 13:34:00	80.5	79.93	35.984	17.118	2.553	30.129	78.788
8/14/01 13:36:00	80.48	79.91	37.994	17.12	2.551	30.121	77.953
8/14/01 13:37:00	80.47	79.91	36.189	17.12	2.553	30.11	77.668
8/14/01 13:38:00	80.46	79.9	36.27	17.122	2.551	30.092	77.308
8/14/01 13:39:00	80.45	79.9	36.426	17.122	2.553	30.102	77.017
8/14/01 13:40:00	80.44	79.89	36.295	17.122	2.553	30.098	76.732
8/14/01 13:42:00	80.41	79.88	36.289	17.124	2.553	30.098	76.46
8/14/01 13:43:00	80.4	79.87	36.258	17.124	2.555	30.1	76.207
8/14/01 13:44:00	80.39	79.86	36.233	17.124	2.555	30.1	75.947
8/14/01 13:45:00	80.37	79.85	36.195	17.126	2.555	30.1	75.707
8/14/01 13:46:00	80.36	79.84	36.171	17.124	2.557	30.098	75.447
8/14/01 13:48:00	80.35	79.82	36.139	17.124	2.557	30.1	75.194
8/14/01 13:49:00	80.36	79.81	36.115	17.124	2.555	30.1	74.941
8/14/01 13:50:00	80.36	79.8	36.083	17.122	2.557	30.102	74.688
8/14/01 13:51:00	80.36	79.79	36.071	17.124	2.557	30.104	74.448
8/14/01 13:52:00	80.37	79.78	36.034	17.124	2.558	30.102	74.195
8/14/01 13:54:00	80.36	79.76	36.015	17.124	2.558	30.104	73.948
8/14/01 13:55:00	80.35	79.75	35.99	17.124	2.557	30.102	73.701
8/14/01 13:56:00	80.33	79.74	35.971	17.126	2.558	30.102	73.455
8/14/01 13:57:00	80.32	79.73	35.953	17.126	2.56	30.1	73.208
8/14/01 13:58:00	80.31	79.72	35.934	17.126	2.56	30.098	72.967
8/14/01 14:00:00	80.29	79.71	35.915	17.126	2.56	30.1	72.714
8/14/01 14:01:00	80.29	79.7	35.903	17.126	2.56	30.098	72.474
8/14/01 14:02:00	80.28	79.7	35.884	17.126	2.56	30.1	72.227
8/14/01 14:03:00	80.27	79.69	35.866	17.126	2.56	30.102	71.987
8/14/01 14:04:00	80.26	79.68	35.853	17.128	2.562	30.096	71.74
8/14/01 14:06:00	80.25	79.67	35.841	17.126	2.562	30.094	71.5
8/14/01 14:07:00	80.25	79.66	35.834	17.126	2.562	30.092	71.253
8/14/01 14:08:00	80.25	79.64	35.828	17.126	2.562	30.094	71.019
8/14/01 14:09:00	80.24	79.63	35.816	17.126	2.562	30.094	70.773
8/14/01 14:10:00	80.24	79.62	35.81	17.126	2.562	30.092	70.539
8/14/01 14:12:00	80.23	79.6	35.803	17.126	2.562	30.09	70.292
8/14/01 14:13:00	80.22	79.6	35.797	17.124	2.562	30.09	70.052
8/14/01 14:14:00	80.22	79.59	35.791	17.122	2.562	30.094	69.811
8/14/01 14:15:00	80.21	79.59	35.785	17.122	2.56	30.088	69.577
8/14/01 14:16:00	80.2	79.58	35.772	17.12	2.56	30.086	69.331
8/14/01 14:18:00	80.19	79.57	35.766	17.12	2.562	30.09	69.097
8/14/01 14:19:00	80.18	79.57	35.76	17.12	2.56	30.09	68.856
8/14/01 14:20:00	80.16	79.56	35.754	17.118	2.56	30.088	68.623
8/14/01 14:21:00	80.15	79.55	35.747	17.12	2.562	30.092	68.382
8/14/01 14:22:00	80.14	79.55	35.741	17.118	2.562	30.09	68.148
8/14/01 14:24:00	80.12	79.53	35.735	17.118	2.562	30.09	67.902
8/14/01 14:25:00	80.1	79.52	35.729	17.118	2.562	30.09	67.668
8/14/01 14:26:00	80.09	79.51	35.722	17.118	2.562	30.09	67.421
8/14/01 14:27:00	80.07	79.5	35.71	17.118	2.562	30.092	67.193
8/14/01 14:28:00	80.06	79.49	35.704	17.118	2.564	30.09	66.96
8/14/01 14:30:00	80.04	79.47	35.698	17.118	2.564	30.09	66.726
8/14/01 14:31:00	80.04	79.47	35.691	17.118	2.564	30.092	66.485
8/14/01 14:32:00	80.04	79.47	35.685	17.118	2.564	30.088	66.251
8/14/01 14:33:00	80.04	79.46	35.679	17.118	2.564	30.09	66.018
8/14/01 14:34:00	80.04	79.46	35.673	17.116	2.564	30.094	65.784
8/14/01 14:36:00	80.03	79.44	35.666	17.116	2.564	30.092	65.543
8/14/01 14:37:00	80.02	79.42	35.66	17.116	2.564	30.092	65.316
8/14/01 14:38:00	80.01	79.41	35.654	17.116	2.564	30.094	65.088
8/14/01 14:39:00	80	79.39	35.648	17.118	2.564	30.096	64.854
8/14/01 14:40:00	79.99	79.37	35.642	17.118	2.564	30.094	64.62
8/14/01 14:42:00	79.97	79.35	35.642	17.118	2.566	30.094	64.387
8/14/01 14:43:00	79.97	79.34	35.635	17.12	2.566	30.09	64.159
8/14/01 14:44:00	79.96	79.33	35.629	17.122	2.566	30.094	63.925
8/14/01 14:45:00	79.95	79.33	35.629	17.122	2.566	30.09	63.698
8/14/01 14:46:00	79.95	79.32	35.623	17.12	2.566	30.09	63.464
8/14/01 14:48:00	79.94	79.31	35.623	17.118	2.566	30.09	63.236
8/14/01 14:49:00	79.93	79.31	35.617	17.116	2.566	30.086	62.996
8/14/01 14:50:00	79.93	79.31	35.61	17.116	2.566	30.088	62.781
8/14/01 14:51:00	79.93	79.31	35.623	17.116	2.566	30.088	62.56
8/14/01 14:52:00	79.92	79.31	35.598	17.116	2.566	30.086	62.32
8/14/01 14:54:00	79.91	79.3	35.604	17.116	2.568	30.086	62.098
8/14/01 14:55:00	79.9	79.31	35.579	17.114	2.566	30.084	61.865
8/14/01 14:56:00	79.89	79.31	35.592	17.114	2.566	30.086	61.643
8/14/01 14:57:00	79.88	79.31	35.585	17.116	2.566	30.086	61.416
8/14/01 14:58:00	79.88	79.31	35.585	17.118	2.566	30.088	61.188
8/14/01 15:00:00	79.86	79.3	35.573	17.118	2.566	30.088	60.967
8/14/01 15:01:00	79.85	79.3	35.567	17.118	2.566	30.088	60.74
8/14/01 15:02:00	79.84	79.29	35.573	17.118	2.566	30.09	60.519
8/14/01 15:03:00	79.83	79.28	35.567	17.118	2.566	30.088	60.291
8/14/01 15:04:00	79.82	79.28	35.561	17.118	2.566	30.086	60.07
8/14/01 15:06:00	79.81	79.25	35.561	17.118	2.564	30.088	59.849
8/14/01 15:07:00	79.81	79.23	35.542	17.118	2.566	30.086	59.628
8/14/01 15:08:00	79.81	79.22	35.542	17.118	2.566	30.09	59.4
8/14/01 15:09:00	79.81	79.2	35.548	17.118	2.566	30.086	59.179
8/14/01 15:10:00	79.81	79.18	35.542	17.118	2.566	30.084	58.964
8/14/01 15:12:00	79.79	79.15	35.529	17.12	2.566	30.082	58.743
8/14/01 15:13:00	79.78	79.14	35.529	17.12	2.568	30.086	58.522
8/14/01 15:14:00	79.76	79.14	35.517	17.122	2.568	30.088	58.294
8/14/01 15:15:00	79.75	79.13	35.517	17.12	2.566	30.084	58.073
8/14/01 15:16:00	79.73	79.12	35.498	17.12	2.566	30.084	57.858
8/14/01 15:18:00	79.71	79.11	35.511	17.12	2.566	30.084	57.637
8/14/01 15:19:00	79.7	79.11	35.492	17.12	2.564	30.084	57.416
8/14/01 15:20:00	79.69	79.1	35.498	17.12	2.564	30.084	57.201
8/14/01 15:21:00	79.68	79.1	35.505	17.122	2.564	30.084	56.987
8/14/01 15:22:00	79.67	79.09	35.492	17.122	2.564	30.086	56.765
8/14/01 15:24:00	79.67	79.08	35.486	17.122	2.564	30.086	56.551
8/14/01 15:25:00	79.67	79.07	35.48	17.122	2.564	30.082	56.33
8/14/01 15:26:00	79.67	79.06	35.455	17.122	2.566	30.084	56.121
8/14/01 15:27:00	79.67	79.05	35.505	17.122	2.566	30.084	55.906
8/14/01 15:28:00	79.67	79.05	35.467	17.122	2.564	30.082	55.685
8/14/01 15:30:00	79.66	79.03	35.461	17.122	2.564	30.082	55.477
8/14/01 15:31:00	79.66	79.02	35.461	17.122	2.564	30.08	55.262
8/14/01 15:32:00	79.65	79.01	35.43	17.122	2.564	30.082	55.041
8/14/01 15:33:00	79.65	79	35.449	17.124	2.564	30.082	54.832
8/14/01 15:34:00	79.65	78.99	35.442	17.122	2.564	30.084	54.624
8/14/01 15:36:00	79.63	78.98	35.436	17.124	2.564	30.08	54.409
8/14/01 15:37:00	79.62	78.98	35.43	17.124	2.562	30.08	54.195
8/14/01 15:38:00	79.61	78.97	35.43	17.124	2.564	30.08	53.992
8/14/01 15:39:00	79.6	78.97	35.424	17.124	2.562	30.082	53.778
8/14/01 15:40:00	79.58	78.97	35.417	17.126	2.564	30.08	53.569
8/14/01 15:42:00	79.57	78.96	35.411	17.126	2.562	30.078	53.361
8/14/01 15:43:00	79.56	78.95	35.405	17.128	2.564	30.08	53.146
8/14/01 15:44:00	79.55	78.95	35.405	17.128	2.564	30.082	52.938
8/14/01 15:45:00	79.54	78.95	35.393	17.128	2.562	30.08	52.729
8/14/01 15:46:00	79.54	78.94	35.386	17.131	2.562	30.078	52.521
8/14/01 15:48:00	79.52	78.92	35.38	17.131	2.564	30.08	52.319
8/14/01 15:49:00	79.52	78.91	35.343	17.131	2.564	30.076	52.11
8/14/01 15:50:00	79.51	78.9	35.386	17.131	2.562	30.078	51.908
8/14/01 15:51:00	79.51	78.88	35.38	17.128	2.562	30.08	51.7
8/14/01 15:52:00	79.5	78.87	35.368	17.128	2.562	30.076	51.498
8/14/01 15:54:00	79.49	78.85	35.374	17.126	2.562	30.076	51.296
8/14/01 15:55:00	79.48	78.84	35.361	17.126	2.562	30.076	51.087
8/14/01 15:56:00	79.48	78.83	35.361	17.128	2.562	30.072	50.885

CITY of COOPER CITY
INJECTION TEST DATA

Date/Time	Downhole Pressure (psi)	Downhole Temperature (deg F)	Wellhead Pressure (psi)	Upper Monitor Pressure (psi)	Lower Monitor Pressure (psi)	Barometric Pressure (inchs Hg)	Annular Pressure (psi)
8/14/01 15:57:00	79.47	78.83	35.33	17.128	2.562	30.076	50.69
8/14/01 15:58:00	79.46	78.82	35.38	17.128	2.562	30.074	50.488
8/14/01 16:00:00	79.45	78.8	35.337	17.128	2.562	30.074	50.279
8/14/01 16:01:00	79.45	78.8	35.343	17.131	2.562	30.074	50.077
8/14/01 16:02:00	79.44	78.79	35.343	17.131	2.562	30.076	49.875
8/14/01 16:03:00	79.44	78.79	35.33	17.131	2.562	30.076	49.679
8/14/01 16:04:00	79.43	78.78	35.33	17.131	2.562	30.072	49.471
8/14/01 16:06:00	79.42	78.78	35.324	17.131	2.562	30.072	49.275
8/14/01 16:07:00	79.41	78.78	35.324	17.131	2.562	30.076	49.073
8/14/01 16:08:00	79.4	78.77	35.318	17.131	2.56	30.078	48.871
8/14/01 16:09:00	79.39	78.77	35.312	17.131	2.56	30.078	48.676
8/14/01 16:10:00	79.36	78.77	35.312	17.129	2.56	30.076	48.48
8/14/01 16:12:00	79.35	78.76	35.299	17.129	2.56	30.076	48.284
8/14/01 16:13:00	79.34	78.75	35.299	17.129	2.56	30.078	48.082
8/14/01 16:14:00	79.32	78.75	35.299	17.129	2.558	30.078	47.886
8/14/01 16:15:00	79.3	78.74	35.293	17.129	2.56	30.078	47.691
8/14/01 16:16:00	79.28	78.73	35.287	17.126	2.56	30.08	47.501
8/14/01 16:18:00	79.27	78.71	35.281	17.124	2.558	30.078	47.306
8/14/01 16:19:00	79.27	78.7	35.281	17.122	2.558	30.08	47.104
8/14/01 16:20:00	79.27	78.69	35.274	17.122	2.558	30.082	46.914
8/14/01 16:21:00	79.27	78.68	35.268	17.122	2.558	30.078	46.719
8/14/01 16:22:00	79.28	78.67	35.268	17.12	2.558	30.08	46.529
8/14/01 16:24:00	79.27	78.65	35.268	17.122	2.558	30.08	46.334
8/14/01 16:25:00	79.27	78.64	35.256	17.124	2.558	30.08	46.138
8/14/01 16:26:00	79.26	78.63	35.249	17.126	2.558	30.082	45.955
8/14/01 16:27:00	79.25	78.62	35.249	17.128	2.558	30.08	45.765
8/14/01 16:28:00	79.25	78.61	35.243	17.128	2.558	30.082	45.57
8/14/01 16:30:00	79.23	78.59	35.243	17.124	2.558	30.078	45.38
8/14/01 16:31:00	79.23	78.59	35.231	17.128	2.558	30.08	45.191
8/14/01 16:32:00	79.22	78.59	35.231	17.128	2.558	30.082	45.002
8/14/01 16:33:00	79.21	78.59	35.225	17.128	2.558	30.084	44.812
8/14/01 16:34:00	79.21	78.59	35.225	17.128	2.558	30.074	44.623
8/14/01 16:36:00	79.19	78.57	35.218	17.128	2.558	30.084	44.434
8/14/01 16:37:00	79.19	78.56	35.212	17.124	2.557	30.084	44.244
8/14/01 16:38:00	79.18	78.55	35.206	17.128	2.557	30.082	44.061
8/14/01 16:39:00	79.17	78.54	35.206	17.128	2.558	30.086	43.878
8/14/01 16:40:00	79.16	78.53	35.2	17.128	2.557	30.08	43.695
8/14/01 16:42:00	79.15	78.51	35.2	17.128	2.558	30.08	43.512
8/14/01 16:43:00	79.14	78.5	35.193	17.129	2.558	30.08	43.323
8/14/01 16:44:00	79.13	78.49	35.187	17.129	2.558	30.082	43.14
8/14/01 16:45:00	79.12	78.47	35.187	17.129	2.558	30.08	42.951
8/14/01 16:46:00	79.11	78.46	35.187	17.129	2.56	30.08	42.774
8/14/01 16:48:00	79.09	78.44	35.175	17.131	2.56	30.084	42.591
8/14/01 16:49:00	79.08	78.44	35.156	17.131	2.558	30.082	42.408
8/14/01 16:50:00	79.08	78.43	35.175	17.131	2.558	30.082	42.225
8/14/01 16:51:00	79.07	78.42	35.168	17.129	2.56	30.084	42.042
8/14/01 16:52:00	79.06	78.41	35.168	17.128	2.56	30.082	41.865
8/14/01 16:54:00	79.06	78.4	35.156	17.129	2.56	30.078	41.682
8/14/01 16:55:00	79.05	78.4	35.162	17.129	2.56	30.08	41.506
8/14/01 16:56:00	79.05	78.4	35.156	17.128	2.56	30.08	41.329
8/14/01 16:57:00	79.05	78.4	35.15	17.128	2.56	30.08	41.146
8/14/01 16:58:00	79.04	78.4	35.15	17.129	2.56	30.082	40.963
8/14/01 17:00:00	79.03	78.4	35.144	17.128	2.56	30.082	40.786
8/14/01 17:01:00	79.02	78.39	35.137	17.129	2.562	30.08	40.61
8/14/01 17:02:00	79.01	78.38	35.131	17.129	2.56	30.084	40.433
8/14/01 17:03:00	79	78.38	35.125	17.129	2.562	30.084	40.257
8/14/01 17:04:00	78.99	78.37	35.125	17.129	2.562	30.082	40.08
8/14/01 17:06:00	78.98	78.36	35.119	17.131	2.562	30.08	39.91
8/14/01 17:07:00	78.97	78.36	35.119	17.131	2.562	30.084	39.733
8/14/01 17:08:00	78.97	78.36	35.119	17.133	2.564	30.08	39.556
8/14/01 17:09:00	78.96	78.36	35.112	17.133	2.564	30.08	39.38
8/14/01 17:10:00	78.96	78.35	35.106	17.133	2.564	30.08	39.203
8/14/01 17:12:00	78.95	78.34	35.106	17.135	2.564	30.08	39.033
8/14/01 17:13:00	78.94	78.33	35.1	17.133	2.564	30.08	38.862
8/14/01 17:14:00	78.93	78.32	35.1	17.133	2.564	30.08	38.692
8/14/01 17:15:00	78.93	78.3	35.094	17.133	2.564	30.08	38.522
8/14/01 17:16:00	78.92	78.29	35.088	17.131	2.564	30.082	38.345
8/14/01 17:18:00	78.9	78.27	35.088	17.131	2.564	30.08	38.175
8/14/01 17:19:00	78.9	78.26	35.075	17.131	2.564	30.08	38.004
8/14/01 17:20:00	78.89	78.26	35.075	17.129	2.564	30.078	37.84
8/14/01 17:21:00	78.88	78.25	35.069	17.131	2.564	30.08	37.67
8/14/01 17:22:00	78.87	78.24	35.069	17.129	2.564	30.078	37.494
8/14/01 17:24:00	78.86	78.22	35.069	17.129	2.564	30.078	37.323
8/14/01 17:25:00	78.85	78.22	35.056	17.129	2.566	30.078	37.153
8/14/01 17:26:00	78.84	78.21	35.056	17.131	2.566	30.078	36.989
8/14/01 17:27:00	78.83	78.21	35.044	17.129	2.566	30.076	36.825
8/14/01 17:28:00	78.83	78.2	35.05	17.131	2.566	30.08	36.655
8/14/01 17:30:00	78.82	78.19	35.038	17.131	2.566	30.08	36.491
8/14/01 17:31:00	78.82	78.18	35.038	17.133	2.568	30.08	36.32
8/14/01 17:32:00	78.82	78.18	35.038	17.133	2.568	30.078	36.163
8/14/01 17:33:00	78.82	78.17	35.019	17.133	2.568	30.074	35.999
8/14/01 17:34:00	78.82	78.16	35.038	17.133	2.566	30.076	35.835
8/14/01 17:36:00	78.81	78.15	35.025	17.131	2.568	30.076	35.664
8/14/01 17:37:00	78.81	78.14	35.025	17.133	2.568	30.076	35.507
8/14/01 17:38:00	78.81	78.13	35.019	17.131	2.568	30.078	35.343
8/14/01 17:39:00	78.8	78.13	35.019	17.133	2.568	30.076	35.179
8/14/01 17:40:00	78.8	78.12	35.013	17.131	2.566	30.078	35.021
8/14/01 17:42:00	78.79	78.1	34.994	17.129	2.568	30.078	34.857
8/14/01 17:43:00	78.78	78.09	35.019	17.129	2.566	30.074	34.7
8/14/01 17:44:00	78.77	78.09	35	17.129	2.566	30.076	34.536
8/14/01 17:45:00	78.76	78.08	35	17.129	2.566	30.072	34.372
8/14/01 17:46:00	78.75	78.07	34.994	17.129	2.566	30.074	34.214
8/14/01 17:48:00	78.73	78.06	34.994	17.129	2.568	30.072	34.056
8/14/01 17:49:00	78.72	78.05	34.988	17.128	2.568	30.074	33.899
8/14/01 17:50:00	78.71	78.04	34.982	17.128	2.568	30.074	33.741
8/14/01 17:51:00	78.7	78.04	34.976	17.129	2.568	30.07	33.584
8/14/01 17:52:00	78.69	78.03	34.976	17.129	2.568	30.068	33.428
8/14/01 17:54:00	78.68	78.01	34.976	17.128	2.566	30.07	33.288
8/14/01 17:55:00	78.68	78	34.963	17.129	2.568	30.072	33.111
8/14/01 17:56:00	78.67	77.98	34.963	17.129	2.568	30.07	32.953
8/14/01 17:57:00	78.67	77.97	34.963	17.131	2.568	30.068	32.802
8/14/01 17:58:00	78.67	77.96	34.957	17.129	2.568	30.072	32.644
8/14/01 18:00:00	78.66	77.95	34.957	17.129	2.566	30.07	32.486
8/14/01 18:01:00	78.66	77.95	34.951	17.129	2.566	30.072	32.335
8/14/01 18:02:00	78.66	77.95	34.944	17.129	2.568	30.072	32.184
8/14/01 18:03:00	78.65	77.95	34.944	17.131	2.566	30.068	32.026
8/14/01 18:04:00	78.65	77.96	34.938	17.129	2.566	30.07	31.875
8/14/01 18:06:00	78.64	77.95	34.938	17.131	2.566	30.072	31.717
8/14/01 18:07:00	78.64	77.95	34.932	17.131	2.566	30.074	31.566
8/14/01 18:08:00	78.63	77.94	34.92	17.133	2.566	30.068	31.415
8/14/01 18:09:00	78.63	77.94	34.92	17.133	2.564	30.072	31.263
8/14/01 18:10:00	78.63	77.93	34.913	17.133	2.564	30.068	31.112
8/14/01 18:12:00	78.61	77.92	34.913	17.133	2.562	30.072	30.967
8/14/01 18:13:00	78.61	77.91	34.907	17.133	2.562	30.072	30.816
8/14/01 18:14:00	78.6	77.9	34.907	17.133	2.562	30.072	30.664
8/14/01 18:15:00	78.59	77.89	34.901	17.133	2.562	30.07	30.519
8/14/01 18:16:00	78.58	77.88	34.901	17.131	2.56	30.072	30.368
8/14/01 18:18:00	78.56	77.87	34.901	17.131	2.562	30.072	30.223
8/14/01 18:19:00	78.55	77.87	34.895	17.133	2.56	30.07	30.072
8/14/01 18:20:00	78.54	77.86	34.901	17.131	2.562	30.07	29.927
8/14/01 18:21:00	78.53	77.86	34.888	17.131	2.56	30.068	29.788
8/14/01 18:22:00	78.52	77.86	34.882	17.131	2.56	30.07	29.643
8/14/01 18:24:00	78.51	77.86	34.882	17.129	2.56	30.07	29.505
8/14/01 18:25:00	78.5	77.86	34.882	17.129	2.56	30.072	29.366
8/14/01 18:26:00	78.49	77.86	34.876	17.129	2.558	30.072	29.221
8/14/01 18:27:00	78.49	77.86	34.864	17.129	2.558	30.074	29.082
8/14/01 18:28:00	78.48	77.86	34.87	17.129	2.56	30.074	28.931
8/14/01 18:30:00	78.47	77.85	34.864	17.131	2.558	30.072	28.792
8/14/01 18:31:00	78.46	77.84	34.864	17.131	2.558	30.072	28.647
8/14/01 18:32:00	78.45	77.83	34.857	17.131	2.558	30.072	28.502
8/14/01 18:33:00	78.44	77.82	34.851	17.131	2.558	30.072	28.37
8/14/01 18:34:00	78.43	77.81	34.845	17.131	2.558	30.07	28.225
8/14/01 18:36:00	78.42	77.79	34.845	17.131	2.558	30.072	28.086
8/14/01 18:37:00	78.41	77.78	34.845	17.131	2.558	30.072	27.941
8/14/01 18:38:00	78.41	77.78	34.832	17.131	2.558	30.072	27.803
8/14/01 18:39:00	78.4	77.77	34.839	17.129	2.558	30.072	27.658
8/14/01 18:40:00	78.4	77.76	34.832	17.129	2.558	30.07	27.519
8/14/01 18:42:00	78.39	77.74	34.826	17.129	2.557	30.07	27.38
8/14/01 18:43:00	78.38	77.74	34.826	17.129	2.557	30.074	27.242
8/14/01 18:44:00	78.37	77.73	34.826	17.129	2.557	30.074	27.109
8/14/01 18:45:00	78.37	77.72	34.814	17.129	2.557	30.076	26.971
8/14/01 18:46:00	78.36	77.72	34.814	17.128	2.557	30.076	26.832
8/14/01 18:48:00	78.35	77.7	34.814	17.128	2.557	30.074	26.694
8/14/01 18:49:00	78.34	77.69	34.808	17.128	2.557	30.076	26.561
8/14/01 18:50:00	78.34	77.68	34.808	17.128	2.557	30.072	26.423
8/14/01 18:51:00	78.33	77.67	34.795	17.128	2.555	30.076	26.29
8/14/01 18:52:00	78.33	77.66	34.801	17.128	2.557	30.074	26.158
8/14/01 18:54:00	78.32	77.64	34.789	17.128	2.557	30.076	26.026
8/14/01 18:55:00	78.31	77.64	34.789	17.128	2.557	30.074	25.887
8/14/01 18:56:00	78.31	77.63	34.783	17.128	2.555	30.072	25.748
8/14/01 18:57:00	78.3	77.63	34.776	17.128	2.555	30.076	25.616
8/14/01 18:58:00	78.3	77.63	34.783	17.128	2.555	30.074	25.484
8/14/01 19:00:00	78.29	77.62	34.776	17.128	2.555	30.074	25.351
8/14/01 19:01:00	78.28	77.61	34.776	17.128	2.555	30.074	25.225
8/14/01 19:02:00	78.27	77.61	34.77	17.129	2.555	30.074	25.093
8/14/01 19:03:00	78.27	77.6	34.776	17.128	2.555	30.074	24.961
8/14/01 19:04:00	78.26	77.6	34.758	17.126	2.555	30.074	24.828
8/14/01 19:06:00	78.25	77.59	34.77	17.124	2.553	30.076	24.702
8/14/01 19:07:00	78.24	77.58	34.751	17.124	2.553	30.078	24.57
8/14/01 19:08:00	78.23	77.57	34.758	17.124	2.553	30.078	24.444
8/14/01 19:09:00	78.22	77.56	34.751	17.124	2.553	30.076	24.318
8/14/01 19:10:00	78.22	77.56	34.751	17.124	2.553	30.076	24.186
8/14/01 19:12:00	78.2	77.54	34.739	17.124	2.551	30.076	24.06
8/14/01 19:13:00	78.2	77.54	34.733	17.124	2.551	30.076	23.934
8/14/01 19:14:00	78.2	77.54	34.733	17.122	2.551	30.076	23.808
8/14/01 19:15:00	78.19	77.53	34.727	17.122	2.551	30.076	23.682
8/14/01 19:16:00	78.19	77.53	34.727	17.122	2.551	30.076	23.556
8/14/01 19:18:00	78.18	77.52	34.727	17.122	2.551	30.078	23.423
8/14/01 19:19:00	78.17	77.52	34.72	17.122	2.551	30.08	23.297
8/14/01 19:20:00	78.17	77.51	34.727	17.12	2.549	30.076	23.178
8/14/01 19:21:00	78.16	77.51	34.708	17.12	2.549	30.08	23.052
8/14/01 19:22:00	78.15	77.51	34.72	17.12	2.551	30.08	22.926
8/14/01 19:24:00	78.14	77.5	34.72	17.12	2.551	30.076	22.8
8/14/01 19:25:00	78.14	77.5	34.733	17.122	2.551	30.076	22.674
8/14/01 19:26:00	78.14	77.5	34.708	17.12	2.551	30.08	22.554
8/14/01 19:27:00	78.14	77.5	34.689	17.12	2.551	30.08	22.428
8/14/01 19:28:00	78.14	77.49	34.689	17.122	2.551	30.076	22.302
8/14/01 19:30:00	78.13	77.49	34.683	17.122	2.553	30.082	22.176
8/14/01 19:31:00	78.13	77.48	34.646	17.124	2.553	30.076	22.056
8/14/01 19:32:00	78.12	77.47	34.689	17.124	2.553	30.078	21.943
8/14/01 19:33:00	78.12	77.47	34.633	17.126	2.553	30.074	21.817
8/14/01 19:34:00	78.11	77.46	34.683	17.126	2.553	30.078	21.697
8/14/01 19:36:00	78.1	77.44	34.671	17.128	2.555	30.078	21.577
8/14/01 19:37:00	78.09	77.43	34.664	17.126	2.555	30.078	21.464
8/14/01 19:38:00	78.08	77.41	34.652	17.128	2.555	30.078	21.338
8/14/01 19:39:00	78.07	77.4	34.639	17.128	2.555	30.076	21.225
8/14/01 19:40:00	78.06	77.39	34.627	17.128	2.555	30.076	21.099
8/14/01 19:42:00	78.04	77.37	34.627	17.128	2.555	30.08	20.985
8/14/01 19:43:00	78.04	77.36	34.484	17.126	2.555	30.076	20.866
8/14/01 19:44:00	78.04	77.35	34.596	17.126	2.555	30.078	20.752
8/14/01 19:45:00	78.03	77.34	34.627	17.126	2.555	30.078	20.633
8/14/01 19:46:00	78.03	77.33	34.615	17.126	2.555	30.078	20.519
8/14/01 19:48:00	78.01	77.31	34.484	17.126	2.555	30.082	20.393
8/14/01 19:49:00	78	77.31	34.633	17.124	2.557	30.08	20.28
8/14/01 19:50:00	77.99	77.3	34.596	17.126	2.557	30.078	20.166
8/14/01 19:51:00	77.98	77.3	34.615	17.126	2.558	30.078	20.059
8/14/01 19:52:00	77.97	77.29	34.596	17.126	2.557	30.08	19.946
8/14/01 19:54:00	77.95	77.28	34.583	17.128	2.558	30.078	19.826
8/14/01 19:55:00	77.95	77.27	34.583	17.128	2.558	30.078	19.719
8/14/01 19:56:00	77.95	77.27	34.577	17.128	2.558	30.078	19.606
8/14/01 19:57:00	77.94	77.26	34.59	17.126	2.557	30.078	19.486
8/14/01 19:58:00	77.94	77.25	34.571	17.124	2.557	30.078	19.373
8/14/01 20:00:00	77.94	77.25	34.565	17.124	2.557	30.08	19.272
8/14/01 20:01:00	77.94	77.25	34.565	17.122	2.557	30.078	19.159
8/14/01 20:02:00	77.95	77.25	34.565	17.12	2.557	30.08	19.045
8/14/01 20:03:00	77.95	77.25	34.565	17.12	2.555	30.078	18.938
8/14/01 20:04:00	77.95	77.25	34.552	17.12	2.555	30.08	18.825
8/14/01 20:06:00	77.94	77.25	34.552	17.12	2.555	30.08	18.718

CITY of COOPER CITY
INJECTION TEST DATA

Date/Time	Downhole Pressure (psi)	Downhole Temperature (deg F)	Wellhead Pressure (psi)	Upper Monitor Pressure (psi)	Lower Monitor Pressure (psi)	Barometric Pressure (inchs Hg)	Annular Pressure (psi)
8/14/01 20:07:00	77.94	77.25	34.546	17.12	2.555	30.08	18.604
8/14/01 20:08:00	77.93	77.25	34.54	17.12	2.555	30.078	18.497
8/14/01 20:09:00	77.92	77.25	34.54	17.12	2.555	30.082	18.384
8/14/01 20:10:00	77.91	77.25	34.527	17.12	2.557	30.082	18.277
8/14/01 20:12:00	77.9	77.24	34.527	17.122	2.557	30.08	18.17
8/14/01 20:13:00	77.89	77.23	34.546	17.122	2.557	30.082	18.063
8/14/01 20:14:00	77.88	77.22	34.509	17.126	2.558	30.084	17.956
8/14/01 20:15:00	77.88	77.21	34.515	17.126	2.558	30.082	17.855
8/14/01 20:16:00	77.87	77.21	34.509	17.129	2.56	30.082	17.748
8/14/01 20:18:00	77.85	77.19	34.509	17.131	2.562	30.082	17.641
8/14/01 20:19:00	77.84	77.18	34.503	17.133	2.562	30.082	17.54
8/14/01 20:20:00	77.82	77.17	34.503	17.133	2.562	30.084	17.452
8/14/01 20:21:00	77.81	77.16	34.496	17.133	2.562	30.08	17.37
8/14/01 20:22:00	77.79	77.15	34.49	17.135	2.562	30.08	17.269
8/14/01 20:24:00	77.78	77.14	34.49	17.137	2.562	30.08	17.156
8/14/01 20:25:00	77.77	77.13	34.484	17.137	2.562	30.078	17.068
8/14/01 20:26:00	77.76	77.13	34.484	17.139	2.562	30.082	16.955
8/14/01 20:27:00	77.76	77.13	34.478	17.141	2.564	30.078	16.835
8/14/01 20:28:00	77.75	77.12	34.478	17.143	2.562	30.08	16.747
8/14/01 20:30:00	77.74	77.11	34.471	17.143	2.564	30.08	16.627
8/14/01 20:31:00	77.74	77.1	34.465	17.143	2.562	30.078	16.545
8/14/01 20:32:00	77.73	77.1	34.459	17.144	2.562	30.078	16.438
8/14/01 20:33:00	77.73	77.09	34.459	17.146	2.56	30.082	16.35
8/14/01 20:34:00	77.72	77.08	34.447	17.148	2.562	30.08	16.23
8/14/01 20:36:00	77.71	77.07	34.44	17.148	2.562	30.078	16.149
8/14/01 20:37:00	77.71	77.06	34.434	17.148	2.562	30.08	16.035
8/14/01 20:38:00	77.71	77.05	34.434	17.15	2.562	30.08	15.953
8/14/01 20:39:00	77.71	77.05	34.422	17.152	2.56	30.082	15.84
8/14/01 20:40:00	77.71	77.04	34.422	17.152	2.56	30.08	15.752
8/14/01 20:42:00	77.7	77.02	34.422	17.154	2.558	30.08	15.639
8/14/01 20:43:00	77.69	77.02	34.415	17.156	2.56	30.084	15.557
8/14/01 20:44:00	77.68	77.01	34.415	17.158	2.562	30.08	15.443
8/14/01 20:45:00	77.66	77	34.409	17.163	2.564	30.082	15.362
8/14/01 20:46:00	77.65	77	34.409	17.167	2.558	30.08	15.248
8/14/01 20:48:00	77.64	76.98	34.403	17.171	2.56	30.08	15.173
8/14/01 20:49:00	77.64	76.98	34.403	17.174	2.562	30.076	15.066
8/14/01 20:50:00	77.63	76.98	34.397	17.178	2.562	30.08	14.977
8/14/01 20:51:00	77.63	76.97	34.391	17.182	2.562	30.082	14.87
8/14/01 20:52:00	77.63	76.97	34.391	17.186	2.562	30.082	14.782
8/14/01 20:54:00	77.62	76.96	34.391	17.191	2.562	30.08	14.713
8/14/01 20:55:00	77.62	76.95	34.378	17.195	2.562	30.08	14.6
8/14/01 20:56:00	77.62	76.94	34.378	17.199	2.562	30.082	14.524
8/14/01 20:57:00	77.62	76.93	34.378	17.206	2.562	30.08	14.411
8/14/01 20:58:00	77.62	76.92	34.372	17.214	2.564	30.082	14.329
8/14/01 21:00:00	77.62	76.91	34.366	17.225	2.564	30.082	14.222
8/14/01 21:01:00	77.61	76.91	34.359	17.236	2.568	30.08	14.14
8/14/01 21:02:00	77.61	76.91	34.359	17.247	2.57	30.08	14.021
8/14/01 21:03:00	77.6	76.91	34.378	17.255	2.57	30.082	13.951
8/14/01 21:04:00	77.6	76.91	34.353	17.262	2.571	30.082	13.876
8/14/01 21:06:00	77.58	76.89	34.347	17.276	2.571	30.08	13.762
8/14/01 21:07:00	77.57	76.89	34.347	17.292	2.573	30.084	13.687
8/14/01 21:08:00	77.56	76.88	34.341	17.311	2.575	30.082	13.611
8/14/01 21:09:00	77.55	76.87	34.335	17.334	2.577	30.082	13.504
8/14/01 21:10:00	77.54	76.86	34.335	17.354	2.573	30.082	13.429
8/14/01 21:12:00	77.52	76.84	34.335	17.339	2.581	30.078	13.315
8/14/01 21:13:00	77.51	76.83	34.322	17.352	2.586	30.082	13.253
8/14/01 21:14:00	77.51	76.82	34.322	17.352	2.592	30.082	13.177
8/14/01 21:15:00	77.5	76.82	34.322	17.358	2.594	30.086	13.064
8/14/01 21:16:00	77.49	76.81	34.316	17.356	2.597	30.084	12.994
8/14/01 21:18:00	77.48	76.8	34.303	17.36	2.597	30.082	12.913
8/14/01 21:19:00	77.47	76.8	34.303	17.352	2.597	30.08	12.812
8/14/01 21:20:00	77.46	76.79	34.303	17.358	2.596	30.082	12.73
8/14/01 21:21:00	77.46	76.79	34.303	17.352	2.594	30.084	12.681
8/14/01 21:22:00	77.45	76.79	34.291	17.351	2.594	30.082	12.554
8/14/01 21:24:00	77.44	76.78	34.291	17.339	2.594	30.08	12.491
8/14/01 21:25:00	77.44	76.77	34.291	17.352	2.594	30.082	12.378
8/14/01 21:26:00	77.44	76.76	34.285	17.352	2.592	30.078	12.315
8/14/01 21:27:00	77.43	76.76	34.285	17.345	2.594	30.078	12.201
8/14/01 21:28:00	77.43	76.75	34.272	17.352	2.597	30.08	12.138
8/14/01 21:30:00	77.42	76.74	34.272	17.345	2.599	30.078	12.069
8/14/01 21:31:00	77.41	76.73	34.26	17.338	2.601	30.076	11.949
8/14/01 21:32:00	77.4	76.73	34.266	17.349	2.588	30.08	11.893
8/14/01 21:33:00	77.4	76.73	34.26	17.349	2.592	30.082	11.824
8/14/01 21:34:00	77.39	76.73	34.254	17.337	2.59	30.08	11.723
8/14/01 21:36:00	77.38	76.72	34.254	17.341	2.571	30.08	11.666
8/14/01 21:37:00	77.37	76.71	34.254	17.334	2.564	30.078	11.584
8/14/01 21:38:00	77.37	76.7	34.247	17.349	2.558	30.076	11.49
8/14/01 21:39:00	77.36	76.69	34.241	17.349	2.555	30.074	11.414
8/14/01 21:40:00	77.36	76.69	34.235	17.337	2.553	30.08	11.358
8/14/01 21:42:00	77.35	76.67	34.229	17.339	2.547	30.078	11.251
8/14/01 21:43:00	77.34	76.67	34.241	17.334	2.547	30.082	11.188
8/14/01 21:44:00	77.33	76.66	34.235	17.347	2.547	30.078	11.075
8/14/01 21:45:00	77.32	76.66	34.222	17.334	2.547	30.076	11.024
8/14/01 21:46:00	77.32	76.65	34.222	17.337	2.546	30.078	10.955
8/14/01 21:48:00	77.31	76.65	34.229	17.345	2.546	30.074	10.854
8/14/01 21:49:00	77.32	76.64	34.229	17.332	2.546	30.076	10.796
8/14/01 21:50:00	77.32	76.64	34.21	17.339	2.547	30.074	10.722
8/14/01 21:51:00	77.32	76.64	34.216	17.337	2.546	30.072	10.621
8/14/01 21:52:00	77.33	76.64	34.21	17.339	2.546	30.072	10.565
8/14/01 21:54:00	77.32	76.63	34.21	17.339	2.546	30.072	10.508
8/14/01 21:55:00	77.31	76.63	34.204	17.343	2.547	30.072	10.401
8/14/01 21:56:00	77.3	76.62	34.198	17.339	2.547	30.074	10.338
8/14/01 21:57:00	77.3	76.61	34.185	17.343	2.549	30.074	10.275
8/14/01 21:58:00	77.29	76.61	34.191	17.33	2.549	30.068	10.181
8/14/01 22:00:00	77.27	76.59	34.185	17.336	2.547	30.072	10.118
8/14/01 22:01:00	77.26	76.58	34.173	17.336	2.549	30.072	10.055
8/14/01 22:02:00	77.25	76.57	34.185	17.337	2.547	30.07	9.961
8/14/01 22:03:00	77.24	76.56	34.185	17.334	2.544	30.072	9.898
8/14/01 22:04:00	77.23	76.55	34.166	17.324	2.544	30.07	9.841
8/14/01 22:06:00	77.22	76.53	34.166	17.334	2.542	30.07	9.747
8/14/01 22:07:00	77.22	76.53	34.16	17.326	2.544	30.07	9.684
8/14/01 22:08:00	77.22	76.52	34.16	17.322	2.544	30.066	9.577
8/14/01 22:09:00	77.22	76.52	34.154	17.322	2.546	30.072	9.528
8/14/01 22:10:00	77.22	76.51	34.148	17.332	2.549	30.07	9.47
8/14/01 22:12:00	77.22	76.5	34.148	17.328	2.547	30.072	9.363
8/14/01 22:13:00	77.21	76.49	34.142	17.328	2.549	30.072	9.312
8/14/01 22:14:00	77.21	76.48	34.135	17.328	2.553	30.072	9.256
8/14/01 22:15:00	77.2	76.48	34.129	17.322	2.555	30.07	9.149
8/14/01 22:16:00	77.19	76.47	34.129	17.328	2.555	30.072	9.105
8/14/01 22:18:00	77.17	76.46	34.129	17.337	2.551	30.07	9.048
8/14/01 22:19:00	77.16	76.46	34.123	17.321	2.551	30.07	8.985
8/14/01 22:20:00	77.15	76.45	34.117	17.322	2.549	30.07	8.891
8/14/01 22:21:00	77.14	76.45	34.117	17.322	2.549	30.066	8.84
8/14/01 22:22:00	77.12	76.45	34.11	17.337	2.551	30.068	8.778
8/14/01 22:24:00	77.11	76.44	34.104	17.336	2.553	30.074	8.689
8/14/01 22:25:00	77.11	76.43	34.117	17.326	2.553	30.07	8.627
8/14/01 22:26:00	77.11	76.42	34.104	17.328	2.551	30.066	8.576
8/14/01 22:27:00	77.11	76.42	34.104	17.336	2.553	30.068	8.475
8/14/01 22:28:00	77.11	76.41	34.086	17.332	2.555	30.066	8.425
8/14/01 22:30:00	77.11	76.4	34.092	17.321	2.557	30.066	8.375
8/14/01 22:31:00	77.11	76.39	34.092	17.332	2.557	30.068	8.274
8/14/01 22:32:00	77.11	76.39	34.079	17.332	2.56	30.066	8.224
8/14/01 22:33:00	77.11	76.38	34.073	17.326	2.558	30.064	8.18
8/14/01 22:34:00	77.11	76.38	34.079	17.337	2.564	30.068	8.117
8/14/01 22:36:00	77.1	76.37	34.073	17.326	2.564	30.062	8.035
8/14/01 22:37:00	77.09	76.37	34.079	17.336	2.562	30.068	7.978
8/14/01 22:38:00	77.09	76.36	34.061	17.315	2.568	30.06	7.922
8/14/01 22:39:00	77.08	76.36	34.067	17.33	2.573	30.062	7.834
8/14/01 22:40:00	77.07	76.36	34.061	17.332	2.581	30.062	7.783
8/14/01 22:42:00	77.05	76.35	34.061	17.33	2.575	30.06	7.733
8/14/01 22:43:00	77.04	76.34	34.048	17.309	2.57	30.06	7.632
8/14/01 22:44:00	77.04	76.34	34.042	17.294	2.558	30.06	7.595
8/14/01 22:45:00	77.03	76.33	34.042	17.298	2.56	30.055	7.551
8/14/01 22:46:00	77.02	76.33	34.048	17.283	2.56	30.06	7.444
8/14/01 22:48:00	77.01	76.32	34.054	17.294	2.566	30.055	7.393
8/14/01 22:49:00	77	76.31	33.974	17.311	2.579	30.06	7.355
8/14/01 22:50:00	76.99	76.31	34.098	17.328	2.592	30.057	7.261
8/14/01 22:51:00	76.99	76.3	33.998	17.33	2.575	30.053	7.223
8/14/01 22:52:00	76.98	76.3	34.042	17.322	2.583	30.06	7.179
8/14/01 22:54:00	76.97	76.29	34.017	17.313	2.577	30.055	7.123
8/14/01 22:55:00	76.96	76.29	34.023	17.309	2.575	30.06	7.041
8/14/01 22:56:00	76.96	76.29	34.023	17.298	2.566	30.055	6.997
8/14/01 22:57:00	76.96	76.29	34.017	17.285	2.56	30.055	6.94
8/14/01 22:58:00	76.95	76.29	34.017	17.302	2.568	30.055	6.852
8/14/01 23:00:00	76.95	76.28	34.017	17.294	2.564	30.051	6.821
8/14/01 23:01:00	76.94	76.26	34.017	17.276	2.557	30.055	6.77
8/14/01 23:02:00	76.94	76.24	34.017	17.262	2.555	30.053	6.676
8/14/01 23:03:00	76.94	76.23	34.005	17.272	2.558	30.051	6.644
8/14/01 23:04:00	76.93	76.21	34.011	17.274	2.557	30.051	6.588
8/14/01 23:06:00	76.93	76.19	33.998	17.298	2.566	30.055	6.544
8/14/01 23:07:00	76.93	76.19	33.998	17.298	2.57	30.053	6.468
8/14/01 23:08:00	76.92	76.19	33.998	17.321	2.584	30.051	6.418
8/14/01 23:09:00	76.92	76.19	33.992	17.332	2.597	30.051	6.374
8/14/01 23:10:00	76.92	76.19	33.992	17.326	2.599	30.055	6.292
8/14/01 23:12:00	76.91	76.19	33.992	17.328	2.557	30.051	6.248
8/14/01 23:13:00	76.91	76.18	33.986	17.328	2.558	30.049	6.204
8/14/01 23:14:00	76.9	76.17	33.986	17.319	2.564	30.051	6.122
8/14/01 23:15:00	76.89	76.17	33.98	17.324	2.566	30.049	6.091
8/14/01 23:16:00	76.89	76.16	33.98	17.322	2.57	30.051	6.04
8/14/01 23:18:00	76.88	76.15	33.974	17.321	2.577	30.049	5.959
8/14/01 23:19:00	76.87	76.15	33.974	17.321	2.57	30.049	5.934
8/14/01 23:20:00	76.87	76.14	33.974	17.322	2.566	30.051	5.877
8/14/01 23:21:00	76.86	76.14	33.974	17.328	2.566	30.049	5.789
8/14/01 23:22:00	76.86	76.13	33.967	17.317	2.581	30.051	5.757
8/14/01 23:24:00	76.85	76.13	33.967	17.328	2.592	30.049	5.713
8/14/01 23:25:00	76.84	76.12	33.967	17.321	2.584	30.051	5.632
8/14/01 23:26:00	76.83	76.12	33.961	17.321	2.584	30.049	5.613
8/14/01 23:27:00	76.82	76.11	33.974	17.321	2.575	30.049	5.569
8/14/01 23:28:00	76.82	76.11	33.967	17.294	2.557	30.047	5.518
8/14/01 23:30:00	76.81	76.1	33.974	17.247	2.546	30.051	5.437
8/14/01 23:31:00	76.8	76.09	33.961	17.236	2.546	30.053	8.803
8/14/01 23:32:00	76.8	76.09	33.992	17.249	2.553	30.047	15.267
8/14/01 23:33:00	76.8	76.08	33.967	17.276	2.568	30.055	23.367
8/14/01 23:34:00	76.79	76.08	33.98	17.287	2.557	30.043	32.846
8/14/01 23:36:00	76.78	76.07	33.967	17.296	2.562	30.031	43.475
8/14/01 23:37:00	76.78	76.06	33.967	17.324	2.577	30.025	54.795
8/14/01 23:38:00	76.77	76.06	33.961	17.313	2.575	30.015	66.656
8/14/01 23:39:00	76.77	76.05	33.955	17.326	2.577	30.031	76.883
8/14/01 23:40:00	76.76	76.04	33.924	17.324	2.564	30.035	83.903
8/14/01 23:42:00	76.75	76.03	33.967	17.321	2.588	30.039	83.555
8/14/01 23:43:00	76.75	76.03	33.949	17.326	2.588	30.037	83.283
8/14/01 23:44:00	76.74	76.03	33.955	17.321	2.592	30.037	83.023
8/14/01 23:45:00	76.74	76.02	33.949	17.313	2.594	30.039	82.77
8/14/01 23:46:00	76.73	76.02	33.949	17.326	2.596	30.039	82.58
8/14/01 23:48:00	76.73	76.01	33.942	17.326	2.577	30.039	82.358
8/14/01 23:49:00	76.72	76.01	33.942	17.321	2.581	30.039	82.168
8/14/01 23:50:00	76.72	76	33.942	17.306	2.56	30.035	81.972
8/14/01 23:51:00	76.72	76	33.936	17.3	2.551	30.037	81.782
8/14/01 23:52:00	76.71	76	33.942	17.259	2.54	30.039	81.586
8/14/01 23:54:00	76.7	75.99	33.936	17.253	2.546	30.041	81.434
8/14/01 23:55:00	76.69	75.99	33.936	17.247	2.546	30.041	81.263
8/14/01 23:56:00	76.69	75.98	33.93	17.238	2.542	30.041	81.08
8/14/01 23:57:00	76.68	75.98	33.936	17.236	2.54	30.041	80.915
8/14/01 23:58:00	76.67	75.98	33.93	17.203	2.529	30.039	80.776
8/15/01	76.66	75.97	33.93	17.204	2.534	30.041	80.605
8/15/01 00:01:00	76.66	75.96	33.924	17.203	2.527	30.039	80.434
8/15/01 00:02:00	76.66	75.95	33.924	17.204	2.527	30.039	80.295
8/15/01 00:03:00	76.66	75.95	33.924	17.199	2.527	30.039	80.13
8/15/01 00:04:00	76.66	75.94	33.924	17.208	2.534	30.039	79.997
8/15/01 00:06:00	76.66	75.93	33.918	17.232	2.536	30.041	79.826
8/15/01 00:07:00	76.67	75.92	33.918	17.216	2.534	30.037	79.656
8/15/01 00:08:00	76.67	75.92	33.918	17.236	2.54	30.041	79.529
8/15/01 00:09:00	76.68	75.91	33.911	17.255	2.544	30.039	79.358
8/15/01 00:10:00	76.68	75.91	33.918	17.251	2.542	30.037	79.231
8/15/01 00:12:00	76.68	75.9	33.911	17.244	2.533	30.041	79.073
8/15/01 00:13:00	76.69	75.9	33.911	17.238	2.533	30.037	78.94
8/15/01 00:14:00	76.69	75.9	33.911	17.229	2.533	30.039	78.762
8/15/01 00:15:00	76.69	75.9	33.911	17.223	2.533	30.037	78.662

CITY of COOPER CITY
INJECTION TEST DATA

Date/Time	Downhole Pressure (psi)	Downhole Temperature (deg F)	Wellhead Pressure (psi)	Upper Monitor Pressure (psi)	Lower Monitor Pressure (psi)	Barometric Pressure (inchs Hg)	Annular Pressure (psi)
8/15/01 00:16:00	76.69	75.9	33.911	17.225	2.534	30.037	78.497
8/15/01 00:18:00	76.69	75.89	33.911	17.227	2.536	30.037	78.339
8/15/01 00:19:00	76.69	75.89	33.905	17.227	2.538	30.033	78.219
8/15/01 00:20:00	76.69	75.88	33.905	17.236	2.54	30.039	78.061
8/15/01 00:21:00	76.68	75.88	33.905	17.236	2.542	30.033	77.94
8/15/01 00:22:00	76.68	75.88	33.905	17.238	2.542	30.037	77.782
8/15/01 00:24:00	76.68	75.87	33.899	17.236	2.544	30.037	77.624
8/15/01 00:25:00	76.68	75.87	33.893	17.264	2.547	30.035	77.504
8/15/01 00:26:00	76.68	75.87	33.893	17.264	2.544	30.035	77.346
8/15/01 00:27:00	76.69	75.87	33.893	17.264	2.54	30.033	77.225
8/15/01 00:28:00	76.69	75.87	33.899	17.251	2.534	30.031	77.067
8/15/01 00:30:00	76.69	75.86	33.893	17.251	2.534	30.033	76.953
8/15/01 00:31:00	76.68	75.86	33.899	17.257	2.534	30.033	76.795
8/15/01 00:32:00	76.68	75.85	33.893	17.268	2.54	30.033	76.681
8/15/01 00:33:00	76.68	75.85	33.893	17.266	2.542	30.033	76.523
8/15/01 00:34:00	76.68	75.85	33.893	17.24	2.538	30.029	76.409
8/15/01 00:36:00	76.67	75.84	33.886	17.223	2.536	30.033	76.251
8/15/01 00:37:00	76.67	75.83	33.886	17.216	2.54	30.029	76.137
8/15/01 00:38:00	76.67	75.83	33.886	17.203	2.536	30.029	75.979
8/15/01 00:39:00	76.66	75.83	33.88	17.189	2.538	30.029	75.865
8/15/01 00:40:00	76.66	75.82	33.88	17.178	2.536	30.029	75.707
8/15/01 00:42:00	76.65	75.81	33.88	17.197	2.542	30.027	75.599
8/15/01 00:43:00	76.65	75.81	33.88	17.219	2.551	30.031	75.447
8/15/01 00:44:00	76.65	75.8	33.88	17.227	2.551	30.025	75.334
8/15/01 00:45:00	76.65	75.79	33.88	17.238	2.557	30.027	75.188
8/15/01 00:46:00	76.65	75.79	33.874	17.255	2.553	30.029	75.03
8/15/01 00:48:00	76.65	75.78	33.874	17.268	2.553	30.029	74.916
8/15/01 00:49:00	76.65	75.77	33.874	17.291	2.562	30.025	74.802
8/15/01 00:50:00	76.64	75.76	33.874	17.315	2.562	30.029	74.644
8/15/01 00:51:00	76.64	75.76	33.874	17.322	2.57	30.027	74.536
8/15/01 00:52:00	76.64	75.75	33.874	17.319	2.575	30.029	74.385
8/15/01 00:54:00	76.63	75.74	33.868	17.302	2.564	30.027	74.271
8/15/01 00:55:00	76.63	75.73	33.868	17.3	2.557	30.025	74.125
8/15/01 00:56:00	76.62	75.73	33.868	17.319	2.562	30.027	74.011
8/15/01 00:57:00	76.62	75.72	33.868	17.319	2.57	30.029	73.859
8/15/01 00:58:00	76.62	75.72	33.868	17.321	2.588	30.029	73.752
8/15/01 01:00:00	76.6	75.71	33.868	17.319	2.581	30.031	73.606
8/15/01 01:01:00	76.6	75.71	33.868	17.309	2.581	30.029	73.461
8/15/01 01:02:00	76.59	75.71	33.868	17.319	2.583	30.025	73.36
8/15/01 01:03:00	76.58	75.71	33.862	17.306	2.592	30.027	73.208
8/15/01 01:04:00	76.57	75.71	33.855	17.311	2.586	30.027	73.1
8/15/01 01:06:00	76.56	75.71	33.862	17.317	2.596	30.029	72.955
8/15/01 01:07:00	76.55	75.71	33.855	17.311	2.577	30.027	72.847
8/15/01 01:08:00	76.55	75.71	33.862	17.302	2.581	30.023	72.702
8/15/01 01:09:00	76.54	75.71	33.862	17.317	2.579	30.021	72.556
8/15/01 01:10:00	76.54	75.71	33.855	17.309	2.583	30.025	72.449
8/15/01 01:12:00	76.53	75.71	33.855	17.302	2.579	30.025	72.31
8/15/01 01:13:00	76.52	75.71	33.855	17.289	2.568	30.023	72.208
8/15/01 01:14:00	76.51	75.71	33.855	17.298	2.564	30.023	72.044
8/15/01 01:15:00	76.51	75.71	33.855	17.317	2.56	30.025	71.917
8/15/01 01:16:00	76.5	75.71	33.855	17.289	2.551	30.027	71.791
8/15/01 01:18:00	76.49	75.71	33.849	17.307	2.549	30.025	71.664
8/15/01 01:19:00	76.49	75.71	33.849	17.317	2.551	30.021	71.538
8/15/01 01:20:00	76.48	75.71	33.849	17.264	2.54	30.023	71.411
8/15/01 01:21:00	76.48	75.71	33.849	17.201	2.531	30.023	71.304
8/15/01 01:22:00	76.47	75.71	33.855	17.143	2.527	30.017	71.196
8/15/01 01:24:00	76.46	75.71	33.849	17.124	2.527	30.021	71.051
8/15/01 01:25:00	76.46	75.71	33.855	17.099	2.523	30.021	70.937
8/15/01 01:26:00	76.45	75.71	33.843	17.088	2.525	30.023	70.836
8/15/01 01:27:00	76.45	75.71	33.843	17.077	2.525	30.021	70.684
8/15/01 01:28:00	76.44	75.71	33.855	17.066	2.527	30.021	70.577
8/15/01 01:30:00	76.43	75.71	33.843	17.064	2.531	30.023	70.463
8/15/01 01:31:00	76.43	75.71	33.843	17.066	2.533	30.019	70.305
8/15/01 01:32:00	76.43	75.71	33.837	17.064	2.534	30.021	70.216
8/15/01 01:33:00	76.42	75.71	33.843	17.066	2.531	30.017	70.064
8/15/01 01:34:00	76.42	75.71	33.843	17.064	2.529	30.021	69.957
8/15/01 01:36:00	76.4	75.69	33.843	17.064	2.533	30.019	69.805
8/15/01 01:37:00	76.4	75.66	33.843	17.066	2.534	30.017	69.698
8/15/01 01:38:00	76.39	75.64	33.837	17.066	2.534	30.021	69.596
8/15/01 01:39:00	76.38	75.61	33.837	17.064	2.536	30.021	69.451
8/15/01 01:40:00	76.37	75.59	33.837	17.075	2.54	30.019	69.312
8/15/01 01:42:00	76.35	75.55	33.83	17.098	2.547	30.015	69.223
8/15/01 01:43:00	76.35	75.53	33.83	17.107	2.555	30.019	69.084
8/15/01 01:44:00	76.34	75.52	33.83	17.114	2.558	30.015	68.983
8/15/01 01:45:00	76.33	75.5	33.83	17.146	2.564	30.015	68.844
8/15/01 01:46:00	76.33	75.48	33.83	17.184	2.57	30.017	68.749
8/15/01 01:48:00	76.31	75.46	33.83	17.231	2.581	30.011	68.61
8/15/01 01:49:00	76.31	75.44	33.824	17.246	2.577	30.015	68.471
8/15/01 01:50:00	76.3	75.43	33.824	17.268	2.579	30.015	68.37
8/15/01 01:51:00	76.29	75.42	33.824	17.296	2.586	30.015	68.243
8/15/01 01:52:00	76.29	75.41	33.824	17.345	2.599	30.011	68.136
8/15/01 01:54:00	76.27	75.37	33.824	17.341	2.594	30.015	67.997
8/15/01 01:55:00	76.26	75.35	33.824	17.336	2.597	30.013	67.895
8/15/01 01:56:00	76.25	75.33	33.818	17.343	2.605	30.013	67.763
8/15/01 01:57:00	76.24	75.31	33.812	17.332	2.597	30.017	67.63
8/15/01 01:58:00	76.23	75.29	33.818	17.321	2.601	30.013	67.529
8/15/01 02:00:00	76.21	75.25	33.812	17.324	2.597	30.015	67.396
8/15/01 02:01:00	76.2	75.23	33.812	17.334	2.586	30.011	67.307
8/15/01 02:02:00	76.18	75.21	33.818	17.322	2.568	30.015	67.162
8/15/01 02:03:00	76.17	75.19	33.818	17.292	2.557	30.015	67.061
8/15/01 02:04:00	76.16	75.17	33.812	17.281	2.551	30.015	66.922
8/15/01 02:06:00	76.13	75.13	33.812	17.302	2.551	30.013	66.827
8/15/01 02:07:00	76.12	75.11	33.812	17.326	2.555	30.011	66.688
8/15/01 02:08:00	76.1	75.08	33.812	17.324	2.564	30.013	66.561
8/15/01 02:09:00	76.08	75.06	33.812	17.332	2.571	30.015	66.454
8/15/01 02:10:00	76.07	75.04	33.812	17.334	2.577	30.013	66.359
8/15/01 02:12:00	76.04	75	33.812	17.315	2.57	30.013	66.22
8/15/01 02:13:00	76.02	74.98	33.806	17.319	2.57	30.009	66.125
8/15/01 02:14:00	76.01	74.97	33.806	17.319	2.568	30.009	65.992
8/15/01 02:15:00	75.99	74.95	33.806	17.324	2.568	30.009	65.853
8/15/01 02:16:00	75.98	74.93	33.806	17.291	2.56	30.007	65.765
8/15/01 02:18:00	75.95	74.89	33.799	17.253	2.553	30.007	65.626
8/15/01 02:19:00	75.93	74.86	33.799	17.283	2.553	30.007	65.518
8/15/01 02:20:00	75.91	74.84	33.799	17.315	2.56	30.009	65.43
8/15/01 02:21:00	75.89	74.81	33.799	17.324	2.555	30.009	65.284
8/15/01 02:22:00	75.88	74.79	33.799	17.298	2.546	30.002	65.196
8/15/01 02:24:00	75.84	74.88	33.799	17.264	2.54	30.007	65.063
8/15/01 02:25:00	75.83	74.99	33.793	17.255	2.54	30.002	64.936
8/15/01 02:26:00	75.81	75.11	33.799	17.21	2.536	30.005	64.842
8/15/01 02:27:00	75.79	75.22	33.799	17.191	2.536	30.007	64.709
8/15/01 02:28:00	75.78	75.34	33.793	17.193	2.538	30.007	64.614
8/15/01 02:30:00	75.74	75.6	33.793	17.18	2.538	30.005	64.481
8/15/01 02:31:00	75.72	75.74	33.793	17.193	2.542	29.998	64.387
8/15/01 02:32:00	75.71	75.88	33.787	17.218	2.546	30.002	64.285
8/15/01 02:33:00	75.69	76.02	33.787	17.225	2.546	30.002	64.146
8/15/01 02:34:00	75.67	76.16	33.793	17.204	2.544	30	64.052
8/15/01 02:36:00	75.64	76.37	33.787	17.216	2.546	29.998	63.95
8/15/01 02:37:00	75.62	76.43	33.787	17.231	2.547	30	63.805
8/15/01 02:38:00	75.61	76.5	33.793	17.246	2.549	29.996	63.704
8/15/01 02:39:00	75.59	76.57	33.787	17.242	2.547	29.996	63.609
8/15/01 02:40:00	75.58	76.64	33.787	17.249	2.551	29.996	63.476
8/15/01 02:42:00	75.7	76.76	33.787	17.214	2.546	29.996	63.369
8/15/01 02:43:00	75.84	76.81	33.787	17.204	2.546	29.996	63.236
8/15/01 02:44:00	75.98	76.86	33.787	17.229	2.547	29.992	63.148
8/15/01 02:45:00	76.12	76.91	33.787	17.249	2.551	29.992	63.046
8/15/01 02:46:00	76.25	76.97	33.787	17.276	2.557	29.992	62.907
8/15/01 02:48:00	76.44	76.99	33.793	17.291	2.562	29.99	62.819
8/15/01 02:49:00	76.49	76.97	33.787	17.285	2.56	29.992	62.686
8/15/01 02:50:00	76.54	76.94	33.787	17.259	2.553	29.99	62.585
8/15/01 02:51:00	76.59	76.92	33.787	17.232	2.547	29.99	62.452
8/15/01 02:52:00	76.64	76.89	33.781	17.193	2.544	29.988	62.37
8/15/01 02:54:00	76.79	76.81	33.781	17.204	2.547	29.99	62.244
8/15/01 02:55:00	76.9	76.76	33.781	17.206	2.547	29.986	62.162
8/15/01 02:56:00	77.01	76.71	33.781	17.204	2.551	29.984	62.029
8/15/01 02:57:00	77.12	76.66	33.781	17.212	2.551	29.986	61.94
8/15/01 02:58:00	77.22	76.61	33.781	17.204	2.549	29.986	61.808
8/15/01 03:00:00	77.32	76.52	33.781	17.191	2.549	29.986	61.707
8/15/01 03:01:00	77.3	76.48	33.774	17.218	2.551	29.982	61.587
8/15/01 03:02:00	77.29	76.44	33.774	17.201	2.553	29.986	61.492
8/15/01 03:03:00	77.28	76.4	33.781	17.199	2.555	29.982	61.365
8/15/01 03:04:00	77.27	76.36	33.781	17.227	2.557	29.986	61.277
8/15/01 03:06:00	77.23	76.24	33.781	17.268	2.557	29.982	61.144
8/15/01 03:07:00	77.2	76.17	33.774	17.281	2.562	29.986	61.049
8/15/01 03:08:00	77.18	76.1	33.774	17.328	2.57	29.978	60.929
8/15/01 03:09:00	77.15	76.03	33.781	17.324	2.571	29.984	60.841
8/15/01 03:10:00	77.13	75.96	33.774	17.304	2.562	29.982	60.714
8/15/01 03:12:00	77.07	75.82	33.774	17.306	2.562	29.98	60.62
8/15/01 03:13:00	77.03	75.75	33.781	17.279	2.557	29.98	60.5
8/15/01 03:14:00	77	75.68	33.774	17.27	2.555	29.978	60.405
8/15/01 03:15:00	76.97	75.61	33.774	17.272	2.555	29.972	60.266
8/15/01 03:16:00	76.93	75.54	33.781	17.257	2.555	29.978	65.746
8/15/01 03:18:00	76.86	75.38	33.781	17.247	2.553	29.978	78.042
8/15/01 03:19:00	76.81	75.29	33.793	17.229	2.551	29.976	84.638
8/15/01 03:20:00	76.76	75.2	33.768	17.204	2.549	29.974	84.429
8/15/01 03:21:00	76.72	75.11	33.774	17.223	2.551	29.976	84.22
8/15/01 03:22:00	76.67	75.02	33.768	17.238	2.553	29.978	84.049
8/15/01 03:24:00	76.58	74.85	33.774	17.257	2.553	29.978	83.897
8/15/01 03:25:00	76.53	74.77	33.774	17.277	2.555	29.972	83.745
8/15/01 03:26:00	76.48	74.69	33.762	17.306	2.557	29.976	83.612
8/15/01 03:27:00	76.43	74.6	33.774	17.321	2.562	29.974	83.485
8/15/01 03:28:00	76.38	74.52	33.774	17.311	2.562	29.974	83.333
8/15/01 03:30:00	76.27	74.38	33.774	17.306	2.558	29.974	83.226
8/15/01 03:31:00	76.22	74.31	33.762	17.286	2.566	29.972	83.08
8/15/01 03:32:00	76.17	74.24	33.768	17.319	2.577	29.974	82.966
8/15/01 03:33:00	76.12	74.18	33.762	17.304	2.577	29.974	82.814
8/15/01 03:34:00	76.06	74.11	33.762	17.311	2.568	29.972	82.707
8/15/01 03:36:00	75.95	73.99	33.762	17.319	2.566	29.974	82.567
8/15/01 03:37:00	75.89	73.93	33.762	17.321	2.57	29.976	82.466
8/15/01 03:38:00	75.83	73.87	33.762	17.321	2.577	29.978	82.32
8/15/01 03:39:00	75.77	73.82	33.762	17.279	2.568	29.976	82.213
8/15/01 03:40:00	75.71	73.76	33.756	17.247	2.568	29.966	82.08
8/15/01 03:42:00	75.6	73.66	33.762	17.204	2.562	29.97	81.979
8/15/01 03:43:00	75.54	73.62	33.756	17.15	2.555	29.97	81.833
8/15/01 03:44:00	75.48	73.58	33.756	17.135	2.555	29.966	81.725
8/15/01 03:45:00	75.43	73.53	33.756	17.135	2.558	29.972	81.592
8/15/01 03:46:00	75.37	73.49	33.756	17.144	2.564	29.97	81.491
8/15/01 03:48:00	75.26	73.4	33.756	17.152	2.568	29.97	81.358
8/15/01 03:49:00	75.2	73.36	33.756	17.139	2.564	29.972	81.251
8/15/01 03:50:00	75.14	73.31	33.756	17.124	2.558	29.972	81.118
8/15/01 03:51:00	75.09	73.26	33.756	17.118	2.558	29.972	81.016
8/15/01 03:52:00	75.03	73.22	33.75	17.114	2.558	29.97	80.877
8/15/01 03:54:00	74.93	73.14	33.756	17.105	2.555	29.97	80.769
8/15/01 03:55:00	74.88	73.11	33.75	17.105	2.557	29.97	80.675
8/15/01 03:56:00	74.83	73.07	33.756	17.116	2.558	29.968	80.542
8/15/01 03:57:00	74.78	73.04	33.75	17.124	2.562	29.964	80.447
8/15/01 03:58:00	74.73	73.01	33.75	17.139	2.577	29.97	80.307
8/15/01 04:00:00	74.63	72.94	33.75	17.163	2.575	29.966	80.212
8/15/01 04:01:00	74.59	72.9	33.75	17.193	2.581	29.974	80.08
8/15/01 04:02:00	74.55	72.86	33.75	17.189	2.579	29.962	79.978
8/15/01 04:03:00	74.5	72.82	33.75	17.219	2.586	29.966	79.852
8/15/01 04:04:00	74.46	72.78	33.75	17.259	2.584	29.964	79.757
8/15/01 04:06:00	74.38	72.71	33.75	17.262	2.581	29.964	79.618
8/15/01 04:07:00	74.34	72.67	33.743	17.268	2.584	29.962	79.491
8/15/01 04:08:00	74.3	72.64	33.743	17.255	2.586	29.966	79.402
8/15/01 04:09:00	74.26	72.6	33.743	17.218	2.581	29.96	79.269
8/15/01 04:10:00	74.23	72.57	33.787	17.204	2.581	29.962	79.2
8/15/01 04:12:00	74.15	72.5	33.75	17.193	2.577	29.964	79.073
8/15/01 04:13:00	74.11	72.46	33.743	17.169	2.57	29.962	78.934
8/15/01 04:14:00	74.08	72.43	33.743	17.144	2.57	29.96	78.833
8/15/01 04:15:00	74.04	72.39	33.75	17.12	2.558	29.964	78.744
8/15/01 04:16:00	74	72.36	33.743	17.126	2.562	29.964	78.611
8/15/01 04:18:00	73.93	72.29	33.743	17.124	2.562	29.962	78.485
8/15/01 04:19:00	73.9	72.27	33.75	17.107	2.557	29.966	78.39
8/15/01 04:20:00	73.86	72.24	33.743	17.101	2.557	29.96	78.27
8/15/01 04:21:00	73.83	72.21	33.743	17.111	2.558	29.958	78.181
8/15/01 04:22:00	73.8	72.18	33.737	17.113	2.566	29.958	78.054
8/15/01 04:24:00	73.73	72.12	33.737	17.114	2.568	29.958	77.94
8/15/01 04:25:00	73.7	72.08	33.737	17.15	2.579	29.958	77.852

CITY of COOPER CITY
INJECTION TEST DATA

Date/Time	Downhole Pressure (psi)	Downhole Temperature (deg F)	Wellhead Pressure (psi)	Upper Monitor Pressure (psi)	Lower Monitor Pressure (psi)	Barometric Pressure (inchs Hg)	Annular Pressure (psi)
8/15/01 04:26:00	73.67	72.05	33.737	17.158	2.577	29.956	77.719
8/15/01 04:27:00	73.64	72.01	33.737	17.158	2.573	29.954	77.624
8/15/01 04:28:00	73.6	71.97	33.737	17.133	2.566	29.956	77.504
8/15/01 04:30:00	73.54	71.91	33.737	17.111	2.56	29.956	77.403
8/15/01 04:31:00	73.51	71.88	33.737	17.107	2.558	29.95	77.282
8/15/01 04:32:00	73.47	71.86	33.737	17.103	2.56	29.954	77.156
8/15/01 04:33:00	73.44	71.83	33.737	17.122	2.566	29.954	77.055
8/15/01 04:34:00	73.41	71.8	33.737	17.152	2.573	29.952	76.928
8/15/01 04:36:00	73.34	71.75	33.737	17.128	2.568	29.948	76.846
8/15/01 04:37:00	73.31	71.73	33.737	17.12	2.566	29.95	76.713
8/15/01 04:38:00	73.27	71.7	33.737	17.139	2.57	29.948	76.624
8/15/01 04:39:00	73.24	71.68	33.737	17.159	2.577	29.945	76.504
8/15/01 04:40:00	73.2	71.65	33.725	17.165	2.575	29.945	76.409
8/15/01 04:42:00	73.14	71.61	33.725	17.143	2.568	29.95	76.314
8/15/01 04:43:00	73.11	71.59	33.718	17.139	2.566	29.945	76.2
8/15/01 04:44:00	73.09	71.58	33.725	17.186	2.575	29.941	76.08
8/15/01 04:45:00	73.06	71.56	33.718	17.221	2.583	29.95	75.96
8/15/01 04:46:00	73.04	71.54	33.718	17.227	2.583	29.945	75.884
8/15/01 04:48:00	72.99	71.51	33.718	17.229	2.579	29.943	75.757
8/15/01 04:49:00	72.96	71.49	33.718	17.184	2.571	29.943	75.631
8/15/01 04:50:00	72.94	71.48	33.718	17.173	2.57	29.945	75.549
8/15/01 04:51:00	72.92	71.46	33.718	17.165	2.568	29.945	75.422
8/15/01 04:52:00	72.9	71.45	33.712	17.206	2.575	29.941	75.327
8/15/01 04:54:00	72.85	71.41	33.712	17.244	2.584	29.941	75.207
8/15/01 04:55:00	72.83	71.4	33.718	17.251	2.584	29.943	75.118
8/15/01 04:56:00	72.81	71.38	33.725	17.24	2.579	29.939	75.011
8/15/01 04:57:00	72.8	71.37	33.743	17.253	2.579	29.941	74.941
8/15/01 04:58:00	72.78	71.35	33.712	17.289	2.586	29.943	74.802
8/15/01 05:00:00	72.74	71.32	33.718	17.326	2.584	29.943	74.713
8/15/01 05:01:00	72.72	71.3	33.718	17.315	2.588	29.939	74.6
8/15/01 05:02:00	72.69	71.28	33.712	17.317	2.594	29.937	74.473
8/15/01 05:03:00	72.67	71.26	33.718	17.326	2.597	29.943	74.378
8/15/01 05:04:00	72.65	71.24	33.712	17.319	2.599	29.941	74.302
8/15/01 05:06:00	72.62	71.21	33.718	17.315	2.594	29.941	74.176
8/15/01 05:07:00	72.6	71.2	33.712	17.321	2.592	29.939	74.087
8/15/01 05:08:00	72.58	71.19	33.718	17.317	2.59	29.939	73.961
8/15/01 05:09:00	72.57	71.18	33.718	17.315	2.588	29.943	73.859
8/15/01 05:10:00	72.55	71.17	33.718	17.277	2.583	29.941	73.765
8/15/01 05:12:00	72.52	71.15	33.718	17.285	2.588	29.943	73.676
8/15/01 05:13:00	72.5	71.14	33.718	17.322	2.596	29.941	73.556
8/15/01 05:14:00	72.48	71.12	33.712	17.319	2.596	29.941	73.436
8/15/01 05:15:00	72.46	71.11	33.718	17.291	2.588	29.939	73.347
8/15/01 05:16:00	72.45	71.1	33.718	17.272	2.581	29.937	73.252
8/15/01 05:18:00	72.41	71.08	33.718	17.279	2.581	29.939	73.157
8/15/01 05:19:00	72.4	71.06	33.718	17.287	2.583	29.939	73.031
8/15/01 05:20:00	72.38	71.05	33.718	17.285	2.581	29.935	72.949
8/15/01 05:21:00	72.37	71.04	33.718	17.216	2.579	29.935	72.828
8/15/01 05:22:00	72.35	71.03	33.718	17.193	2.581	29.935	72.74
8/15/01 05:24:00	72.32	71	33.718	17.171	2.579	29.933	72.632
8/15/01 05:25:00	72.31	70.99	33.718	17.174	2.575	29.933	72.55
8/15/01 05:26:00	72.29	70.98	33.718	17.171	2.575	29.935	72.449
8/15/01 05:27:00	72.28	70.97	33.718	17.18	2.573	29.933	72.322
8/15/01 05:28:00	72.26	70.96	33.712	17.203	2.579	29.931	72.246
8/15/01 05:30:00	72.24	70.94	33.712	17.229	2.581	29.931	72.126
8/15/01 05:31:00	72.23	70.92	33.712	17.259	2.59	29.935	72.05
8/15/01 05:32:00	72.21	70.91	33.712	17.281	2.586	29.933	71.924
8/15/01 05:33:00	72.2	70.9	33.718	17.212	2.579	29.931	71.829
8/15/01 05:34:00	72.19	70.88	33.712	17.186	2.575	29.935	71.74
8/15/01 05:36:00	72.16	70.86	33.712	17.174	2.577	29.931	71.62
8/15/01 05:37:00	72.15	70.85	33.712	17.167	2.577	29.935	71.525
8/15/01 05:38:00	72.14	70.83	33.712	17.158	2.581	29.929	71.411
8/15/01 05:39:00	72.13	70.82	33.712	17.173	2.581	29.931	71.317
8/15/01 05:40:00	72.12	70.81	33.712	17.144	2.577	29.933	71.234
8/15/01 05:42:00	72.09	70.79	33.712	17.137	2.581	29.929	71.146
8/15/01 05:43:00	72.08	70.78	33.712	17.137	2.581	29.935	71.019
8/15/01 05:44:00	72.07	70.77	33.712	17.135	2.581	29.927	70.937
8/15/01 05:45:00	72.05	70.76	33.712	17.129	2.581	29.923	70.842
8/15/01 05:46:00	72.04	70.75	33.712	17.128	2.581	29.927	70.722
8/15/01 05:48:00	72.01	70.72	33.706	17.118	2.579	29.925	70.634
8/15/01 05:49:00	72	70.71	33.712	17.137	2.584	29.927	70.507
8/15/01 05:50:00	71.99	70.7	33.712	17.154	2.586	29.923	70.431
8/15/01 05:51:00	71.97	70.68	33.706	17.176	2.592	29.925	70.317
8/15/01 05:52:00	71.96	70.67	33.712	17.184	2.588	29.923	70.229
8/15/01 05:54:00	71.93	70.64	33.706	17.148	2.583	29.923	70.14
8/15/01 05:55:00	71.92	70.63	33.712	17.143	2.584	29.925	70.02
8/15/01 05:56:00	71.91	70.61	33.712	17.139	2.588	29.925	69.938
8/15/01 05:57:00	71.9	70.6	33.706	17.133	2.584	29.925	69.856
8/15/01 05:58:00	71.89	70.58	33.706	17.124	2.581	29.923	69.729
8/15/01 06:00:00	71.87	70.54	33.7	17.114	2.581	29.923	69.647
8/15/01 06:01:00	71.85	70.51	33.706	17.124	2.581	29.925	69.533
8/15/01 06:02:00	71.84	70.49	33.706	17.118	2.583	29.925	69.438
8/15/01 06:03:00	71.82	70.46	33.706	17.118	2.583	29.927	69.356
8/15/01 06:04:00	71.81	70.44	33.694	17.137	2.59	29.929	69.236
8/15/01 06:06:00	71.78	70.38	33.706	17.141	2.594	29.925	69.147
8/15/01 06:07:00	71.77	70.35	33.7	17.129	2.588	29.927	69.065
8/15/01 06:08:00	71.75	70.32	33.7	17.126	2.59	29.927	68.964
8/15/01 06:09:00	71.74	70.29	33.712	17.105	2.588	29.927	68.856
8/15/01 06:10:00	71.72	70.25	33.7	17.086	2.581	29.923	68.749
8/15/01 06:12:00	71.69	70.17	33.7	17.083	2.575	29.927	68.66
8/15/01 06:13:00	71.68	70.13	33.7	17.086	2.57	29.925	68.566
8/15/01 06:14:00	71.67	70.08	33.7	17.084	2.57	29.927	68.477
8/15/01 06:15:00	71.66	70.03	33.706	17.086	2.566	29.927	68.389
8/15/01 06:16:00	71.64	69.98	33.7	17.088	2.571	29.927	68.3
8/15/01 06:18:00	71.61	69.89	33.706	17.094	2.575	29.927	68.18
8/15/01 06:19:00	71.59	69.83	33.7	17.088	2.571	29.927	68.085
8/15/01 06:20:00	71.57	69.78	33.7	17.09	2.573	29.927	68.009
8/15/01 06:21:00	71.55	69.73	33.706	17.094	2.575	29.927	67.889
8/15/01 06:22:00	71.53	69.68	33.706	17.092	2.573	29.929	67.8
8/15/01 06:24:00	71.48	69.59	33.7	17.096	2.575	29.929	67.699
8/15/01 06:25:00	71.44	69.54	33.706	17.096	2.573	29.931	67.623
8/15/01 06:26:00	71.41	69.5	33.706	17.094	2.571	29.927	67.497
8/15/01 06:27:00	71.38	69.45	33.7	17.094	2.571	29.927	67.415
8/15/01 06:28:00	71.35	69.41	33.7	17.094	2.57	29.927	67.333
8/15/01 06:30:00	71.28	69.31	33.7	17.096	2.571	29.929	67.206

Date/Time	Downhole Pressure (psi)	Downhole Temperature (deg F)	Wellhead Pressure (psi)	Upper Monitor Pressure (psi)	Lower Monitor Pressure (psi)	Barometric Pressure (inchs Hg)	Annular Pressure (psi)
8/15/01 06:31:00	71.24	69.26	33.706	17.098	2.575	29.929	67.118
8/15/01 06:32:00	71.2	69.2	33.706	17.098	2.575	29.935	67.029
8/15/01 06:33:00	71.16	69.15	33.706	17.096	2.577	29.931	66.934
8/15/01 06:34:00	71.12	69.1	33.706	17.096	2.575	29.931	66.852
8/15/01 06:36:00	71.04	68.98	33.706	17.098	2.575	29.933	66.732
8/15/01 06:37:00	71	68.92	33.7	17.098	2.575	29.929	66.65
8/15/01 06:38:00	70.96	68.86	33.706	17.099	2.573	29.931	66.561
8/15/01 06:39:00	70.91	68.79	33.706	17.099	2.573	29.931	66.473
8/15/01 06:40:00	70.87	68.73	33.706	17.101	2.575	29.929	66.372
8/15/01 06:42:00	70.79	68.65	33.706	17.103	2.575	29.931	66.283
8/15/01 06:43:00	70.74	68.63	33.706	17.101	2.575	29.933	66.163
8/15/01 06:44:00	70.7	68.61	33.706	17.098	2.573	29.935	66.081
8/15/01 06:45:00	70.66	68.6	33.706	17.101	2.575	29.931	65.999
8/15/01 06:46:00	70.61	68.58	33.7	17.103	2.579	29.931	65.878
8/15/01 06:48:00	70.52	68.53	33.7	17.107	2.577	29.935	65.79
8/15/01 06:49:00	70.48	68.51	33.7	17.105	2.575	29.935	65.701
8/15/01 06:50:00	70.43	68.48	33.7	17.109	2.579	29.935	65.626
8/15/01 06:51:00	70.39	68.46	33.7	17.107	2.581	29.931	65.505
8/15/01 06:52:00	70.34	68.43	33.706	17.101	2.579	29.933	65.43
8/15/01 06:54:00	70.24	68.37	33.706	17.105	2.577	29.935	65.316
8/15/01 06:55:00	70.19	68.33	33.7	17.113	2.581	29.933	65.24
8/15/01 06:56:00	70.13	68.29	33.7	17.129	2.584	29.933	65.132
8/15/01 06:57:00	70.07	68.25	33.706	17.146	2.59	29.935	65.05
8/15/01 06:58:00	70.02	68.21	33.7	17.165	2.596	29.933	64.936
8/15/01 07:00:00	69.95	68.17	33.694	17.18	2.601	29.937	64.861
8/15/01 07:01:00	69.94	68.17	33.706	17.191	2.603	29.935	64.747
8/15/01 07:02:00	69.92	68.17	33.706	17.173	2.597	29.937	64.658
8/15/01 07:03:00	69.91	68.17	33.7	17.156	2.597	29.939	64.589
8/15/01 07:04:00	69.9	68.17	33.7	17.15	2.597	29.933	64.469
8/15/01 07:06:00	69.86	68.15	33.694	17.163	2.597	29.931	64.399
8/15/01 07:07:00	69.83	68.14	33.694	17.178	2.601	29.935	64.292
8/15/01 07:08:00	69.8	68.12	33.712	17.178	2.603	29.935	65.139
8/15/01 07:09:00	69.77	68.1	33.694	17.152	2.599	29.937	75.58
8/15/01 07:10:00	69.74	68.08	33.681	17.135	2.594	29.933	84.277
8/15/01 07:12:00	69.67	68.04	33.712	17.12	2.588	29.931	84.068
8/15/01 07:13:00	69.62	68.02	33.694	17.111	2.584	29.931	83.878
8/15/01 07:14:00	69.58	68	33.7	17.114	2.586	29.933	83.732
8/15/01 07:15:00	69.53	67.98	33.7	17.113	2.586	29.931	83.599
8/15/01 07:16:00	69.49	67.96	33.7	17.12	2.59	29.933	83.473
8/15/01 07:18:00	69.44	67.95	33.7	17.129	2.594	29.935	83.352
8/15/01 07:19:00	69.43	67.95	33.694	17.143	2.596	29.933	83.232
8/15/01 07:20:00	69.42	67.95	33.694	17.137	2.596	29.937	83.112
8/15/01 07:21:00	69.42	67.95	33.694	17.135	2.597	29.935	83.01
8/15/01 07:22:00	69.41	67.95	33.694	17.129	2.596	29.935	82.896
8/15/01 07:24:00	69.42	67.96	33.706	17.124	2.594	29.935	82.789
8/15/01 07:25:00	69.43	67.96	33.706	17.118	2.594	29.937	82.681
8/15/01 07:26:00	69.45	67.97	33.7	17.114	2.59	29.937	82.574
8/15/01 07:27:00	69.46	67.97	33.7	17.114	2.594	29.939	82.486
8/15/01 07:28:00	69.48	67.98	33.7	17.111	2.59	29.937	82.365
8/15/01 07:30:00	69.51	67.99	33.694	17.111	2.586	29.939	82.257
8/15/01 07:31:00	69.53	68	33.694	17.116	2.59	29.941	82.162
8/15/01 07:32:00	69.55	68	33.694	17.126	2.597	29.939	82.054
8/15/01 07:33:00	69.57	68.01	33.694	17.133	2.597	29.941	81.953
8/15/01 07:34:00	69.59	68.01	33.694	17.135	2.599	29.941	81.852
8/15/01 07:36:00	69.63	68.03	33.694	17.135	2.599	29.939	81.757
8/15/01 07:37:00	69.64	68.03	33.694	17.137	2.597	29.937	81.649
8/15/01 07:38:00	69.66	68.04	33.694	17.139	2.599	29.939	81.554
8/15/01 07:39:00	69.68	68.04	33.694	17.141	2.601	29.941	81.453
8/15/01 07:40:00	69.7	68.04	33.694	17.141	2.601	29.937	81.358
8/15/01 07:42:00	69.73	68.06	33.687	17.146	2.601	29.937	81.251
8/15/01 07:43:00	69.75	68.06	33.687	17.156	2.605	29.939	81.156
8/15/01 07:44:00	69.76	68.07	33.75	17.161	2.609	29.939	81.061
8/15/01 07:45:00	69.78	68.07	33.687	17.174	2.605	29.941	80.959
8/15/01 07:46:00	69.79	68.08	33.694	17.173	2.605	29.939	80.858
8/15/01 07:48:00	69.82	68.09	33.687	17.178	2.603	29.939	80.763
8/15/01 07:49:00	69.83	68.09	33.687	17.189	2.605	29.939	80.662
8/15/01 07:50:00	69.85	68.1	33.681	17.204	2.607	29.939	80.573
8/15/01 07:51:00	69.86	68.1	33.681	17.204	2.609	29.941	80.466
8/15/01 07:52:00	69.88	68.11	33.681	17.206	2.605	29.941	80.377
8/15/01 07:54:00	69.91	68.12	33.681	17.208	2.607	29.941	80.276
8/15/01 07:55:00	69.92	68.12	33.681	17.216	2.607	29.941	80.187
8/15/01 07:56:00	69.93	68.13	33.681	17.208	2.605	29.943	80.086
8/15/01 07:57:00	69.95	68.13	33.681	17.216	2.607	29.943	79.997
8/15/01 07:58:00	69.96	68.14	33.681	17.223	2.607	29.945	79.896
8/15/01 08:00:00	69.99	68.15	33.675	17.229	2.607	29.943	79.801
8/15/01 08:01:00	70	68.15	33.675	17.24	2.607	29.948	79.7
8/15/01 08:02:00	70.02	68.16	33.675	17.229	2.605	29.943	79.611
8/15/01 08:03:00	70.03	68.16	33.669	17.208	2.599	29.948	79.51
8/15/01 08:04:00	70.04	68.17	33.675	17.201	2.599	29.945	79.415
8/15/01 08:06:00	70.07	68.18	33.675	17.197	2.599	29.948	79.32
8/15/01 08:07:00	70.08	68.18	33.669	17.193	2.599	29.945	79.225
8/15/01 08:08:00	70.09	68.18	33.669	17.189	2.597	29.95	79.13
8/15/01 08:09:00	70.1	68.18	33.669	17.169	2.596	29.948	79.042
8/15/01 08:10:00	70.12	68.18	33.669	17.15	2.592	29.948	78.94
8/15/01 08:12:00	70.14	68.18	33.669	17.144	2.59	29.95	78.852
8/15/01 08:13:00	70.15	68.18	33.662	17.143	2.588	29.95	78.757
8/15/01 08:14:00	70.16	68.18	33.669	17.146	2.588	29.952	78.656
8/15/01 08:15:00	70.17	68.18	33.662	17.148	2.59	29.956	78.567
8/15/01 08:16:00	70.18	68.18	33.662	17.146	2.588	29.954	78.472
8/15/01 08:18:00	70.19	68.18	33.662	17.154	2.592	29.95	78.377
8/15/01 08:19:00	70.2	68.18	33.662	17.161	2.594	29.954	78.282
8/15/01 08:20:00	70.21	68.18	33.656	17.171	2.596	29.95	78.194
8/15/01 08:21:00	70.22	68.18	33.662	17.146	2.59	29.952	78.099
8/15/01 08:22:00	70.22	68.18	33.662	17.143	2.588	29.952	78.01
8/15/01 08:24:00	70.24	68.18	33.656	17.143	2.588	29.95	77.909
8/15/01 08:25:00	70.25	68.18	33.656	17.141	2.588	29.95	77.82
8/15/01 08:26:00	70.25	68.18	33.656	17.141	2.588	29.95	77.725
8/15/01 08:27:00	70.26	68.18	33.656	17.137	2.588	29.95	77.637
8/15/01 08:28:00	70.27	68.18	33.65	17.141	2.588	29.952	77.542
8/15/01 08:30:00	70.46	68.92	33.656	17.129	2.584	29.954	77.447
8/15/01 08:31:00	70.64	69.66	33.656	17.12	2.583	29.952	77.358

INJECTION TEST CALIBRATION CERTIFICATES

HAZEN AND SAWYER
Environmental Engineers & Scientists

Hazen and Sawyer, P.C.
2101 Corporate Blvd., Suite 301
Boca Raton, FL 33431

MEMORANDUM

OFFICE (561) 997-8070
FAX (561) 997-8159

TO: Mike Wengrenovich/Hollywood
John Largey/Boca Raton
Jim Wheatley/West Palm Beach

COPY: FILE 40174 & 40368

FROM: Albert Muniz/Boca Raton

DATE: August 13, 2001

SUBJECT: City of Cooper City - Concentrate Disposal System
Injection Test Calibration Certificates

Attached please find a copy of the injection test calibration certificates for the injection test conducted on August 13, 2001.

WATER SPECIALTIES

METER TEST RECORD

963052-z
SERIAL NUMBER

6/21/2001
DATE

SOLD TO OZONE INDUSTRIES CORP.

SHIP TO SAME

FINAL TOTALIZER READING

WE CERTIFY THAT THE TEST RESULTS SHOWN IN THIS REPORT ARE CORRECT TO THE BEST OF OUR KNOWLEDGE AND BELIEF. OUR TEST FACILITY IS CERTIFIED REGULARLY TO AN ACCURACY OF 0.2% AND IS TRACEABLE TO THE NATIONAL INSTITUTE OF STANDARDS & TECHNOLOGY.

WATER SPECIALTIES

BY:

FLOW RATE G.P.M.	TESTED ACCURACY			FLOW RATE G.P.M	NEW ACCURACY		
	% ACCURACY	GEARS	INDEX		% ACCURACY	GEARS	INDEX
~~2990.6~~	101.3	39J/24D	.8487				
~~1529.5~~	101.0						
~~270.1~~	98.2						

TESTED AVERAGE ______ TESTED INDEX

DESIRED AVERAGE ______ NEW INDEX

SPEC. PIPE I.D. ______ STD. PIPE I.D. ______

$$\left(\left(\frac{\text{SPEC. I.D.}^2 \;\_\_\_ - 4.285}{\text{STD. I.D.}^2 - 4.285}\right) * \text{STD. INDEX} \;\_\_\_\right) = \text{NEW INDEX} \;\_\_\_$$

CUSTOMER PIPE SIZE ______ O.D. ______ I.D. ______ % AS GEARED

	SPECIFICATION	INDEX
METER SIZE/MODEL NO.	12" MODEL ML-03	
TOTALIZER DIAL	1000 GALLONS	
INDICATOR DIAL TOTALIZER GEARING	256/1	

METER CHANGE GEARS

A/B = SEE ABOVE

GEAR RATIO

PROP. SIZE ______ TYP[E] ______ BEA[RI]NGS ______

ACCESSORIES ______

BUILT BY ______ DAT[E B]UILT ______

INV. DATE ______ INV. ______ [CH]KD. BY ______

CERTS

FORM 111-G-1200

In-Situ Inc.

Calibration Report

210 S. Third Street, Laramie, Wyoming 82070 U.S.A. (TEL) 1-800-446-7488, 307-742-8213 (FAX) 307-721-7598
Visit us on the Internet at **www.in-situ.com!**

Report Number: 2001072604005037 **Calibration Result:** **PASSED**

Calibration Date:	2001-07-26
Model:	PXD-261
Full Scale Pressure Range:	206.8 kPa (30 PSI) Gauge
Manufacturer:	In-Situ
Serial Number:	5037

Calibration Procedures and Equipment Used:

1. Digital Multi-Meter (DMM), HP 3457A, s/n 2703A11708
2. Multi-Channel Thermometer, Instrulab 4312A-15, s/n 41015
3. Platinum RTD, Instrulab 832, s/n 12067
4. Pressure Controller, Mensor PCS-400, s/n 180324
5. Automated software calibration procedures used

Range of Applied Temperatures: 4.54 C to 30.60 C
Range of Applied Pressures: -0.0014 kPa (-0.0002 PSI) to 206.8441 kPa (30.0002 PSI)

Calibration Coefficients:

Linearity	0.2374
Scale	29.7360
Offset	0.0079

PASS/FAIL Criteria:

	Applied Pressure	Current mA	
Zero Response	-0.0014 kPa (-0.0002 PSI)	3.997	**PASSED**
Full Scale Response	206.8441 kPa (30.0002 PSI)	20.009	**PASSED**

	Minimum	Maximum	
Temperature Stability (%FS)	-0.057	0.102	**PASSED**
Repeatability at 15 C (%FS)	-0.010	0.004	**PASSED**

Hysteresis (%FS)	0.005	**PASSED**
Thermal Hysteresis (%FS)	0.004	**PASSED**

Test Performed By: DJK Test Verified By:

Document Version 1.00

In-Situ Inc.

Calibration Report

210 S. Third Street, Laramie, Wyoming 82070 U.S.A. (TEL) 1-800-446-7488, 307-742-8213 (FAX) 307-721-7598

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Understanding the Transducer Calibration Report

Page 1 provides calibration information for your In-Situ pressure transducer. Page 2 provides an explanation of the results and a brief description of our rigid test procedures. We include this information so that you may have a better understanding of our calibration procedures relative to the high accuracy of our products. We take our published specifications seriously, and in most cases, the actual results of our calibration report exceed those specifications.

The Calibration Procedure

We run six separate cycles (nominally 5°C, 15°C, 30°C, 15°C, 15°C, and 15°C) to test the transducer's performance and ability to repeat readings at constant temperatures. For each cycle, the transducer is temperature-stabilized, then pressure readings are taken from 0 to full scale (FS) pressure and back to 0 in 10% FS steps (22 data points).

The transducer is optimized for operation at 15°C, a temperature that characterizes a majority of groundwater applications.

Calibration Coefficients

The transducer's coefficients are also found on the probe's data tag. These are the coefficients to enter into In-Situ's data loggers before running a test. Instructions for programming Linearity, Scale, and Offset may be found in the data logger operator's manual.

PASS/FAIL Criteria

"Deviation" refers to the difference between the transducer readings and our NIST-traceable (National Institute of Standards and Technology) pressure standard. mA = milliAmps, FS = Full Scale.

Zero Response: Response of the probe, in mA, when 0 PSI pressure is applied.

Full Scale Response: Response of the probe, in mA, when full scale pressure is applied.

Temperature Stability: Minimum and maximum % FS deviation over the first four cycles.

Repeatability at 15°C: Minimum and maximum % FS deviation over the last three cycles.

Hysteresis: Maximum difference between % FS deviations over the last three cycles.

Thermal Hysteresis: Maximum difference between % FS deviations between the first two 15°C cycles.

Transducer

In-Situ Inc.

Calibration Report

210 S. Third Street, Laramie, Wyoming 82070 U.S.A. (TEL) 1-800-446-7488, 307-742-8213 (FAX) 307-721-7598
Visit us on the Internet at www.in-situ.com!

Report Number: 2001080518006962 **Calibration Result:** **PASSED**

Calibration Date:	2001-08-05
Model:	PXD-261
Full Scale Pressure Range:	206.8 kPa (30 PSI) Gauge
Manufacturer:	In-Situ
Serial Number:	6962

Calibration Procedures and Equipment Used:

1. Automated software calibration procedures used

Range of Applied Temperatures: 4.82 C to 29.89 C
Range of Applied Pressures: -0.0043 kPa (-0.0006 PSI) to 206.8433 kPa (30.0001 PSI)

Calibration Coefficients:

Linearity	0.3144
Scale	29.5218
Offset	0.0928

PASS/FAIL Criteria:

	Applied Pressure	Current mA	
Zero Response	-0.0043 kPa (-0.0006 PSI)	3.951	**PASSED**
Full Scale Response	206.8433 kPa (30.0001 PSI)	20.037	**PASSED**

	Minimum	Maximum	
Temperature Stability (%FS)	-0.106	0.057	**PASSED**
Repeatability at 15 C (%FS)	-0.010	0.007	**PASSED**

Hysteresis (%FS)	0.010	**PASSED**
Thermal Hysteresis (%FS)	0.006	**PASSED**

Test Performed By: JMD Test Verified By:

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Transducer

In-Situ Inc.

Calibration Report

210 S. Third Street, Laramie, Wyoming 82070 U.S.A. (TEL) 1-800-446-7488, 307-742-8213 (FAX) 307-721-7598
Visit us on the Internet at **www.in-situ.com!**

Report Number: 2001071807006142 **Calibration Result:** **PASSED**

Calibration Date:	2001-07-18
Model:	PXD-261
Full Scale Pressure Range:	689.5 kPa (100 PSI) Gauge
Manufacturer:	In-Situ
Serial Number:	6142

Calibration Procedures and Equipment Used:

1. Digital Multi-Meter (DMM), HP 3457A, s/n 2703A11708
2. Multi-Channel Thermometer, Instrulab 4312A-15, s/n 41015
3. Platinum RTD, Instrulab 832, s/n 12067
4. Pressure Controller, Mensor PCS-400, s/n 180324
5. Automated software calibration procedures used

Range of Applied Temperatures: 4.43 C to 30.41 C
Range of Applied Pressures: -0.0552 kPa (-0.0080 PSI) to 689.4757 kPa (100.0000 PSI)

Calibration Coefficients:

Linearity	0.1896
Scale	100.0195
Offset	-0.0167

PASS/FAIL Criteria:

	Applied Pressure	Current mA	
Zero Response	-0.0552 kPa (-0.0080 PSI)	4.003	**PASSED**
Full Scale Response	689.4757 kPa (100.0000 PSI)	19.969	**PASSED**

	Minimum	Maximum	
Temperature Stability (%FS)	-0.105	0.123	**PASSED**
Repeatability at 15 C (%FS)	-0.004	0.006	**PASSED**

Hysteresis (%FS)	0.007	**PASSED**
Thermal Hysteresis (%FS)	0.002	**PASSED**

Test Performed By: TLS Test Verified By:

Transducer

In-Situ Inc.

Calibration Report

210 S. Third Street, Laramie, Wyoming 82070 U.S.A. (TEL) 1-800-446-7488, 307-742-8213 (FAX) 307-721-7598
Visit us on the Internet at **www.in-situ.com!**

Report Number: 2001022223007803 **Calibration Result:** **PASSED**

Calibration Date:	2001-02-22
Model:	PXD-261
Full Scale Pressure Range:	689.5 kPa (100 PSI) Gauge
Manufacturer:	In-Situ
Serial Number:	7803

Calibration Procedures and Equipment Used:

1. Automated software calibration procedures used

Range of Applied Temperatures: 4.88 C to 30.07 C
Range of Applied Pressures: -0.0194 kPa (-0.0028 PSI) to 689.4771 kPa (100.0002 PSI)

Calibration Coefficients:

Linearity	0.4153
Scale	100.6131
Offset	0.3670

PASS/FAIL Criteria:

	Applied Pressure	Current mA	
Zero Response	-0.0194 kPa (-0.0028 PSI)	3.941	**PASSED**
Full Scale Response	689.4771 kPa (100.0002 PSI)	19.780	**PASSED**

	Minimum	Maximum	
Temperature Stability (%FS)	-0.116	0.094	**PASSED**
Repeatability at 15 C (%FS)	-0.015	0.006	**PASSED**

Hysteresis (%FS)	0.014	**PASSED**
Thermal Hysteresis (%FS)	0.014	**PASSED**

Test Performed By: DJK Test Verified By:

Transducer

In-Situ Inc.

Calibration Report

210 S. Third Street, Laramie, Wyoming 82070 U.S.A. (TEL) 1-800-446-7488, 307-742-8213 (FAX) 307-721-7598
Visit us on the Internet at **www.in-situ.com!**

Report Number: 2001042820000307 **Calibration Result:** **PASSED**

Calibration Date:	2001-04-28
Model:	PXD-261
Full Scale Pressure Range:	689.5 kPa (100 PSI) Gauge
Manufacturer:	In-Situ
Serial Number:	307

Calibration Procedures and Equipment Used:

1. Automated software calibration procedures used

Range of Applied Temperatures: 5.11 C to 29.95 C
Range of Applied Pressures: -0.0218 kPa (-0.0032 PSI) to 689.4771 kPa (100.0002 PSI)

Calibration Coefficients:

Linearity	0.3864
Scale	100.5307
Offset	0.4174

PASS/FAIL Criteria:

	Applied Pressure	Current mA	
Zero Response	-0.0218 kPa (-0.0032 PSI)	3.933	**PASSED**
Full Scale Response	689.4771 kPa (100.0002 PSI)	19.790	**PASSED**

	Minimum	Maximum	
Temperature Stability (%FS)	-0.061	0.028	**PASSED**
Repeatability at 15 C (%FS)	-0.012	0.006	**PASSED**

Hysteresis (%FS)	0.008	**PASSED**
Thermal Hysteresis (%FS)	0.033	**PASSED**

Test Performed By: JMD Test Verified By:

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Transducer

In-Situ Inc.

Calibration Report

210 S. Third Street, Laramie, Wyoming 82070 U.S.A. (TEL) 1-800-446-7488, 307-742-8213 (FAX) 307-721-7598
Visit us on the Internet at **www.in-situ.com!**

Report Number: 2001022315007883 **Calibration Result:** **PASSED**

Calibration Date:	2001-02-23
Model:	PXD-261
Full Scale Pressure Range:	689.5 kPa (100 PSI) Gauge
Manufacturer:	In-Situ
Serial Number:	7883

Calibration Procedures and Equipment Used:

1. Automated software calibration procedures used

Range of Applied Temperatures: 4.76 C to 29.89 C
Range of Applied Pressures: -0.0229 kPa (-0.0033 PSI) to 689.4764 kPa (100.0001 PSI)

Calibration Coefficients:

Linearity	0.3691
Scale	99.3226
Offset	0.2979

PASS/FAIL Criteria:

	Applied Pressure	Current mA	
Zero Response	-0.0229 kPa (-0.0033 PSI)	3.952	**PASSED**
Full Scale Response	689.4764 kPa (100.0001 PSI)	20.002	**PASSED**

	Minimum	Maximum	
Temperature Stability (%FS)	-0.104	0.088	**PASSED**
Repeatability at 15 C (%FS)	-0.014	0.010	**PASSED**

Hysteresis (%FS)	0.014	**PASSED**
Thermal Hysteresis (%FS)	0.027	**PASSED**

Test Performed By: **JMD** Test Verified By:

Transducer

In-Situ Inc.

Calibration Report

210 S. Third Street, Laramie, Wyoming 82070 U.S.A. (TEL) 1-800-446-7488, 307-742-8213 (FAX) 307-721-7598
Visit us on the Internet at **www.in-situ.com!**

Report Number: 2001043017000539 **Calibration Result:** **PASSED**

Calibration Date:	2001-04-30
Model:	PXD-261
Full Scale Pressure Range:	206.8 kPa (30 PSI) Gauge
Manufacturer:	In-Situ
Serial Number:	539

Calibration Procedures and Equipment Used:

1. Automated software calibration procedures used

Range of Applied Temperatures: 4.93 C to 29.61 C
Range of Applied Pressures: -0.0167 kPa (-0.0024 PSI) to 206.8434 kPa (30.0001 PSI)

Calibration Coefficients:

Linearity	0.3068
Scale	29.6254
Offset	0.0327

PASS/FAIL Criteria:

	Applied Pressure	Current mA	
Zero Response	-0.0167 kPa (-0.0024 PSI)	3.983	**PASSED**
Full Scale Response	206.8434 kPa (30.0001 PSI)	20.018	**PASSED**

	Minimum	Maximum	
Temperature Stability (%FS)	-0.054	0.027	**PASSED**
Repeatability at 15 C (%FS)	-0.008	0.006	**PASSED**

Hysteresis (%FS)	0.009	**PASSED**
Thermal Hysteresis (%FS)	0.014	**PASSED**

Test Performed By: JMD Test Verified By:

Transducer

In-Situ Inc.

Calibration Report

210 S. Third Street, Laramie, Wyoming 82070 U.S.A. (TEL) 1-800-446-7488, 307-742-8213 (FAX) 307-721-7598
Visit us on the Internet at **www.in-situ.com!**

Report Number: 2001070900005110 **Calibration Result:** **PASSED**

Calibration Date:	2001-07-09
Model:	PXD-261
Full Scale Pressure Range:	206.8 kPa (30 PSI) Gauge
Manufacturer:	In-Situ
Serial Number:	5110

Calibration Procedures and Equipment Used:

1. Digital Multi-Meter (DMM), HP 3457A, s/n 2703A11708
2. Multi-Channel Thermometer, Instrulab 4312A-15, s/n 41015
3. Platinum RTD, Instrulab 832, s/n 12067
4. Pressure Controller, Mensor PCS-400, s/n 180324
5. Automated software calibration procedures used

Range of Applied Temperatures: 4.50 C to 30.50 C
Range of Applied Pressures: -0.0028 kPa (-0.0004 PSI) to 206.8434 kPa (30.0001 PSI)

Calibration Coefficients:

Linearity	0.2210
Scale	29.6471
Offset	-0.7035

PASS/FAIL Criteria:

	Applied Pressure	Current mA	
Zero Response	-0.0028 kPa (-0.0004 PSI)	4.380	**PASSED**
Full Scale Response	206.8434 kPa (30.0001 PSI)	20.444	**PASSED**

	Minimum	Maximum	
Temperature Stability (%FS)	-0.069	0.161	**PASSED**
Repeatability at 15 C (%FS)	-0.005	0.005	**PASSED**

Hysteresis (%FS)	0.007	**PASSED**
Thermal Hysteresis (%FS)	0.011	**PASSED**

Test Performed By: TLS Test Verified By: /

Document Version 1.00

c0: 1.203151e+04
c4:-1.041348e+00
c1:-2.371483e-03
c5: 7.356509e-07

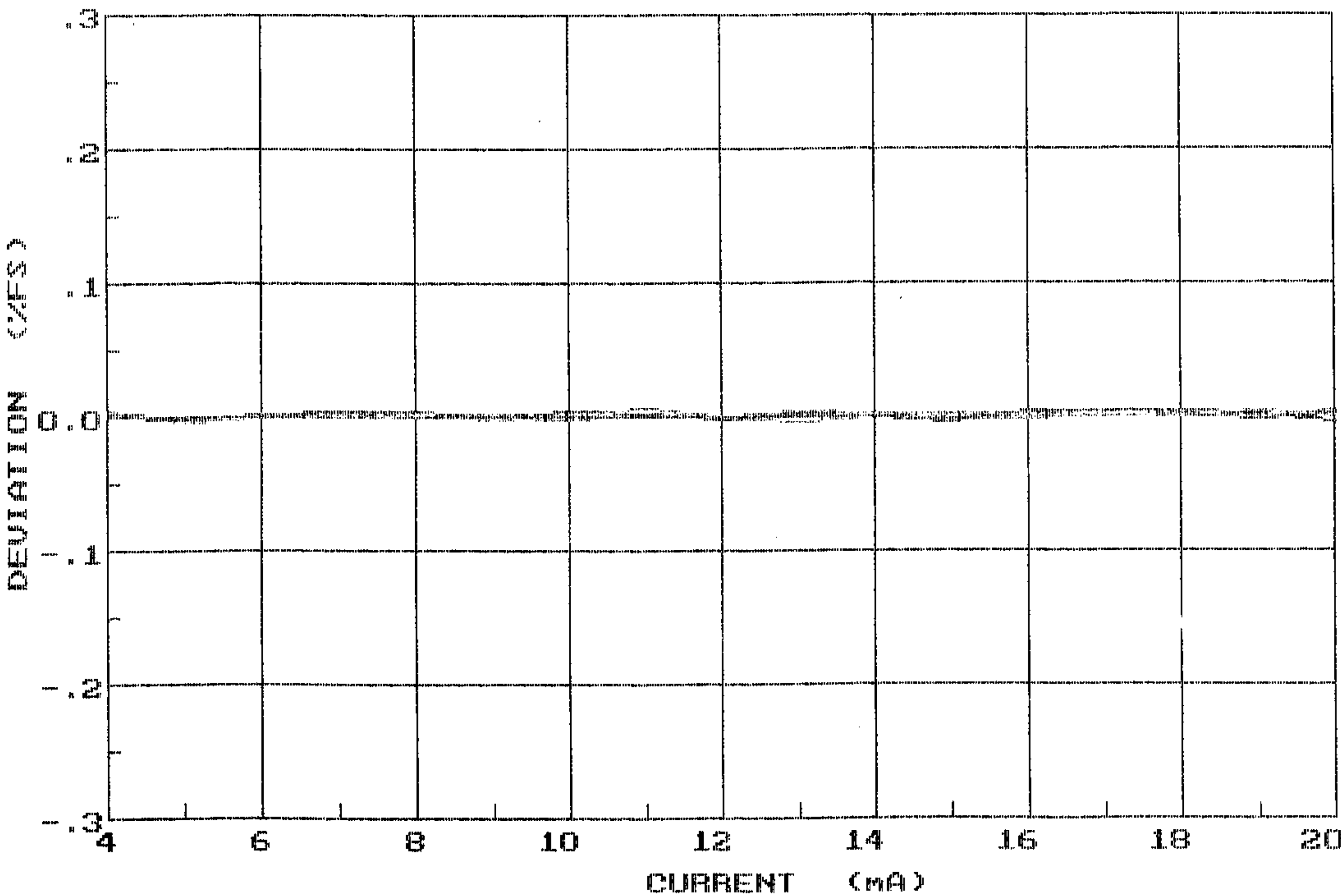
H3K   S/N 45350,   976K-8   Inputs 1-4

Deviation
+0.005 %FS
-0.005 %FS

I Sleep (uA)
241/319

I Wake (mA)
162/166

Cycle 1
-15.0 deg C
Cycle 2
5.0 deg C
Cycle 3
25.0 deg C
Cycle 4
45.0 deg C
Cycle 5
65.0 deg C



Opr: PJM   Plot Date: 05-25-2001   PASS   Unit 5

c0: 1.206913e+04
c4:-1.037337e+00
c1:-2.749917e-03
c5: 4.977755e-07

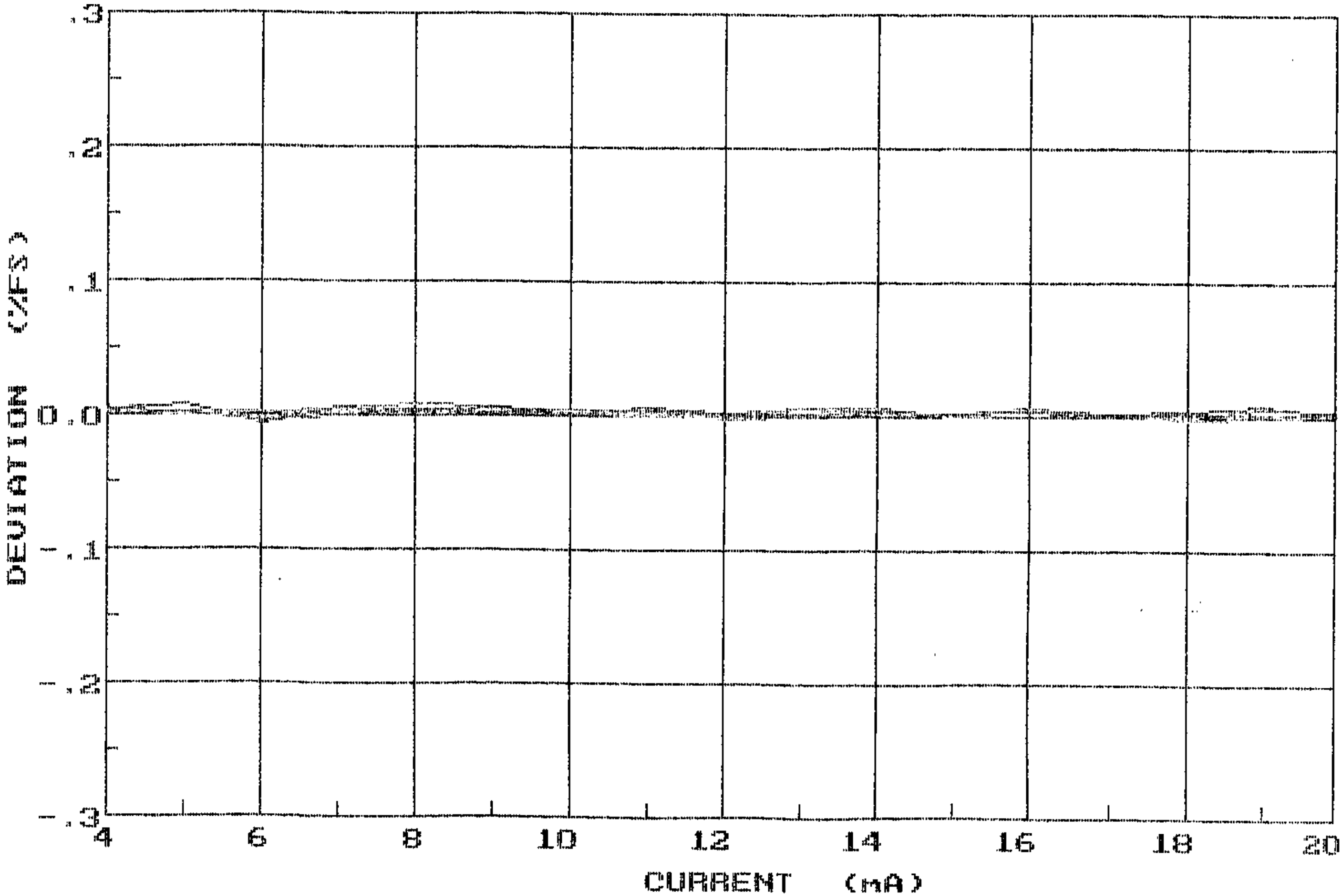
H3K S/N 45350, 976K-8 Inputs 5-8

Deviation
+0.007 %FS
-0.007 %FS

I Sleep (uA)
241/319

I Wake (mA)
162/166

Cycle 1
-15.0 deg C
Cycle 2
5.0 deg C
Cycle 3
25.0 deg C
Cycle 4
45.0 deg C
Cycle 5
65.0 deg C



Opr: PJM Plot Date: 05-25-2001

PASS

Unit 5

THE COORDINATES SHOW
TO "CHARLIE" CONTROL

DESIGNATION – CHARL
PID – AD576
STATE/COUNTY – FL/BR
USGS QUAD – COOPE
NAD 83/90 GEOGRAPHIC
NAD 83/90 STATE PLANE
NORTHING: 629,693.14 (
EASTING: 886,752.46 (F

SURVEY PLAT

EXISTING WELL
WATER TREATMENT FACILITY
OCATED IN COOPER CITY,
OWARD COUNTY, FLORIDA

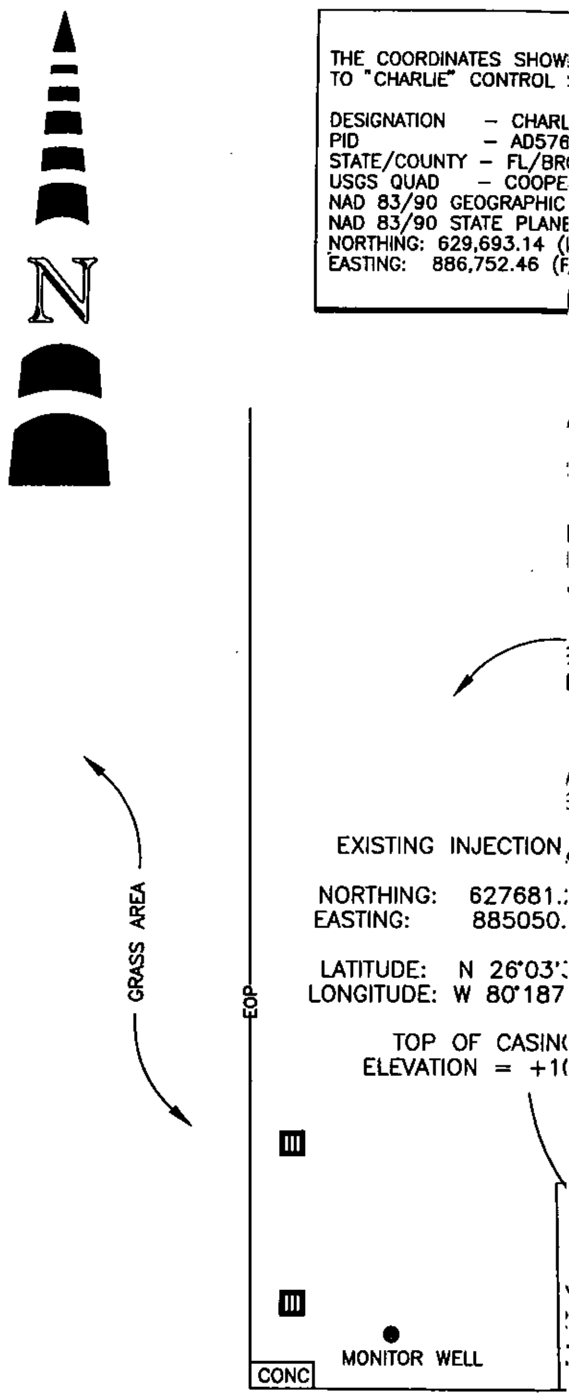
AS A SPECIFIC PURPOSE SURVEY FOR THE PURPOSE OF WELL AT THE COOPER CITY WATER TREATMENT FACILITY DINATES.

INATES SHOWN HEREON ARE STATE PLANE FOR THE AD 83/1990 ADJUSTMENT AND BASED ON GPS RTK ITROL STATION "CHARLIE".

EREON ARE BASED ON THE NATIONAL GEODETIC VERTICAL D 29), FROM TIES TO CONTROL STATION "CHARLIE"

/EMENTS, UTILITIES AND/OR FOUNDATIONS WERE NOT ERWISE SHOWN OR NOTED.

VORK: 9-13-2001



BY: [signature]
SCOTT M. SHORE
PROFESSIONAL SURVEYOR AND MAPPER
FLORIDA CERTIFICATE NO. LS# 5743

DATE SIGNED: [handwritten date]

NATURE AND THE ORIGINAL RAISED SEAL OF A AND MAPPER.

IC PURPOSE SURVEY

RIDIAN
G & MAPPING, LLC
RVEYORS· PLANNERS
LB# 7071

5245 RAMSEY WAY, SUITE #2
FORT MYERS, FLORIDA 33907
PHONE: (941) 275-8575
FAX: (941) 275-8457
www.meridianfl.com

LEGEND:

CONC = CONCRETE
EOP = EDGE OF PAVEMENT
▥ = CATCH BASIN

/PAGE:	PROJECT NO.:	SHEET:
19/51	1675	1 OF 1

SCALE:	CHECKED BY:	FILE NO. (S-T-R)
1"= 30'	SMS	

10/31/2001/2:49 P.M. – 04 BOCA – H:\40340\EXHIBIT\40340X01.dwg – XREFS: – PS 1=30

City of Cooper City

Concentrate Disposal System

Project No. 40340

Dual-Zone Monitoring Well (MW-1)