



**CITY COUNCIL
ZEPHYRHILLS, FLORIDA**

**Monday, March 11, 2024
6:00 PM**

Please join the GoToMeeting
from your computer, tablet or smartphone:

<https://meet.goto.com/377392925>

or dial in using your phone:

+1 (312) 757-3121 - Access Code: 377-392-925

(Please mute your phone unless you wish to speak on a specific item)

**Zephyrhills
City Hall**

**Council
Chambers**

Call to Order – Council President Lance A. Smith

Roll Call – City Clerk Lori Hillman

Invocation – Rosie Paulsen

Pledge of Allegiance – Council President Lance A. Smith

1. MAYOR

1.1 Girl Scout Proclamation

1. Girl Scout Proclamation

1.2 Zephyrhills Robodawgs Presentation

1. JROTC Robotics Team

2. CONSENT ITEMS

2.1 Approval of February 26, 2024 Meeting Minutes

1. M02-26-2024

2.2 Request Council's Approval and Signature Upon the Close Out Document for the Wire Road Reclaim FDEP SRF Loan Project

1. WW510550_Amortization Schedule Report

2. Zephyrhills WW510550 A2 - final

3. BUSINESS ITEMS/PUBLIC HEARING

3.1 Mayor's Youth Council Amendment

Second Reading **ORDINANCE NO. 1476-24 - "AN ORDINANCE BY THE CITY COUNCIL OF THE CITY OF ZEPHYRHILLS, FLORIDA AMENDING SECTION 30.140 OF THE CITY OF ZEPHYRHILLS CODE OF ORDINANCES, EXPANDING THE STUDENT SCHOOL GRADE LEVEL ELIGIBLE FOR APPOINTMENT TO THE MAYOR'S YOUTH COUNCIL; PROVIDING FOR APPLICABILITY, REPEALER, SEVERABILITY, INCLUSION IN THE CODE, AND PROVIDING AN EFFECTIVE DATE."**

- A. Council President opens Public Hearing
- B. Council President closes Public Hearing
- C. City Council considers Ordinance No. 1476-24 on the Second Reading

- 1. Ordinance 1476-24 - Mayor's Youth Council Amendment

3.2 Indoor and Outdoor Storage Facilities Moratorium Extension

Second Reading **ORDINANCE NO. 1477-24 - "AN ORDINANCE OF THE CITY OF ZEPHYRHILLS, FLORIDA, AMENDING ORDINANCE 1455-23, TO EXTEND THE TEMPORARY MORATORIUM ON RECEIVING AND PROCESSING PLANS AND PERMIT APPLICATIONS FOR RECREATIONAL VEHICLE STORAGE MATERIAL LAYDOWN AREAS AND INDOOR STORAGE FACILITIES; PROVIDING FOR CONFLICTS, SEVERABILITY, EXPIRATION AND AN EFFECTIVE DATE."**

- A. Council President opens Public Hearing
- B. Council President closes Public Hearing
- C. City Council considers Ordinance No. 1477-24 on the Second Reading

- 1. 30386751v1 - Ordinance 1477-24 Storage Facilities Moratorium Extension

3.3 Oakside Cemetery Amendment

Second Reading **ORDINANCE NO. 1478-24 - "AN ORDINANCE BY THE CITY COUNCIL OF THE CITY OF ZEPHYRHILLS, FLORIDA AMENDING SECTION 94.06. – INSTALLATION, MARKERS, MONUMENTS OF THE CITY OF ZEPHYRHILLS CODE OF ORDINANCES, AMENDING THE MARKERS REQUIREMENTS IN BLOCKS ONE THROUGH 8 (THE OLD SECTION) OF THE CITY OF ZEPHYRHILLS OAKSIDE CEMETERY; PROVIDING FOR APPLICABILITY, REPEALER, SEVERABILITY, INCLUSION IN THE CODE, AND PROVIDING AN EFFECTIVE DATE. "**

- A. Council President opens Public Hearing
- B. Council President closes Public Hearing
- C. City Council considers Ordinance No. 1478-24 on the Second Reading

- 1. Ordinance No. 1478-24 - Oakside Cemetery Amendment

4. CITY ATTORNEY'S REPORT

4.1 Approval of Gagne Utility Services Agreement No. 41-24-06

- 1. Utilities Agreement Prarieview Place FINAL
- 2. Exhibit B - Utilities Agreement Prarieview Place - Gagne

5. CITIZEN COMMENTS

5.1 Joseph Brisco - Citrus Capital Advisors - Alternative Water Option

1. Email
2. report

MAYOR ANNOUNCEMENTS

CITY MANAGER ANNOUNCEMENTS

CITY ATTORNEY ANNOUNCEMENTS

CITY COUNCIL COMMENTS

ADJOURN

*** PLEASE NOTE: This is a Public Meeting. Should any interested party seek to appeal any decision made by the Council with respect to any matter considered at such meeting or hearing, he or she will need a record of the proceedings, and that, for such purpose, he or she may need to ensure that a verbatim record of the proceeding is made, which record includes the testimony and evidence upon which the appeal is to be based. F.S. 286.0105. If you are a person with a disability which requires reasonable accommodation in order to participate in this meeting, please contact the City Clerk at 813/780-0000 at least 48 hours prior to the public hearing. A.D.A. and F.S. 286.26.**



PROCLAMATION

WHEREAS, since 1912, Girl Scouting has fueled the leadership pipeline in our communities by preparing and inspiring millions of girls and women to be active leaders with the highest ideals of character, conduct, and patriotism; and

WHEREAS, in 1956, Vera Morton and Phyllis Collier formed the first Girl Scout troop in our community to promote Juliette Gordon Low's vision of female leaders; and

WHEREAS, throughout its distinguished history, Girl Scouts has been the preeminent leadership development organization for girls, where they can unleash their potential to be the leaders that world needs; and

WHEREAS, Girl Scouts' expertise and timeless programming offers every girl a chance to practice a lifetime of leadership in a girl-led, girl-focused, and all-girl environment; and

WHEREAS, through Girl Scouting, girls gain courage, confidence, and character to make their local communities and world a better place; and

WHEREAS, girls gain new experiences in science, technology, engineering, and math (STEM), the outdoors, and entrepreneurship through Girl Scout's unique programs; and

WHEREAS, through the Girl Scout Leadership Experience, girls gain knowledge and develop skills that will serve them throughout their lives and enable them to better contribute to their communities; and

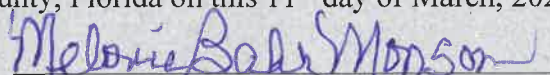
WHEREAS, Girl Scouts is committed to assuring that all girls can participate in Girl Scouts regardless of their financial circumstances.

NOW, THEREFORE, I, Melonie Bahr Monson, by virtue of the authority vested in me as Mayor of the City of Zephyrhills, do hereby proclaim Tuesday, March 12, 2024

NATIONAL GIRL SCOUT DAY

in the City of Zephyrhills and recognizes the Girl Scouts of West Central Florida for serving 18,000 members across eight Florida counties.

IN WITNESS WHEREOF, I have hereunto set my hand and caused to be affixed the official seal of the City of Zephyrhills, Pasco County, Florida on this 11th day of March, 2024.


Melonie Bahr Monson, Mayor

Attest: 
Lori L. Hillman, City Clerk



From: Bradley Odell <bodellllc@gmail.com>
Sent: Tuesday, February 27, 2024 2:41 PM
To: Kevin Weiss <KWeiss@ci.zephyrhills.fl.us>
Subject: Zephyrhills JROTC Robotics team

EXTERNAL EMAIL
Greetings

This letter is on behalf of the Zephyrhills JROTC Robotics teams. This year the teams have competed in the North Florida Vex robotics competition and has done extremely well. Starting in the latter part of 2023 the

teams have progressively gotten better. There are 4 teams with 3 students per team. The start of the season saw the teams leaving close to last place in these Vex competitions, this started driving the students to rethink and rebuild their bots to improve for each competition. Soon with assistance, the cadets started finishing in in the quarter finals. Finally the seasons ending competition, at Stienbrienner High School, saw the cadets with enough points to compete in the Vex North Central JROTC finals. This competition would end in the Robodawgs taking second place in the overall competition as well as 3 of the other teams finishing in the semi finals.

With this ending the teams were overjoyed but with the uncertainty that only one team had made enough point to be invited to the world finals. Shortly to our great full surprise, all 4 teams received an invitation to attend the Vex world finals which can be closely compared the the Olympics.

With the invitation comes the cost of the entry fees of 600.00 per team plus the cost of adding a few new parts to next year's robotics build.

We are looking to fund raise over 3000.00 to get all the 4 teams to Texas for the competition. We would be very appreciative if the City of Zephyrhills would join the Zephyrhills Robodawgs in raising the funds needed to send these 12 outstanding students to a world class event.

Sincerely
Coach Brad Odell
813-377-9427
[Bodellllc@gmail.com](mailto:bodellllc@gmail.com)

From: Bradley Odell <bodellllc@gmail.com>
Sent: Tuesday, February 27, 2024 2:49 PM
To: Kevin Weiss <KWeiss@ci.zephyrhills.fl.us>
Subject: Dates for the robotics event

EXTERNAL EMAIL
Hello

In my previous email I neglected to tell you the event is in Dallas Texas and on April 27th through the 1st of May.

Sincerely
Brad Odell



Kevin Weiss
Public Information Officer
City of Zephyrhills
5335 8th Street
Zephyrhills, FL, 33542
PH: 813-780-0000 x3577
FAX: 813-780-0005
ci.zephyrhills.fl.us



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REGULAR COUNCIL MEETING

A Regular Council Meeting was held on February 26, 2024 at 6:00 p.m. in the Council Chambers of City Hall and via GoToMeeting (872)-240-3412 - Access Code: 763-530-541.

Council President Lance Smith called the meeting to order at 6:03 p.m. Roll call was taken. Present were members Lance A. Smith, Charles Proctor, Kenneth Burgess, Jodi Wilkeson, Steven F. Spina, Ph.D., and Mayor Melonie Bahr Monson. City Manager William Poe was present. City Attorney Matthew Maggard arrived at 6:05 p.m.

Staff present: Police Chief Derek Brewer, Police Lieutenant Nathan Gardner, Public Works Director Shane LeBlanc, Planning Director Todd Vande Berg, IT Director Michael Panak, Public Information Officer Kevin Weiss, Building Official Bill Burgess, Airport Manager Nathan Coleman, Water Treatment Plant Operator Eric Martin, GIS Technician and Community Planner Tommy Lee Hunt and City Clerk Lori Hillman.

Pastor Nick Deford of the First Church of the Nazarene delivered the invocation. The Pledge of Allegiance followed.

1. MAYOR

Item 1.4 was moved to this place on the agenda.

1.4 Promotion of K-9 Officer Sparkman to Sergeant

Police Chief Derek Brewer announced the promotion of K-9 Officer Morris Sparkman to Sergeant. Sergeant Sparkman was pinned by his wife.

1.1 Pascal Collard Presentation – PTSD and Skydiving

Sarah Vande Berg Tennis Center CEO Pasco Collard said the last three years have been an amazing adventure. He said when Alex and Ryan approached him about the Skydive First Project, Alex said he couldn't walk but he could fly and that statement still resonates with him. Soldiers and Veterans are close to State Senator Danny Burgess' heart who is excited about this unique project. The Skydive First Project is a 501(c)(3) organization working with Kyle and Lauren Savato and skydivers at Skydive City. Mr. Collard presented two videos; the Skydive First Project and SVB / Skydive City Awareness Fundraising.

Spoke from the floor: Skydiver and Disabled Veteran Alex Dillman

Mr. Dillman said it has been 13 years since his injury where his life changed drastically and skydiving has been a pivotal part of his mental health process to move forward. The mission of the Skydive First Project is to share skydiving with other veterans to invoke conversations through exposure to get them back into the state of mind that nothing is impossible mentally. He said Skydive City is a great place but it is the people that make it rewarding. He said Zephyrhills is a loving community and thanked Council for their support.

Spoke from the Floor: Skydive First Project Supporter Ryan Kanouff

Mr. Kanouff said 60 years ago this year was the first sky dive made in Zephyrhills by the Army Golden Knights, known as adventure therapy. He said he and Alex had the pleasure of joining the Golden Knights recently over Zephyrhills and they will continue to support events for Veterans.

Spoke from the floor: Kyle Salvato of Sky Dive City

Kyle Salvato said he is excited to support the Skydive First Project and looks forward to building this program to help Veterans with disabilities. He said one moment can change the rest of your life and our community is very accepting to all walks of life.

Council Vice President Burgess said Senator Burgess is the #1 advocate for Veterans in the state legislature and will be a huge ally for this project to spread the word and bring recognition to the Skydive First Project.

1.2 Sarah Vande Berg Tennis Center Pricing Presentation

Sarah Vande Berg Tennis Center CEO Pascal Collard said what has been achieved at SVB in the last three years has been very exciting. He began traveling three months ago in an effort to expand SVB through recruitment internationally and his efforts are coming to fruition. He said rates have not been increased within the last three years and presented a brief synopsis of the current rates with the proposed rates. He said every six months, in an effort to

streamline processes, he discovered people were not becoming members due to the low guest fees. He said the SVB housing complex with 98 beds has ten students currently. He said the initial SVB tennis program began meeting kids at the park and has grown to 13 local schools with SVB providing transportation to the SVB Tennis Center. He added there is free play, for any sport at SVB, from 12:00 p.m. – 2:00 p.m. daily. He said SVB is a beautiful, welcoming facility and requested Council's approval of the proposed rate increases.

Steve Spina moved to accept the Sarah Vande Berg Tennis Center Rate Increase as presented. Seconded by Charles Proctor. Motion passed unanimously.

1.3 Water Use Permit Modification Update Presentation by P.E. Mike Clark – Jones Edmunds and Geologist Michelle Hays – Liquid Solutions Group

Mr. Clark with Jones Edmunds said a meeting was held with SWFWMD last week to discuss the Request for Additional Information (RAI) related to the Water Use Permit (WUP) modification and feels confident SWFWMD will have an answer.

Ms. Hays presented a timeline with SWFWMD as follows:

- February 2023 pre-application meeting to discuss a permit modification;
- April 28, 2023 permit modification submittal for review;
- June 15, 2023 received first request for additional information (RAI) to confirm quantity, additional groundwater modeling, confirmation of ground water modeling submitted, additional residential development information, Environmental Monitoring Plan (EMP) site visit and water conservation plan restructuring;
- September 14, 2023 requested a time extension to coordinate an EMP site visit and additional residential development information;
- October 26, 2023 SWFWMD completed Environmental Site Plan visit;
- November 10, 2023 submitted a response to the first request for additional information;
- December 13, 2023 received a second request for additional information;
- February 19, 2024 prepared a draft response to the second request for additional information prior to a meeting with SWFWMD to assure all items were addressed (ground water modeling and the well location, draft agreement with well owners, request for additional EMP sites and use of District Wetland Assessment Procedure (WAP), geospatial analysis of development population, timeline for residential developments, information on industrial/commercial water use, and additional updates to the water conservation plan). Due to the City's access to a limited number of wetlands appropriate for test monitoring, the process to identify a second site is ongoing;
- March 12, 2024 response to second request for additional information is due.

Ms. Hays said groundwater modeling was established to show additional impacts will not touch the Hillsborough River Groundwater Basin which is at capacity. The City's last WUP modification increased from 2.9 to 3.3 with a current increase request to 4.5. She clarified when a quantity is increased, impacts to existing users must be assessed. She said the WUP will be a 20 year permit (2040) but stated it is always a good idea to look into the future toward an alternative water supply. The RAI response will be submitted March 12, 2024 and she is hopeful the City will have a response by the end of April 2024 as SWFWMD has been turning the RAI's around within 30 days.

Mr. Clark said based on what is occurring in Florida, statewide, alternative water sources are significant for everyone and Florida cities would be well suited to look at other alternatives moving forward. The coastal communities are harder hit than most due to chloride infiltration in the groundwater. He said the City of Zephyrhills has an emergency interconnect with the City of Dade City and if Dade City has capacity, through an agreement, the City of Zephyrhills could draw water. The infrastructure already exists and the method Dade City uses for water treatment is the same as the City of Zephyrhills and would not require costly modifications. He said the City can also connect to Pasco County but since Pasco County receives water from Tampa Bay Water who use a different technique to treat their water, Zephyrhills would have to implement a treatment process to modify the water. Tampa Bay Water treats their water using chloride and

ammonia and Zephyrhills uses chloride as their method for water treatment. Zephyrhills would have to strip the ammonia from the water through a chemical process which can be costly depending on the amount of water accepted.

Council Vice President Burgess said the City hired Jones Edmunds to do a job that he figured entails eight hours a day, 40 hours a week. A pre-application meeting was held in February 2023 to discuss the permit modification and this is February 2024 and Council has received no informational updates during the process. He said he would like to receive periodic updates when there is a five month gap (June 2023 to November 2023). He said communication is key. The City is in the middle of a moratorium with Council making decisions based on the information provided and requested updates moving forward in the process.

City Manager William Poe said staff will schedule a meeting following the WUP increase to discuss a plan moving forward for new projects. He said the modified WUP will cover entitled projects and projects in Q.

Councilman Spina suggested hosting a workshop in the near future to look at alternatives to build a plan.

2. CONSENT ITEMS

- 2.1 Approval of February 12, 2024 Meeting Minutes
- 2.2 Approval of February 20, 2024 Mayor's Caucus Minutes
- 2.3 Award of Bid Number ITB 2023-002, for N.E. Sewer Force Main and Water Main Phase 3 to US Water
- 2.4 Approval of Agreement No. 25-24-01 with US Water for the N.E. Sewer Force Main and Water Main
- 2.5 Award Bid Number ITB 2023-03 for South 301 Water and Sewer Improvement Project to US Water
- 2.6 Approval of Agreement No. 25-24-02 with US Water for the South 301 Water and Sewer Improvement Project
- 2.7 Approval of Task Assignment to RCM Utilities for Water Tower Valve Replacements
- 2.8 Approval of Task Assignment to RCM Utilities for Water Tower Motor and Pump Replacement
- 2.9 Approval of Grant Administration Professional Services Agreement No. 37-24-02 – Audrey McGuire
- 2.10 Canine Transfer of Ownership Agreement No. 41-24-05

Jodi Wilkeson moved to approve the Consent Items. Seconded by Steve Spina.
Motion passed unanimously.

3. BUSINESS ITEMS/ATTORNEY'S REPORT

3.1 Mayor's Youth Council Amendment

First Reading **ORDINANCE NO. 1476-24 - "AN ORDINANCE BY THE CITY COUNCIL OF THE CITY OF ZEPHYRHILLS, FLORIDA AMENDING SECTION 30.140 OF THE CITY OF ZEPHYRHILLS CODE OF ORDINANCES, EXPANDING THE STUDENT SCHOOL GRADE LEVEL ELIGIBLE FOR APPOINTMENT TO THE MAYOR'S YOUTH COUNCIL; PROVIDING FOR APPLICABILITY, REPEALER, SEVERABILITY, INCLUSION IN THE CODE, AND PROVIDING AN EFFECTIVE DATE."**

City Attorney Matthew Maggard read Ordinance No. 1476-24 by title. He said the ordinance is being expanded to include middle school students.

Charles Proctor moved to approve Business Item 3.1 on the First Reading. Seconded by Steve Spina. Motion passed unanimously.

3.2 Indoor and Outdoor Storage Facilities Moratorium Extension

First Reading **ORDINANCE NO. 1477-24 - "AN ORDINANCE OF THE CITY OF ZEPHYRHILLS, FLORIDA, AMENDING ORDINANCE 1455-23, TO EXTEND**

THE TEMPORARY MORATORIUM ON RECEIVING AND PROCESSING PLANS AND PERMIT APPLICATIONS FOR RECREATIONAL VEHICLE STORAGE MATERIAL LAYDOWN AREAS AND INDOOR STORAGE FACILITIES; PROVIDING FOR CONFLICTS, SEVERABILITY, EXPIRATION AND AN EFFECTIVE DATE."

City Attorney Matthew Maggard read Ordinance No. 1477-24 by title. He said this ordinance extends the temporary moratorium for six additional months.

Steve Spina moved to approve Ordinance No. 1477-24 on the First Reading. Seconded by Kenneth Burgess. Motion passed unanimously.

3.3 Oakside Cemetery Amendment

First Reading **ORDINANCE NO. 1478-24 - "AN ORDINANCE BY THE CITY COUNCIL OF THE CITY OF ZEPHYRHILLS, FLORIDA AMENDING SECTION 94.06. – INSTALLATION, MARKERS, MONUMENTS OF THE CITY OF ZEPHYRHILLS CODE OF ORDINANCES, AMENDING THE MARKERS REQUIREMENTS IN BLOCKS ONE THROUGH 8 (THE OLD SECTION) OF THE CITY OF ZEPHYRHILLS OAKSIDE CEMETERY; PROVIDING FOR APPLICABILITY, REPEALER, SEVERABILITY, INCLUSION IN THE CODE, AND PROVIDING AN EFFECTIVE DATE. "**

City Attorney Matthew Maggard read Ordinance No. 1478.24 by title. City Manager William Poe said this amendment will allow upright headstones in Sections 1 through 8, the old section of the cemetery, where upright headstones currently exist. Flat headstones are required in all other sections of the cemetery.

Steve Spina moved to approve Ordinance No. 1478-24 on the First Reading. Seconded by Charles Proctor. Motion passed unanimously.

4. CITIZEN COMMENTS

Spoke from the floor: Rosie Paulsen – 4730 Timber Way – Zephyrhills, FL 33542

Ms. Paulsen said she reported lights out at Zephyr Park following the Mobility Plan Meeting on Thursday, February 15, 2024 and the following day the Parks and Recreation crew replaced most of the lights. She said she is very proud to live in the City of Zephyrhills where people care.

MAYOR ANNOUNCEMENTS – Mayor Bahr Monson thanked everyone involved with the Ellis Harrold Park renaming and dedication ceremony.

CITY MANAGER ANNOUNCEMENTS – City Manager William Poe thanked the Public Works Department and employees for their participation in the Community Clean Up Saturday, February 24, 2024. He said Planning Director Todd Vande Berg will be Acting City Manager in his absence next week. He referred to Tennis Center renderings distributed to Councilmembers and the Mayor at the dias, stating brick has been added to the building. He said there is an expense associated with the brick and suggested moving forward by adding brick as a bid alternate with associated costs for Council's approval in building a package. He requested the 11,000 sq. ft. building be located along Simmons Road and not on the northern portion of the property as previously discussed. He explained the City negotiated a Developer's Agreement with the Lovinger Group to build a 22,000 sq. ft. building along Simmons Road. There is a clause in the agreement that if the building is not built there, the Lovinger Group can take the property back and the City will lose the site. He said the architect will try to lower the sidewalls of the building from 35' to 28'.

Councilwoman Wilkeson referred to an elevation rendering where a mechanical element was introduced and suggested the element be placed on the backside of the building near the parking area. She requested a legitimate site plan prior to approval.

Council Vice President Burgess recommended staff be careful when lowering the roof line on a multi-sport facility.

Council President Smith said there was a consensus among Council to move forward with the renderings as presented on the original site.

CITY ATTORNEY ANNOUNCEMENTS – N/A

CITY COUNCIL COMMENTS – Council Vice President Burgess said the Mayor’s Youth Council is a great program and thanked Mayor Monson for her efforts.

Councilwoman Wilkeson said the Mayor’s Youth Council affords young people the opportunity to learn from being involved and congratulated Sergeant Sparkman on his promotion.

Councilman Proctor said the Skydive First Project is close to his heart. He said his father was a Veteran and his son is currently serving in Germany. He recognized the Public Works Department for their efforts with the Community Clean Up and said the City may get a future council member from the Mayor’s Youth Council.

Councilman Spina acknowledged Skydive City Owner Joannie Murphy and said the Skydive First Project presentation was moving. He said the Ellis Harrold Park dedication was fantastic. He said he and Police Chief Brewer met with the CHIPS organization to discuss Treasure Island and Gulfport’s solutions to their homeless. He said Seth Healy was appointed as ZPD’s homeless liaison.

Council President Smith thanked the Public Works crew for cleaning up the YMCA retention area. He said he walked Geiger Road with Planning Staff, the Mayor, Pasco County staff, and MPO staff to assess pedestrian safety to begin planning for road improvements. He said Council approved former employee, Audrey McGuire, as a grant consultant on the consent agenda and thanked staff for thinking outside the box. He said the City needs to start thinking creatively to employ the new generation who want flexible work days.

ADJOURN

Meeting Adjourned: 7:37 p.m.
Submitted by Lori L. Hillman

CONSENT ITEMS 2.2

Request Council's Approval and Signature Upon the Close Out Document for the Wire Road Reclaim FDEP SRF Loan Project

Issue:

Approval and signature upon the close out document for the Wire Rd. Reclaim FDEP SRF Loan Project

Background:

In 2021 the city planned to have a reclaim water line installed from the corner of CR54 and 12th St., head east to the Dairy Rd/CR54 intersection, turn north along Dairy Rd. to Daughtery Rd., then east along Daughtery Rd. to Wire Rd., head north to the Otis Allen/Wire Rd. intersection to feed the Abbott Park development with reclaim water.

Attachment(s):

1. WW510550_Amortization Schedule Report
2. Zephyrhills WW510550 A2 - final

Fiscal Impact:

The original loan request was for \$1,224,530 with an actual disbursement amount of \$746,423

Staff Recommendation:

Staff recommends to the City Council to approve the loan close out document as presented.

Florida State Revolving Fund
Amortization Schedule Report

Sponsor: Zephyrhills
Funding Number: CW-510550

Loan Number	Payment #	Payment	Date	Rate	Principal	Interest	GAA Fees	Service Fee	SF Int	Total to Pay
CW-510550	1	\$31,226.00	Aug 15, 2023	0.000 %	\$31,226.00					\$715,197.00
	2	\$31,226.00	Feb 15, 2024	0.000 %	\$31,226.00					\$683,971.00
	3	\$18,392.08	Aug 15, 2024	0.000 %	\$3,464.08	\$0.00	\$0.00	\$14,928.00	\$0.00	\$680,506.92
	4	\$18,392.08	Feb 15, 2025	0.000 %	\$18,392.08	\$0.00	\$0.00	\$0.00	\$0.00	\$662,114.84
	5	\$18,392.08	Aug 15, 2025	0.000 %	\$18,392.08	\$0.00	\$0.00	\$0.00	\$0.00	\$643,722.76
	6	\$18,392.08	Feb 15, 2026	0.000 %	\$18,392.08	\$0.00	\$0.00	\$0.00	\$0.00	\$625,330.68
	7	\$18,392.08	Aug 15, 2026	0.000 %	\$18,392.08	\$0.00	\$0.00	\$0.00	\$0.00	\$606,938.60
	8	\$18,392.08	Feb 15, 2027	0.000 %	\$18,392.08	\$0.00	\$0.00	\$0.00	\$0.00	\$588,546.52
	9	\$18,392.08	Aug 15, 2027	0.000 %	\$18,392.08	\$0.00	\$0.00	\$0.00	\$0.00	\$570,154.44
	10	\$18,392.08	Feb 15, 2028	0.000 %	\$18,392.08	\$0.00	\$0.00	\$0.00	\$0.00	\$551,762.36
	11	\$18,392.08	Aug 15, 2028	0.000 %	\$18,392.08	\$0.00	\$0.00	\$0.00	\$0.00	\$533,370.28
	12	\$18,392.08	Feb 15, 2029	0.000 %	\$18,392.08	\$0.00	\$0.00	\$0.00	\$0.00	\$514,978.20
	13	\$18,392.08	Aug 15, 2029	0.000 %	\$18,392.08	\$0.00	\$0.00	\$0.00	\$0.00	\$496,586.12
	14	\$18,392.08	Feb 15, 2030	0.000 %	\$18,392.08	\$0.00	\$0.00	\$0.00	\$0.00	\$478,194.04
	15	\$18,392.08	Aug 15, 2030	0.000 %	\$18,392.08	\$0.00	\$0.00	\$0.00	\$0.00	\$459,801.96
	16	\$18,392.08	Feb 15, 2031	0.000 %	\$18,392.08	\$0.00	\$0.00	\$0.00	\$0.00	\$441,409.88
	17	\$18,392.08	Aug 15, 2031	0.000 %	\$18,392.08	\$0.00	\$0.00	\$0.00	\$0.00	\$423,017.80
	18	\$18,392.08	Feb 15, 2032	0.000 %	\$18,392.08	\$0.00	\$0.00	\$0.00	\$0.00	\$404,625.72
	19	\$18,392.08	Aug 15, 2032	0.000 %	\$18,392.08	\$0.00	\$0.00	\$0.00	\$0.00	\$386,233.64
	20	\$18,392.08	Feb 15, 2033	0.000 %	\$18,392.08	\$0.00	\$0.00	\$0.00	\$0.00	\$367,841.56
	21	\$18,392.08	Aug 15, 2033	0.000 %	\$18,392.08	\$0.00	\$0.00	\$0.00	\$0.00	\$349,449.48
	22	\$18,392.08	Feb 15, 2034	0.000 %	\$18,392.08	\$0.00	\$0.00	\$0.00	\$0.00	\$331,057.40
	23	\$18,392.08	Aug 15, 2034	0.000 %	\$18,392.08	\$0.00	\$0.00	\$0.00	\$0.00	\$312,665.32
	24	\$18,392.08	Feb 15, 2035	0.000 %	\$18,392.08	\$0.00	\$0.00	\$0.00	\$0.00	\$294,273.24
	25	\$18,392.08	Aug 15, 2035	0.000 %	\$18,392.08	\$0.00	\$0.00	\$0.00	\$0.00	\$275,881.16

Florida State Revolving Fund
Amortization Schedule Report

Sponsor: Zephyrhills
Funding Number: CW-510550

Loan Number	Payment #	Payment	Date	Rate	Principal	Interest	GAA Fees	Service Fee	SF Int	Total to Pay
CW-510550	26	\$18,392.08	Feb 15, 2036	0.000 %	\$18,392.08	\$0.00	\$0.00	\$0.00	\$0.00	\$257,489.08
	27	\$18,392.08	Aug 15, 2036	0.000 %	\$18,392.08	\$0.00	\$0.00	\$0.00	\$0.00	\$239,097.00
	28	\$18,392.08	Feb 15, 2037	0.000 %	\$18,392.08	\$0.00	\$0.00	\$0.00	\$0.00	\$220,704.92
	29	\$18,392.08	Aug 15, 2037	0.000 %	\$18,392.08	\$0.00	\$0.00	\$0.00	\$0.00	\$202,312.84
	30	\$18,392.08	Feb 15, 2038	0.000 %	\$18,392.08	\$0.00	\$0.00	\$0.00	\$0.00	\$183,920.76
	31	\$18,392.08	Aug 15, 2038	0.000 %	\$18,392.08	\$0.00	\$0.00	\$0.00	\$0.00	\$165,528.68
	32	\$18,392.08	Feb 15, 2039	0.000 %	\$18,392.08	\$0.00	\$0.00	\$0.00	\$0.00	\$147,136.60
	33	\$18,392.08	Aug 15, 2039	0.000 %	\$18,392.08	\$0.00	\$0.00	\$0.00	\$0.00	\$128,744.52
	34	\$18,392.08	Feb 15, 2040	0.000 %	\$18,392.08	\$0.00	\$0.00	\$0.00	\$0.00	\$110,352.44
	35	\$18,392.08	Aug 15, 2040	0.000 %	\$18,392.08	\$0.00	\$0.00	\$0.00	\$0.00	\$91,960.36
	36	\$18,392.08	Feb 15, 2041	0.000 %	\$18,392.08	\$0.00	\$0.00	\$0.00	\$0.00	\$73,568.28
	37	\$18,392.08	Aug 15, 2041	0.000 %	\$18,392.08	\$0.00	\$0.00	\$0.00	\$0.00	\$55,176.20
	38	\$18,392.08	Feb 15, 2042	0.000 %	\$18,392.08	\$0.00	\$0.00	\$0.00	\$0.00	\$36,784.12
	39	\$18,392.08	Aug 15, 2042	0.000 %	\$18,392.08	\$0.00	\$0.00	\$0.00	\$0.00	\$18,392.04
	40	\$18,392.04	Feb 15, 2043	0.000 %	\$18,392.04	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
CW-510550 Totals					\$746,423.00	\$0.00	\$0.00	\$14,928.00	\$0.00	

Combined								
Date	Payment #	Payment	Principal	Interest	GAA Fees	Service Fee	SF Int	Left To Pay
8/15/2023	1	\$31,226.00	\$31,226.00					\$715,197.00
2/15/2024	2	\$31,226.00	\$31,226.00					\$683,971.00
8/15/2024	3	\$18,392.08	\$3,464.08	\$0.00	\$0.00	\$14,928.00	\$0.00	\$680,506.92
2/15/2025	4	\$18,392.08	\$18,392.08	\$0.00	\$0.00	\$0.00	\$0.00	\$662,114.84
8/15/2025	5	\$18,392.08	\$18,392.08	\$0.00	\$0.00	\$0.00	\$0.00	\$643,722.76

Florida State Revolving Fund
Amortization Schedule Report

Sponsor: Zephyrhills
Funding Number: CW-510550

Combined								
Date	Payment #	Payment	Principal	Interest	GAA Fees	Service Fee	SF Int	Left To Pay
2/15/2026	6	\$18,392.08	\$18,392.08	\$0.00	\$0.00	\$0.00	\$0.00	\$625,330.68
8/15/2026	7	\$18,392.08	\$18,392.08	\$0.00	\$0.00	\$0.00	\$0.00	\$606,938.60
2/15/2027	8	\$18,392.08	\$18,392.08	\$0.00	\$0.00	\$0.00	\$0.00	\$588,546.52
8/15/2027	9	\$18,392.08	\$18,392.08	\$0.00	\$0.00	\$0.00	\$0.00	\$570,154.44
2/15/2028	10	\$18,392.08	\$18,392.08	\$0.00	\$0.00	\$0.00	\$0.00	\$551,762.36
8/15/2028	11	\$18,392.08	\$18,392.08	\$0.00	\$0.00	\$0.00	\$0.00	\$533,370.28
2/15/2029	12	\$18,392.08	\$18,392.08	\$0.00	\$0.00	\$0.00	\$0.00	\$514,978.20
8/15/2029	13	\$18,392.08	\$18,392.08	\$0.00	\$0.00	\$0.00	\$0.00	\$496,586.12
2/15/2030	14	\$18,392.08	\$18,392.08	\$0.00	\$0.00	\$0.00	\$0.00	\$478,194.04
8/15/2030	15	\$18,392.08	\$18,392.08	\$0.00	\$0.00	\$0.00	\$0.00	\$459,801.96
2/15/2031	16	\$18,392.08	\$18,392.08	\$0.00	\$0.00	\$0.00	\$0.00	\$441,409.88
8/15/2031	17	\$18,392.08	\$18,392.08	\$0.00	\$0.00	\$0.00	\$0.00	\$423,017.80
2/15/2032	18	\$18,392.08	\$18,392.08	\$0.00	\$0.00	\$0.00	\$0.00	\$404,625.72
8/15/2032	19	\$18,392.08	\$18,392.08	\$0.00	\$0.00	\$0.00	\$0.00	\$386,233.64
2/15/2033	20	\$18,392.08	\$18,392.08	\$0.00	\$0.00	\$0.00	\$0.00	\$367,841.56
8/15/2033	21	\$18,392.08	\$18,392.08	\$0.00	\$0.00	\$0.00	\$0.00	\$349,449.48
2/15/2034	22	\$18,392.08	\$18,392.08	\$0.00	\$0.00	\$0.00	\$0.00	\$331,057.40
8/15/2034	23	\$18,392.08	\$18,392.08	\$0.00	\$0.00	\$0.00	\$0.00	\$312,665.32

Florida State Revolving Fund
Amortization Schedule Report

Sponsor: Zephyrhills
Funding Number: CW-510550

Combined								
Date	Payment #	Payment	Principal	Interest	GAA Fees	Service Fee	SF Int	Left To Pay
2/15/2035	24	\$18,392.08	\$18,392.08	\$0.00	\$0.00	\$0.00	\$0.00	\$294,273.24
8/15/2035	25	\$18,392.08	\$18,392.08	\$0.00	\$0.00	\$0.00	\$0.00	\$275,881.16
2/15/2036	26	\$18,392.08	\$18,392.08	\$0.00	\$0.00	\$0.00	\$0.00	\$257,489.08
8/15/2036	27	\$18,392.08	\$18,392.08	\$0.00	\$0.00	\$0.00	\$0.00	\$239,097.00
2/15/2037	28	\$18,392.08	\$18,392.08	\$0.00	\$0.00	\$0.00	\$0.00	\$220,704.92
8/15/2037	29	\$18,392.08	\$18,392.08	\$0.00	\$0.00	\$0.00	\$0.00	\$202,312.84
2/15/2038	30	\$18,392.08	\$18,392.08	\$0.00	\$0.00	\$0.00	\$0.00	\$183,920.76
8/15/2038	31	\$18,392.08	\$18,392.08	\$0.00	\$0.00	\$0.00	\$0.00	\$165,528.68
2/15/2039	32	\$18,392.08	\$18,392.08	\$0.00	\$0.00	\$0.00	\$0.00	\$147,136.60
8/15/2039	33	\$18,392.08	\$18,392.08	\$0.00	\$0.00	\$0.00	\$0.00	\$128,744.52
2/15/2040	34	\$18,392.08	\$18,392.08	\$0.00	\$0.00	\$0.00	\$0.00	\$110,352.44
8/15/2040	35	\$18,392.08	\$18,392.08	\$0.00	\$0.00	\$0.00	\$0.00	\$91,960.36
2/15/2041	36	\$18,392.08	\$18,392.08	\$0.00	\$0.00	\$0.00	\$0.00	\$73,568.28
8/15/2041	37	\$18,392.08	\$18,392.08	\$0.00	\$0.00	\$0.00	\$0.00	\$55,176.20
2/15/2042	38	\$18,392.08	\$18,392.08	\$0.00	\$0.00	\$0.00	\$0.00	\$36,784.12
8/15/2042	39	\$18,392.08	\$18,392.08	\$0.00	\$0.00	\$0.00	\$0.00	\$18,392.04
2/15/2043	40	\$18,392.04	\$18,392.04	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Total		\$761,351.00	\$746,423.00	\$0.00	\$0.00	\$14,928.00	\$0.00	

**AMENDMENT 2 TO LOAN AGREEMENT WW510550
CITY OF ZEPHYRHILLS**

This amendment is executed by the STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION (Department) and the CITY OF ZEPHYRHILLS, FLORIDA, (the “Local Government”) existing as a local governmental entity under the laws of the State of Florida. Collectively, the Department and the Local Government shall be referred to as “Parties” or individually as “Party.”

WITNESSETH:

WHEREAS, the Florida Water Pollution Control Financing Corporation (Corporation) and the Local Government entered into a Clean Water State Revolving Fund Loan Agreement, Number WW510550, as amended, authorizing a Loan amount of \$1,224,530, excluding Capitalized Interest; and

WHEREAS, the oversight and management of this Loan is being assumed by the Department; and

WHEREAS, the loan to the Local Government is under same terms and conditions of the transferred loan unless amended herein; and

WHEREAS, the Loan Amount, Semiannual Loan Payment amount, Loan Service Fee, and Project costs need adjustment to reflect actual costs; and

WHEREAS, certain provisions of the Agreement need to be revised.

NOW, THEREFORE, the parties hereto agree as follows:

1. Oversight and management of the loan is transferred to the Department. All references in the Agreement to Corporation or Trustee are deleted and replaced with “Department” and all references to “Local Borrower” shall be replaced with “Local Government.”

2. Subsections 1.01(5), (6), (11), (25) and (26) of the Agreement are deleted.

3. Subsection 1.01(12) is deleted and replaced as follows:

“Grant Allocation Assessment” shall mean an assessment, expressed as a percent per annum, accruing on the unpaid balance of the Loan. It is computed similarly to the way interest charged on the Loan is computed and is included in the Semiannual Loan Payment. The Department will use Grant Allocation Assessment moneys for making grants to financially disadvantaged small communities pursuant to Section 403.1835 of the Florida Statutes.

4. Subsection 2.01(14) of the Agreement is deleted.

5. Section 2.02. of the Agreement is deleted.

6. Section 8.04 of the Agreement is deleted and replaced as follows:

8.04. ASSIGNMENT OF RIGHTS UNDER AGREEMENT.

The Department may assign any part of its rights under this Agreement after notification to the Local Government. The Local Government shall not assign rights created by this Agreement without the written consent of the Department.

7. The Loan amount is hereby reduced by \$478,107, and the adjusted total disbursed amount for this loan is \$746,423.

8. The Loan Service Fee is \$14,928. This fee represents two percent of the Loan amount excluding Capitalized Interest; that is, two percent of \$746,423.

9. The total amount of the Loan is \$761,351. This consists of \$746,423 disbursed to the Local Borrower, plus accrued Capitalized Interest of \$0 and service fee charges of \$14,928.

10. The total amount remaining to repay which amount accounts for the Department's receipt of 2 Semiannual Loan Payments is \$698,899, consisting of unpaid principal of the Loan of \$683,971 and an unpaid service fee charge of \$14,928.

11. The Semiannual Loan Payment amount, adjusted to account for repayments received to date, is hereby revised and shall be in the amount of \$18,392.08. Such payments shall be received by the Department on August 15, 2024 and semiannually thereafter on February 15 and August 15 of each year until all amounts due hereunder have been fully paid.

12. Subsection 2.04(1) of the Agreement is hereby deleted and replaced as follows:

(1) The financial assistance authorized pursuant to this Loan Agreement consists of the following:

State Resources Awarded to the Local Borrower Pursuant to this Agreement Consist of the Following Resources Subject to Section 215.97, F.S.:					
State Program Number	Funding Source	CSFA Number	CSFA Title or Fund Source Description	Funding Amount	State Appropriation Category
Original Agreement	Wastewater Treatment and Stormwater Management TF	37.077	Wastewater Treatment Facility Construction	\$746,423	140131

13. Project Costs are revised as follows:

The Local Borrower, the Corporation, and the Department acknowledge that changes in Project costs may occur as a result of an audit. Unless this Agreement is amended subsequent to an audit, the following Project disbursements shall be final.

CATEGORY	PROJECT COSTS (\$)
Construction and Demolition	671,366
Technical Services During Construction	75,057
SUBTOTAL (Total Disbursed)	746,423
Capitalized Interest	0
TOTAL (Loan Principal Amount)	746,423

14. All other terms and provisions of the Loan Agreement shall remain in effect.

REMAINDER OF PAGE INTENTIONALLY LEFT BLANK

This Amendment 2 to Loan Agreement WW510550 may be executed in three or more counterparts, any of which shall be regarded as an original and all of which constitute but one and the same instrument.

IN WITNESS WHEREOF, the Corporation has caused this amendment to the Loan Agreement to be executed on its behalf by its Chief Executive Officer and the Local Borrower has caused this amendment to be executed on its behalf by its Authorized Representative and by its affixed seal. The effective date of this amendment shall be as set forth below by the Chief Executive Officer of the Corporation.

for
STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

Secretary or Designee

Date

for
CITY OF ZEPHYRHILLS

Council President

Attest:

Attest as to form and correctness:

City Clerk

City Attorney

SEAL

APPROVED AND ACCEPTED BY THE STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION.

Chief Executive Officer

Reviewed and approved by the Corporate Secretary
or Designee

BUSINESS ITEMS/PUBLIC HEARING 3.1

Mayor's Youth Council Amendment

Second Reading **ORDINANCE NO. 1476-24 - "AN ORDINANCE BY THE CITY COUNCIL OF THE CITY OF ZEPHYRHILLS, FLORIDA AMENDING SECTION 30.140 OF THE CITY OF ZEPHYRHILLS CODE OF ORDINANCES, EXPANDING THE STUDENT SCHOOL GRADE LEVEL ELIGIBLE FOR APPOINTMENT TO THE MAYOR'S YOUTH COUNCIL; PROVIDING FOR APPLICABILITY, REPEALER, SEVERABILITY, INCLUSION IN THE CODE, AND PROVIDING AN EFFECTIVE DATE."**

- A. Council President opens Public Hearing
- B. Council President closes Public Hearing
- C. City Council considers Ordinance No. 1476-24 on the Second Reading

Issue:

The Mayor and staff would like to increase the number of students that qualify to be a member of the Mayor's Youth Council.

Background:

Ordinance 1476-24 will allow for the expansion of qualifying students to participate in the Mayor's Youth Council.

The Ordinance allows:

- Charter school students;
- Middle school students;
- Students as young as sixth grade;
- Changes the length of terms;
- The mayor may call for the appointment of new members if the Youth Council fails to operate as a council for more than six months.

Attachment(s):

1. Ordinance 1476-24 - Mayor's Youth Council Amendment

Fiscal Impact:

No fiscal impact

Staff Recommendation:

Staff recommends approval of Ordinance 1476-24

ORDINANCE 1476-24

AN ORDINANCE BY THE CITY COUNCIL OF THE CITY OF ZEPHYRHILLS, FLORIDA AMENDING SECTION 30.140 OF THE CITY OF ZEPHYRHILLS CODE OF ORDINANCES, EXPANDING THE STUDENT SCHOOL GRADE LEVEL ELIGIBLE FOR APPOINTMENT TO THE MAYOR'S YOUTH COUNCIL; PROVIDING FOR APPLICABILITY, REPEALER, SEVERABILITY, INCLUSION IN THE CODE, AND PROVIDING AN EFFECTIVE DATE.

WHEREAS, the City of Zephyrhills ("City") has, by ordinance, established the Mayor's Youth Council to advise the City Council, amongst other things, on matters effecting youth within the City, to increase youth participation in local government, to promote civic education, and to prepare young people to be future civic leaders; and

WHEREAS, the City Council desires to amend the qualifications for individuals appointed to serve on the Mayor's Youth Council; and

WHEREAS, the City Council has conducted duly noticed public hearings as required by law, at which hearings all parties in interest and citizens were afforded notice and the opportunity to be heard; and

WHEREAS, the City Council desires to amend the qualifications and terms of service for individuals appointed to serve on the Mayor's Youth Council.

NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF HOMESTEAD, FLORIDA, AS FOLLOWS:¹

Section 1. Recitals. The Whereas Clauses above are true and accurate and are incorporated by reference and made a part of this Ordinance.

Section 2. Authority. That this Ordinance is enacted pursuant to Chapter 166, Florida Statutes, and under the home rule powers of the City.

Section 3. Amendment to Code of Ordinances. That Section 30.140 of the City of Zephyrhills, Code of Ordinances is hereby modified as set forth herein below:

Sec. 30.140. – Creation.

There is hereby created a Board to be known as the Mayor's Youth Council, which shall consist of seven members. The members will be Zephyrhills area residents who are actively enrolled in a public, charter, or private high school or middle school, or home schooled in grades ~~nine~~ six through 12. The members shall be appointed by the City Council and each member appointed shall serve a term of two years, except that of the seven members first appointed, three shall serve for a term of ~~seven months~~ three years, four shall serve for a term of ~~one year and seven months~~ two years, ending at the conclusion of the current school year that their term expires. The terms of members of the Mayor's Youth Council will remain staggered and will expire and be appointed in ~~June~~ August. If the Mayor's Youth Council fails to operate as a Council for more than Six (6) months, the Mayor can call for the appointment of all new members at any time and the new member's terms will be reduced by the time served from the date of appointment to the following August. The Mayor will attend meetings along with city staff, and shall coordinate the youth council activities.

¹ Proposed additions to text of City Code of Ordinances are indicated by underline; proposed deletions from text of City Code of Ordinances are indicated by ~~strike through~~.

Section 5. **Repealer.** All ordinances and resolutions or parts thereof of the City in conflict with the provisions herein contained are, to the extent of such conflict, hereby superseded and repealed.

Section 6. Severability. It is declared the intent of the City Council of the City of Zephyrhills, Florida, that if any section, subsection, sentence, clause, or provision of this Ordinance shall be declared invalid, the remainder of this Ordinance shall be construed as not having contained said section, subsection, sentence, clause or provisions and shall not be affected by such holding.

Section 7. Inclusion in the Code. It is the intent of the City Council of the City of Zephyrhills, Florida that the provisions of this Ordinance shall become and be made a part of the City of Zephyrhills Code of Ordinances, and that the sections of this Ordinance may be renumbered or re-lettered and the word “ordinance” may be changed to “section,” “article,” “regulation,” or such other appropriate word or phrase in order to accomplish such intentions.

Section 8. Effective Date. This Ordinance shall become effective upon passage on the second reading and signing by the Mayor.

The foregoing Ordinance No. 1476-24 was read and passed on the first reading in an open and regular meeting of the City Council of the City of Zephyrhills, Florida, on this 26th day of February, 2024.

Attest: _____
Lori L. Hillman, City Clerk

Lance A. Smith, Council President

The foregoing Ordinance No. 1476-24 was read and passed on the second reading, following a public hearing, in an open and regular meeting of the City Council of the City of Zephyrhills, Florida, on this 11th day of March, 2024.

Attest: _____
Lori L. Hillman, City Clerk

Lance A. Smith, Council President

The foregoing Ordinance No. 1476-24 was approved by me this 11th day of March, 2024.

Melonie Bahr Monson, Mayor

Approved as to legal form and legal content

Matthew E. Maggard, City Attorney

BUSINESS ITEMS/PUBLIC HEARING 3.2

Indoor and Outdoor Storage Facilities Moratorium Extension

Second Reading **ORDINANCE NO. 1477-24 - "AN ORDINANCE OF THE CITY OF ZEPHYRHILLS, FLORIDA, AMENDING ORDINANCE 1455-23, TO EXTEND THE TEMPORARY MORATORIUM ON RECEIVING AND PROCESSING PLANS AND PERMIT APPLICATIONS FOR RECREATIONAL VEHICLE STORAGE MATERIAL LAYDOWN AREAS AND INDOOR STORAGE FACILITIES; PROVIDING FOR CONFLICTS, SEVERABILITY, EXPIRATION AND AN EFFECTIVE DATE."**

- A. Council President opens Public Hearing
- B. Council President closes Public Hearing
- C. City Council considers Ordinance No. 1477-24 on the Second Reading

Issue:

Extension of the Outdoor storage facilities moratorium for six months

Background:

Staff is continuing research / analysis on the previously approved storage moratorium and to prepare policy recommendations for the City's Land Development Code.

Attachment(s):

1. 30386751v1 - Ordinance 1477-24 Storage Facilities Moratorium Extension

Fiscal Impact:

NA

Staff Recommendation:

Approval

ORDINANCE NO. 1477-24

AN ORDINANCE OF THE CITY OF ZEPHYRHILLS, FLORIDA, AMENDING ORDINANCE 1455-23, TO EXTEND THE TEMPORARY MORATORIUM ON RECEIVING AND PROCESSING PLANS AND PERMIT APPLICATIONS FOR RECREATIONAL VEHICLE STORAGE MATERIAL LAYDOWN AREAS AND INDOOR STORAGE FACILITIES; PROVIDING FOR CONFLICTS, SEVERABILITY, EXPIRATION AND AN EFFECTIVE DATE.

WHEREAS, as provided in section 2(b), Article VIII of the Constitution of the State of Florida, and section 166.021(1), Florida Statutes, the City of Zephyrhills, Florida (the “City”), a municipal corporation, enjoys all governmental, corporate, and proprietary powers necessary to conduct municipal government, perform municipal functions, and render municipal services, and may exercise any power for municipal purposes, except as expressly prohibited by law; and

WHEREAS, as provided in section 166.021(3), Florida Statutes, the governing body of each municipality in the state has the power to enact legislation concerning any subject matter upon which the state legislature may act, except when expressly prohibited by law; and

WHEREAS, the City of Zephyrhills passed Ordinance 1455-23 on February 27, 2023 to establish a temporary moratorium on receiving and processing plans and permit applications for: Recreational Vehicle Storage, Material Laydown Areas, and Indoor Storage Facilities with an expiration date of February 27, 2024; and

WHEREAS, the City of Zephyrhills staff is still reviewing and preparing standards to be implemented for storage facilities as described herein and is requested additional time, not to exceed six (6) months from the effective date of this Ordinance.

NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF ZEPHYRHILLS, FLORIDA, AS FOLLOWS:

SECTION 1. FINDINGS OF FACT. The above “Whereas” clauses are deemed findings of fact and are adopted herein.

SECTION 2. EXPIRATION. The expiration date of Ordinance 1455-23 shall be the earlier of six (6) months after the adoption of this Ordinance, or the final adoption of an ordinance regulating Recreational Vehicle Storage, Material Laydown Areas, and Indoor Storage Facilities.

SECTION 3. CONFLICTS. All ordinances or parts of ordinances in conflict with any of the provisions of this Ordinance are hereby repealed to the extent of such conflict.

SECTION 4. SEVERABILITY. If any section, subsection, sentence, clause, phrase, word or provision of this Ordinance is for any reason held invalid or unconstitutional by any court of competent jurisdiction, whether for substantive, procedural, or any other reason, such portion shall be deemed a separate, distinct and independent provision, and such holding shall not affect the validity of the remaining portions of this Ordinance.

SECTION 5. EFFECTIVE DATE. This Ordinance shall become effective pursuant to the Zephyrhills Charter.

The foregoing Ordinance No. 1477-24 was read and passed on the first reading in an open and regular meeting of the City Council of the City of Zephyrhills, Florida, on this 26th day of February, 2024.

Attest: _____
Lori L. Hillman, City Clerk

Lance A. Smith, Council President

The foregoing Ordinance No. 1477-24 was read and passed on the second reading, following a public hearing, in an open and regular meeting of the City Council of the City of Zephyrhills, Florida, on this 11th day of March, 2024.

Attest: _____
Lori L. Hillman, City Clerk Lance A. Smith, Council President

The foregoing Ordinance No. 1477-24 was approved by me this 11th day of March, 2024.

Melonie Bahr Monson, Mayor

Approved as to legal form and legal content

Matthew E. Maggard, City Attorney

BUSINESS ITEMS/PUBLIC HEARING 3.3

Oakside Cemetery Amendment

Second Reading **ORDINANCE NO. 1478-24 - "AN ORDINANCE BY THE CITY COUNCIL OF THE CITY OF ZEPHYRHILLS, FLORIDA AMENDING SECTION 94.06. – INSTALLATION, MARKERS, MONUMENTS OF THE CITY OF ZEPHYRHILLS CODE OF ORDINANCES, AMENDING THE MARKERS REQUIREMENTS IN BLOCKS ONE THROUGH 8 (THE OLD SECTION) OF THE CITY OF ZEPHYRHILLS OAKSIDE CEMETERY; PROVIDING FOR APPLICABILITY, REPEALER, SEVERABILITY, INCLUSION IN THE CODE, AND PROVIDING AN EFFECTIVE DATE. "**

- A. Council President opens Public Hearing
- B. Council President closes Public Hearing
- C. City Council considers Ordinance No. 1478-24 on the Second Reading

Issue:

The City has received requests over the years to allow vertical headstones at Oakside Cemetery. Currently, vertical headstones are not permitted in the cemetery, although there are existing headstones in Blocks 1 through 8, "The Old Section."

Staff would like to amend the ordinance to allow vertical headstones within only Blocks 1 through 8. All other blocks/sections will still prohibit vertical headstones.

Background:

Attachment(s):

1. Ordinance No. 1478-24 - Oakside Cemetery Amendment

Fiscal Impact:

No fiscal impact

Staff Recommendation:

Staff recommends approval of the amendment to Ordinance 1478-24.

ORDINANCE 1478-24

AN ORDINANCE BY THE CITY COUNCIL OF THE CITY OF ZEPHYRHILLS, FLORIDA AMENDING SECTION 94.06. – INSTALLATION, MARKERS, MONUMENTS OF THE CITY OF ZEPHYRHILLS CODE OF ORDINANCES, AMENDING THE MARKERS REQUIREMENTS IN BLOCKS ONE THROUGH 8 (THE OLD SECTION) OF THE CITY OF ZEPHYRHILLS OAKSIDE CEMETERY; PROVIDING FOR APPLICABILITY, REPEALER, SEVERABILITY, INCLUSION IN THE CODE, AND PROVIDING AN EFFECTIVE DATE.

WHEREAS, the City of Zephyrhills owns and operates the Oakside Cemetery and has established rules and regulations for the operation of same; and

WHEREAS, City Council has determined that it is in the best interest of the citizens of the City of Zephyrhills to amend the rules and regulations for the operation of the City’s cemetery from time to time;

WHEREAS, the City Council has conducted duly noticed public hearings as required by law, at which hearings all parties in interest and citizens were afforded notice and the opportunity to be heard; and

WHEREAS, the City Council desires to amend the rules and regulations that apply to the type of markers can be used in Blocks one through 8 (“The Old Section”) of the Oakside Cemetery.

NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF HOMESTEAD, FLORIDA, AS FOLLOWS:¹

Section 1. **Recitals.** The Whereas Clauses above are true and accurate and are incorporated by reference and made a part of this Ordinance.

Section 2. **Authority.** That this Ordinance is enacted pursuant to Chapter 166, Florida Statutes, and under the home rule powers of the City.

Section 3. **Amendment to Code of Ordinances.** That Section 94.06(e) of the City of Zephyrhills, Code of Ordinances is hereby modified as set forth herein below:

Sec. 94.06. – Installation, markers, monuments..

- (E) With the exception of ~~existing~~ markers in blocks one through eight, all markers must be flush using ground variety. These markers shall be installed at ground level and may contain inverted type vases which can be inverted when not in use.

Section 5. **Repealer.** All ordinances and resolutions or parts thereof of the City in conflict with the provisions herein contained are, to the extent of such conflict, hereby superseded and repealed.

Section 6. **Severability.** It is declared to be the intent of the City Council of the City of Zephyrhills, Florida, that if any section, subsection, sentence, clause, or provision of this ordinance is held invalid, the remainder of the ordinance shall be construed as not having continued the said section, subsection, sentence, clause, or provision and shall not be affected by such holding.

Section 7. **Inclusion in the Code.** It is the intent of the City Council of the City of Zephyrhills, Florida that the provisions of this Ordinance shall become and be made a part of the City of Zephyrhills Code of Ordinances, and that the sections of this Ordinance may be renumbered

¹ Proposed additions to text of City Code of Ordinances are indicated by underline; proposed deletions from text of City Code of Ordinances are indicated by ~~strikethrough~~.

or re-lettered and the word “ordinance” may be changed to “section,” “article,” “regulation,” or such other appropriate word or phrase in order to accomplish such intentions.

Section 8. Effective Date. This Ordinance shall become effective upon passage on the second reading and signing by the Mayor.

The foregoing Ordinance No. 1478-24 was read and passed on the first reading in an open and regular meeting of the City Council of the City of Zephyrhills, Florida, on this 26th day of February, 2024.

Attest: _____
Lori L. Hillman, City Clerk

Lance A. Smith, Council President

The foregoing Ordinance No. 1478-24 was read and passed on the second reading, following a public hearing, in an open and regular meeting of the City Council of the City of Zephyrhills, Florida, on this 11th day of March, 2024.

Attest: _____
Lori L. Hillman, City Clerk

Lance A. Smith, Council President

The foregoing Ordinance No. 1478-24 was approved by me this 11th day of March, 2024.

Melonie Bahr Monson, Mayor

Approved as to legal form and legal content

Matthew E. Maggard, City Attorney

CITY ATTORNEY'S REPORT 4.1

Approval of Gagne Utility Services Agreement No. 41-24-06

Issue:

Approve agreement with Lennar Homes and Robert Gagne for water and sewer utility service for the subdivision at the southeast corner of Chancey Road and US 39.

Background:

Lennar Homes of Florida is purchasing the Gagne property with entitlements of 218 residential units. With this agreement, Lennar will be responsible for designing, permitting, and constructing the following within 5 years:

- The extension of the water line from Copeland Drive to the western boundary of the property;
- The extension of the sewer line from Copeland Drive to the property line;
- Installation of stub-outs for water and sewer near the intersection of Copeland Drive;
- The replacement and upsizing of the sewer line along Copeland Drive from Chancey Road to Tucker Road;
- The replacement and upsizing of the sewer line along Alston Road from Tucker Road to the wastewater treatment plant.

The City will be responsible for:

- The material cost to upsize the sewer line from Copeland Drive to the property from 4" to 6";
- The material cost for upsizing the water line from Copeland Drive to the property from 8" to 12";
- All material and labor costs for the water and sewer stub-outs near Copeland Drive;
- The material cost for upsizing the sewer line from Quaker Ridge Street to the wastewater treatment plant.

Attachment(s):

1. Utilities Agreement Prarieview Place FINAL
2. Exhibit B - Utilities Agreement Prarieview Place - Gagne

Fiscal Impact:

The developer will be paid in Utility Capacity Fee Credits in the amount of \$301,920. This amount may be adjusted based on total expenses actually incurred.

Staff Recommendation:

Staff recommends approval of the agreement to the City Council as presented.

UTILITIES SERVICES AGREEMENT
BETWEEN CITY OF ZEPHYRHILLS AND
LENNAR HOMES OF FLORIDA, LLC, AS JOINED BY ROBERT H. GAGNE, AS
TRUSTEE OF THE ROBERT H. GAGNE REVOCABLE TRUST OF 2008 U/A DATED
JANUARY 21, 2008

THIS UTILITY SERVICE AGREEMENT (this “**Agreement**”) made and entered into as of March 11, 2024 (“**Agreement**”), by and between the **CITY OF ZEPHYRHILLS**, a political subdivision of the State of Florida, by and through its City Council (the “**City**”), and **LENNAR HOMES OF FLORIDA, LLC**, a Florida limited liability company (“**Developer**”), as joined by **ROBERT H. GAGNE, AS TRUSTEE OF THE ROBERT H. GAGNE REVOCABLE TRUST OF 2008 U/A DATED JANUARY 21, 2008** (“**Gagne**”).

WITNESSETH:

WHEREAS, the City is authorized provided in Section 2(b), Article VIII of the Constitution of the State of Florida, and section 166.021(1), Florida Statutes, to enjoy all governmental, corporate, and proprietary powers necessary to conduct municipal government, perform municipal functions, and render municipal services, and may exercise any power for municipal purposes, except as expressly prohibited by law to enter into agreements for the provision of utility services for parties contemplating developments within the City limits;

WHEREAS, Developer is the proposed developer of a residential project (the “**Project**”) on that certain property located in the City of Zephyrhills, Pasco County, Florida, described and depicted on **Exhibit “A”** attached hereto (“**Property**”), which is owned by Gagne; and

WHEREAS, as a condition to issuing building permits in connection with development of the Project, the City requires Developer to extend certain utility lines for water and wastewater from their current locations near the intersection of Chancey Road and Copeland Road to the Property; and

WHEREAS, at the request of the City, Developer has agreed to perform additional the utility installations or increase the capacity of certain utility installations in order to accommodate other future development in the vicinity of the Project; and

WHEREAS, Developer and the City desire to enter into this Agreement to memorialize the rights and obligations of the parties with respect to such improvements, including the City’s obligation to reimbursements Developer for some of such improvements.

NOW, THEREFORE, in consideration of the mutual covenants and provisions herein contained, and other good and valuable consideration, receipt and sufficiency of which is hereby acknowledged, the City and Developer hereby agree as follows:

1. **Recitals; Exhibits.** The foregoing recitals and all exhibits attached hereto are Incorporated herein by reference and made a part of this Agreement.

2. **Purpose.** It is the purpose and intent of this Agreement to further set forth terms and conditions of the development approval of the Project, as the same relate to the design, permitting and construction of the Utility Improvements (as hereinafter defined). This Agreement is intended to define the terms and conditions of the City's and Developer's participation in and respective obligations associated with the Utility Improvements. All terms and conditions of this Agreement shall be interpreted in a manner consistent with, and in furtherance of, the purpose as set forth herein.

3. **General Requirements.**

a. **Legal Description.** The land subject to this Agreement (the Property) is identified on **Exhibit "A"** attached hereto and made a part hereof. The obligations, burdens, restrictions, and conditions of this Agreement shall be binding upon and the benefits shall inure to all such legal owners and their successors in interest for any of the land subject to this Agreement (the Property).

b. .

c. **Duration and Effective Date.** This Agreement shall become effective on the date (the "**Effective Date**") the last of the following occurs: (1) this Agreement is fully executed by Developer and the City; and (2) this Agreement is approved by the City Council. This Agreement shall be for a duration of five (5) years from the Effective Date, subject to any conditions precedent or termination provisions set forth herein or mutual agreement.

d. **Development Uses of Land.** The Master Site Plan for the Project sets forth the permitted uses for the Property.

e. **Reservations or Dedications for Public Purpose.** All reservations and dedications for public purposes shall be provided in accordance with this Agreement.

f. **Findings.** The City has determined that the Project is consistent with the provisions of the Zephyrhills Comprehensive Plan and the Zephyrhills Land Development Code (collectively, the "**City Regulations**").

g. **Requirements Necessary for the Public Health, Safety and Welfare.** The conditions, terms, restrictions, and other requirements determined to be necessary by the City for the public health, safety, or welfare of its citizens are identified and included within the Preliminary Plan/Construction Plans for the Project and this Agreement.

h. **Compliance with Legal Requirements and Permitting.** The failure of this Agreement to address a particular permit, condition, term, or restriction shall not relieve any Developer of the necessity of complying with the law governing said permitting requirement, condition, term, or restriction.

i. **Zoning and Comprehensive Plan Issues.** The land use designation for the Project under the Future Land Use Element of the Zephyrhills Comprehensive Plan is Mixed Use, and the zoning designation for the Project is PUD (Planned Unit Development). The City has

found the zoning of the Project to be consistent with the land use designations for the Project established in the Future Land Use Element of the Zephyrhills Comprehensive Plan for the Property.

4. **Utility Improvements.**

a. In consideration of the City's approval of the Project, grant of certain entitlements in connection therewith, and agreement to provide Developer with Utility Capacity Fee Credits as more particularly set forth in Paragraph 5 below, Developer agrees to design, permit and construct at Developer's sole cost and expense, the following utility improvements (collectively, the "**Utility Improvements**") to occur in two phases, as follows: (i) as part of "Phase 1" (which will allow the Developer to obtain up to 40 certificates of occupancy within the Project), (aa) an extension of the potable water line from its current locations near the intersection of Chancey Road and Copeland Drive to the western boundary of the Property depicted as Segment 5 on the map attached hereto as **Exhibit "B"** and (bb) an extension of a sanitary sewer line from its current location near Copeland Drive and Chancey Road to the Property depicted as Segment 6 on **Exhibit "B"** to the Property (the "**Phase 1 Improvements**"), and (ii) as part of "Phase 2", (aa) installation of stub outs for the water line and sanitary sewer lines completed in the Phase 1 Improvements near the intersection of Copeland Drive and Chancey Road as depicted on **Exhibit "B"** (the "**Stub Outs**") and (bb) the replacement and upsizing of a sanitary sewer line from (xx) the intersection of Copeland Drive and Chancey Road north to the intersection of Copeland Drive and Tucker Road depicted as Segment 4 on **Exhibit "B"**, (yy) along Alston Avenue from its intersection of Tucker Road to the City's wastewater treatment plant on Alston Avenue depicted as Segment 1 on **Exhibit "B"** and (zz) along Tucker Road for the segment depicted as Segment 2 on **Exhibit "B"** (the "**Phase 2 Improvements**"). The Phase 1 Improvements and Phase 2 Improvements are further described and depicted on **Exhibit "B"** attached hereto and made a part hereof. For purposes of clarification, Developer shall have no obligation to design, permit or construct any improvements for Segment 3 as set forth on **Exhibit "B"** and the same shall not be included as part of the "Utility Improvements".

b. Developer shall design and permit the Utility Improvements in accordance with the approved set of construction plans approved by the City ("**Construction Plans**") and the terms of this Agreement. At the City's request, Developer is oversizing the size of the lines and related equipment and facilities of the Phase 1 Improvements to accommodate additional capacity for other users (the "**Phase 1 Oversizing**"). Specifically, the City has requested that the Phase 1 Oversizing include, without limitation, (i) upsizing the potable water line depicted as Segment 5 on the map attached hereto as **Exhibit "B"** from an 8" line to a 12" line and (ii) upsizing the sanitary sewer line depicted as Segment 6 on **Exhibit "B"** from a 4" line to a 6" line. Additionally, at the City's request, Developer is completing the Phase 2 Improvements to accommodate additional capacity for other users (the "**Phase 2 Oversizing**"). Additionally, the City has requested that the Phase 2 Oversizing include, without limitation, (i) the construction of the Stub-Outs, (ii) constructing new, oversized 12" sanitary sewer lines for Segment 1 and Segment 2 as depicted on **Exhibit "B"**. For purposes of this Agreement, the City's obligation for the "Phase 1 Oversizing" shall include, and the City shall reimburse Developer in accordance with this Agreement, for the material cost only in upsizing the potable water line depicted as Segment 5 on the map attached hereto as **Exhibit "B"** from an 8" line to a 12" line and upsizing the sanitary

sewer line depicted as Segment 6 on **Exhibit “B”** from a 4” line to a 6” line. For purposes of this Agreement, the City’s obligation for the “Phase 2 Oversizing” shall include, and the City shall reimburse Developer in accordance with this Agreement, for all material and labor costs for the construction of the Stub Outs and the material cost only for the construction of new, oversized 12” sanitary sewer lines for Segment 1 and Segment 2 as depicted on **Exhibit “B”**. The City shall have no reimbursement obligation for Phase 4 as depicted on **Exhibit “B”**. Following approval of the Construction Plans, Developer shall obtain any and all required permits for the Utility Improvements from Pasco County, the City and any and all applicable local and State regulatory agencies, provided, however, the City agrees to apply for and obtain any required permits and approvals from CSX Railroad to allow for any work required within the railroad right of way. The City shall, upon request by Developer, cooperate with Developer in processing permit applications, and Developer agrees to use commercially reasonable efforts to secure all permits that are necessary for the design and construction of the Utility Improvements.

c. Developer shall commence construction of the Phase 1 Improvements within eighteen (18) months of issuance of all required permits and approvals, and shall complete construction within eighteen (18) months thereafter, subject to extension for delays caused by force majeure. Developer shall commence construction of the Phase 2 Improvements within eighteen (18) months of issuance of all required permits and approvals, and shall complete construction within eighteen (18) months thereafter, subject to extension for delays caused by force majeure. Developer shall be responsible for the care and protection of any materials provided or work performed for the Utility Improvements until they are completed and, to the extent applicable, accepted by the City. Following completion, Developer shall provide to the City copies of as-built drawings for the Utility Improvements. All as-built drawings submitted to the City shall include reproducible PDFs, mylars and/or electronic files compatible with AutoCad.

d. Developer shall be required to provide a performance bond in connection with the Utility Improvements.

e. In addition to the CSX approvals and consents referenced in Section 4.b. above, the City acknowledges that Developer’s ability to construct and complete certain of the Utility Improvements outside of the existing public right-of-way will require the City to obtain permanent utility easements from third party landowners. The City agrees to coordinate with Developer to confirm which easements and consents that Developer deems reasonably necessary for it to commence and complete the construction of the Utility Improvements. Developer shall cooperate with the City to facilitate its obtaining of such easements and consents. The City shall be responsible for any costs associated with obtaining such easements and consents. Developer’s obligations under this Agreement are contingent upon the City obtaining such easements and consents within twelve (12) months of the Effective Date of this Agreement. If the City fails to obtain such easements and consents within twelve (12) months of the Effective Date of this Agreement, Developer may terminate this Agreement by providing notice to the City of the same.

5. **Capacity Fees and Credits.** The City has determined that the Phase 1 Oversizing and the Phase 2 Oversizing are Utility Capacity Fee creditable in accordance with the terms and conditions of City Ordinance No. 1388-19, as recorded in OR Book 9999 Page 1872 with an Instrument Number of 2019186911. In this regard, the City agrees that Utility Capacity Fee Credits

shall be provided to Developer in an amount equal to one hundred percent (100%) of all sums actually and reasonably incurred by Developer in connection with the Phase 1 Oversizing and the Phase 2 Oversizing, which such amounts shall be evidenced by invoices to be submitted by Developer to the City. Based on the preliminary budget for the Phase 1 Oversizing and the Phase 2 Oversizing, the City and Developer anticipate that Developer will be entitled to Utility Capacity Fee Credits in the amount of \$301,920.00 for such oversizing, but such amount is subject to adjustment based on the total expenses actually incurred. The Utility Capacity Fee Credits due to Developer under this paragraph may be utilized by Developer in connection with the Project. Notwithstanding the foregoing, to the extent the Utility Capacity Fee Credits due to Developer under this Agreement exceed the amount of utility capacity fees that are due and payable in connection with the Project, the City agrees that it will not issue such excess Utility Capacity Fee Credits, but instead shall reimburse Developer for such excess amount in cash.

6. **General Provisions.**

a. **Termination.** If Developer defaults in its obligations under this Agreement, the City shall provide Developer with a written notice of default, describing those terms and conditions with which Developer has failed to comply. If Developer has not remedied the failure or initiated good faith efforts to remedy the failure within ninety (90) days after receiving the notice of default, the City may terminate this Agreement upon notice to Developer, and Developer shall not thereafter be entitled to any impact fee credits, reimbursement, or compensation as provided herein. This paragraph is not intended to replace any other legal or equitable remedies available to City under Florida law, but it is in addition thereto.

b. **Notices.** All notices, demands, requests, and other communications required or permitted hereunder shall be in writing, and shall be deemed to be delivered when actually received, or, if earlier and regardless of whether actually received, one day after deposit with Federal Express or comparable one-day express delivery system or transmission by facsimile, addressed to the addressee at its address set forth below or at such other address as such party may have specified theretofore by notice delivered in accordance with this Section and actually received by the addressee:

If to City:
William C. Poe, City Manager
5335 8th Street
Zephyrhills, Florida 33542

With copy to:
Todd Vande Berg, Planning Director
5335 8th Street
Zephyrhills, Florida 33542

And with a required copy to:
Matthew E. Maggard
Shumaker, Loop & Kendrick, LLP
13134 US Highway 301
Dade City, Florida 33525

If to Developer:
Lennar Homes of Florida, LLC
Attn. Steve Smith, Division President, and Chelsea Hardy, V.P.
4301 W. Boy Scout Blvd., Suite 600
Tampa, FL 33607

With a Required Copy To:
Clarke G. Hobby
Hobby & Hobby, P.A.
109 N. Brush St., Suite 250
Tampa, FL 33602

c. Entire Agreement. This Agreement embodies and constitutes the entire understanding and agreement between the parties with respect to the transactions contemplated herein and this Agreement supersedes all prior and contemporaneous agreements, understandings, representations, communications and statements, either oral or written, provided, however, that nothing shall relieve Developer of any development approval requirements or conditions previously imposed or authorized to be imposed under the City Regulations for future permits required by Developer, except as specifically waived herein.

d. Modification. Neither this Agreement, nor any portion hereof, may be waived, modified, amended, discharged nor terminated except as authorized by law pursuant to an instrument in writing signed by the party against which the enforcement of such waiver, modification, amendment, discharge or termination is sought, and then only to the extent set forth in such instrument.

e. Waiver. The failure of any party to this Agreement to object to or to take affirmative action with respect to any conduct of the other which is in violation of the terms of this Agreement shall not be construed as a waiver of the violation or breach or of any future violation, breach or wrongful conduct.

f. Contract Execution. This Agreement may be executed in several counterparts, each constituting a duplicate original, but all such counterparts shall constitute one and the same Agreement.

g. Gender. Whenever the contract hereof shall so require, the singular shall include the plural, the male gender shall include the female gender and the neuter and vice versa.

h. Headings. All article and descriptive headings of paragraphs in this Agreement are inserted for convenience only and shall not affect the construction or interpretation hereof.

i. Severability. In case one (1) or more of the provisions contained in this Agreement is found to be invalid, illegal or unenforceable in any respect, such invalidity, illegality or unenforceability shall not affect any other provision hereon and this Agreement shall be

construed as if such invalid, illegal or unenforceable provision had never been contained herein unless such unenforceable provision results in a frustration of the purpose of this Agreement or the failure of consideration.

j. Preparation of Agreement. The parties hereby agree that each has played an equal part in the negotiation and drafting of this Agreement and in the event any ambiguity should be realized in the construction or interpretation of this Agreement the result of such ambiguity shall be equally assumed and realized by each of the parties to this Agreement. In the event of a conflict between this Agreement and the zoning conditions of approval relating to matters set forth in the Agreement, this Agreement shall govern.

k. Strict Compliance with Laws. Developer agrees that acts to be performed by it in connection with this Agreement shall be performed in strict conformity with all applicable Federal, State and local laws, rules, regulations, standards and guidelines.

l. Signatories Authority. By the execution hereof the parties covenant that the provisions of this Agreement have been duly approved and signatories hereto are duly authorized to execute this Agreement.

m. Governing Law and Venue. This Agreement shall be governed by and construed in accordance with the laws of the State of Florida. Venue for any litigation arising from this Agreement shall be in Pasco County, Florida.

n. Successors and Assigns. The terms of this Agreement shall run with the title to the Property and be binding upon Developer and its successors and assigns. Developer may assign this Agreement and all its rights and obligations hereunder to any person, firm, corporation or other entity with the consent of the parties to this Agreement, which consent should not be unreasonably withheld or delayed, and any such assignee shall be entitled to all the rights and powers of such participation hereunder. No such consent shall be required for an assignment, in whole or in part, to any of Developer's affiliates. Upon any such assignment, such assignee shall succeed to all the rights and obligations of assignor hereto, and shall, for purposes of specific rights and/or obligations assigned, or otherwise, all purposes hereof, be substituted for such participant. Gagne joins in this Agreement for the purpose of confirming that the Agreement runs with title to the Property and that, if Developer's contract for purchase of the Property (the "PSA") shall terminate after the Effective Date of this Agreement, Gagne shall succeed to the interests, rights and obligations of Developer hereunder. Developer shall provide the City and Gagne notice within five (5) business days of the termination of the PSA and Gagne agrees to confirm the same to the City if so requested .

(Signature Page Follows)

IN WITNESS WHEREOF, the parties hereto have hereunto set their hands and seals the day and year first above written.

LENNAR HOMES OF FLORIDA, LLC, a
Florida limited liability company

By: _____
Print Name: _____
Title: _____

CITY OF ZEPHYRHILLS, FLORIDA, a
political subdivision of the State of Florida

By: _____
Lance A. Smith, City Council President

ATTEST:

Lori L. Hillman, MMC, City Clerk

Approved as to Form and Content

Matthew E. Maggard, City Attorney

[JOINDER OF GAGNE TO FOLLOW]

JOINDER OF GAGNE

Gagne hereby joins in the Agreement for the specific purposes set forth in the Agreement.

GAGNE:

By: _____
ROBERT H. GAGNE, AS TRUSTEE
OF THE ROBERT H. GAGNE
REVOCABLE TRUST OF 2008 U/A
DATED JANUARY 21, 2008

Exhibit "A"

Legal Description of Property

DESCRIPTION: (per Title Commitment)

A parcel of land being TRACTS 103, 104 and 122, and a portion of TRACTS 58, 101, 102, 105, 106, 107, 108, 118, 119, 120, 121 and 123 in Section 24, Township 26 South, Range 21 East, and a portion of TRACTS 97, 112 and 113 in Section 23, Township 26 South, Range 21 East, together with portions of Right-of-Ways, ZEPHYRHILLS COLONY COMPANY, as recorded in Plat Book 1, Page 55 of the Public Records of Pasco County, Florida, together with a portion of the Northwest 1/4 of the Southwest 1/4 and a portion of the Northeast 1/4 of the Southwest 1/4, of Section 24, Township 26 South, Range 21 East, all of Pasco County, Florida, being more particularly described as follows:

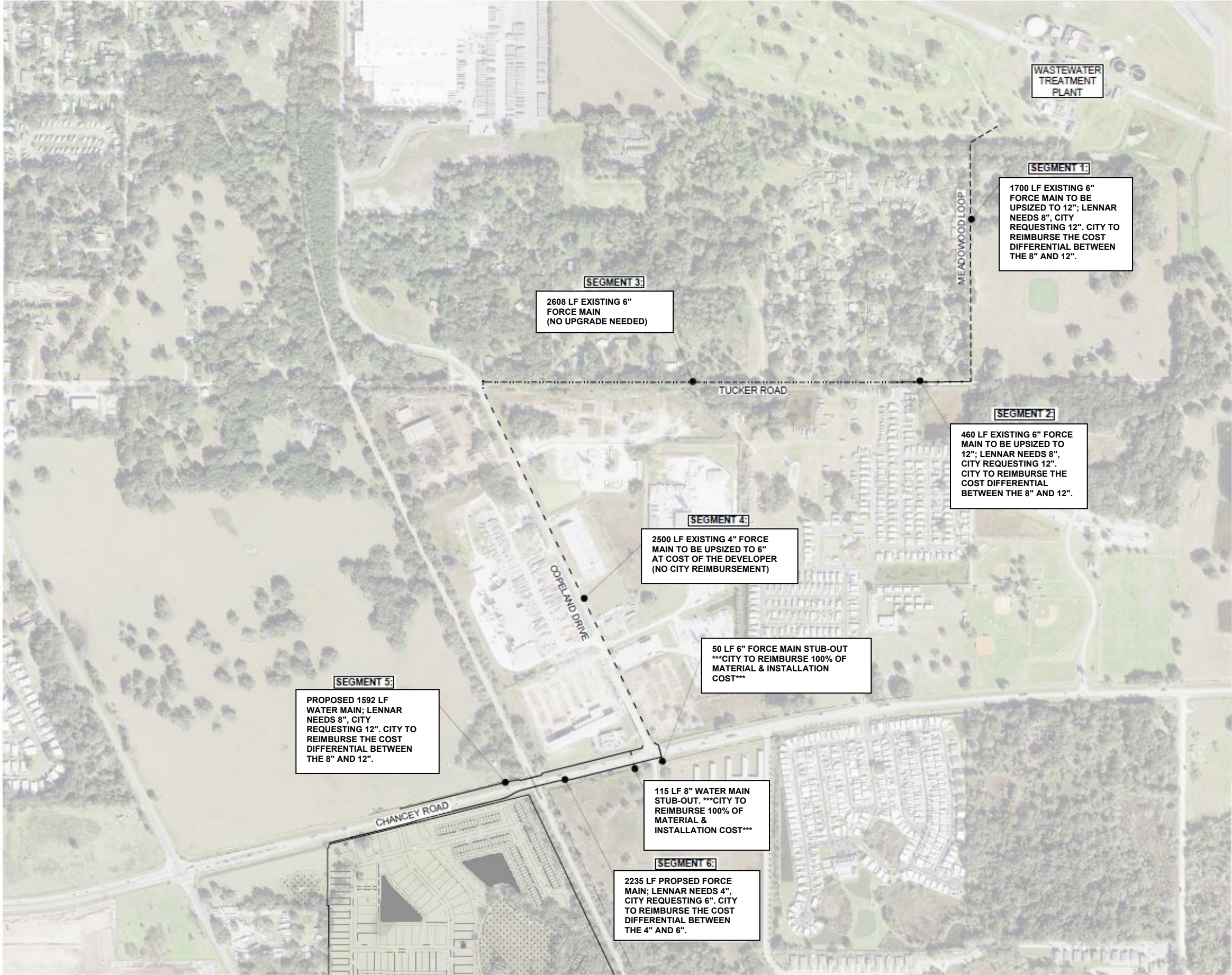
COMMENCE at the Northwest corner of Section 24, Township 26 South, Range 21 East, of Pasco County, Florida; thence S.01°47'15"W., along the West line of the Northwest 1/4 of said Section 24, (being the basis of bearings for this legal description), for 81.76 feet to the point of intersection with the Westerly line of the CSX Railroad Right-of-Way, same being the point of intersection with a non-tangent curve, concave Northeasterly, same also being the Northeast corner of that certain property as described in Official Records Book 7964, Page 1218 of the Public Records of Pasco County, Florida; thence the following three (3) courses along the East and South lines and the Westerly extension of the South line of said certain property as described in Official Records Book 7964, Page 1218; (1) thence Southeasterly along said Westerly line of the CSX Railroad Right-of-Way, along the arc of said curve, with a radial bearing of N.68°31'55"E., having a radius of 4,643.87 feet, a central angle of 04°47'51", an arc length of 388.83 feet, and a chord bearing S.23°52'00"E., for 388.72 feet, to the point of tangent; (2) thence continue along said Westerly line of the CSX Railroad Right-of-Way, S.25°21'34"E., for 2,252.90 feet to the point of intersection with the North Right-of-Way line of Chancey Road; (3) thence leaving said Westerly line of the CSX Railroad Right-of-Way, S.76°02'04"W., along said North Right-of-Way line of Chancey Road, for 1,237.84 feet to the point of intersection with the West line of the Southwest 1/4 of said Section 24; thence leaving said North Right-of-Way line of Chancey Road, S.00°17'02"W., along said West line of the Southwest 1/4 of Section 24, for 123.84 feet to the point of intersection with the South Right-of-Way line of Chancey Road, same being the POINT OF BEGINNING; thence leaving said West line of the Southwest 1/4, of Section 24, N.76°02'04"E., along said South Right-of-Way line of Chancey Road, for 1,292.50 feet to the point of intersection with said Westerly line of the CSX Railroad Right-of-Way; thence leaving said South Right-of-Way line of Chancey Road, S.25°21'34"E., along said Westerly line of the CSX Railroad Right-of-Way, for 986.42 feet; thence continue along said Westerly line of the CSX Railroad Right-of-Way, S.25°23'23"E., for 893.80 feet; thence leaving said Westerly line of the CSX Railroad Right-of-Way, S.85°18'42"W., for 1,450.74 feet, thence S.00°37'47"W., for 449.21 feet; thence S.90°00'00"E., for 828.59 feet; thence S.00°04'35"W., for 402.39 feet to the point of intersection with the South line of TRACT 123 in Section 24, Township 26 South, Range 21 East, ZEPHYRHILLS COLONY COMPANY, as recorded in Plat Book 1, Page 55 of the Public Records of Pasco County, Florida; thence, N.89°55'25"W., along the South lines of TRACTS 123, 122 and 121, respectively, in said Section 24, Township 26 South, Range 21 East, ZEPHYRHILLS COLONY COMPANY, for 1,195.75 feet to the point of intersection with the East Right-of-Way of State Road 39; thence leaving said South line of TRACT 121, N.27°12'20"W., along said East Right-of-Way of State Road 39, for 1,392.36 feet; thence leaving said East Right-of-Way of State Road 39, N.82°54'15"E., for 367.70 feet; thence S.89°42'58"E., for 15.00 feet to the point of intersection with said West line of the Southwest 1/4 of Section 24; thence N.00°17'02"E., along said West line of the Southwest 1/4 of Section 24, for 687.23 feet; thence leaving said West line of the Southwest 1/4 of Section 24, S.89°18'49"W., along the Easterly extension of the South line of TRACT 80, in Section 23, Township 26 South, Range 21 East, said ZEPHYRHILLS COLONY COMPANY, for 10.00 feet; thence N.00°17'02"E., for 361.57 feet to the point of intersection with said South Right-of-Way line of Chancey Road; thence N.76°02'04"E., along said South Right-of-Way line of Chancey Road, for 10.32 feet to the point of intersection with said West line of the Southwest 1/4, of Section 24; thence N.00°17'02"E., continuing along said South Right-of-Way line of Chancey Road, same being said West line of the Southwest 1/4, of Section 24, for 20.63 feet to the POINT OF BEGINNING.

Exhibit “B”

Depiction of Location of Utility Improvements

See attached

EXHIBIT "B"



PROJECT NAME: CHANCEY 116 UTILITY EXTENSION		LEVELUP CONSULTING, LLC  505 E. JACKSON STREET SUITE 200 TAMPA, FLORIDA 33602 OFFICE: 813-375-0616 WWW.LEVELUPFLORIDA.COM
DRAWING TITLE: UTILITY EXTENSION PLAN		
PREPARED FOR: LENNAR		
PROJECT No.	144-01-E35	
SHEET	1 of 1	

From: saxon@citruscapitalcorp.com
To: [Lori L. Hillman, MMC](#)
Cc: [Claire Clements; "Joseph Brisco"](#)
Subject: Town Meeting
Date: Thursday, March 7, 2024 5:15:34 PM
Attachments: [image001.png](#)

EXTERNAL EMAIL

Good Afternoon,

My name is Saxon, and I am collaborating with Joseph in our utility development division. I've attached a report from the Southwest Florida Water Management District for your review, and I'd like to discuss its contents during your meeting next Monday.

Briefly, the report examines the impact of extracting 33 million gallons of water daily from directly beneath the Dade City Business Center, formerly known as the Lykes Pasco Packing Plant, without any drawdown due to an extremely unique geological formation connecting the 1st and 2nd aquifer. My partners and I acquired the plant in November of 2022. We hold a significant consumptive use permit and operate 16 deep water wells, with 9 tapping into the lower aquifer. Our aim is to present to the city a viable option for sourcing potable water that doesn't involve costly piping infrastructures.

The necessary pipelines connecting Dade City and Zephyrhills are already installed. However, based on further study, we're prepared to upsize the piping to your city if required. Presently, we're capable of supplying Zephyrhills with 3 million gallons of water daily for your potable water system, while the remainder supports our water bottling and beverage production operations in Dade city.

Report: <https://pubs.usgs.gov/wri/1980/0033/report.pdf>

As I am aware I only have 3 minutes to speak with the group , please let me know if I can have 10 minutes. If not I look forward to seeing you and keeping it consice.

Best,

Saxon Evans

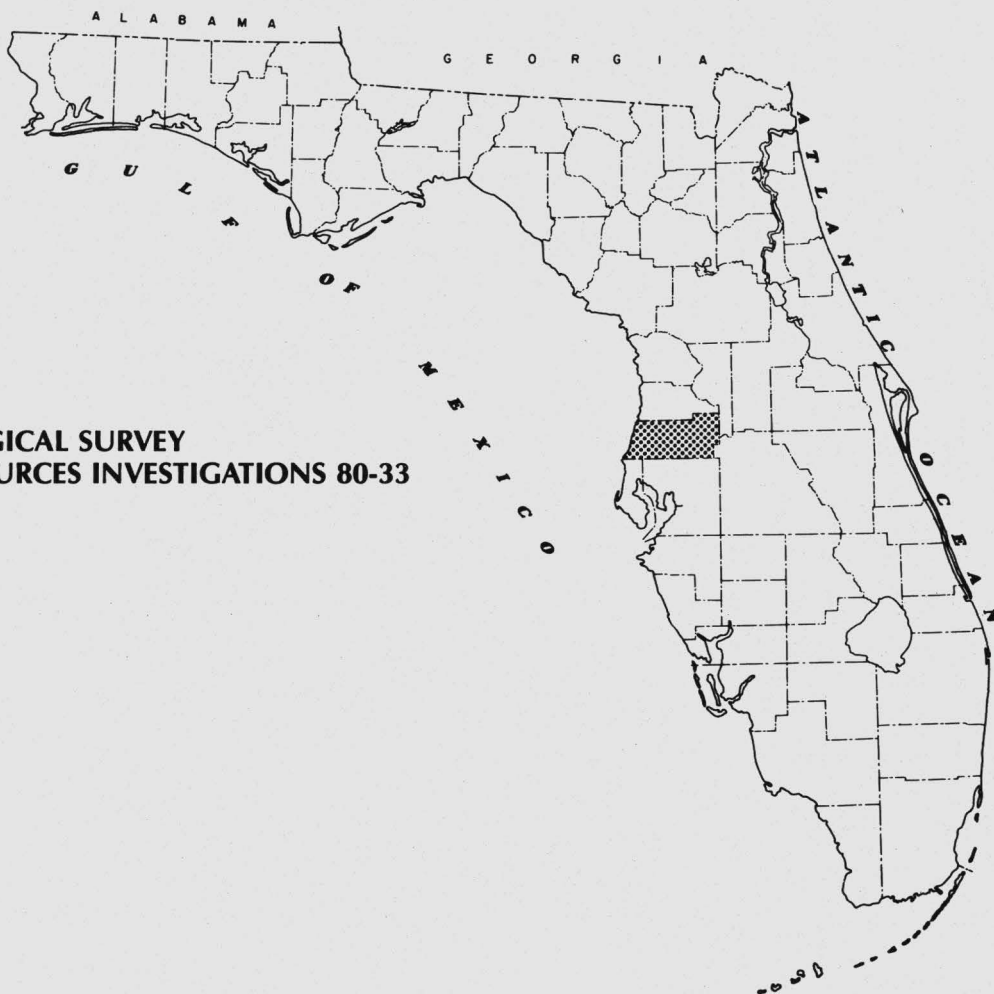
Director

M: 239-384-1432



GROUND-WATER HYDROLOGY OF THE DADE CITY AREA, PASCO COUNTY, FLORIDA, WITH EMPHASIS ON THE HYDROLOGIC EFFECTS OF PUMPING FROM THE FLORIDAN AQUIFER

U.S. GEOLOGICAL SURVEY
WATER-RESOURCES INVESTIGATIONS 80-33



Prepared in cooperation with the
SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT



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By C. H. Tibbals, Warren Anderson, and C. P. Laughlin

U.S. GEOLOGICAL SURVEY

Water-Resources Investigations 80-33

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SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT



1980

UNITED STATES DEPARTMENT OF THE INTERIOR

CECIL D. ANDRUS, Secretary

GEOLOGICAL SURVEY

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CONVERSION FACTORS

For use of those readers who may prefer to use metric units rather than inch-pound units, the conversion factors for the terms used in this report are listed below:

<u>Multiply inch-pound units</u>	<u>By</u>	<u>To obtain metric units</u>
ft (foot)	0.3048	m (meter)
ft ² /d (foot squared per day)	0.0929	m ² /d (meter squared per day)
ft ³ /s (cubic foot per second)	2.832X10 ⁻²	m ³ /s (cubic meter per second)
gal/min (gallon per minute)	6.309X10 ⁻²	L/s (liter per second)
Mgal/d (million gallon per day)	0.0438	m ³ /s (cubic meter per second)
in. (inch)	2.540X10 ⁺¹	mm (millimeter)
in./yr (inch per year)	2.540X10 ⁺¹	mm/yr (millimeter per year)
mi (mile)	1.609	km (kilometer)
mi ² (square mile)	2.590	km ² (square kilometer)

Temperature in degrees Farenheit (°F) can be converted to degrees Celsius (°C) as follows:

$$^{\circ}\text{C} = \frac{^{\circ}\text{F}-32}{1.8} .$$

National Geodetic Vertical Datum (NGVD) of 1929 as used in this report describes what is more commonly known as mean sea level.

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ABSTRACT

The Dade City area, northeast Pasco County, Florida, is an area of about 260 square miles. Almost all water used in the area is pumped from the Floridan aquifer. Of the approximately 32 million gallons per day pumped from the aquifer in the area in 1975 about 16 million gallons per day were pumped from an area of about 0.25 square miles by a citrus processing plant. Peak, or instantaneous pumping rates, have been as high as 66 million gallons per day (April 28, 1964). Since 1972, the citrus processing plant has made increased use of recycled water and, thus, has reduced ground-water withdrawals. There are essentially two producing zones in the Floridan aquifer in the Dade City area. The upper zone is from about 10 feet above NGVD of 1929 (National Geodetic Vertical Datum of 1929) to about 150 feet below NGVD of 1929. The lower producing zone is from about 300 feet to about 500 feet below NGVD of 1929. There is some evidence that either trenching by ancient surface streams or deep vertical solution activity has resulted in the interconnection of the upper and lower zones of the Floridan aquifer. This appears to be highly significant in terms of the geohydrology of the Floridan aquifer in the area, particularly with regard to its ground-water flow pattern, water quality, and aquifer hydraulic characteristics. In the immediate vicinity of the citrus processing plant, aquifer transmissivity may range from 200,000 feet squared per day to as much as 400,000 feet squared per day. It is also probable the Floridan is only semiconfined in the immediate vicinity of the plant. High aquifer transmissivity in the area is the reason why there are only a few feet of drawdown of the Floridan potentiometric surface even near the center of the plant's well field. The long-term effects of the plant's pumping since about 1942 are not discernible from available well records. Fluctuations of the potentiometric surface of the Floridan are due mainly to variations in recharge due to the seasonal variations in the amount of rainfall. The data indicate that the relation of rainfall at Saint Leo to the flow of Weekiwachee Springs near Brooksville has changed. Since about 1950, the spring has discharged more water for a given amount of rainfall than for the period of record prior to 1950.

INTRODUCTION

The Dade City area, herein referred to as the study area, is an area of 260 mi² in northeast Pasco County (fig. 1). Almost all water supplies pumped in the Dade City area are from the Floridan aquifer, an areally-extensive limestone aquifer that underlies all of Florida and parts of Alabama, Georgia, and South Carolina. Most of the ground water used in Dade City area is for industrial use in the form of citrus processing. The largest user of ground water in the area is Lykes-Pasco Packing Co. In 1975, this citrus processing plant pumped an average of 16 Mgal/d from the Floridan aquifer from an area of less than 0.25 mi², a relatively large withdrawal rate as compared to the 1.06 Mgal/d pumped for public supply by Dade City (Healy, 1977) in an area of about 2 mi².

The Dade City area is on the northeast fringe of an area of heavy ground-water development that partially supplies the Tampa Bay area. The Southwest Florida Water Management District (SWFWMD) has the responsibility for the regulation and permitting of water use in the District whose total area includes both the Tampa Bay and Dade City areas.

Purpose and Scope

The purpose and scope of this study is to describe the ground-water hydrology of the Dade City area and to evaluate the effects of relatively large ground-water withdrawals on the local ground-water regimen. This report represents the results of about 16 months of field study.

The studied area surrounds the major center of pumping, the Lykes-Pasco citrus processing plant at Dade City which is the main focus of the study because it is the largest single water user in the area.

The results of this study should help water managers in making informed decisions in planning for future allocations of ground-water withdrawals in the area.

Previous Studies

The Dade City area has been investigated, to some degree, in four previous geohydrologic studies. Wetterhall (1964) made a geohydrologic reconnaissance of Pasco and south Hernando County. The Dade City area is included on the west fringe areas of two studies describing the hydrology of the Green Swamp area (Pride and others, 1966; Grubb and Rutledge, 1978). William F. Guyton and Associates (1974) estimated the likely effects of pumping from proposed well fields in south-central and southwest Pasco County.



Figure 1.--Location of study area.

Other investigators have included Pasco County and the Dade City area in relatively broad-scoped regional or statewide hydrologic studies. Sellards (1908), Sellards and Gunter (1913), Matson and Sanford (1913), Gunter and Ponton (1931), Stringfield (1935, 1936, 1966), Stringfield and Cooper (1950), and Cooper and others (1953) have included the area in their hydrologic reports.

The potentiometric surface of the Floridan aquifer in the SWFWMD has been mapped and published by the U.S. Geological Survey -- intermittently from 1934 to January 1964, every other year from May 1969 to May 1973, annually from May 1973 to May 1975, and in May and September beginning in May 1975.

Hydrologic data on surface water, ground water, and quality of water are published annually in the U.S. Geological Survey series, "Water resources data for Florida." In addition, flow-duration, low-flow, and high-flow characteristics for selected gaged streams in the area have been tabulated in a report by Heath and Wimberly (1971).

Some of the more important geologic and geomorphologic studies that include the Dade City area are those of Cooke (1939, 1945), Carr and Alverson (1959), White (1958, 1970), Yon and Hendry (1972), and Randazzo (1972).

Acknowledgments

The authors express their appreciation to Norvell W. Hunt, Director of Environmental Control, Lykes-Pasco Packing Co., for his assistance and many helpful comments during the investigation.

The authors are grateful to Lykes-Pasco Packing Co. for furnishing pumping data and information on their wells. Thanks are also extended to the many ranchers, grove operators, and other land owners who permitted access to their land and allowed the sampling of water and measuring of water levels in their wells.

Well-Numbering System

In this report, well data are used that are taken from files and publications of several agencies. Each agency has its own well-numbering system. Hence, to attain a consistent well-numbering system in this report, the wells used here in (fig. 2) are assigned numbers in sequential format. Table 1 is used to cross-reference the wells to their respective agencies.

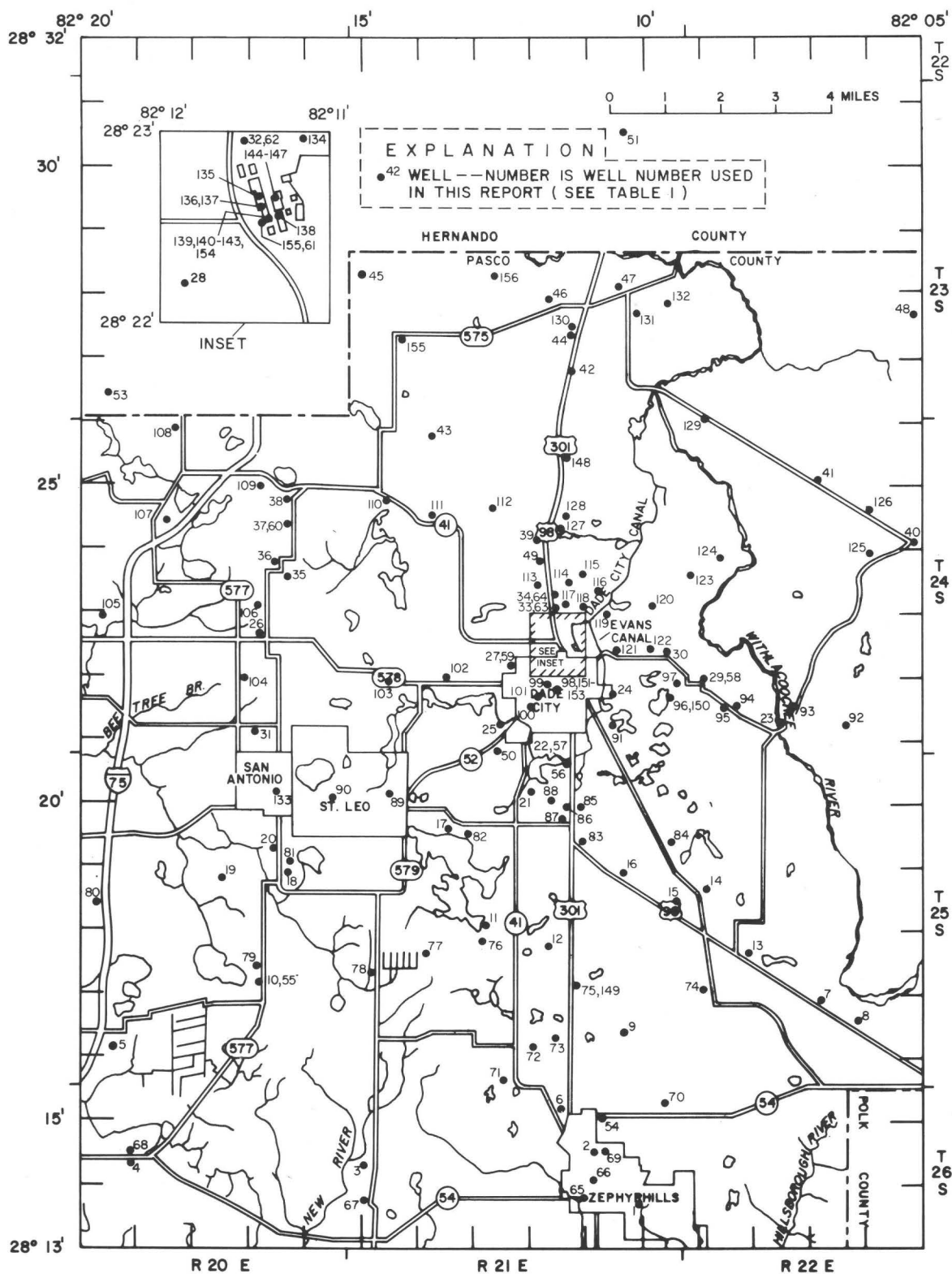


Figure 2.--Locations of wells used in this report.

Table 1.--Index to well numbers and to geologic and drillers' logs used in this report

WELL NUMBER	U.S. GEOLOGICAL WATER RESOURCES DIVISION	SURVEY NUMBER GEOLOGIC DIVISION ^{1/}	FLORIDA BUREAU OF GEOLOGY WELL NUMBER	SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT NUMBER	FLORIDA DEPART- MENT OF NATURAL RESOURCES NUMBER	OTHER NUMBER ^{2/}
1	-	-	-	-	-	813-210-01
2	-	-	W- 2972	-	-	-
3	281414082145901	-	-	-	-	814-214-01
4	281419082190601	-	-	-	-	814-219-01
5	281608082192401	-	-	-	-	816-219-01
6	-	-	W- 3284	-	-	-
7	281654082065901	-	W- 5350	-	-	816-206-01
8	-	G110	-	-	-	-
9	-	-	W-12536	-	-	-
10	281715082164401	-	W- 7466	-	-	817-216-01
11	-	-	-	-	-	819-212-01
12	281749082112701	-	W- 2160	-	-	817-211-01
13	-	G111	-	-	-	-
14	281846082085501	-	-	72- 1643	-	818-208-01
15	-	G112	-	-	-	-
16	-	G113	-	-	-	-
17	-	-	W- 5282	-	-	-
18	-	-	W- 5977	-	-	-
19	-	-	W- 5863	-	-	-
20	-	-	W- 5865	-	-	-
21	-	-	W-10617	-	-	-
22	282038082112001	-	-	-	-	820-211-01
23	282109082073301	-	-	-	-	821-207-03
24	282141082101901	-	-	-	3289	821-210-02
25	-	-	W- 6504	-	-	-
26	282234082164401	-	-	73-10989	-	822-216-01
27	282212082121801	-	W- 2707	-	-	822-212-01
28	-	-	W- 5124	-	-	-
29	282153082085602	-	-	73-13441	-	821-208-04
30	282220082093301	-	-	-	-	822-209-02
31	-	-	W- 8507	-	-	-
32	282258082113101	-	-	72- 1438	-	822-211-16
33	282303082113401	-	-	72- 4464	-	823-211-02
34	-	G114	-	-	-	-
35	-	-	W- 5866	-	-	-
36	-	-	W- 5942	-	-	-
37	282418082161301	-	-	72- 4044	-	824-216-03
38	-	-	W- 2199	-	-	-
39	-	-	W- 8840	-	-	-
40	282408082051401	-	-	-	-	824-205-01

41	282505082065501	-	-	-	-	825-206-01
42	282641082112001	-	-	-	-	826-211-01
43	-	-	-	72- 4231	-	-
44	-	-	W-11593	-	-	-
45	-	-	W-10298	-	-	-
46	-	-	W- 6470	-	-	-
47	-	-	-	72- 8946	-	-
48	282740082050801	-	-	-	-	827-205-01
49	282346082114901	-	-	-	29710	823-211-05
50	282048082123301	-	-	-	-	820-212-01
51	283050082105001	-	W- 4410	-	-	830-210-01
52	282905082163401	-	-	-	-	829-216-01
53	-	-	W- 8426	-	-	-
54	281504082104801	-	-	ROMP DP 86	-	815-210-01
55	281715082164402	-	-	-	-	817-216-02
56	282036082112101	-	-	-	-	820-211-02
57	282037082111601	-	-	-	-	820-211-03
58	282153082085601	-	-	-	-	821-208-03
59	282212082121802	-	-	-	-	822-212-02
60	282418082162001	-	-	-	-	824-216-01
61	282230082112202	-	-	-	-	822-211-18
62	282258082113102	-	-	-	-	822-211-17
63	282302082113401	-	-	-	-	823-211-01
64	282315082113601	-	-	-	-	823-211-03
65	281348082110201	-	-	-	-	813-211-01
66	281404082105201	-	-	-	-	814-210-02
67	281331082145301	-	-	-	-	813-214-01
68	281425082190801	-	-	-	-	814-219-02
69	281431082104701	-	-	-	-	814-210-01
70	281513082094601	-	-	-	-	815-209-01
71	281545082122001	-	-	-	-	815-212-01
72	281610082115901	-	-	-	-	816-211-02
73	281621082113001	-	-	-	-	816-211-01
74	281704082085201	-	-	-	-	817-208-01
75	281730082111101	-	-	-	-	817-211-02
76	281755082124501	-	-	-	-	817-212-01
77	281743082135101	-	-	-	-	817-213-01
78	281725082144801	-	-	-	-	817-214-01
79	281725082164401	-	-	-	-	817-216-03
80	281827082194501	-	-	-	-	818-219-01

^{1/} Carr and Alverson (1959).

^{2/} Wetterhall (1964).

Table 1.--Index to well numbers and to geologic and drillers' logs used in this report - Continued

WELL NUMBER	U.S. GEOLOGICAL WATER RESOURCES DIVISION	SURVEY NUMBER GEOLOGIC DIVISION ^{1/}	FLORIDA BUREAU OF GEOLOGY WELL NUMBER	SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT NUMBER	FLORIDA DEPART- MENT OF NATURAL RESOURCES NUMBER	OTHER NUMBER ^{2/}
81	281906082161601	-	-	-	-	819-216-01
82	281929082131301	-	-	-	-	819-213-01
83	281927082111201	-	-	-	-	819-211-01
84	281930082093701	-	-	-	-	819-209-01
85	281958082110201	-	-	-	-	819-211-05
86	281955082111701	-	-	-	-	819-211-04
87	281942082113101	-	-	-	-	819-211-03
88	282005062112801	-	-	-	-	820-211-04
89	282007082142901	-	-	-	-	820-214-01
90	282005082153501	-	-	-	-	820-215-01
91	282114062103101	-	-	-	-	821-210-01
92	282117062062001	-	-	-	-	821-206-01
93	282121062071101	-	-	-	-	821-207-02
94	282130082082401	-	-	-	-	821-208-02
95	282130082082901	-	-	-	-	821-208-01
96	282143062093201	-	-	-	-	821-209-02
97	282153082092601	-	-	-	-	821-209-01
98	282147082113001	-	-	-	-	821-211-01
99	282152062114101	-	-	-	-	821-211-05
100	282132082115901	-	-	-	-	821-211-06
101	282138082115201	-	-	-	-	821-211-07
102	282155082132601	-	-	-	-	821-213-01
103	282154082142401	-	-	-	-	821-214-01
104	282158082170801	-	-	-	-	821-217-01
105	282258082193601	-	-	-	-	822-219-01
106	282304082164401	-	-	-	-	823-216-01
107	282428082182801	-	-	-	-	824-218-01
108	282552082181201	-	-	-	-	825-218-01
109	282459082164301	-	-	-	-	824-216-02
110	282443082143201	-	-	-	-	824-214-01
111	282428082134501	-	-	-	-	824-213-01
112	282442082124401	-	-	-	-	824-212-01
113	282319082115001	-	-	-	-	823-211-04
114	282326082112001	-	-	-	-	823-211-09
115	282332082110101	-	-	-	-	823-211-06
116	282319082105201	-	-	-	-	823-210-02
117	282306082112601	-	-	-	-	823-211-07
118	282307082111101	-	-	-	-	823-211-08
119	282259082104101	-	-	-	-	822-210-02
120	282303082094901	-	-	-	-	823-209-01

121	282221082103001	-	-	-	-	822-210-01
122	282212082094801	-	-	-	-	822-209-01
123	282336082091001	-	-	-	-	823-209-02
124	282352082083501	-	-	-	-	823-208-01
125	282353082055301	-	-	-	-	823-205-01
126	282434082055801	-	-	-	-	824-206-01
127	282425082112901	-	-	-	-	824-211-01
128	282430082112101	-	-	-	-	824-211-02
129	282601082083901	-	-	-	-	826-208-01
130	282728082111001	-	-	-	-	827-211-01
131	282742082100701	-	-	-	-	827-210-01
132	282735082095201	-	-	-	-	827-209-01
133	282011082162701	-	-	-	-	820-216-01
134	282259082110901	-	-	-	-	822-211-19
135	282239082112401	-	-	-	-	822-211-07
136	282235082112301	-	-	-	-	822-211-05
137	282235082112302	-	-	-	-	822-211-06
138	282235082111901	-	-	-	-	822-211-15
139	282233082112203	-	-	-	-	822-211-01
140	282233082112204	-	-	-	-	822-211-03
141	282233082112201	-	-	-	-	822-211-04
142	282233082112202	-	-	-	-	822-211-12
143	282233082112206	-	-	-	-	822-211-13
144	282240082112001	-	-	-	-	822-211-08
145	282240082112002	-	-	-	-	822-211-09
146	282240082112003	-	-	-	-	822-211-10
147	282240082112004	-	-	-	-	822-211-11
148	282527082112301	-	-	-	-	825-211-01
149	281713082111501	-	-	-	-	817-211-03
150	282143082093301	-	-	-	-	821-209-03
151	282147082113002	-	-	-	-	821-211-02
152	282147082113003	-	-	-	-	821-211-03
153	282147082113004	-	-	-	-	821-211-04
154	282233082112205	-	-	-	-	822-211-14
155	282230082112201	-	-	-	-	822-211-02
156	282717082142001	-	-	-	-	827-214-01
157	282816082123701	-	-	-	-	828-212-01
158	282127082022501	-	-	-	-	821-202-02
-	-	-	-	-	-	-
-	-	-	-	-	-	-

^{1/}Carr and Alverson (1959).

^{2/}Wetterhall (1964).

DESCRIPTION OF THE AREA

The study area is mostly rural. According to the Pasco County Planning Department (David Pettrow, written commun., August 24, 1978), of the estimated 46,000 people living in the entire 260 mi² area as of July 1, 1977, about 10,500 live in the 10 mi² of incorporated areas comprised by San Antonio, St. (Saint) Leo, Zephyrhills, and Dade City. The rural population consists of about 36,000 people living in an area of about 250 mi², a population density of about 140 people per mi² as opposed to about 1,050 people per mi² in the incorporated areas.

Much of the area north and east of U.S. Highway 98 and east of Zephyrhills is flat and swampy and is generally used only for cattle ranching and timber harvesting for pulpwood. In the past, the area was extensively logged for cypress. Most of the remainder of the study area is also in agricultural use; citrus and cattle ranching being the predominant land-use categories.

The study area is on the west flank of Cooke's (1939, 1945) Central Highlands. A more specific physiographic breakdown is made by referring to White (1970, pl. 1-B) and figure 3: The part of the study area that has surface altitudes greater than about 100 ft is herein considered part of the Brooksville Ridge, the dominant topographic feature in the area. An adjacent area consisting of an approximately 2- to 3-mile-wide swath dissected by the Withlacoochee River and extending from the north limit of the study area to about the south latitude of Dade City is part of the Tsala Apopka Plain. The remainder of the study area is in the Western Valley.

The topography of the study area ranges from virtually flat to steeply rolling. Land surface altitudes range from 301 ft above NGVD of 1929 6 mi northwest of Dade City to about 60 ft above NGVD of 1929 along the flood plain of the Withlacoochee River in the northeast. Scattered throughout the south-central part of the area are relatively small, topographically high "islands," some of which are 50 to 60 ft higher than the surrounding area.

In terms of surface drainage, the extreme northwest part of the study area is drained by tributaries to the Pithlachascotee River, the west and south parts are drained by the Hillsborough River and its tributaries, and the remainder of the area is drained by the Withlacoochee River and its tributaries (fig. 3).

At high stages there is diversion of water from the upper Withlacoochee River basin into the headwaters of the Hillsborough River. According to Pride and others (1966), at high stages more than one-fourth of the flow from the upper Withlacoochee is diverted into the Hillsborough.

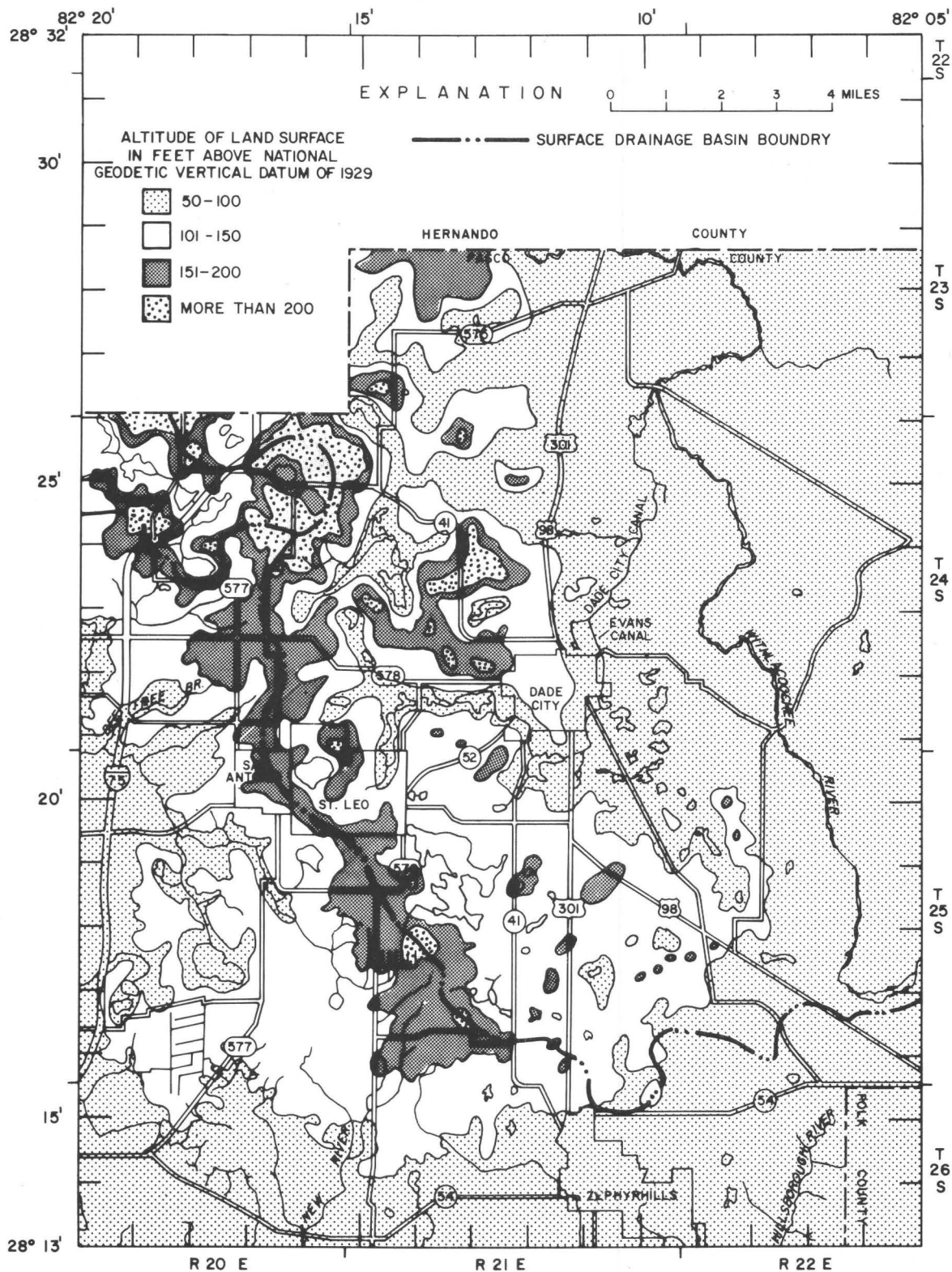


Figure 3.--Generalized topography and surface drainage in the Dade City area.

CLIMATE

The climate of central Florida is classed as subtropical humid and is characterized by long, warm, relatively wet summers and mild, relatively dry winters.

According to the National Oceanographic and Atmospheric Administration records for St. Leo, the average annual rainfall is 56.36 in./yr. For the period of record, 1902 through 1977, the maximum yearly rainfall was 81.93 in. in 1945 and the minimum was 36.61 in. in 1961.

Rainfall is unevenly distributed during the year. About 55 percent of the annual rainfall occurs during four summer months, June, July, August, and September (fig. 4). In addition to the uneven temporal distribution of the rainfall, it can also be unevenly distributed throughout the area at any given time, especially during the summer. This is because most of the summer rainfall is derived from local showers or thunderstorms that occur in a generally random manner throughout the area. Many of those local storms wet only a relatively small part of the total study area. The summer rainfall can be substantially augmented by tropical storms and hurricanes that pass through or near the Florida peninsula from time to time.

Winter rainfall generally results from cold air masses from the north (in the form of fronts) moving south through the area causing the resident warm air masses to lose their moisture, almost always in the form of rain. Winter rainfall generally occurs over wide areas and thus is not as spotty as summer rainfall.

The average annual temperature at St. Leo is about 72°F. Monthly mean temperatures range from about 61°F in January to about 82°F in August. Most years have a few days of freezing temperatures but the minimum daily temperature rarely falls below 20°F. The maximum temperature frequently exceeds 90°F but only occasionally exceeds 100°F.

GEOLOGIC SETTING

As noted in the section on previous studies, the geology of the area has been described by several investigators including Wetterhall (1964) and Pride and others (1966). The geologic information in this report is mainly a summary of the data obtained by those previous investigators. Those data in addition to information from numerous drillers' logs on file with the Florida Bureau of Geology, Southwest Florida Water Management District, and the Florida Department of Natural Resources are used to construct several geologic sections (figs. 6-13), the locations of which are shown in figure 5. The generalized water-bearing characteristics of the various geologic formations are described in table 2.

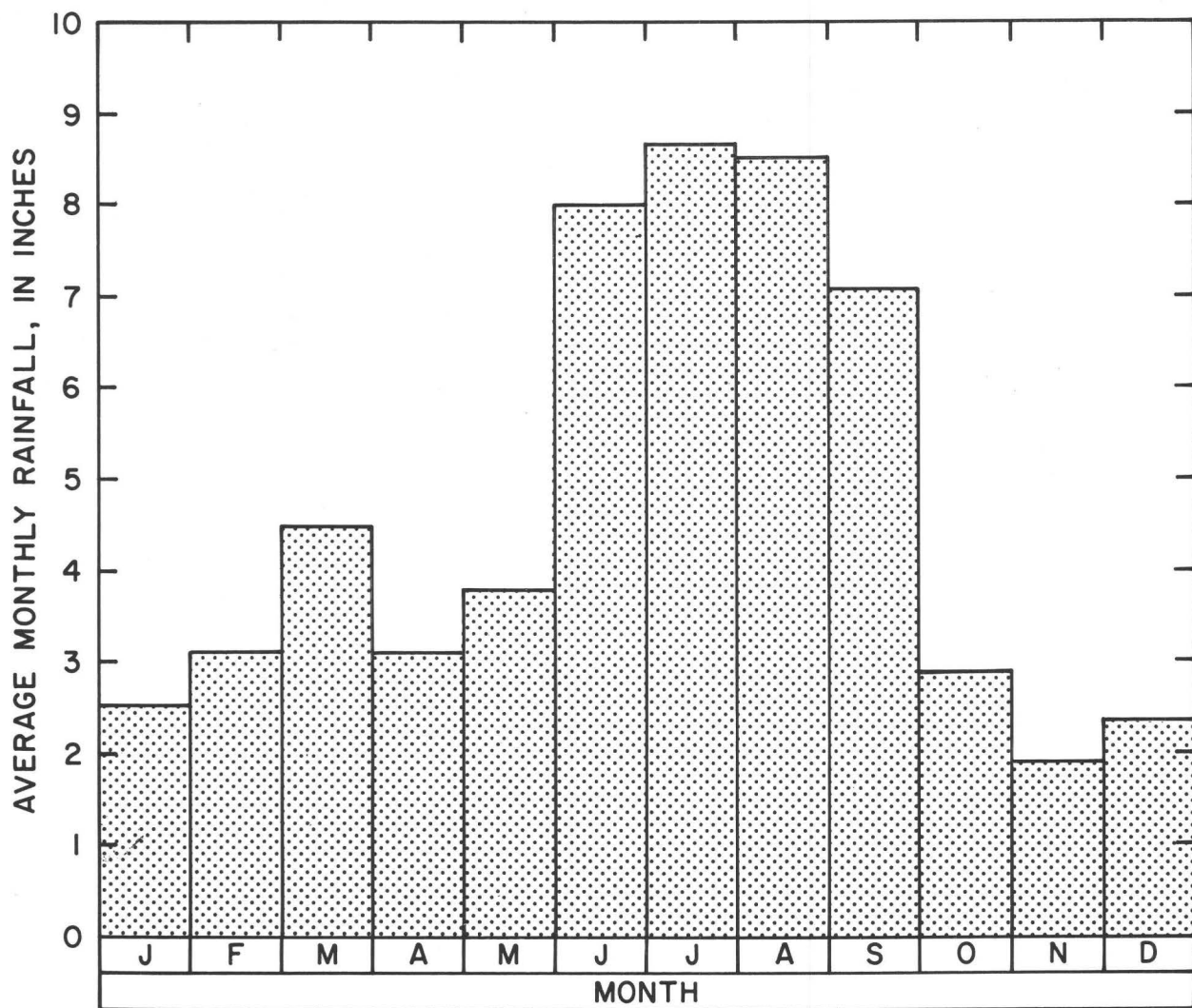


Figure 4. Average monthly rainfall at St. Leo, Florida.

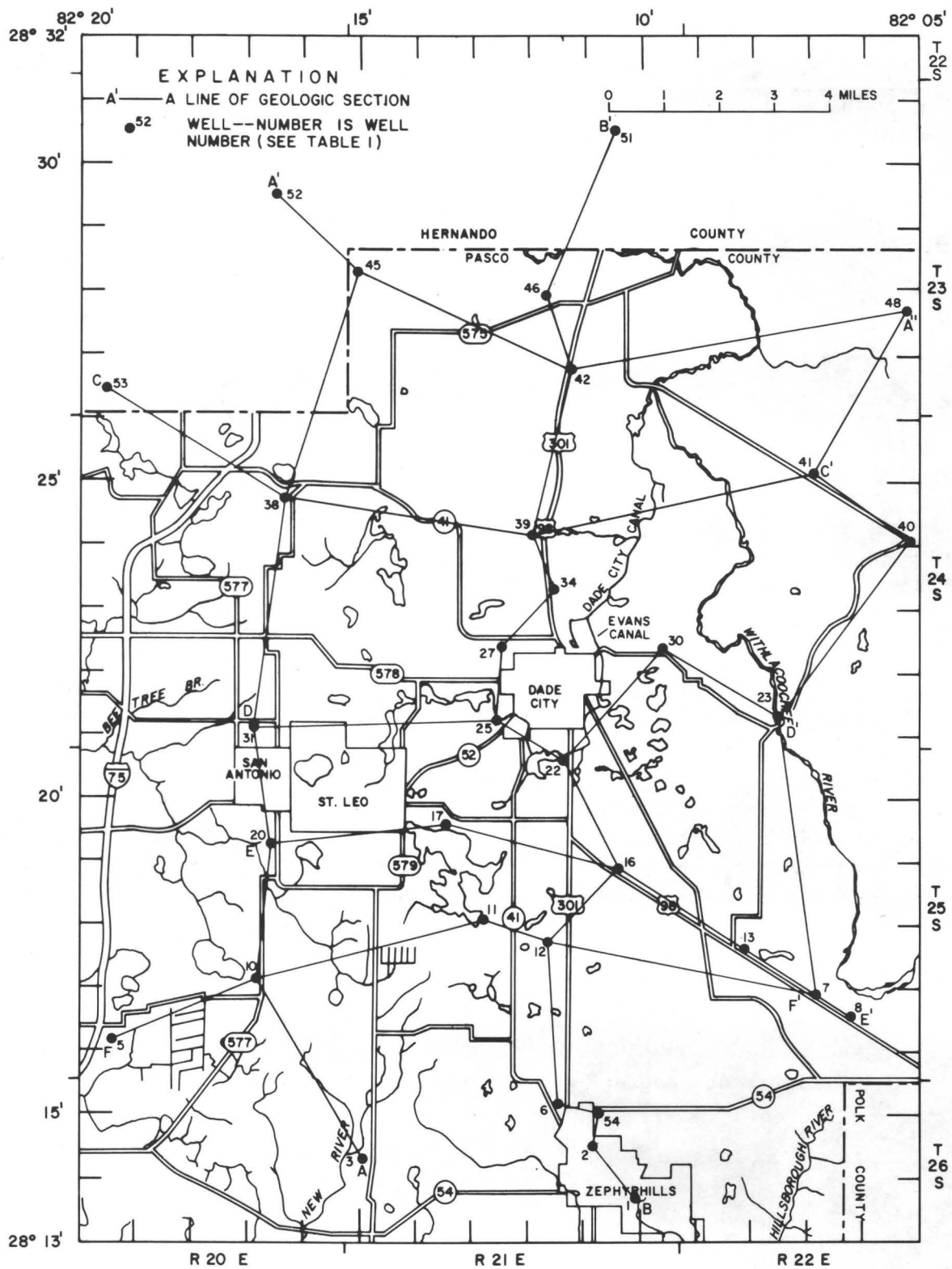


Figure 5.--Locations of geologic sections shown in figures 6-13.

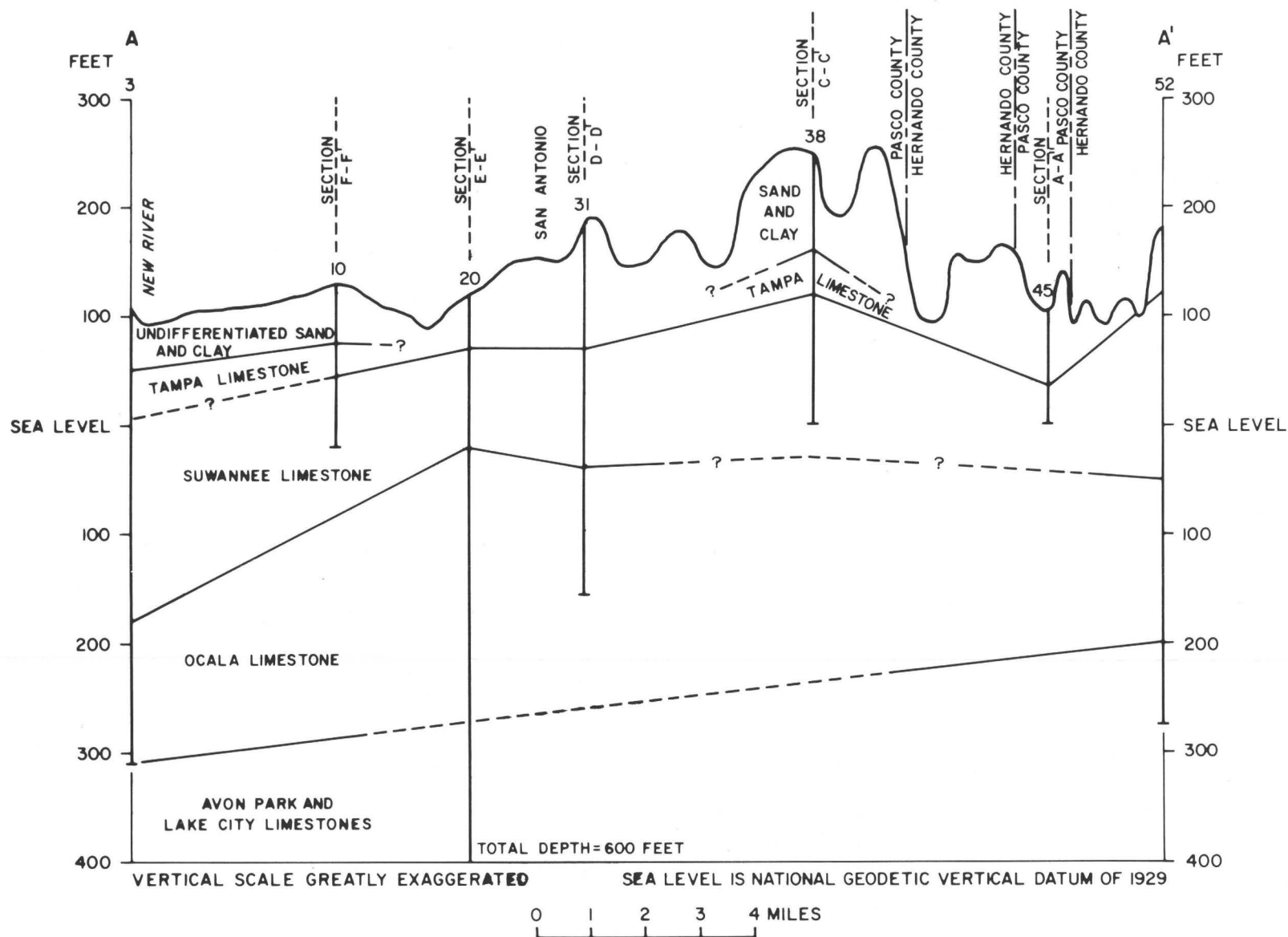


Figure 6.--Geologic section A-A'.

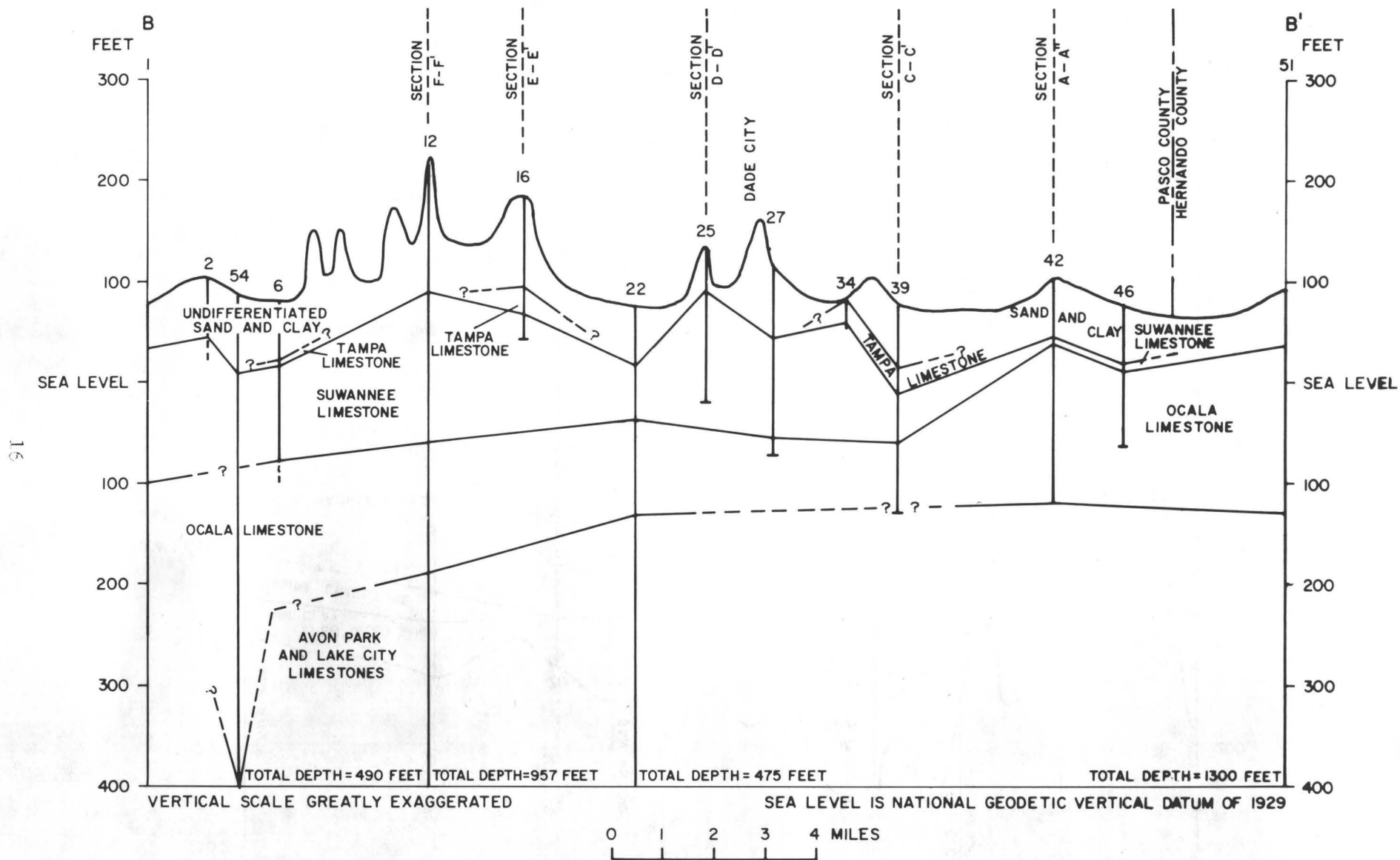


Figure 7.--Geologic section B-B'.

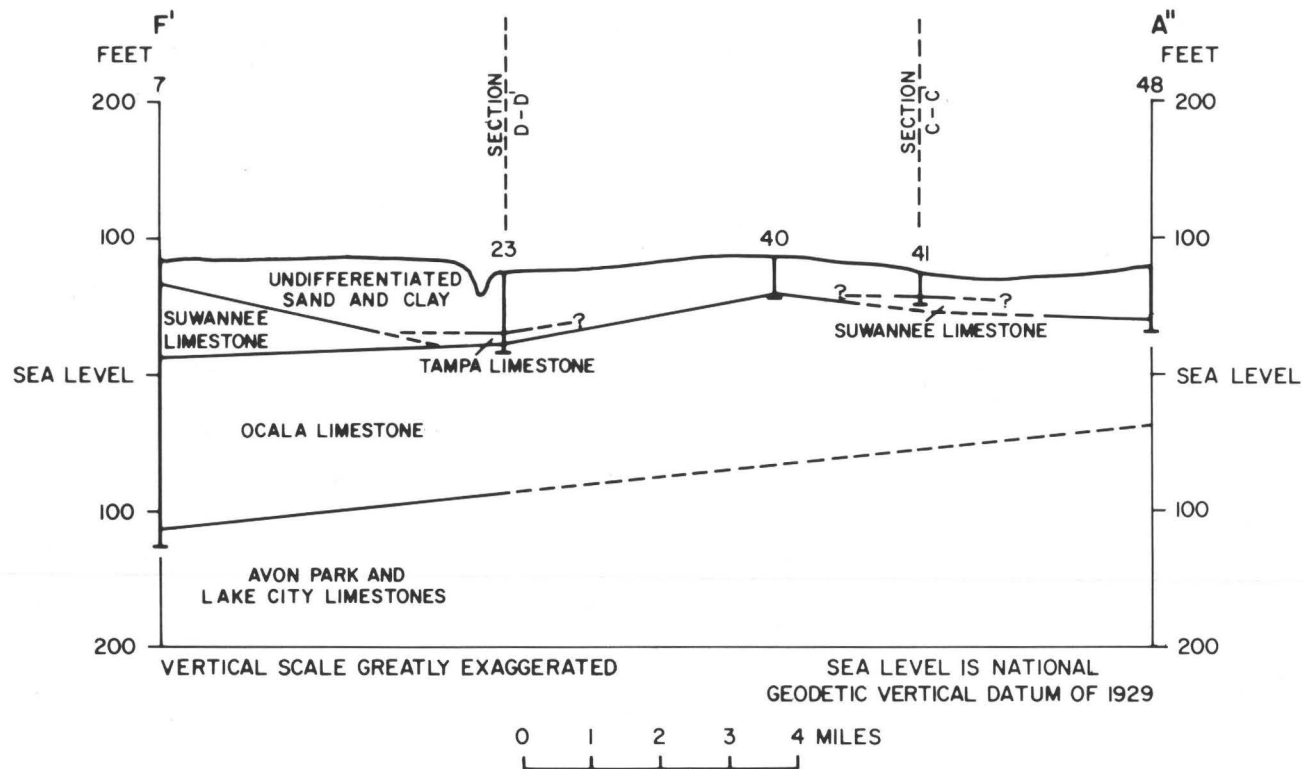


Figure 8.--Geologic section F'-A''.

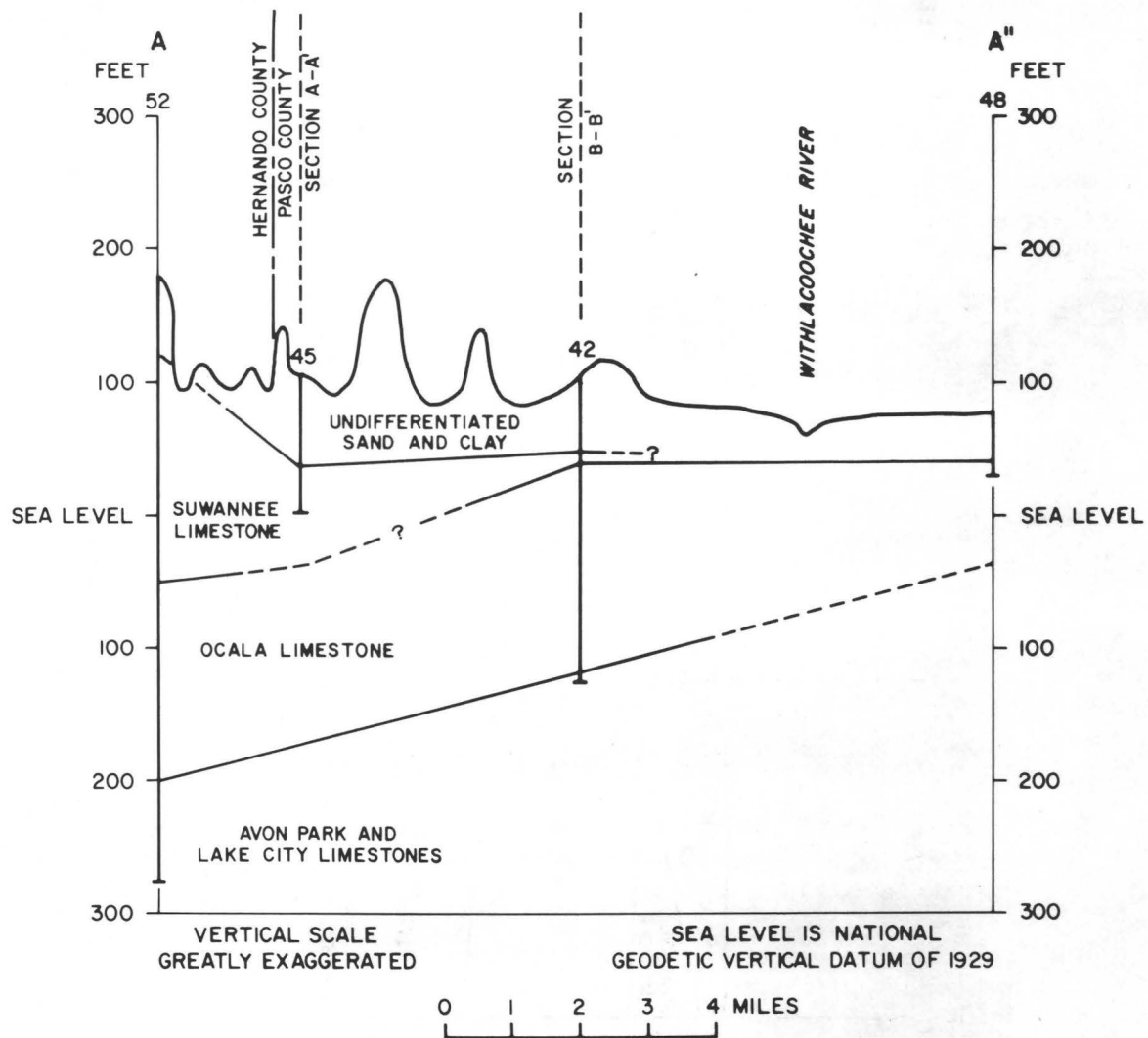


Figure 9.--Geologic section A'-A''.

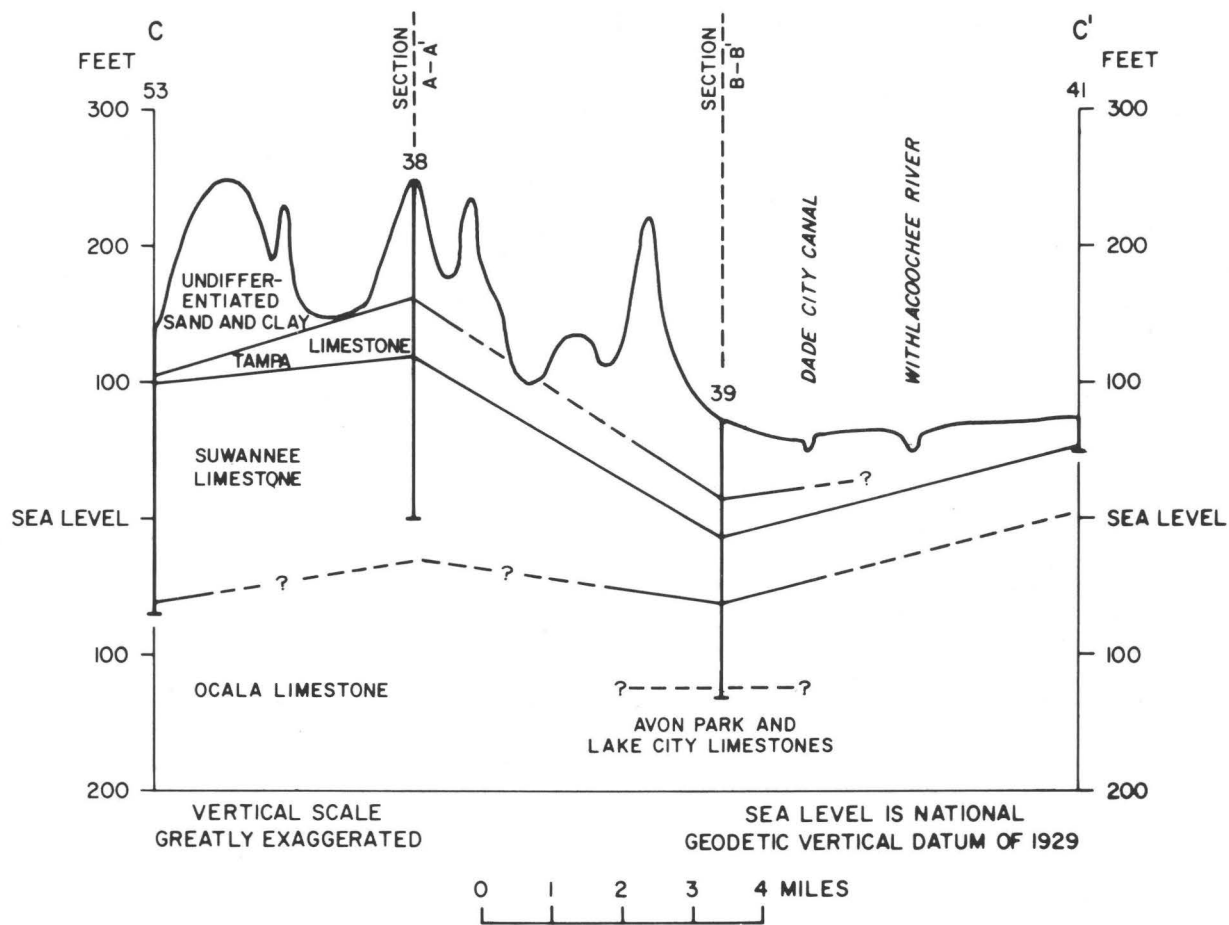


Figure 10.--Geologic section C-C'.

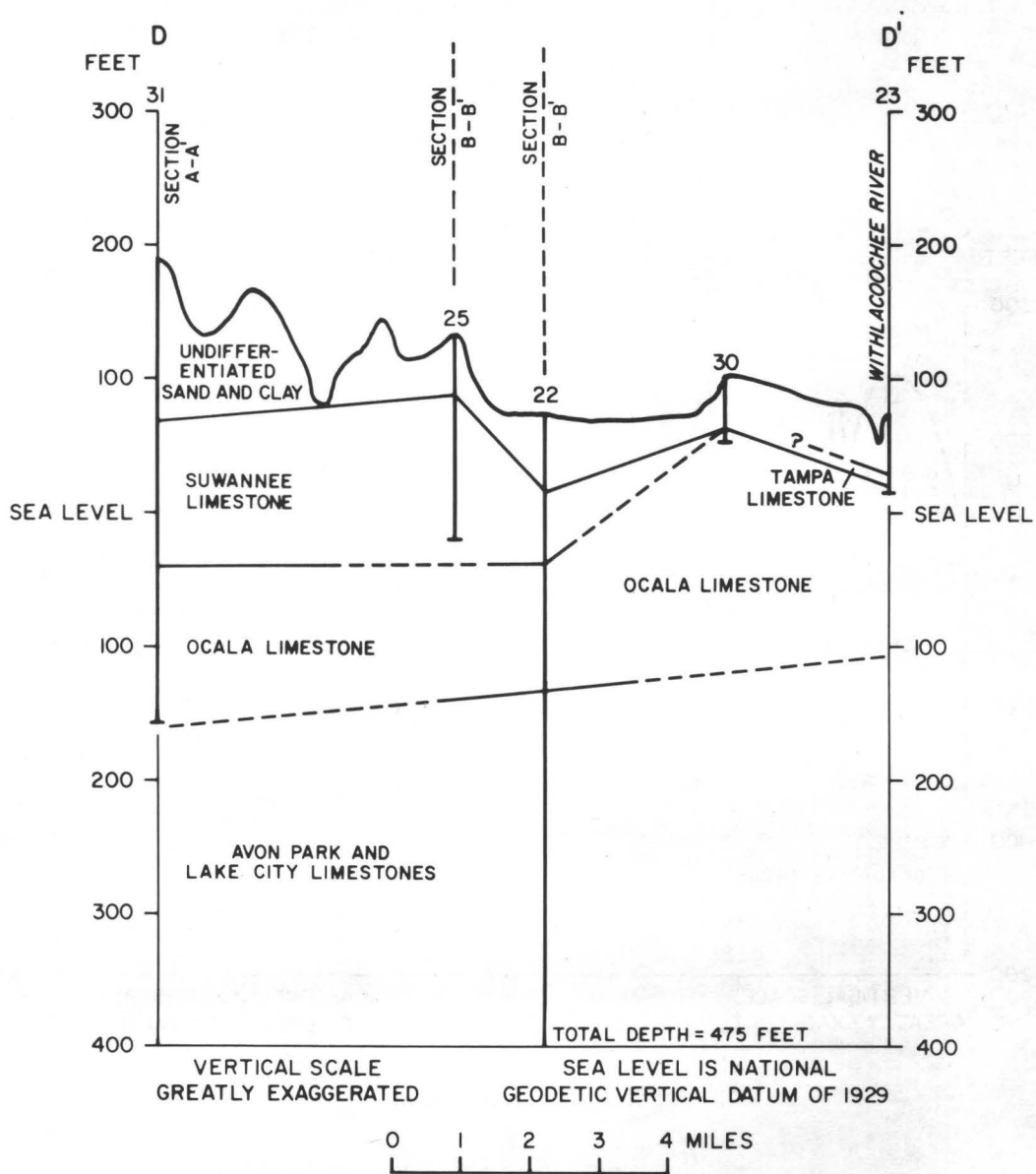


Figure 11.--Geologic section D-D'.

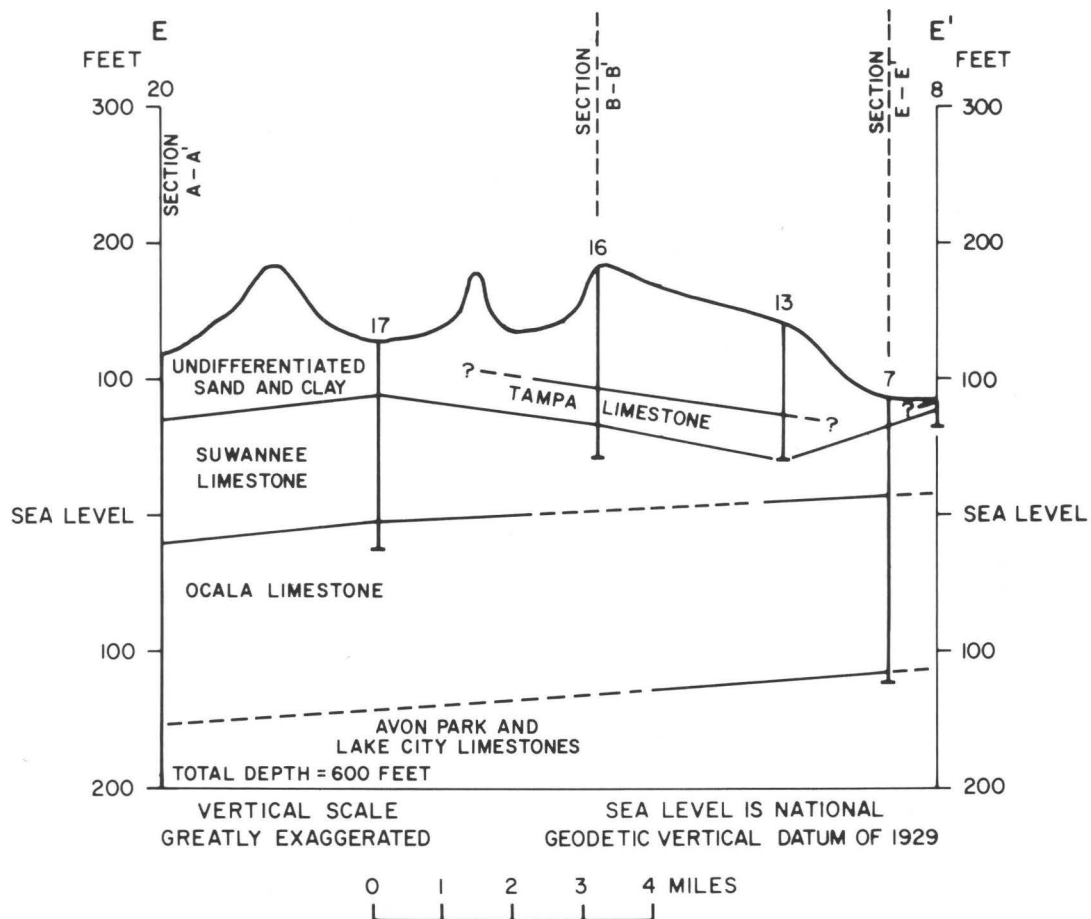


Figure 12.--Geologic section E-E'.

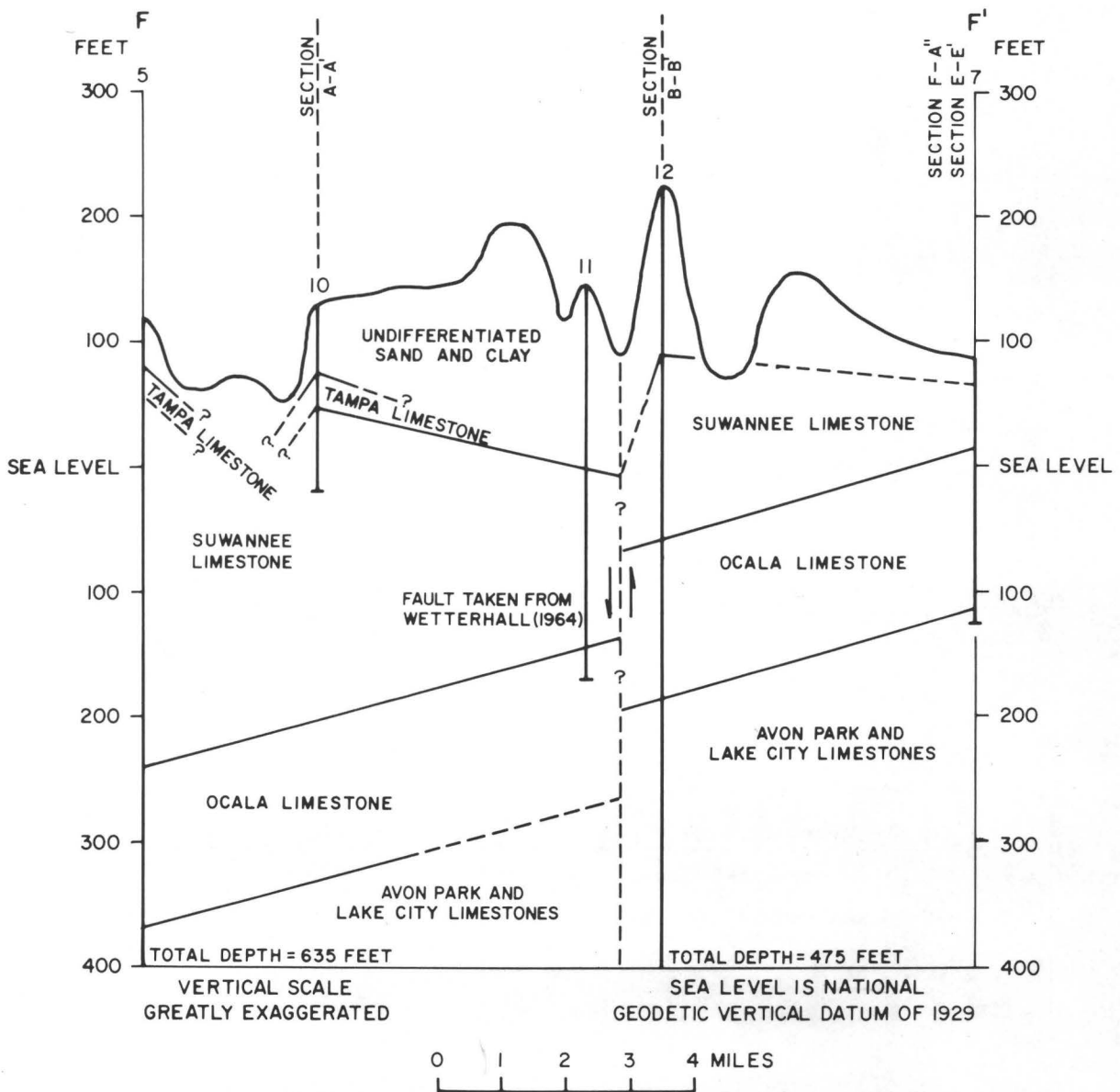


Figure 13.--Geologic section F-F'.

Table 2.--Geologic formations and their water-bearing characteristics in the Dade City area

Age	Formation	Lithology	Quality of water	Use
Holocene and Pleistocene	Undifferentiated sand and clay	Interbedded sand and clay up to 250 feet thick.	Objectionable concentration of iron and high organic color are common.	Only a few small domestic wells.
Miocene	Tampa Limestone	White to gray, sandy, fossiliferous limestone.	Generally satisfactory for domestic supplies without treatment.	Most domestic and many irrigation wells produce water from the basal Suwannee Limestone. Some wells in southwestern Pasco County produce water from the Tampa Limestone if the Suwannee Limestone contains salty water.
Oligocene	Suwannee Limestone	Fossiliferous, yellow to white, finegrained limestone. Hard at bottom.		
Eocene	Ocala Limestone	Soft, chalky, white to tan co-quinoid limestone.	Not well known but probably similar to water from Suwannee Limestone in most areas.	Only a few wells produce water from local cavities.
		Hard, fossiliferous, brown to gray dolomitic limestone.	Contains more sulfate than water from overlying formations but probably does not exceed public health limits in most of area.	Most wells that produce more than 1,000 gal/min penetrate the lower part of the Ocala Limestone and/or part of the hard brown dolomitic section of the Avon Park and Lake City Limestones.
	Avon Park Limestone	Soft to hard, fossiliferous, brown limestone with dark brown beds of dolomitic limestone. Some sapropel.		
	Lake City Limestone			

GROUND WATER

In the study area, ground water occurs under nonartesian and artesian conditions. Nonartesian conditions occur where the upper surface of the zone of saturation (water table) is free to rise and fall in direct response to local rainfall (recharge) and to discharge. Artesian conditions occur where the water in an aquifer is confined by a bed of less permeable material and will rise, in a tightly cased well, above the base of the confining bed. The level to which the water will rise defines the altitude of the aquifer's potentiometric surface, or head, at that location. If the head is above land surface, the well will flow. Measurements of the water level in many artesian wells are used to define the configuration of the potentiometric surface over broad areas.

Surficial Aquifer

The surficial aquifer in the study area is unconfined and consists of sedimentary deposits of white-to-tan, fine to medium-fine quartz sands that grade downward into orange-to-red clayey sand. At some depth below the water table the sand and clayey sand generally grade into a zone of blue or gray-green clay and sandy clay that acts as a confining bed for the underlying limestones that comprise the Floridan aquifer.

The saturated thickness of the surficial aquifer is variable. Its thickness ranges from virtually zero near where the Withlacoochee River borders Hernando County to as much as 90 ft in the topographically-high sand hills northwest of Dade City (fig. 3).

The water table in the surficial aquifer ranges from at or near land surface in the lowlands to a depth of several tens of feet in the sand hills northwest of Dade City. Where the surficial aquifer is thin or where it is underlain by relatively impermeable materials, the water table can stand near land surface even though in the sand hills. For example, about 2 mi south of St. Leo, in a topographically high area (fig. 3) there is a network of drainage ditches used to help maintain the water table at levels lower than it would stand under natural conditions.

The surficial aquifer is recharged by local rainfall, irrigation, septic-tank effluent, and, in areas where the potentiometric surface of the Floridan aquifer is above the water table, from the Floridan by upward leakage through confining beds. Water leaves the surficial aquifer by seepage to lakes, ditches, and streams; by evapotranspiration where the water table is near land surface; by pumpage; and, where the potentiometric surface of the Floridan aquifer is below the water table, by downward leakage to the Floridan.

In terms of the potable water supply of the Dade City area, the most important function of the surficial aquifer is to store water, some of which recharges the Floridan aquifer. The surficial aquifer is little used as a direct source of ground water because, relative to the Floridan aquifer, its permeability is low resulting in relatively low yields to wells. Also, according to Wetterhall (1964), water from the surficial aquifer often contains objectionable concentrations of dissolved iron and is likely to be highly colored.

Floridan Aquifer

In the Dade City area, the principal artesian aquifer is the Floridan aquifer, an approximately 2,000-foot-thick limestone and dolomitic limestone. The top of the Floridan (fig. 14), as used in this report, is characterized by the first vertically persistent occurrence of consolidated carbonate rocks.

In the Dade City area, the Floridan consists of those parts of the Tampa Limestone that meet the above criterion, the Suwannee Limestone, Ocala Limestone, Avon Park Limestone, and part, or, perhaps, all of the Lake City Limestone.

The base of the aquifer and top of the sub-Floridan confining unit is defined as the top of the first vertically persistent anhydrite beds or, in their absence, the top of the transition of the generally permeable carbonate sequence to the much less permeable gypsiferous and anhydritic carbonate beds and beds of chalk. The supra-Floridan confining unit in the Dade City area generally consists of the blue to gray-green clay and sandy clay that, where present, extends from the base of the surficial aquifer to the top of the Floridan.

The Floridan aquifer is recharged (1) by downward leakage from the surficial aquifer in areas where the water table is above the potentiometric surface of the Floridan and where the supra-Floridan confining beds are semipermeable, thin, or breached by sinkholes and (2) by direct rainfall in areas where the Floridan crops out. Discharge from the Floridan occurs by pumping wells, springflow, and by upward leakage to the surficial aquifer in areas where the potentiometric surface of the Floridan is above the water table.

The geologic sections (figs. 6-13) show only one vertical displacement in the Floridan aquifer that could be attributable to faulting (fig. 13) but this does not rule out the possibility of jointing or solution activity causing high transmissivity lineations and, thus, preferential vertical and horizontal flow patterns due to such lineations. The map showing altitude of the top of the Floridan aquifer (fig. 14) shows two generally north-south trending troughs or trench-like features. These features and their hydrologic significance are discussed in later sections of this report.

Figure 15 shows the depths of wells inventoried in the study area by the U.S. Geological Survey. If the well depths shown in figure 15 are considered representative of typical well depths in the study area and if it is assumed that wells are generally drilled no deeper than the depth at which the required amount of water is obtained, then figure 15 suggests that there are essentially two primary producing zones in the Floridan. One zone is from about 10 ft above NGVD of 1929 to 150 ft below NGVD of 1929 and another zone is from about 300 ft to 500 ft below NGVD of 1929. Ryder (1978, fig. 3, p. 7) found nearly the same vertical distribution of water bearing zones in an area about 14 mi southwest of Dade City in the Cypress Creek well-field area. Caliper logs of a few wells (table 3) indicate the presence of cavities in the Floridan aquifer at about the same depths as suggested by figure 15.

Potentiometric Surface

The altitude of the potentiometric surface is constantly changing, mainly in response to changes in rates of recharge and discharge and, to a lesser extent, barometric fluctuations and earth tides. Major fluctuations of the potentiometric surface are seasonal and in response to rainfall or the lack of rainfall. Hydrographs of the two wells in figure 16 show that ground-water levels follow a cyclical pattern of rise and fall that, in general, corresponds with the wet and dry seasons of the year. The long-term trends of water levels of the Floridan aquifer in the Dade City area show no large decline in spite of generally below-normal rainfall since mid-1966 (fig. 16).

Figure 17 shows the regional configuration of the potentiometric surface of the Floridan aquifer in west-central peninsular Florida. The regional flow of ground water in the Floridan aquifer is from areas of high altitude of the potentiometric surface to areas of low altitude, and from areas of recharge to areas of discharge. In the study area, water in the Floridan aquifer flows toward the center from east and west and flows out of the area to the north and south. A north-south trending "trough" in the potentiometric surface in the center of the study area was shown as early as 1934 (fig. 18) by Stringfield (1936, pl. 12). The trough shown by Stringfield is also present in the more recent and detailed Floridan potentiometric maps constructed during this investigation (figs. 19-22). Possible reasons for the occurrence of the trough are: (1) pumping by wells and natural Floridan aquifer discharge, (2) higher aquifer transmissivity in a narrow north-south-trending zone, or (3) a combination of (1) and (2). Reasons (1) and (2) are discussed in the section on "Geohydrology."

Quality of Water

The chemical characteristics of ground water are mostly determined by the types of rocks with which it is in contact, and the length of time the water has been in contact with the rocks.

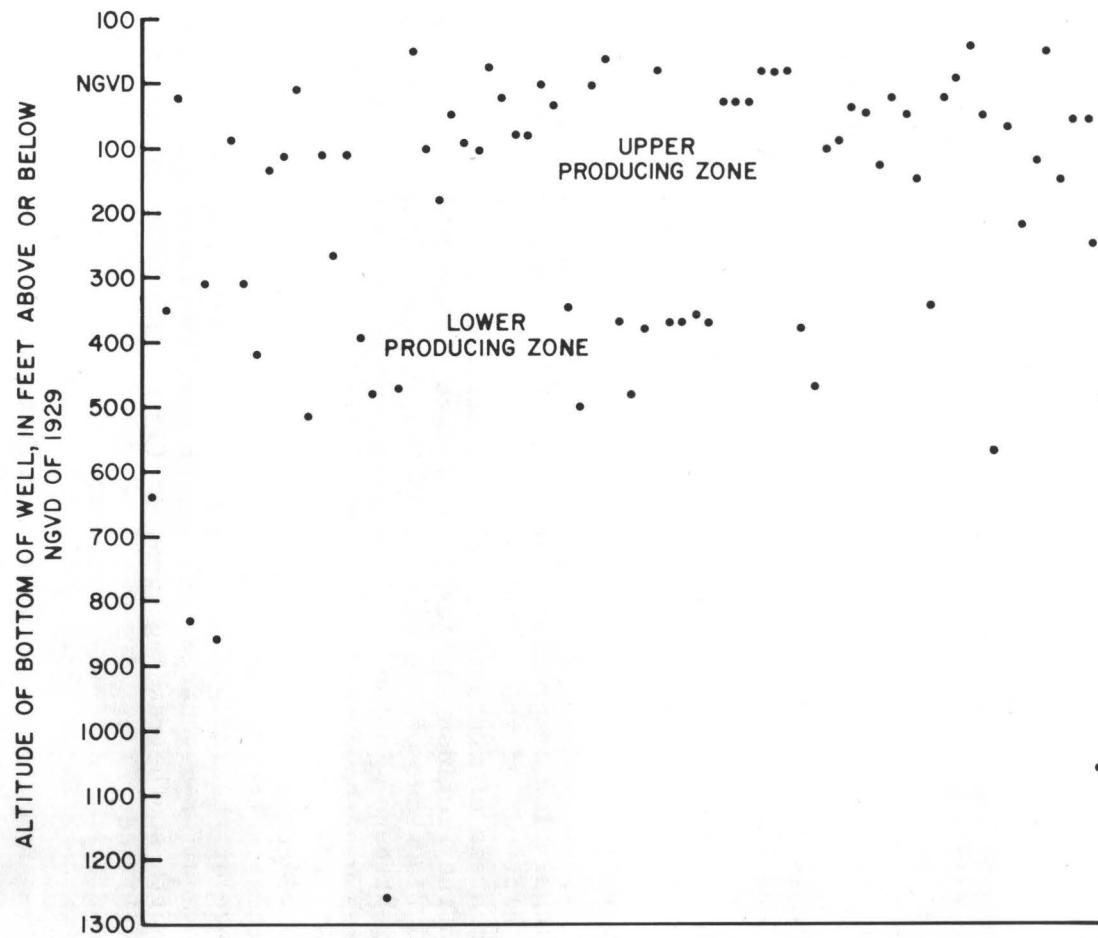


Figure 15.--Altitude of bottoms of inventoried wells in the study area.

Table 3.--Floridan aquifer wells in the Dade City area for which caliper logs are available

Well (see table 1)	Depth interval logged (feet)		Total depth (feet)	Altitude of land surface (feet above NGVD of 1929)
	from	to		
¹ 50	64	1425	1434	175.66
² 139	248	460	461	88.56
³ 62	62	178	178	77.43
⁴ 61	116	171	176	85.27

¹Krissman's well; logs furnished by Craig Helpling, Florida Department of Environmental Regulation.

²Lykes-Pasco Packing Co.; potable supply.

³Lykes-Pasco Packing Co.; fire well test hole.

⁴Lykes-Pasco Packing Co.; observation well.

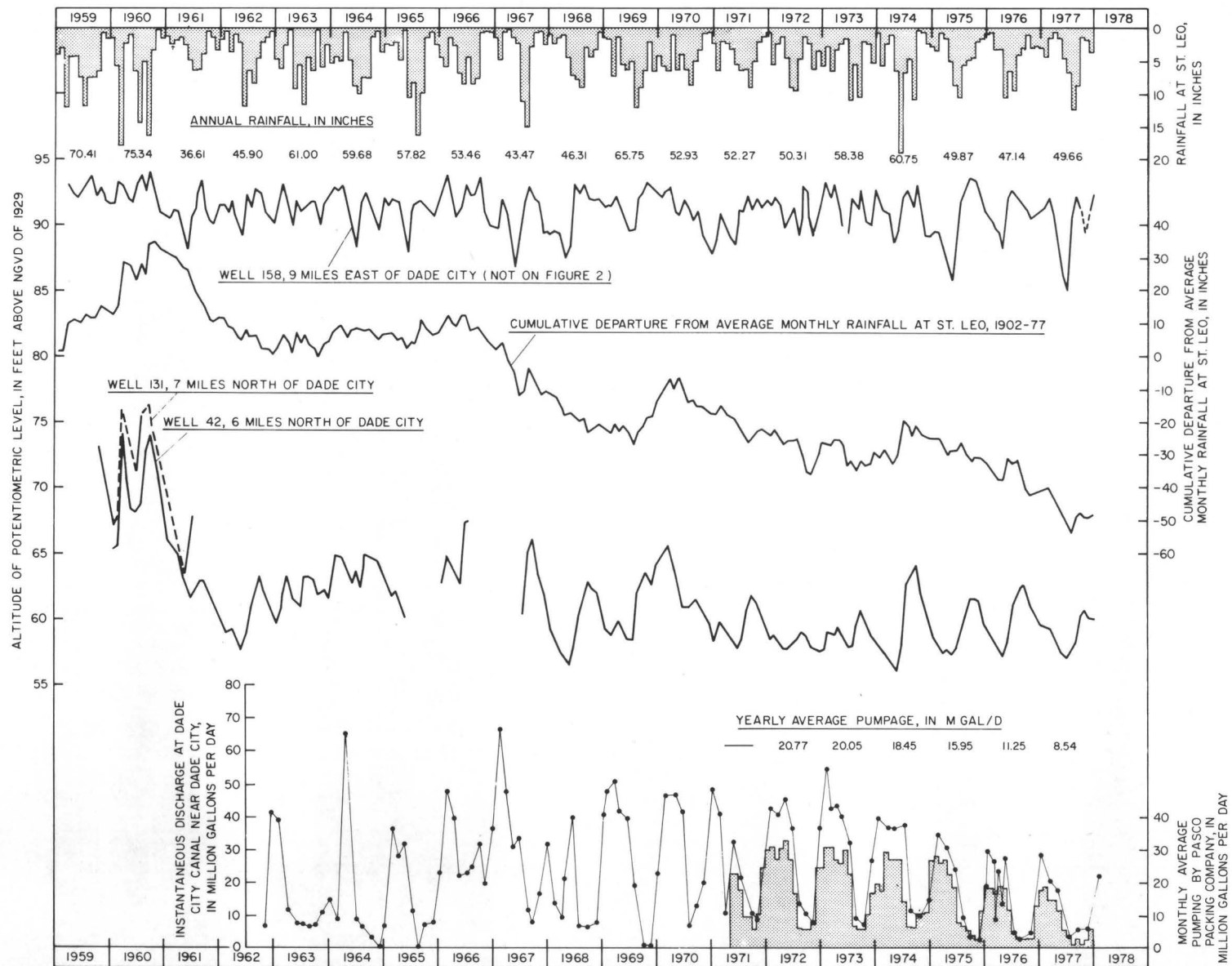
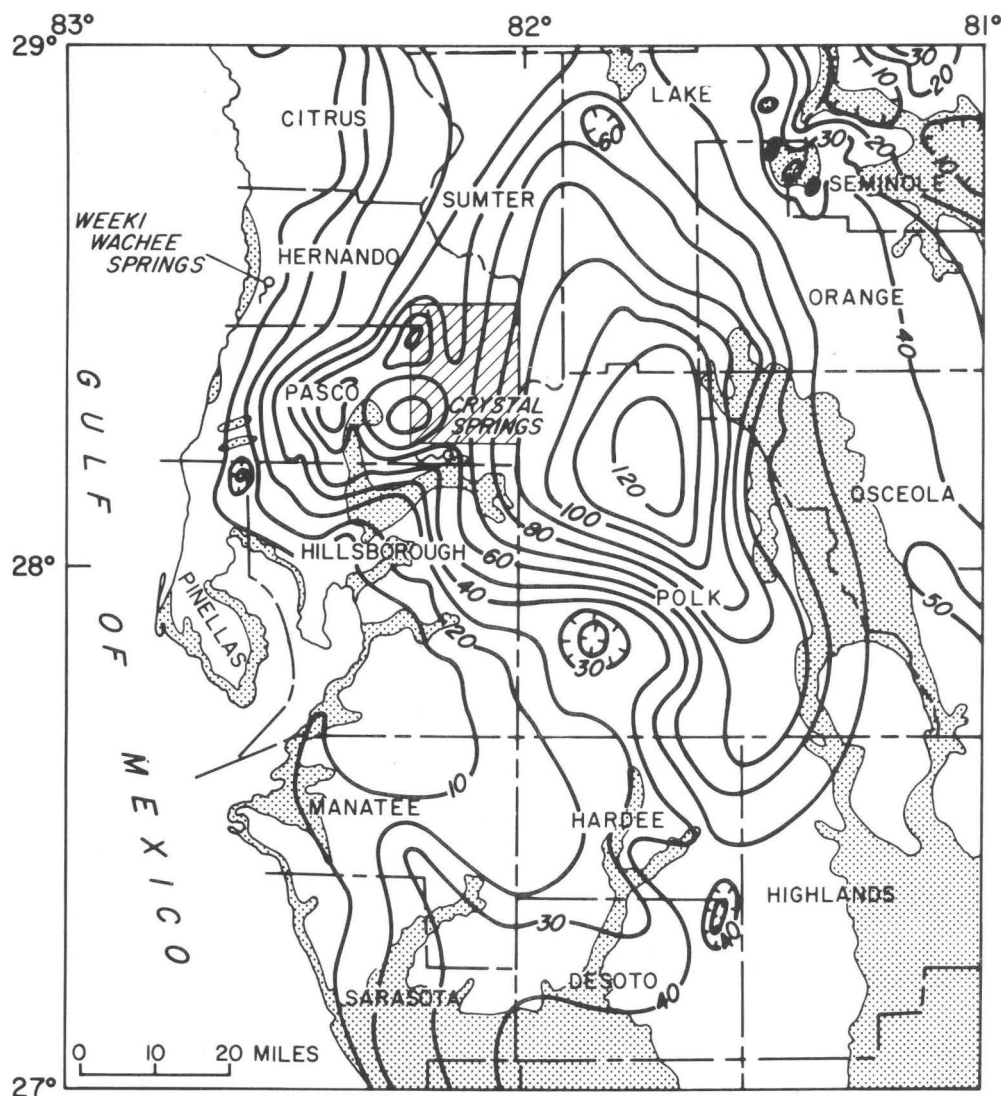


Figure 16.--Monthend potentiometric levels in selected Floridan aquifer wells, monthly rainfall at St. Leo, cumulative departure from average monthly rainfall at St. Leo, discharge of Dade City Canal near Dade City, and pumping by Lykes-Pasco Packing Co., January 1959-December 1977.



EXPLANATION

— 50 — POTENTIOMETRIC CONTOUR—Shows altitude at which water level would have stood in tightly cased wells that tap the Floridan aquifer, May 1974. Contour interval is 10 feet. Datum is National Geodetic Vertical Datum of 1929



AREA OF ARTESIAN FLOW



STUDY AREA

Figure 17.--Potentiometric surface and areas of artesian flow of the Floridan aquifer in west-central peninsular Florida, May 1974.

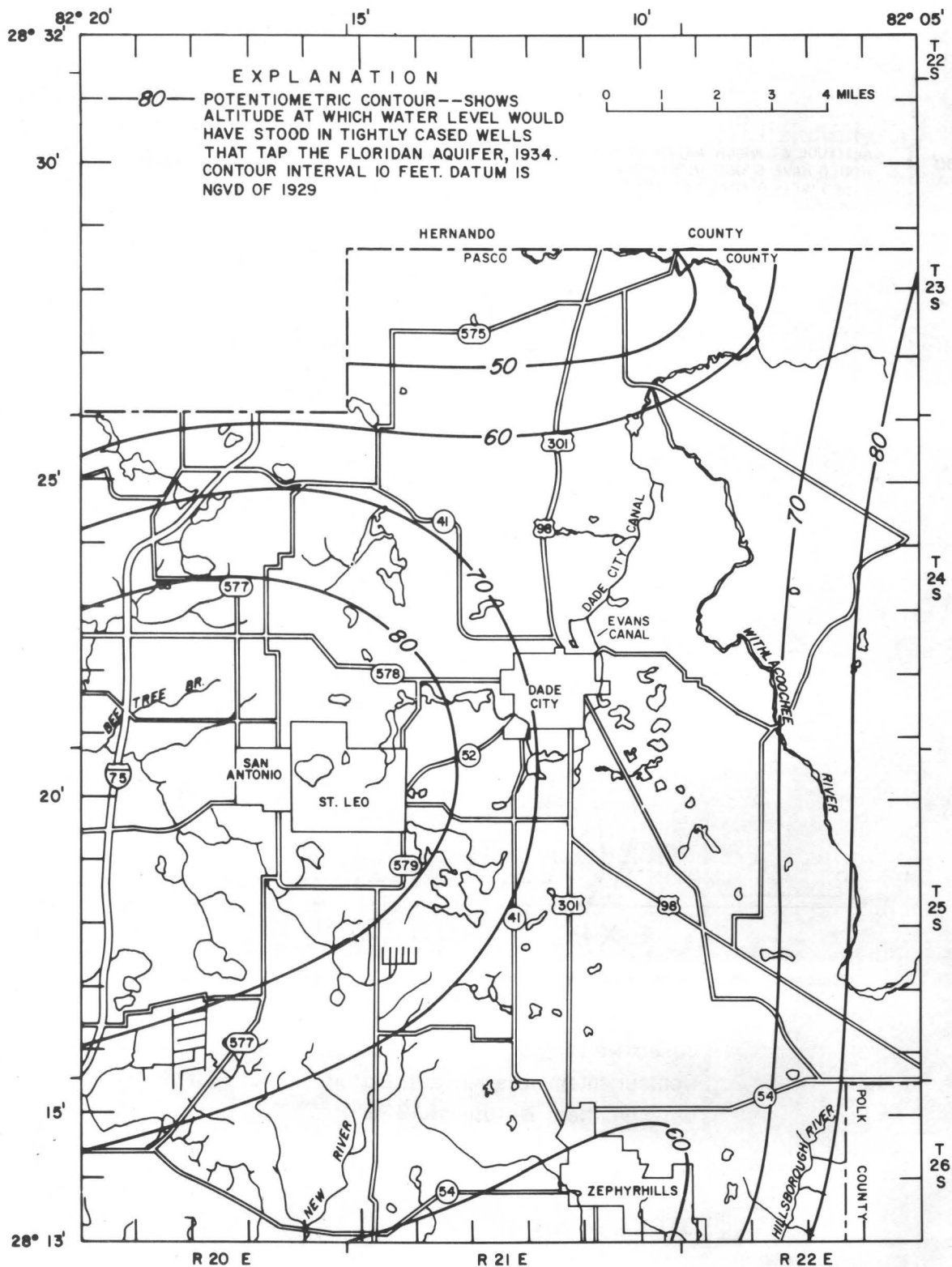


Figure 18.--Potentiometric surface of the Floridan aquifer in the Dade City area, 1934 (adapted from Stringfield, 1936).

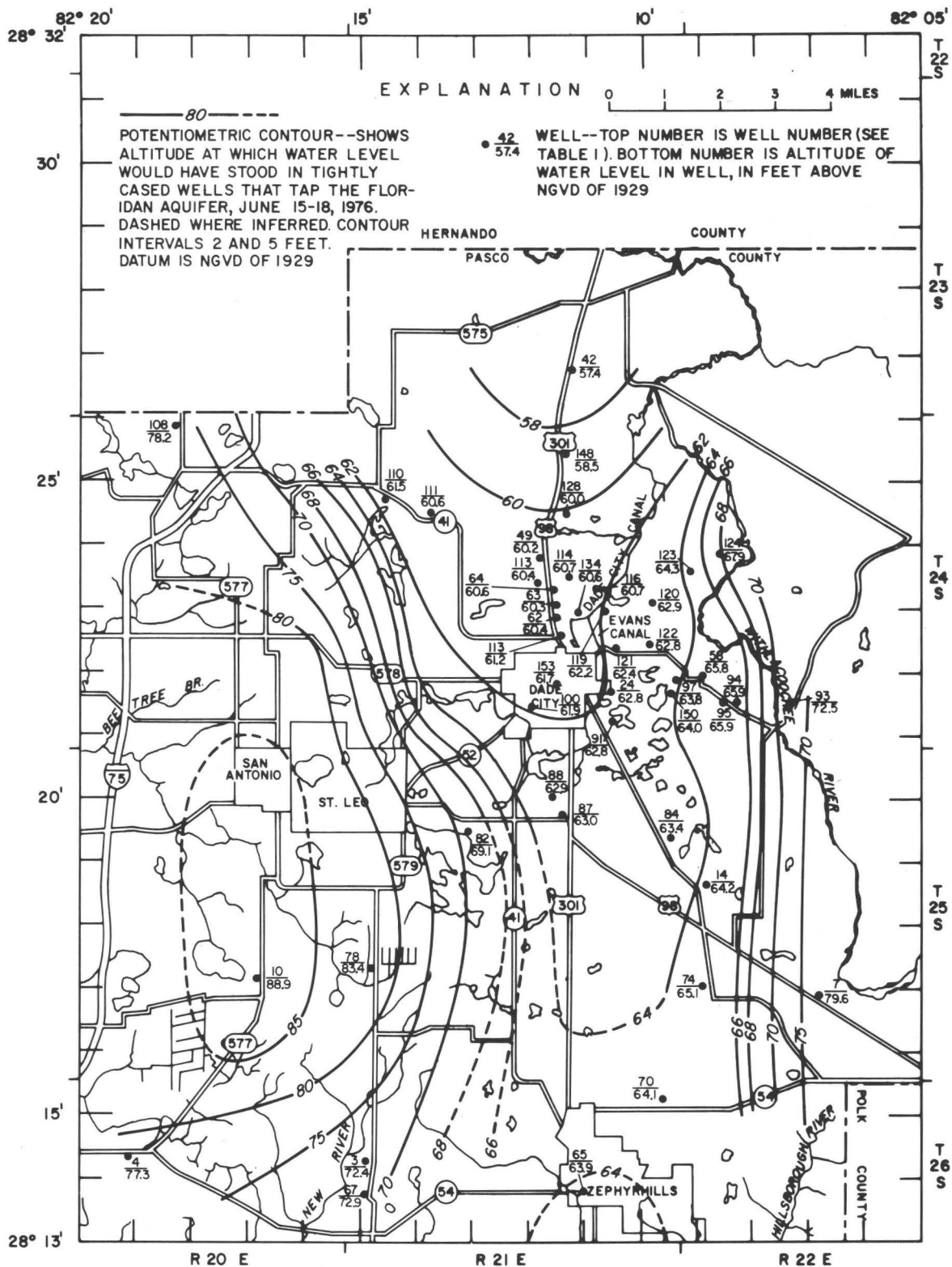


Figure 19.--Potentiometric surface of the Floridan aquifer in the Dade City area, June 15-18, 1976.

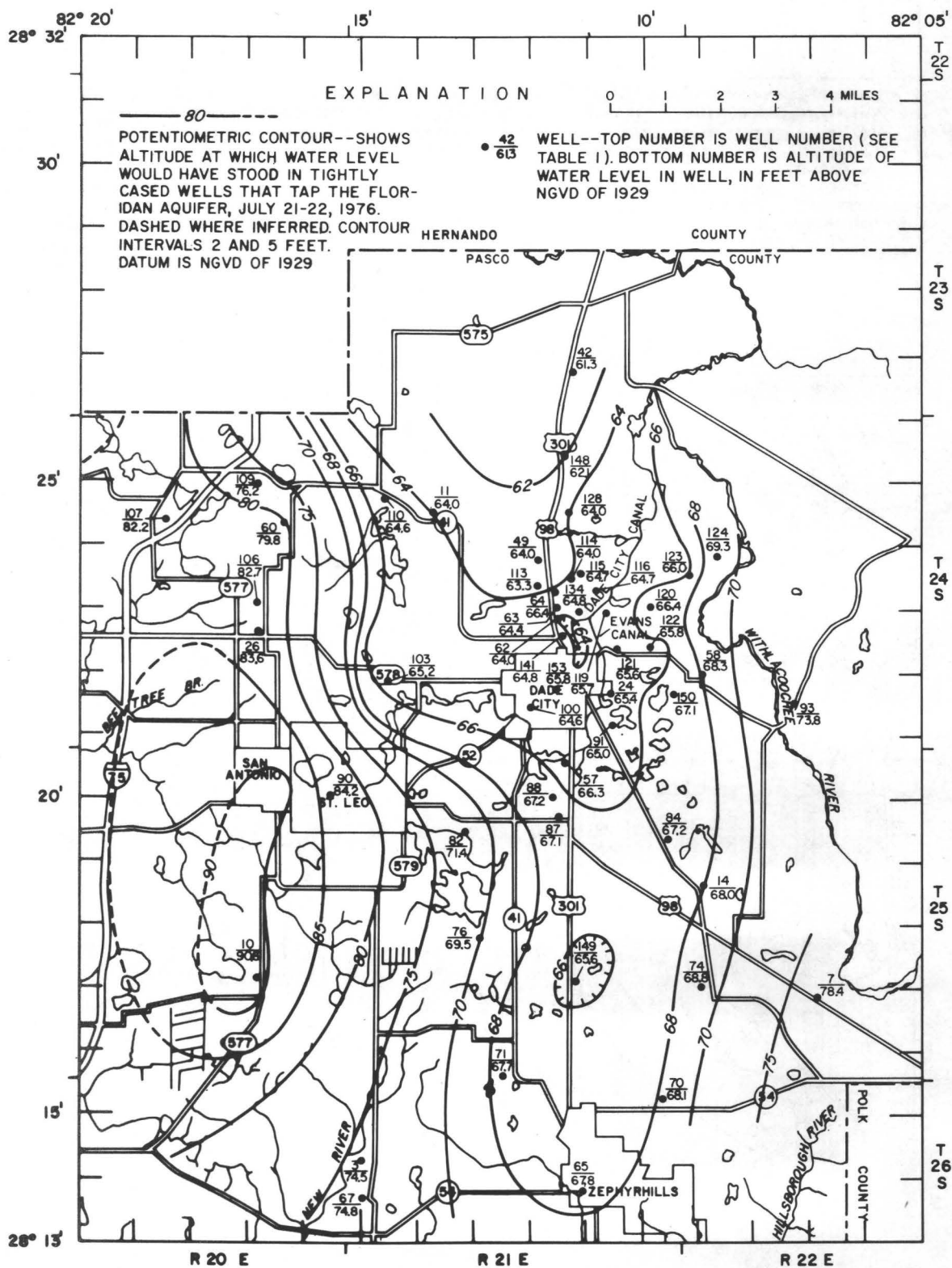


Figure 20.--Potentiometric surface of the Floridan aquifer in the Dade City area, July 21-22, 1976.

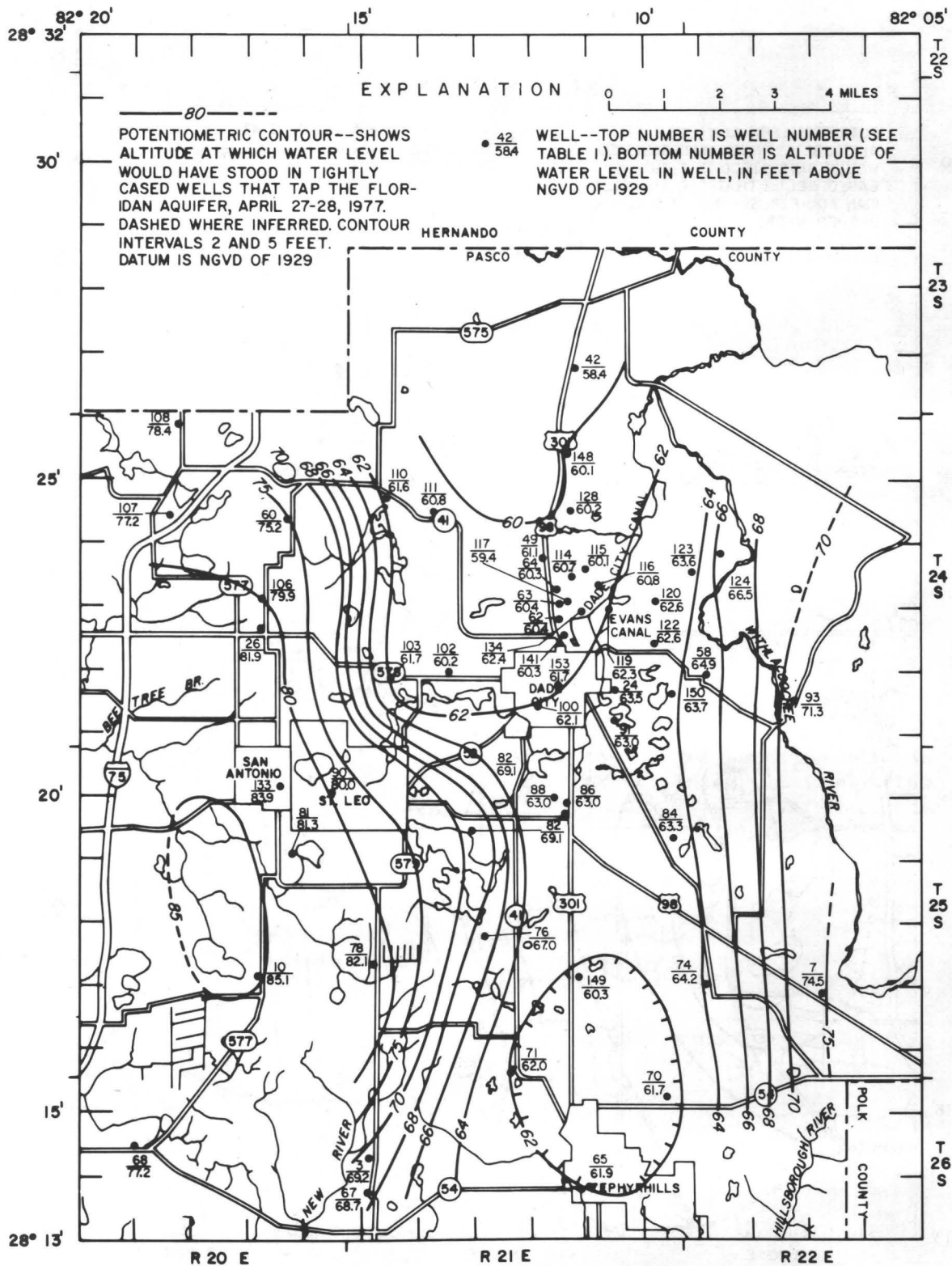


Figure 22.--Potentiometric surface of the Floridan aquifer in the Dade City area, April 27-28, 1977.

In general, the mineralization of water in the Floridan aquifer in the study area tends to increase with depth. An example of such increase in mineralization is given by figure 23. Note that, below an altitude of about 650 ft below NGVD of 1929, the mineralization of the water in well 50, as represented by its hardness, dissolved solids concentration, and specific conductance, increases rather steeply. This indicates that, at altitudes of less than about 650 ft below NGVD of 1929 the Floridan aquifer flow system is relatively sluggish as compared to the flow system at shallower depths.

Though mineralization tends to increase with depth, the chemical quality of Floridan aquifer water also varies from place to place within the study area. The chemical characteristics of Floridan aquifer water at depths of 650 ft or less with respect to dissolved solids, hardness, and sulfate in the Dade City area are shown in figures 24-26. Those parameters vary areally and definite patterns are readily apparent.

The hardness of water and the dissolved solids concentration is greatest on the east and west flanks of the study area and lowest in the center to the north and south of Dade City (figs. 24 and 25). The sulfate concentration in the water is greatest in the immediate vicinity of Dade City and least to the west, south, and east of Dade City (fig. 26). Within any of the patterned areas of figures 24-26 the concentration or value of the chemical parameter is, in general, greater in the deeper wells. Where the values are considered anomalously high for a particular area they are ignored in the overall interpretation but remain as data points on the figures. The data values are flagged as "not representative." Examples of such wells are the northernmost wells sampled in Zephyrhills (well 69) and well 60, 2 mi south of Hernando County and 2 mi east of Interstate Highway 75 (figs. 24-26).

The sulfate concentration is relatively high in water from relatively shallow Floridan aquifer wells in the immediate vicinity and to the north and south of Lykes-Pasco Packing Co. (figs. 26 and 27). The reason for the occurrence of these relatively shallow, high-sulfate waters, usually indicative of water at greater depths, is not known but it could be the result of joints or solution channels in the limestone. It is possible that such joints or channels could provide an avenue for upward movement of deeper waters in response to pumping. Some indirect evidence for interconnection of zones of the Floridan aquifer in the immediate vicinity of Lykes-Pasco is presented in the "Geohydrology" section of this report. An alternative explanation for the relatively shallow, high-sulfate waters is that unreported beds of gypsum or anhydrite (sulfate-bearing rocks) might exist at shallow depths in the area.

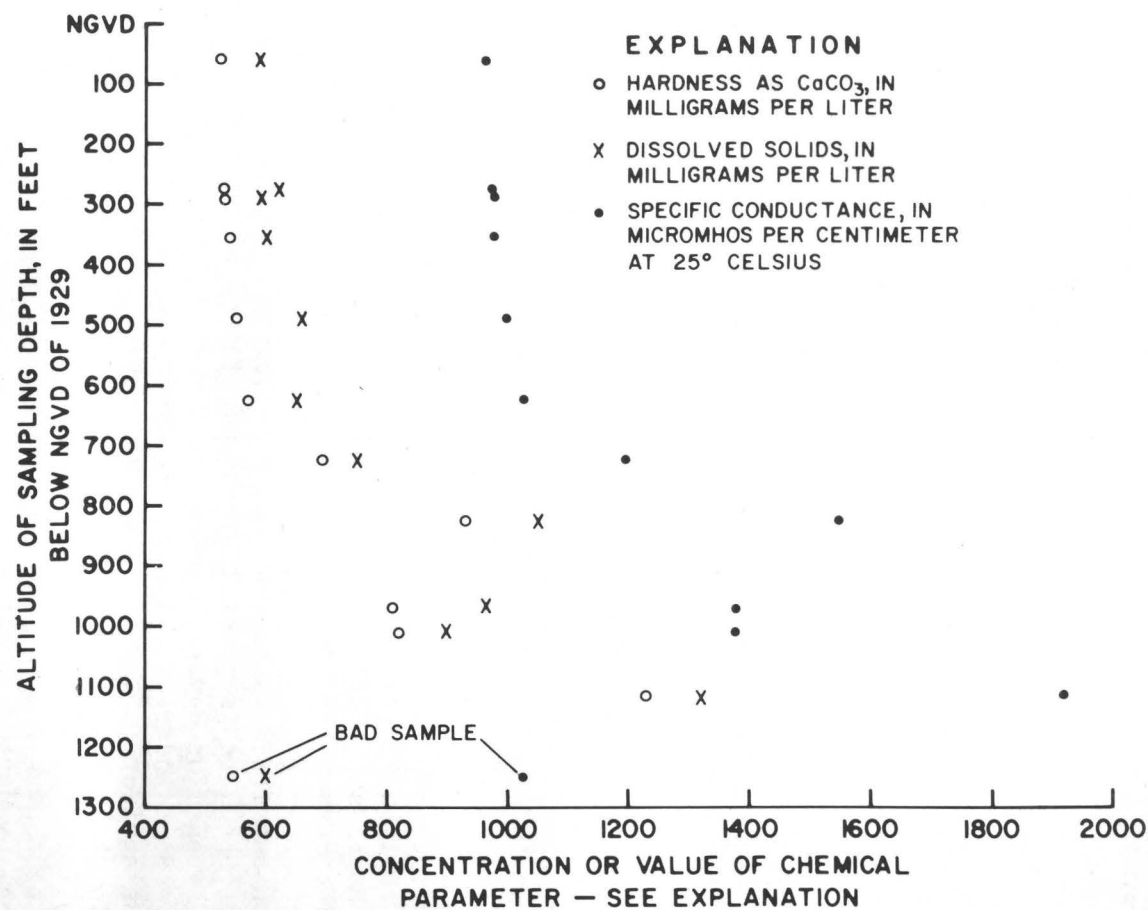


Figure 23.--Hardness, dissolved solids concentration, and specific conductance of water at various depths in well 50, December 16-17, 1975.

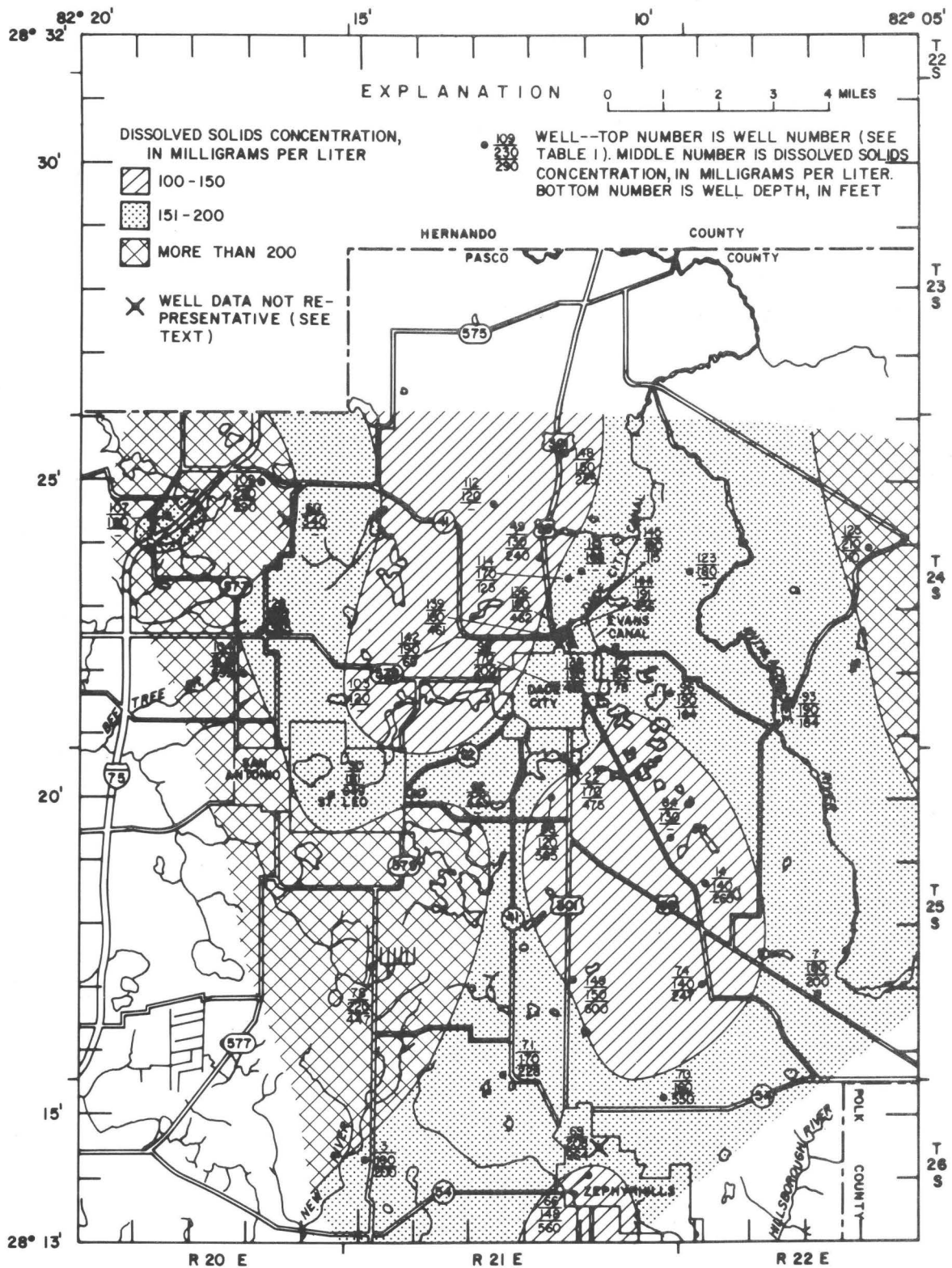


Figure 24.--Dissolved solids concentration in water from wells that tap the Floridan aquifer at depths of 650 feet or less in the Dade City area.

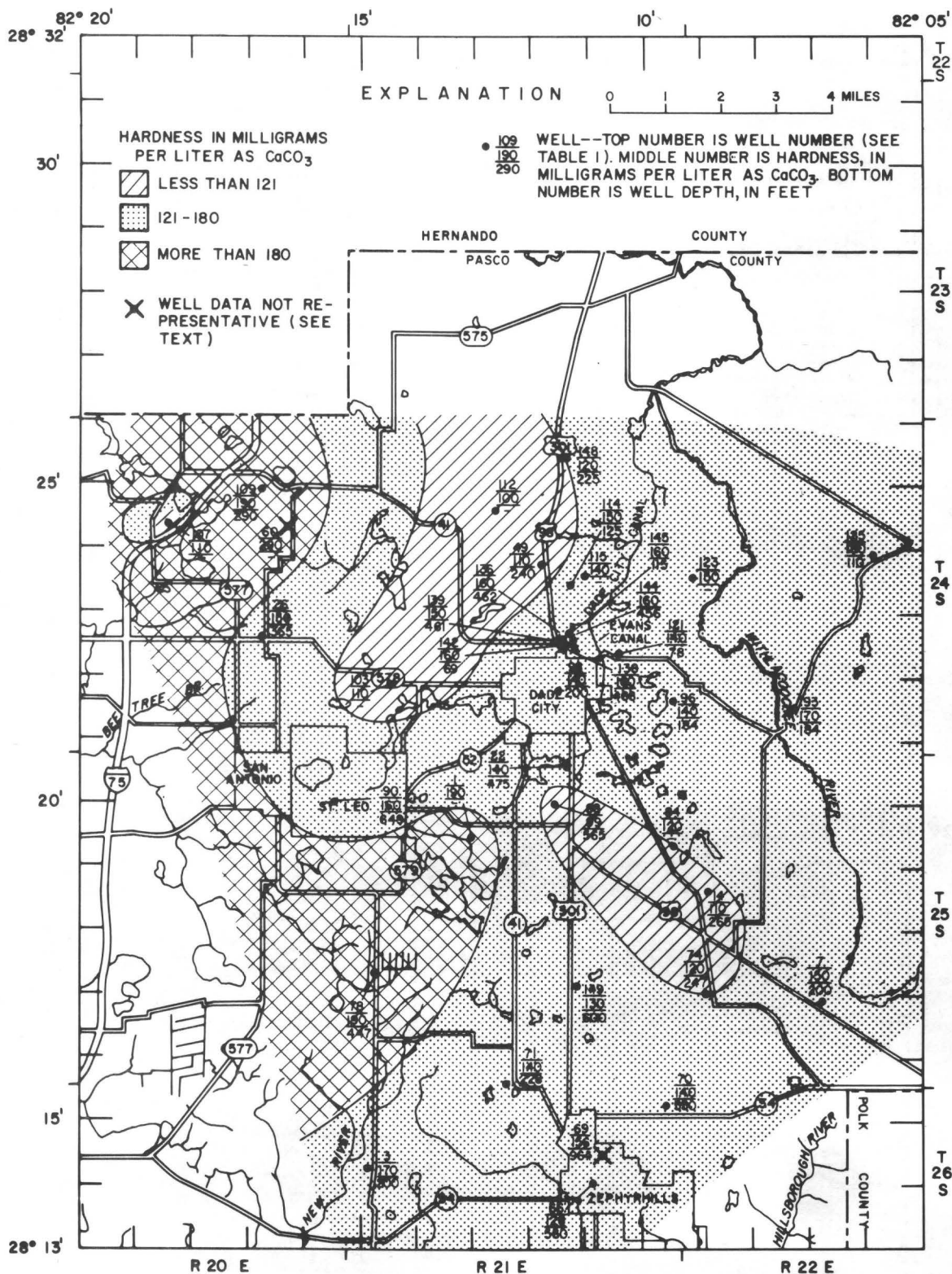


Figure 25.--Hardness of water from wells that tap the Floridan aquifer at depths of 650 feet or less in the Dade City area.

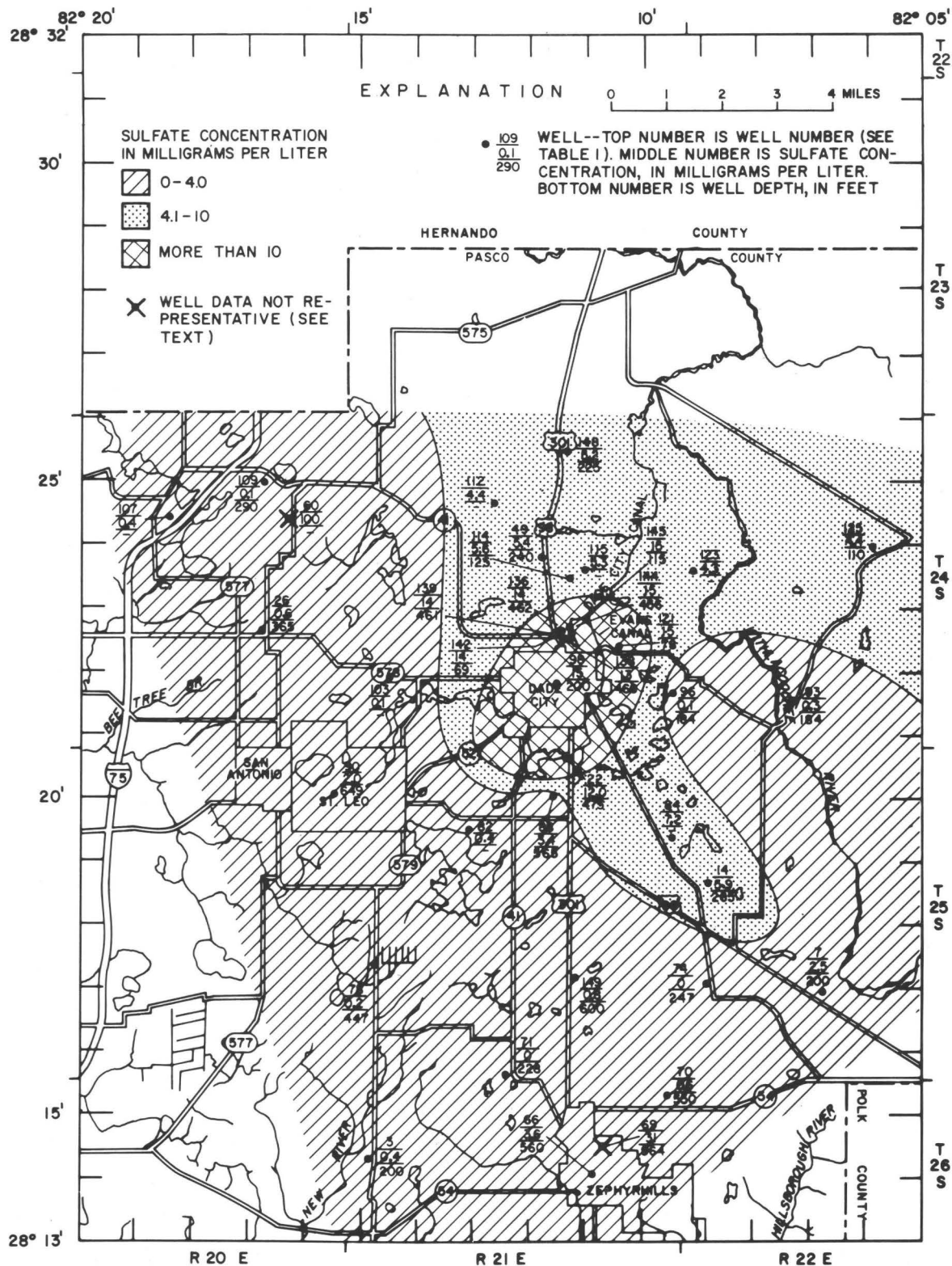


Figure 26.--Sulfate concentration in water from wells that tap the Floridan aquifer at depths of 650 feet or less in the Dade City area.

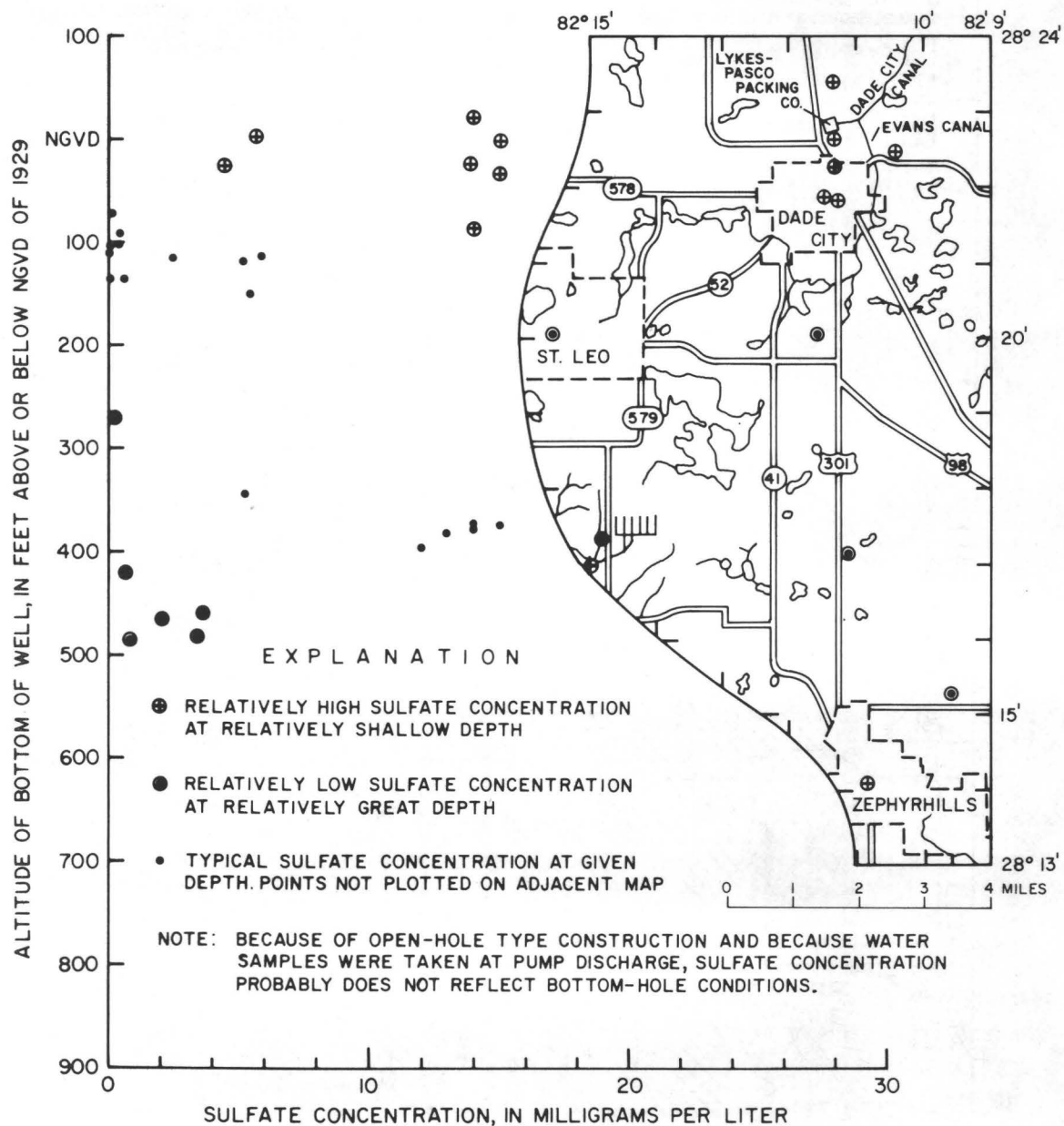


Figure 27.--Relation of sulfate concentration to altitude of bottoms of selected wells in the study area.

Ground-Water Use

Virtually all ground water used in the study area is pumped from wells that tap the Floridan aquifer. In 1975, about 32 Mgal/d were pumped from the Floridan in the Dade City area, whereas about 75 Mgal/d were pumped in the county as a whole (table 4). The largest single user of ground water in the study area is Lykes-Pasco Packing Co. Of the approximately 19.8 Mgal/d pumped by self-supplied industry in 1975 (table 4) in the study area, about 16 Mgal/d were pumped by this citrus processing plant about 1 mi north of Dade City (fig. 2). From 1975 to 1977, pumping by self-supplied industry has apparently declined (table 4). This decline is primarily because Lykes-Pasco has been recycling their process water so that less new "make-up" water is required (Norvell W. Hunt, written commun. June 8, 1977). According to Mr. Hunt, Lykes-Pasco began recycling water in 1971. This is shown by the reported water use data shown in figure 16.

GEOHYDROLOGY

The north-south trending trough in the potentiometric surface of the Floridan aquifer (figs. 17-22) existed as early as 1934 (fig. 18), about 7 years prior to the beginning of pumping by Lykes-Pasco. The trough could be caused by a line sink of discharge along the orientation of the trough or by points of discharge near each end of the trough. Since the potentiometric surface is below land surface throughout almost the entire area of the trough, the line sink is ruled out because it is probable that recharge, rather than natural discharge, is taking place over most of that area. The following discussion concerns the occurrence of Floridan aquifer point discharges at or near the ends of the trough.

On May 25, 1961, during a period of low flow, there was about 12 ft³/s measured increase in the flow of the Withlacoochee River between station 42 at U.S. Highway 301 and at station 41, approximately 5 mi upstream (fig. 28). Pride and others (1966, p. 81) indicated there was a Floridan aquifer spring at the confluence of Gator Hole Slough and the Withlacoochee River, downstream from Dade City and between stations 41 and 42 (fig. 28). This spring is probably the source of most of the 12 ft³/s increase in stream-flow. These low-flow measurements were made during a period of extreme low flow (Pride and others, 1966, p. 38). Therefore, there was little if any surface inflow and probably only minor amounts of seepage from the surficial aquifer.

In addition to the approximately 12 ft³/s of apparent Floridan aquifer discharge into the Withlacoochee River between stations 41 and 42 (fig. 28) there apparently was an additional 39 ft³/s of Floridan discharge into the river between stations 42 and 44. The Little Withlacoochee River flows into the Withlacoochee between stations 42 and 44 but only 0.10 ft³/s was measured as inflow to

Table 4.--Floridan aquifer ground-water use in Pasco County, 1975, and in the study area, 1975-77 (estimated except where noted)

	Pumping rate, in (Mgal/d)		
	Study area (county ¹) 1975	Study area 1976	Study area 1977
Public supply	¹ 1.06 (2.96)	1.1	1.2
Rural domestic	3.2 (10.39)	3.4	3.6
Self-supplied industry ²	19.8 (24.03)	15.1	12.4
Irrigation	8 (37.75)	8	8
Total	32.1 (75.13)	27.6	25.2

¹From Healy (1977).

²Includes Lykes-Pasco Packing Co. (see fig. 16).

the Withlacoochee River from the Little Withlacoochee River (station 43, fig. 28). Since the Little Withlacoochee River was not the source of the increase in flow between stations 42 and 44, the increase is probably due to Floridan aquifer discharge into the Withlacoochee River.

At station 40, upstream from the confluence of Dade City Canal, only 0.53 ft³/s was measured whereas at station 41A on Dade City Canal downstream from Lykes-Pasco Packing Co., 74.8 ft³/s was measured. Though no records of pumping by Lykes-Pasco are available for May 1961, it is possible that almost all the water flowing in Dade City Canal was discharged by Floridan aquifer wells at Lykes-Pasco Packing Co.

Thus, in May 1961 there probably was about 126 ft³/s of Floridan aquifer discharge into the Withlacoochee River near the north end of the trough in the Floridan aquifer potentiometric surface. The Withlacoochee shows a loss of about 3 ft³/s between stations 41A and 41 (fig. 28) but the difference in measured flow could be due to measurement error. Measurement error affected all the measurements to some extent.

The 12 ft³/s water discharged into the Withlacoochee River between stations 41 and 42 is apparently from the Floridan aquifer because according to the equation:

$$Q_{41}C_{41} + Q_p C_p = Q_{42}C_{42}$$

where:

Q_{41} = 71.8 ft³/s (discharge at station 41),
 C_{41} = 177 mg/L (concentration of dissolved solids at station 41),
 Q_p = 12.2 ft³/s (increase in flow between station 41 and 42),
 C_p = dissolved solids concentration of flow increase between stations 41 and 42,
 Q_{42} = 84 ft³/s (discharge at station 42),
 C_{42} = 189 mg/L (concentration of dissolved solids at station 42),
 and solving for C_p , the concentration of dissolved solids in the 12 ft³/s increase in flow between stations 41 and 42, $C_p = 260$ mg/L. This is approximately the dissolved solids concentration of water in the Floridan aquifer along the reach of the Withlacoochee River between stations 41 and 42 (Pride and others, 1966, fig. 45). The Floridan aquifer crops out or is within 10 ft of land surface along the reach of the Withlacoochee River from stations 41 to 44 (fig. 28) (Pride and others, 1966, fig. 31; Grubb, 1977, fig. 6) so it is probable that the Withlacoochee River has incised the Floridan (fig. 14).

Crystal Springs (fig. 17), a Floridan aquifer spring near the south end of the potentiometric trough, about 5 mi south of the north city boundary of Zephyrhills on the left bank of the Hillsborough River, discharges, on the average, about 59 ft³/s into the Hillsborough River (U.S. Geological Survey, 1977).

Lykes-Pasco pumping and upward leakage from the Floridan to streams are points of Floridan discharge north of the Dade City area. The flow of Crystal Springs is a point of discharge from the Floridan south of Dade City. Thus, there is point discharge near each end of the Floridan potentiometric trough in the study area. But, according to the low-flow analysis of Pride and others (1966), there could be as much as 48 ft³/s of naturally-occurring Floridan discharge near the north end of the potentiometric trough between stations 41 and 44 (fig. 28).

The potentiometric trough could also be due to a north-south trending zone of relatively high aquifer transmissivity. This zone could act as a lateral drain and cause a depression in potentiometric head which in turn would cause a trough in the potentiometric surface. Water would then flow toward the trough from the east and west and leave the trough to the north and south under very small hydraulic gradients. There is some evidence of north-south trending joints or solution channels in the limestone of the Floridan aquifer. Topographic maps in the U.S. Geological Survey's 7½-minute series show several lakes along an 8-mi alignment paralleling U.S. Highway 98 and U.S. Highways 98 and 301. These lakes were probably formed by solution of the underlying limestone but the lakes themselves are probably not open to the limestone. The solution activity that formed these lakes may have been enhanced in the geologic past by the Withlacoochee incising a channel along the lakes' alignment rather than in its present channel. White (1958, p. 19-27) suggests that, in the geologic past, the Withlacoochee may have been alternately submergent and emergent because of major oscillations of sea level during glacial and interglacial periods and that the Withlacoochee River could have trenched deeply during glacial periods of low sea level. Such trenching could have incised the limestone of the Floridan aquifer. He also suggests that, not only did the Withlacoochee follow another course in the Tsala-Apopka Lake area in Citrus County, but that it actually flowed south and joined with the Hillsborough River.

The water-quality maps showing dissolved solids concentration, hardness, and, to some extent, sulfate concentration (figs. 24-26) show definite north-south lineations along the general orientation of the potentiometric trough (figs. 18-22). In general, the dissolved solids concentration and hardness are least along the trough except in the immediate Dade City area and near Lykes-Pasco, whereas the sulfate concentration tends to be greater there than to the east and west. There appears to be a contradiction here because the lower dissolved solid concentration and hardness imply vigorous downward circulation of recently recharged water whereas the higher sulfate waters are usually indicative of water that has been in the aquifer for a long time or water that has come in contact with beds of gypsum or anhydrite. These beds usually occur at relatively great depth, usually near the base of the Floridan aquifer or, at least, near the base of the Lake City Limestone (Wetterhall, 1965, p. 9).

The relatively high sulfate concentration in water at shallow depths in the immediate Dade City area is perhaps indicative of some interconnection of deep and shallow aquifer zones.

There is a cone of depression in the Floridan aquifer potentiometric surface near U.S. Highway 301 about 2 mi north of Zephyrhills (figs. 20-22). Wetterhall (1964, fig. 1) noted a similar depression on his 1960 map. There is no appreciable pumping from the Floridan aquifer in the area of the depression so pumping apparently is not the cause. On all recent maps where the depression is shown, the interpretation is based upon water levels measured in only one well. However, Wetterhall measured a different well (well 12) than was used in this study (well 149), thus some degree of corroboration is implied. The well Wetterhall measured is 18 in. in diameter and 957 ft deep (verified by Florida Geological Survey -- now Florida Bureau of Geology -- well log W-2160). The depth of the well measured in this study is unknown. However it is only 4 in. in diameter so it is unlikely that it is more than a few hundred feet deep. In most of the study area where the potentiometric surface of the Floridan aquifer is below land surface, the deeper Florida aquifer wells have lower water levels than shallower Floridan wells in the same immediate vicinity. For example, well 50 near State Highway 52 near the southwest city limit of Dade City (fig. 2) is 1,434 ft deep, cased to a depth of 64 ft, and its water level stood at about 59 ft above NGVD of 1929 July 1976, whereas, according to the potentiometric contours (fig. 20), the water level in a well tapping only the upper part of the aquifer would have stood at about 66 ft above NGVD of 1929. The water level measured in well 50 was not used to construct the map in figure 20 because of its low water level and the fact that its depth was known to be unusually deep compared to the other wells used to construct the map.

It is possible that the cone of depression shown in this study (figs. 20-22) and in Wetterhall (1964, fig. 1) using the water levels in wells 149 and 12, respectively, could be a misinterpretation. This could be because both wells are so deep that they have water levels that are not representative of the potentiometric surface in the upper part of the Floridan. This probably is the case in Wetterhall's (1964, fig. 1) potentiometric map but the depth of the well used in this study is not known so the validity of the interpretation remains in question. If in fact the cone of depression shown in figures 20-22 and in Wetterhall (1964, fig. 1) does represent head levels in the upper Floridan, then there is reason to suspect that there is an exceptionally good interconnection of the upper and lower producing zones in the Floridan aquifer as shown in figure 15. This would tend to depress the head in the upper zone because water would tend to leak downward into the lower zone at a rate somewhat faster than in areas where the interconnection of the zones is not as effective.

In the immediate vicinity of Lykes-Pasco Packing Co., the upper and lower producing zones of the Floridan aquifer (fig. 15) appear to be in good hydraulic connection. In figure 29, the water levels in selected wells on February 2-3, 1977, are plotted against their respective well depths referenced to NGVD of 1929. The main center of pumping for Lykes-Pasco is near wells 141 and 61 and inside a trough that describes the altitude of the top of the Floridan aquifer (figs. 14 and 29). Note that water levels in 3 of the 4 groups of wells are nearly the same, regardless of their depths. The exceptions are wells 121 and 119. Though these wells are approximately the same distance to the center of pumping and are both relatively shallow wells, well 119 has a water level that is about 1.5 ft lower than that of well 121. Both wells are on the east flank of the trough in the surface of the Floridan aquifer. Their different heads could be attributable to lateral anisotropy or aquifer heterogeneity.

The geohydrologic information in this report is representative, primarily, of the upper producing zone of the Floridan aquifer. There is little information available on the lower producing zone. Information on the lower zone is difficult to obtain because there are relatively few deep wells and they are usually equipped with turbine pumps which are difficult to remove. Hence, geophysical logging is precluded and it is often difficult to obtain accurate water level measurements. Since many of the wells are irrigation wells in remote areas, it is sometimes difficult to have the owners present to operate the pumps so that water samples can be obtained.

HYDROLOGIC SIGNIFICANCE OF GROUND-WATER WITHDRAWALS IN THE DADE CITY AREA BY LYKES-PASCO PACKING CO.

Lykes-Pasco Packing Co. began citrus processing operations in 1942 but pumpage records are available only since about mid-1971. Estimates of ground-water withdrawals prior to 1971 can be made because most of the flow in Dade City Canal near Dade City (fig. 2) is ground water pumped by this citrus processing plant. Periodic measurements of that flow have been made and recorded since late 1963 (fig. 16). There is a good relation between average annual flow in Dade City Canal and average annual discharge by the plant from 1972-77 (fig. 30A). The regression equation describing that relation is used to estimate the average annual pumping by the plant from 1963-71 (fig. 30B). There is no satisfactory method to estimate pumping by Lykes-Pasco prior to 1963.

Of the 16 Lykes-Pasco production wells, 9 tap the lower Floridan producing zone. Of that nine, at least three are cased through the upper producing zone and, thus, are open only to the lower zone while the cased depths of six are unknown. Thus it is possible that six wells are open to both the upper and lower zones. Seven wells are open only to the upper producing zone.

EXPLANATION

- 50 — STRUCTURE CONTOUR— SHOWS ALTITUDE OF TOP OF FLORIDAN AQUIFER. CONTOUR INTERVAL 25 FEET. DATUM IS NGVD OF 1929.
- 141 WELL— NUMBER IS WELL NUMBER (SEE TABLE I).

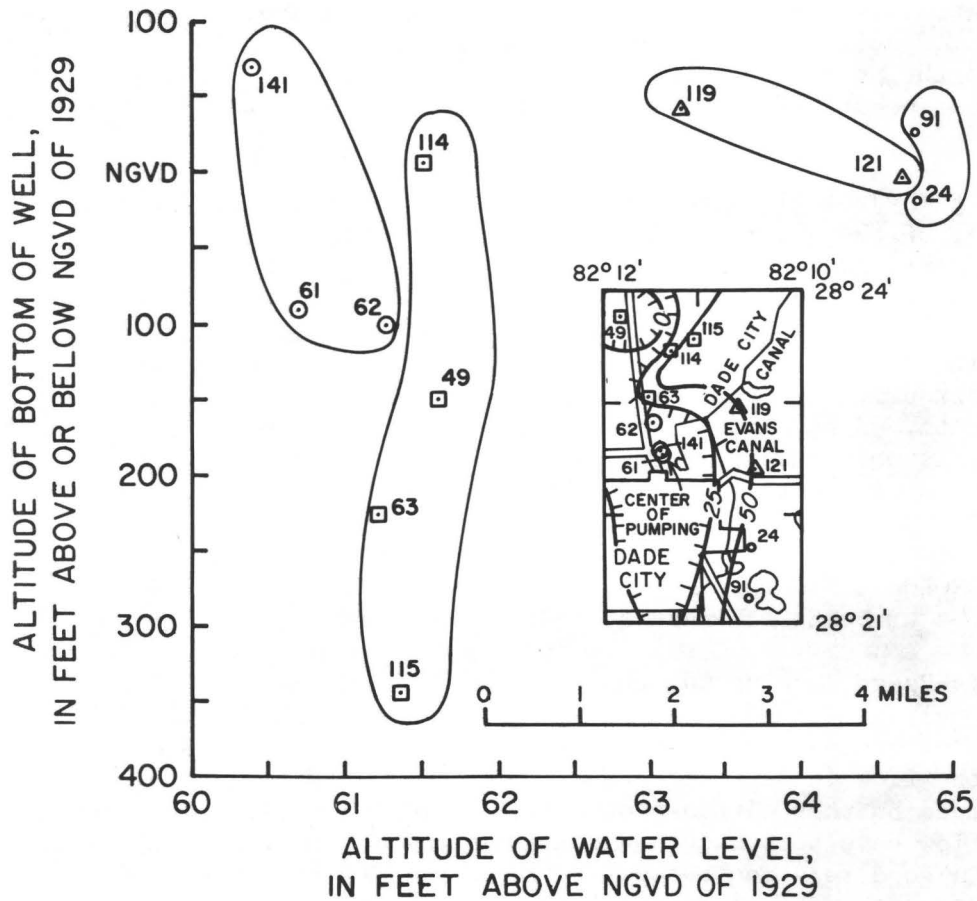


Figure 29.--Well depth versus potentiometric surface of the Floridan aquifer in the vicinity of Lykes-Pasco Packing Co., February 2-3, 1977.

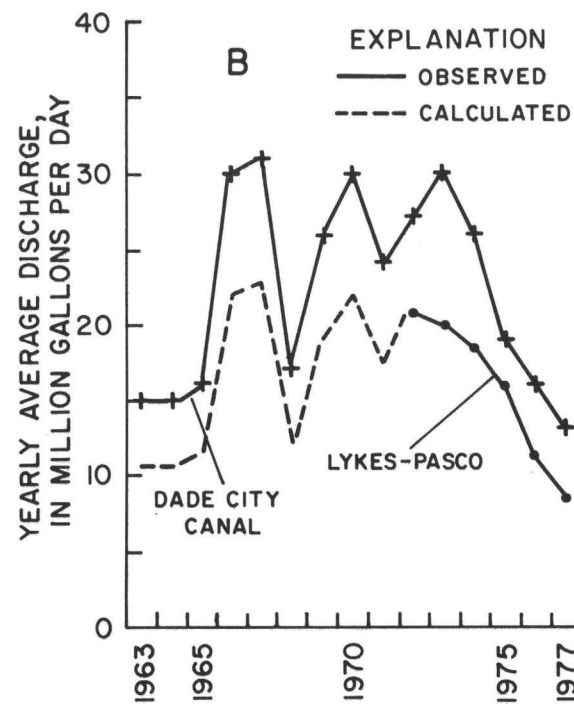
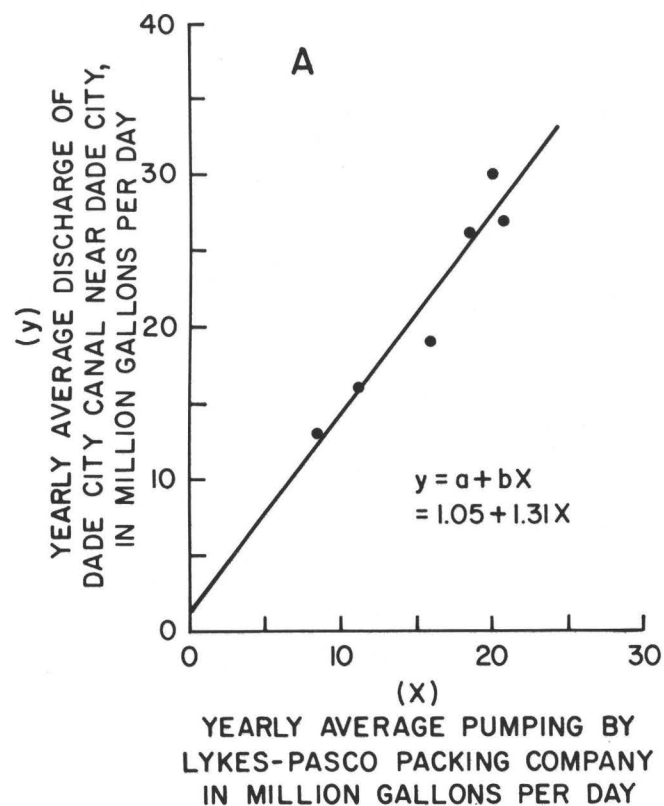


Figure 30.--Relation of flow in Dade City Canal near Dade City to pumping by Lykes-Pasco Packing Co.

The individual pumping rates of the production wells are unknown. Also, the periods of pumping of the various wells are mixed. This lack of information plus the uncertainty of the producing zones tapped by the wells precludes an exact determination of the amounts of water taken from each of the Floridan producing zones. Ryder (1978, p. 8) states that field tests in the Cypress Creek well field, 14 mi southwest of Dade City, indicate that the lower producing zone may supply most of the water to pumping wells that are open to both zones.

During 1963-77, the maximum annual pumping rate was about 30 Mgal/d and probably occurred in either 1966 or 1967 (fig. 30B). Peak, or instantaneous, pumping rates have been as high as 66 Mgal/d (April 28, 1964, fig. 16). Since 1972, annual pumping has steadily declined and, by 1977, was about 9 Mgal/d. According to Mr. Norvell Hunt, Director of Environmental Control, Lykes-Pasco Packing Co. (oral commun.) the lower pumping rates reflect the plant's increased use of recycled water during citrus processing.

From early 1976 through December 1977, water levels were measured continuously in four Floridan aquifer wells in and near the center of pumping of the citrus processing plant (fig. 31). In January-April 1976, water levels declined at a rate of about 0.02 ft/d. During this period the plant was pumping at about 20 Mgal/d (figs. 16 and 31) and rainfall was about 8 in. below normal. During May-September 1976 water levels rose about 7 ft because (1) of seasonal increases in rainfall that, in addition, were about 7 in. above normal and (2) the citrus processing plant had decreased their pumping rate to about 3 Mgal/d. In the first 9 months of 1976, seasonal variations in rainfall and in pumping by the plant were somewhat in phase and it is not possible to separate their effects on water levels in the observation wells (fig. 31). However, in October-November 1976, at the beginning of the seasonal dry period, water levels began to decline at a rate of about 0.03 ft/d even though the plant was still pumping at a reduced rate of about 3 Mgal/d. Rainfall during September-October 1976 was about 8 in. below normal. Rainfall during November-December 1976 was about normal for this ordinarily dry period. On December 6, 1976 the plant increased the pumping rate. It is estimated from the discharge record at Dade City Canal that, by December 7, the plant was pumping at a rate of about 25 Mgal/d, an increase of about 22 Mgal/d. On December 6, water levels in the three observation wells began to decline, clearly in response to the increased pumping rate. The 25 Mgal/d pumping rate remained relatively constant for about 3 days (through December 10). After that time the pumping rate was reduced intermittently.

The drawdown resulting from the increased pumping rate is estimated by extrapolating the trend of declining water levels (prior to pumping) past the time at which pumping began and, at any given time, subtracting the altitude of the observed water level (after

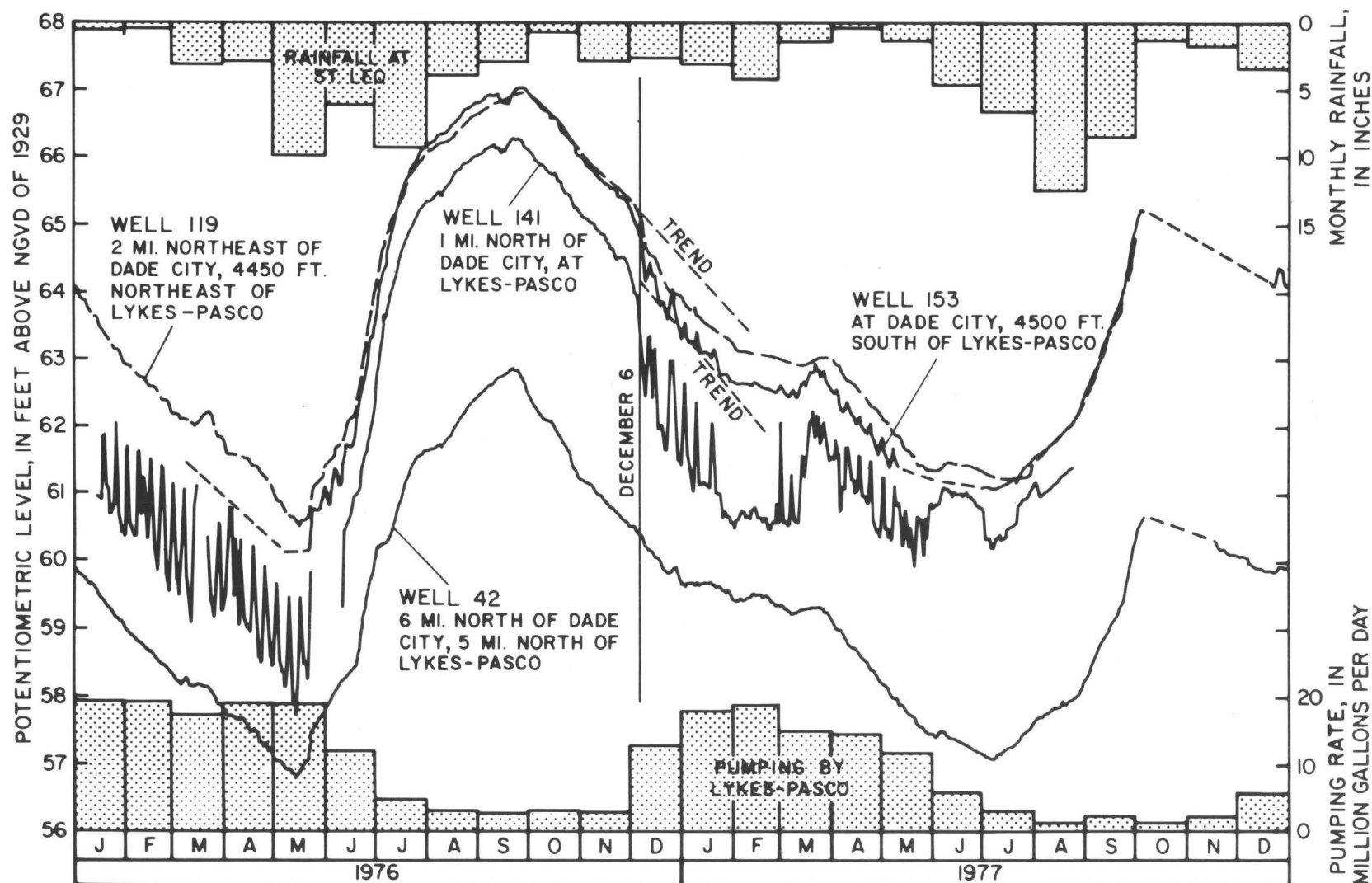


Figure 31.--Daily high potentiometric levels in selected Floridan aquifer wells in the Dade City area, monthly rainfall at St. Leo, and pumping by Lykes-Pasco Packing Co., January 1976 to December 1977.

smoothing the hydrograph) from that which is estimated that would have occurred had there been no increase in pumping (fig. 31). Drawdowns are thus calculated at several times after pumping started and are used to construct a graph of estimated drawdown versus time (fig. 32). Only the first 4 data points corresponding to the first 4 days of pumping are considered valid for the increased pumping rate of 22 Mgal/d.

In the immediate vicinity of the citrus processing plant the upper and lower producing zones (as suggested by figs. 15 and 29) of the Floridan are probably in good hydraulic connection. This is also implied by (1) figures 24 and 27 that show sulfate concentration in water from the deep and shallow Floridan wells to be virtually the same and (2) the apparent trenching on the top of the aquifer (fig. 14) that could be indicative of deep-seated interconnection of zones caused by solution activity. This was discussed in the section of this report entitled "Geohydrology." Further evidence of a good hydraulic connection between aquifer zones is implied by the almost instantaneous decline in water levels in the three wells closest to the center of pumping; wells 153 and 119 are about 4,500 ft from the pumping center and well 141 is near the center of pumping. The fourth well (well 42) is 5 mi from the center of pumping and the short-term drawdown effects, if any, are so small as to be undetectable.

Distance-drawdown analytical techniques or techniques that require the plotting of drawdown versus time divided by the square of the effective distances of the observation wells cannot be used to calculate Floridan aquifer coefficients of transmissivity, storage, and leakance. This is because two of the wells are at virtually the same distance from the center of pumping and also because the effective distance of the well nearest the center of pumping is unknown. The effective distance is unknown because the actual discharge rates of the various Lykes-Pasco wells are unknown and it is also unknown as to exactly which wells were actually pumping. Another consideration that makes the analysis of the drawdown data difficult is that, in the immediate vicinity of the plant, it is probable the aquifer is poorly confined. That is, the top of the upper producing zone of the Floridan is within a few tens of feet from land surface and the sediments that overlie the aquifer are probably fairly permeable. However, it is believed possible to obtain a rough estimate of aquifer transmissivity using the modified Theis (1935) nonequilibrium formula developed by Cooper and Jacob (1946). In this method the slope of the straight-line segment of drawdown in the observation well versus the logarithm of time (semilogarithmic plot) is used to calculate an estimate of aquifer transmissivity (fig. 32).

Computation of transmissivity was made only from the drawdown data for the nearest observation well (well 141). However, drawdowns for the other observation wells follow the same trend with time as those

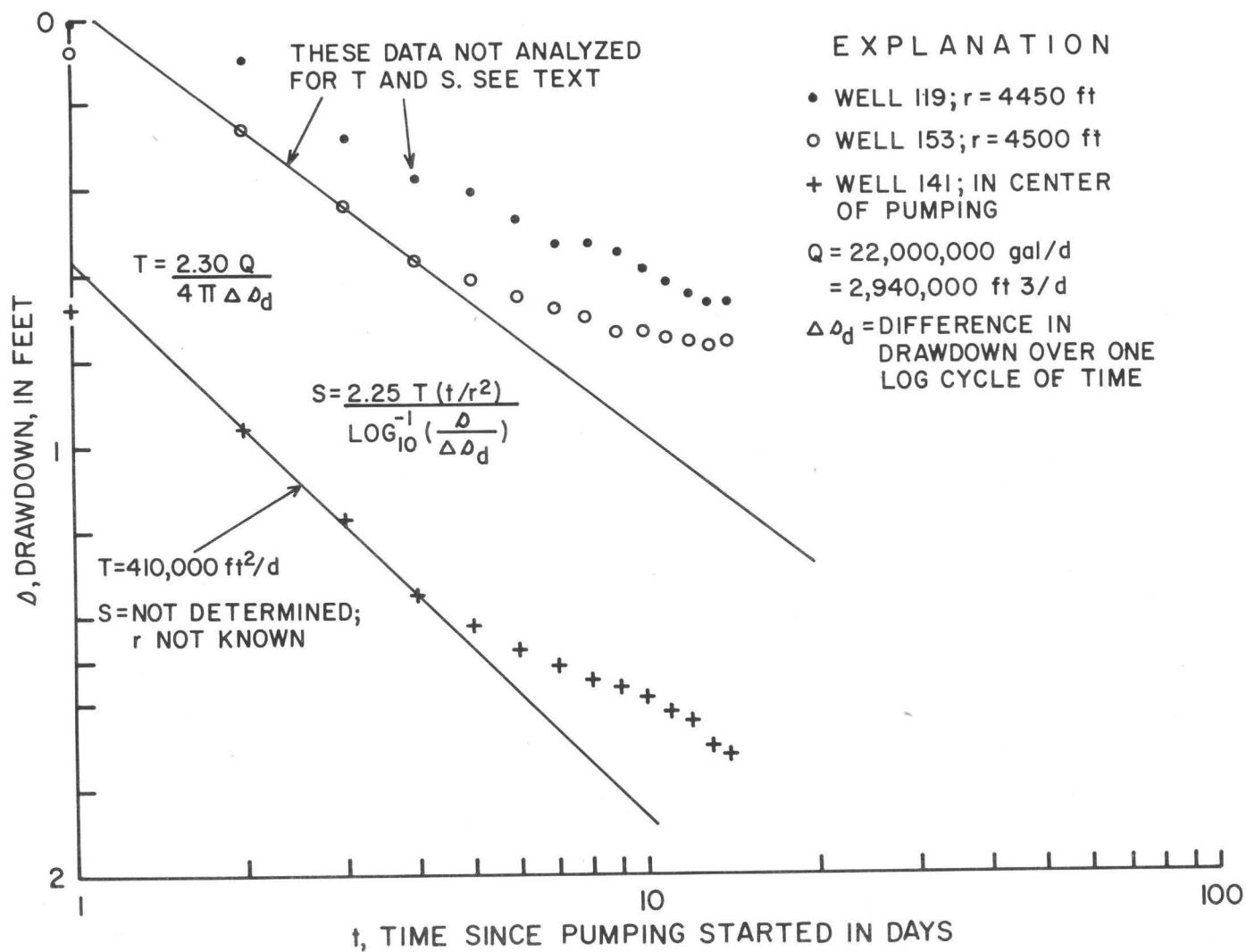


Figure 32.--Estimated drawdown versus time in response to increase in pumping rate by Lykes-Pasco Packing Co., December 6-20, 1976.

for well 141, and thus their analysis would yield somewhat comparable values for transmissivity. But because of the leaky nature of the Floridan aquifer in the area of the plant, the best estimate of transmissivity is obtained from drawdowns in the well nearest to the center of pumping. Leakage from the surficial aquifer would affect the more distant wells to a greater degree.

As stated by Lohman (1972, p. 22), the straight-line solution employed here is applicable only when μ is less than or equal to about 0.01 and

$$\mu = \frac{r^2 S}{4Tt}$$

Taking the estimate of transmissivity (T)=400,000 ft²/d (rounded), determined from figure 32; assuming a storage coefficient (S) of 0.001, a value near the upper end of typical values for the Floridan aquifer where it is confined; and taking radii (r) ranging from, say, 50 ft for well 141 to 4500 ft for well 153; it is seen that observations made at times (t) about 1 day or more after the beginning of pumping may be used in the straight-line plot method, considering even the most distant well. As observations made 2 to 4 days after pumping began were used to define the slope of the straight-line, the criterion of μ being less than or about equal to 0.01 is satisfied.

The transmissivity of 400,000 ft²/d estimated in figure 32 may be too high because of the effect that downward leakage may have had on reducing observed drawdown. Also, the drawdown observed may not have been representative because the observation wells did not penetrate the full thickness of aquifer that is tapped by most of the Lykes-Pasco supply wells. This would also cause the calculated transmissivity to be too high. Nevertheless, it is believed the transmissivity of the Floridan aquifer can be at least estimated to be greater than 200,000 ft²/d and perhaps as high as 400,000 ft²/d in the immediate vicinity of the citrus processing plant.

Several double-mass plots were compiled to indicate hydrologic trends of rainfall, streamflow, springflow, and water levels and to see if the hydrologic effects of pumping by the plant could be discerned. Figure 33 shows long-term double-mass plots of rainfall at St. Leo versus discharge of the Withlacoochee River at Trilby (fig. 29, station 42), discharge of Weekiwachee Springs (fig. 17), and discharge of Crystal Springs near Zephyrhills, about 13 mi south of Dade City, on the left bank of the Hillsborough River. Figure 34 shows a double-mass curve of rainfall at St. Leo versus water level in well 42, 6 mi north of Dade City and 5 mi north of Lykes-Pasco Packing Co. (fig. 2). Though not shown, the rainfall record for St. Leo was double-massed against rainfall at Gainesville and also against the annual average flow of Silver Springs. Those double-mass relations showed that rainfall at St. Leo is suitable for use in the double-mass curve analyses presented herein.

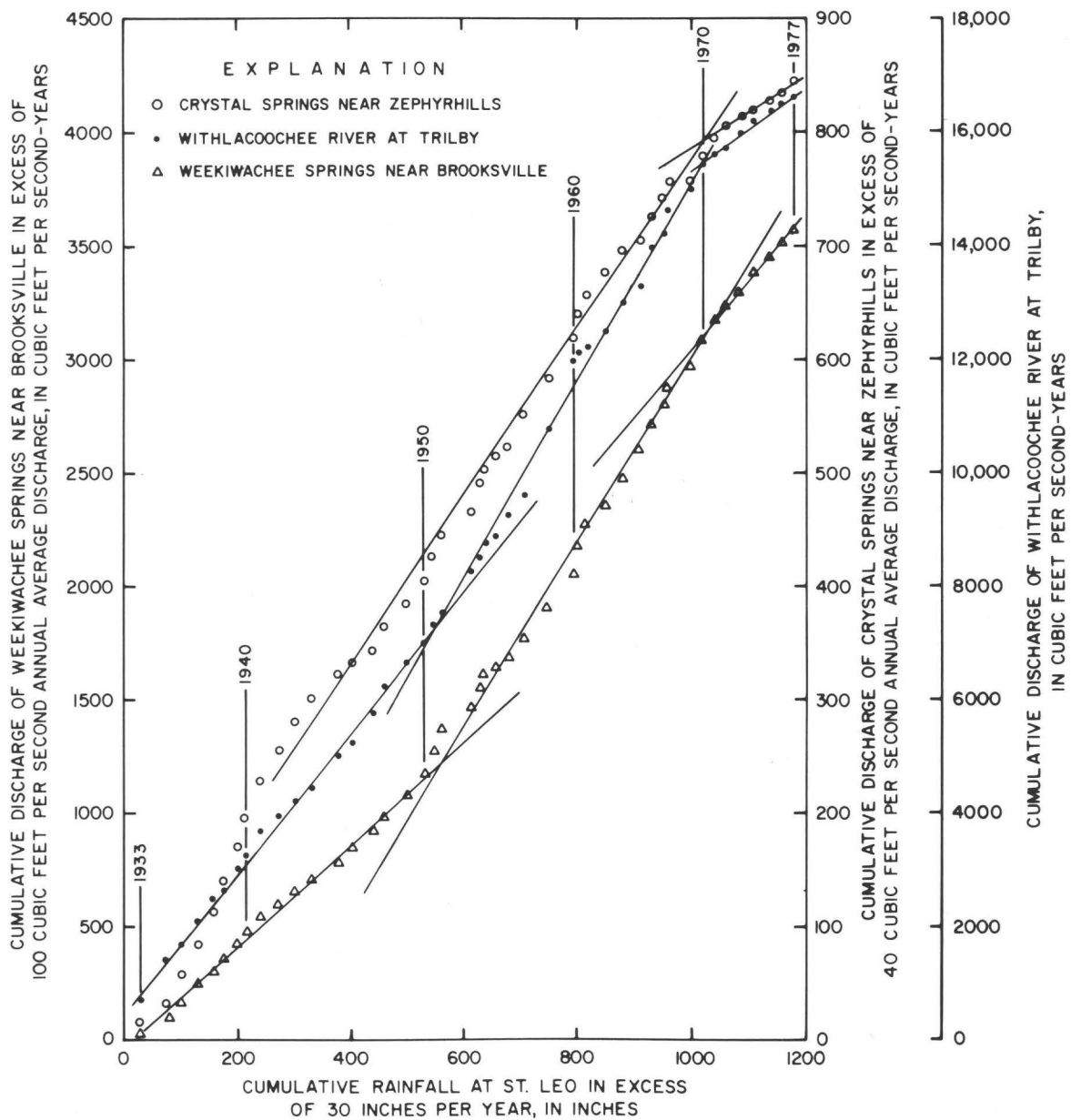


Figure 33.--Double-mass curves of rainfall at St. Leo versus discharge of Withlacoochee River at Trilby, discharge of Weekiwachee Springs near Brooksville, and discharge of Crystal Springs near Zephyrhills.

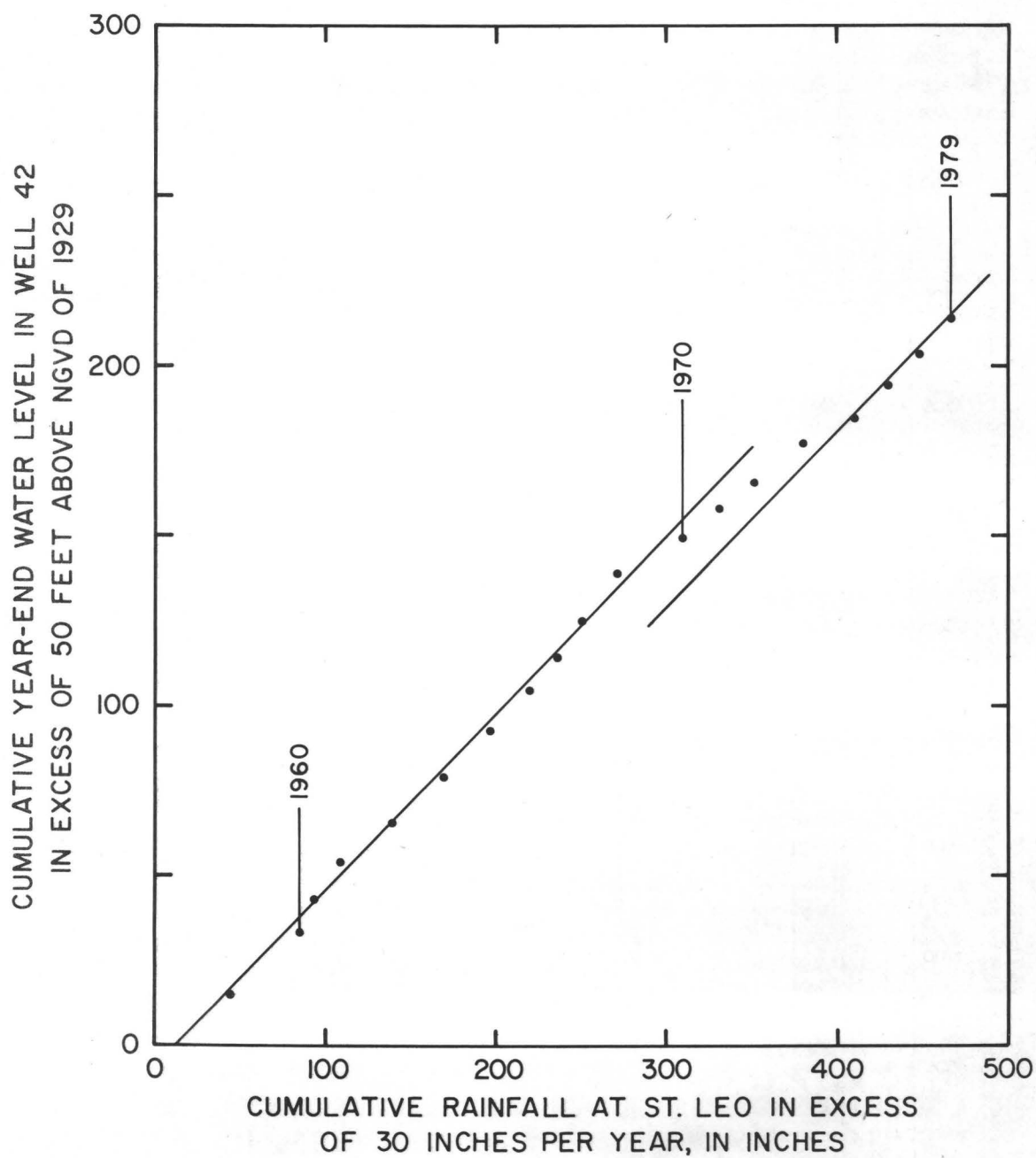


Figure 34.--Double-mass curve of rainfall at St. Leo versus potentiometric level in well 42.

The effects of the citrus processing plant discharging into Dade City Canal should be detectable by increased flow at the Withlacoochee River at Trilby that would be indicated by an increase in slope of the double-mass plot. An increase in slope apparently occurred about 1951 or 1952. From about 1952 until about 1971 that slope remained essentially constant. From 1971 to 1977 a decrease in slope occurred. That could be due in part to the decrease in pumping by the plant that began in about 1972 (fig. 30).

Weekiwachee Springs and Crystal Springs are the nearest, largest-yielding springs downgradient from the citrus processing plant for which long-term discharge records are available. If pumping by the plant caused a reduction of the flow in the regional Floridan groundwater flow system a resultant reduction in the slope of the springs double-mass plots (fig. 33) should occur. In about 1951 there is an apparent increase in slope of the double-mass plot for Weekiwachee Springs indicating that, since about 1950, the spring discharged more water for a given amount of annual rainfall than for the prior period of record. This obscures the effect that pumping by the citrus processing plant might have had on the regional Floridan aquifer flow system but it also results in the interesting implication that increased Floridan aquifer discharge in the form of springflow could, in turn cause the natural lowering of potentiometric levels over a spring's entire drainage area. The phenomenon of apparent increased springflow compared to rainfall was also observed by Anderson and Hughes (1975) in the flow of the Wekiva River near Sanford whose base flow of about $200 \text{ ft}^3/\text{s}$ is derived almost entirely from springflow. There, the rainfall-springflow relation changed in about 1960. Presumably, this could have been caused by the extraordinarily high springflows of 1959 and 1960 flushing out silt and debris in the spring vents and, hence, improving their conveyance thereby reducing the amount of hydraulic head or pressure necessary for water to flow through the vents. The vents of Weekiwachee Springs could have been flushed out by the high flows of the late 1940's and early 1950's or by man's activities in and around the spring while it was being prepared as a tourist attraction. Reductions in backpressure on spring vents would cause water levels to decline elsewhere in the spring basins. An analysis of this phenomenon is beyond the scope of this report but further study is recommended.

The double-mass curve for Crystal Springs (fig. 33) shows a rather constant rainfall-springflow relation from 1933 to about 1942. Since 1942 there is a reduction in the slope of the curve. That reduction in slope indicates less springflow in relation to rainfall than for the period prior to 1942. The time at which the rainfall-springflow relation changed coincides with the beginning of pumping by Lykes-Pasco. But it also coincides with the time at which pumping by the phosphate mining industry in a 30 mi wide area (about 12 mi to the south and southeast of Crystal Springs) began increasing from a rather constant rate of about 36 Mgal/d prior to 1942 to about 140 Mgal/d by

1960, an annual rate of increase of about 4 Mgal/d per year (Robertson and Mills, 1974, fig. 3). About 1960, pumping by the phosphate industry sharply increased and by 1968 was about 280 Mgal/d. That sharp increase was not accompanied by a reduction in slope of the double-mass curve of Crystal Springs, probably because the 1960-68 increases in pumping occurred further from Crystal Springs than did the 1942-60 increases. In 1970, there was another reduction in the slope of the double-mass curve. This reduction in springflow in relation to rainfall is perhaps due to an increase in pumping from the Floridan aquifer in the vicinity of Crystal Springs. The increase in pumping is probably due to increased withdrawals for public supplies or irrigation because, according to Robertson and Mills (1974), since about 1968 pumping by the phosphate mining industry has declined because of increased use of recirculated water in mining operations.

The effect of pumping by Lykes-Pasco is not apparent in the double-mass plot of water levels in well 42 (fig. 34) probably because its period of record is so short (1959-77) that any decrease in slope of the double-mass curve caused by pumping would have occurred prior to the beginning of record. The relatively recent decline in pumping by Lykes-Pasco from 1972-77 should have caused an increase in slope. However, no such marked change in slope is shown in figure 34.

Records of water levels in Floridan aquifer wells in the study area show no major decline. For example, since mid-1966, the water level in well 42 has declined only about 4 ft (fig. 16). Most of that decline is probably due to a cumulative rainfall deficiency of about 40 in. since mid-1967 (fig. 16).

It seems as if the hydraulic characteristics of the upper part of the Floridan aquifer in the study area are affected primarily by amounts of rainfall (recharge) and by natural discharge. These controls mask the hydrologic effects of pumping by Lykes-Pasco Packing Co. It is possible that the upper and lower producing zones are in good hydraulic connection in the immediate vicinity of the plant but elsewhere the connection is not as effective. If that is the case and if most of the water pumped by the plant is taken from the lower producing zone, then the hydraulic effects, or drawdown resulting from that pumping, would extend primarily to only the lower zone except in the immediate vicinity of the plant. The drawdown in the lower zone would cause water from the upper zone to leak into the lower zone at a rate faster than that which would occur were there no pumping from the lower zone but the leakage would occur over a large area and thus not appreciably lower the potentiometric surface of the upper zone. But, as discussed previously, except for the work done by Ryder (1978) there is very little information available on the lower zone on an areal basis, so it is not known if the preceding hypothesis is valid. However, such a hypothesis would explain why the long-term effects of pumping by the plant are difficult to detect in the upper zone of the Floridan aquifer in the study area.

SUMMARY AND CONCLUSIONS

1. Lykes-Pasco Packing Co. is the largest single water user in the Dade City area. During the period 1963-77, the maximum annual pumping rate by this citrus processing plant was about 30 Mgal/d and occurred in either 1966 or 1967. Peak, or instantaneous pumping rates have been as high as 66 Mgal/d.
2. Since 1972, annual pumping rates by the plant have declined because of the company's efforts to recycle water. By 1977, the annual pumping rate was about 9 Mgal/d.
3. There are two major producing zones in the Floridan aquifer in the Dade City area. These zones are apparently in fairly good hydraulic connection in the immediate vicinity and to the south of Lykes-Pasco.
4. The transmissivity of the Floridan aquifer in the immediate vicinity of Lykes-Pasco is considered high compared to that in other nearby areas. The transmissivity is estimated to range from 200,000 ft²/d to as much as 400,000 ft²/d.
5. It is believed that Lykes-Pasco pumps most of its water from the lower Floridan producing zone. Water levels in the study area are measured in the upper producing zone. Drawdown of potentiometric surface of the lower zone extends to the upper producing zone but it is believed to be somewhat attenuated except in the immediate vicinity of the plant.
6. Thus, the vertical zonation of the aquifer and also its high transmissivity are the reasons why Lykes-Pasco's pumping has not resulted in large drawdowns of the potentiometric surface of the upper producing zone in the study area.
7. The effects that the plant's pumping has on the potentiometric surface of the Floridan aquifer are masked by the natural, seasonal fluctuations in levels caused by naturally-occurring recharge and discharge. Records of water levels in the area show no major declines that can be attributed to pumping.

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