

SECTION 01200

MEASUREMENT AND PAYMENT

PART 1 - GENERAL

1.01 GENERAL REQUIREMENTS

- A. The Unit prices stated in the Contract shall be considered payment in full for the completion of all work. Payment shall be made under each item only for work as it is not specifically included under other items.
- B. The CONTRACTOR shall furnish all labor, equipment and materials necessary to deepen and test two Upper Floridan Aquifer (UFA) wells for the Indian River County Utilities Department (OWNER) and return each well to full continuous service following rehabilitation.

1.02 PERFORMANCE

- A. Section generally defines unless otherwise indicated, the following:
 - 1. Payment item descriptions.
 - 2. Payment application descriptions.
- B. The cost of temporary facilities, bonds, insurance, attending project meetings, administration, record drawings, policing, and other general duties shall be considered incidental to all items.
- C. The OWNER may direct the CONTRACTOR to install certain portions of the work in advance of other portions without extra payment to the CONTRACTOR.
- D. Measurement methods delineated in the Summary of Work are intended to complement the criteria of this Section. In the event of conflict, the requirements of the Summary of Work section will govern.
- E. The CONTRACTOR's attention is called to the fact that the quotations for the various items of Work are intended to establish a total price for completing the Work in its entirety. Should the CONTRACTOR feel that the cost of any item of Work has not been established by the Schedule of Values or Measure and Payment, CONTRACTOR shall include the cost for that Work in the other Bid Items so that CONTRACTOR's proposal for the project does reflect CONTRACTOR's total price for completing the Work in its entirety.

1.03 RELATED SECTIONS

- A. Bid Form

1.04 LUMP SUM ITEMS

- A. The lump sum price shall be full compensation for all labor, materials and equipment to satisfactorily complete the installation of the items as shown on the plans and indicated in the details for lump sum bid items.

1.05 UNIT PRICE ITEMS

- A. The HYDROGEOLOGIST or representative shall determine the number of units of each work item installed.

1.06 SATISFACTORY COMPLETION

- A. Satisfactory completion shall include dewatering, if any, and repair or replacement of damaged landscaping, irrigation systems, pavement or other existing improvements.

1.07 PAYMENT ITEMS

- A. Unit Price Bid
 - 1. Payment shall constitute summation of measured quantities multiplied by the respective unit price for items constructed as specified herein and shown on drawings, as applicable; including installation and removal of all temporary facilities, piping; and supply of all incidental materials, equipment and labor necessary to complete the contemplated Work whether specifically identified herein or not.
 - 2. Partial progress payments will be made at monthly intervals and will be based upon the value of the Work completed on the date that a partial payment application is submitted less deductions for retainage as defined elsewhere.

1.08 PAYMENT APPLICATION DESCRIPTION

- A. Preparation of Applications:
 - 1. Use data from approved Schedule of Values. Provide dollar value in each column for each line item for portion of work performed.
 - 2. List each authorized Change Order as an extension on the Application for Payment, listing Change Order number and dollar amount as for an original item of Work.
- B. Submittal Procedures
 - 1. Submit monthly as directed by OWNER.

2. Submit revised progress schedule accurately reflecting the work completed and the schedule of future work items.
- C. Substantiating Data
1. When OWNER requires substantiating information, submit data justifying dollar amounts in question.
 2. Provide one copy of data with cover letter of each copy of application. Show Application number and date, and line item by number and description on each piece of data.

PART 2 – PRODUCTS

NOT USED

PART 3 – EXECUTION

3.01 PART 1 - GENERAL ITEMS

A. **PAY ITEM NO. 1 – GENERAL CONDITIONS, BONDS, AND INDEMNIFICATION**

This pay item shall include the costs to comply with all elements of the General Conditions of the Contract, including but not limited to: compliance with the requirements of the General Conditions, bonds, insurance, record keeping, safety and permitting, preconstruction videos, and indemnification. Payment shall be made at the Contract Lump Sum Price as identified on the BID FORM upon completion of work identified in the general conditions. Total cost of this item shall not exceed 5% of the total bid cost.

B. **PAY ITEM NO. 2 - UNDEFINED CONDITION ALLOWANCE**

This pay item shall include the cost related to drilling/milling cement plug encasing drill bit reportedly located at the base of well S1. Payment shall be made at the Contract Lump Sum Price as identified on the BID FORM upon completion of work necessary to perform scope of work described in the Summary of Work.

3.02 PART 2 – N7 DEEPENING AND TESTING

A. **PAY ITEM NO. 3 – MOBILIZATION/DEMobilIZATION**

The work specified in this item consists of the work and operations necessary in mobilizing and demobilizing for the work as described by the contract documents, including but not limited to, those operations necessary for the movement of personnel, equipment, supplies and incidentals to and from the project site, as required by these specifications, including but not limited to, staging and storage areas, security facilities and services, temporary

environmental controls, sanitary facilities, and the special provisions made by State and local laws and regulations. This item also includes any costs incurred to comply with the General Conditions of the contract. Payment for this item shall be: made at 50% of the Contract Lump Sum Price upon completion of mobilization to the N7 well site where OWNER has authorized CONTRACTOR to rehabilitate the well; and made at 50% of the Contract Lump Sum Price following completion of well rehabilitation and returned to service and accepted the OWNER. Maximum allowable price for mobilization shall not exceed 8% of the total project cost.

B. PAY ITEM NO. 4 – PULL EXISTING PUMP AND MOTOR

The CONTRACTOR shall remove OWNER's wellhead, column pipe, pump and motor including all OWNER's appurtenances within well to the extent required for the Work. Payment for this item shall be at the Contract Lump Sum Price as listed on the Bid Form and as specified in the Contract Documents and accepted by the HYDROGEOLOGIST.

C. PAY ITEM NO. 5 – PRELIMINARY DOWNHOLE VIDEO (STATIC AND DYNAMIC)

The video log shall be paid following the successful video log at the Contract Lump Sum Price listed on the Bid Form as specified in the Contract Documents and accepted by the HYDROGEOLOGIST. Video logging (in both static and dynamic conditions) shall include but not be limited to the furnishing of all material, labor and equipment required, as specified in Summary of Work. Only video logs accepted by the HYDROGEOLOGIST shall be paid for under this pay item.

D. PAY ITEM NO. 6 – FORMATION WATER DISPOSAL SYSTEM

This pay item includes the costs to supply and install required tie-ins, temporary above grade HDPE formation water disposal piping from the well to CONTRACTOR'S settling tanks, to the designated discharge point as determined by OWNER, sampling and compliance with FDEP Permit for the discharge of Produced Groundwater from a non-contaminated site activity (62-621.300(2) FAC), complete restoration of all areas used for formation water discharge as described in Summary of Work and as specified in the Contract Documents and accepted by the HYDROGEOLOGIST. This item includes all labor, material and equipment and removal of the piping from the project site after construction is complete. This pay item also includes the cost to maintain the disposal and settling system and shall include but not be limited to piping, fittings, pumps, monitoring, operation and maintenance. Payment shall be made per Contract Lump Sum Price as listed on the Bid Form.

E. PAY ITEM NO. 7 – DEEPENING OF EXISTING BOREHOLE FROM 800 to 1,500 FEET BELOW LAND SURFACE (BLS)

Payment of this item shall be on a unit price basis. The item shall be paid for at the Contract Unit Price per foot and shall include the actual length of drilled borehole measured and approved by the ENGINEER. The item shall include but not be limited to the furnishing of all material, labor and equipment necessary to complete the work as described in Summary of Work.

F. PAY ITEM NO. 8 – GEOPHYSICAL LOGGING SUITE

Logging shall be paid for at the Contract Lump Sum Cost as listed on the Bid Form for all logs specified in Summary of Work for the well(s) and shall include but not be limited to furnishing all material, labor and equipment necessary to complete the item work in accordance with the Contract Documents and accepted by the HYDROGEOLOGIST.

G. PAY ITEM NO. 9 – INSTALL INFLATABLE STRADDLE PACKER FROM 850-900 FEET BLS AND PERFORMANCE OF PUMPING TEST OF CONFINING UNIT

This pay item includes all materials, labor, and equipment necessary to install (and remove) a straddle packer assembly and successfully complete a pump test to evaluate the confining layer, as described in the Summary of Work. The installation of the straddle packer and performance of the pump test shall be paid for at the Contract Lump Sum Cost listed in the Bid Form.

H. PAY ITEM NO. 10 – INSTALL INFLATABLE OFF BOTTOM PACKER AT APPROXIMATELY 900 FT BLS

This pay item includes all materials, labor, and equipment necessary to successfully install (and remove) an off bottom packer assembly to perform two aquifer performance tests (one for the APPZ and another for the UFA). The installation of the off-bottom packer shall be paid for at the Contract Lump Sum Cost listed in the Bid Form. This pay item is for the installation and removal of the inflatable off bottom packer only. The successful installation of the packer will facilitate the performance of pump tests itemized below.

I. PAY ITEM NO. 11 – 24-HOUR CONSTANT RATE PUMPING TEST OF APPZ

This pay item includes all materials, labor and equipment necessary to perform a constant rate pump test of the Avon Park Permeable Zone (APPZ) as outlined in Summary of Work and accepted by the HYDROGEOLOGIST. The APPZ Pump Test shall be paid for at the Contract Lump Sum Price as listed on the Bid Form.

J. PAY ITEM NO. 12 – 24-HOUR CONSTANT RATE PUMPING TEST OF UFA

This pay item includes all materials, labor and equipment necessary to perform a constant rate pump test of the Upper Floridan Aquifer (UFA) as outlined in Summary of Work and accepted by the HYDROGEOLOGIST. The UFA Pump Test shall be paid for at the Contract Lump Sum Price as listed on the Bid Form.

K. PAY ITEM NO. 13 – SET UP TO BACKPLUG BOREHOLE

This pay items includes all equipment, labor, operations, setup and removal of equipment necessary for emplacement of grout as specified in Pay Item No. 14. This item shall be paid for at the Contract Lump Sum Price listed in the Bid Form.

L. PAY ITEM NO. 14 – BACK PLUG BOREHOLE WITH NEAT CEMENT GROUT FROM APPROXIMATELY 1,250 FEET TO 1,500 FEET AND FROM 850 FEET TO 900 FEET

Cement required to back plug the nominal 12-inch diameter borehole shall be paid for per linear foot or borehole cemented in place and accepted by the HYDROGEOLOGIST, as listed on the Bid Form and described in Summary of Work. Price per linear foot includes but is not limited to materials, equipment, labor, delivery charges, additives, operations, and grout emplacement as specified in the Contract Documents and accepted by the HYDROGEOLOGIST.

M. PAY ITEM NO. 15 – GRAVEL BACKFILL APPZ FROM APPROXIMATELY 900 FEET TO 1,250 FEET BLS

Payment of this item shall be paid for per linear foot of borehole backfilled, as described in the Summary of Work. Price per linear foot includes, but is not limited to equipment, materials, labor, delivery charges, additives, operations and emplacement of gravel and sand backfill as specified in the Summary of Work and accepted by the HYDROGEOLOGIST.

N. PAY ITEM NO. 16 – WELL ACIDIZATION SETUP

This pay item includes the mobilization and demobilization of equipment necessary to acidize the well. The setup and removal of equipment, materials and personnel required to acidize well shall be paid for at the Contract Lump Sum Price as listed on the BID FORM as specified in the Contract Documents and accepted by the HYDROGEOLOGIST. This pay item includes the cost to remove and treat spent acid solution up to a pH of 6.0.

O. PAY ITEM NO. 17 – WELL ACIDIZATION

The acid treatment of the wells shall be paid for at the Contract Unit Price per

gallon as listed on the BID FORM. The said Contract Unit Price shall include but not be limited to furnishing and placing the acid as specified in the Summary of Work and as specified in the Contract Documents and accepted by the HYDROGEOLOGIST.

P. PAY ITEM NO. 18 – INSTALLATION AND REMOVAL OF PUMP DISCHARGE APPARATUS

Payment of this item shall be on a lump sum basis at the Contract price listed in the Bid Form. The item shall include the work required to perform pump development of the well, including installation and removal of temporary wellhead, development pump and piping, and maintenance of formation water disposal system to the satisfaction of the HYDROGEOLOGIST and as described in the Summary of Work.

Q. PAY ITEM NO. 19 – PUMP DEVELOP WELL

Well Development shall be paid for at the Contract Unit Cost Price as listed on the BID FORM as determined by the HYDROGEOLOGIST as development and as described in Summary of Work. The said Contract Unit Price shall include only hours of actual pumping as approved by the HYDROGEOLOGIST, and shall not be limited to the furnishing of all material, labor and equipment necessary to complete development in accordance with the Contract Documents and accepted by the HYDROGEOLOGIST.

R. PAY ITEM NO. 20 – CONDUCT STEP-RATE PUMPING TEST

Payment of this item shall be on a unit price basis. The item shall be paid for at the Contract Unit Price per hour of step-rate pump testing performed and shall include the furnishing of all material, labor and equipment necessary to complete the test as specified in Summary of Work.

S. PAY ITEM NO. 21 – FINAL DOWNHOLE VIDEO LOG (STATIC AND DYNAMIC)

Payment of this item shall be on a lump sum basis. The item includes acceptable video logs, as specified in Summary of Work, including time, equipment and materials necessary to complete the work.

T. PAY ITEM NO. 22 – REINSTALL PERMANENT WELL PUMP

The CONTRACTOR shall re-install OWNER's wellhead, column pipe, pump and motor including all OWNER's appurtenances that CONTRACTOR removed for the initiation of Work. Payment for this item shall be at the Contract Lump Sum Price as listed on the Bid Form and as specified in the Contract Documents and accepted by the HYDROGEOLOGIST.

U. PAY ITEM NO. 23 – WELL DISINFECTION AND BACTERIOLOGICAL CLEARANCE

Payment of this item shall be on a lump sum basis. The item includes but not be limited to, all equipment, materials and labor to satisfactorily disinfect the well and perform bacteriological sampling and testing, as required by, state and local laws and regulations as related to this pay item. The CONTRACTOR shall be responsible for costs associated with re-chlorination, re-sampling, and re-testing as needed to satisfactorily disinfect the well and obtain bacteriological clearance for the well to be placed in service as described in the Summary of Work.

V. PAY ITEM NO. 24 – SITE RESTORATION

The work specified under this pay item includes restoring the site to its original condition, the intended grades as shown on the site plan, restoring site conditions to the satisfaction of the HYDROGEOLOGIST and OWNER and as described in Section 02300. Payment shall be at the Contract Lump Sum Price as listed on the Bid Form and shall include all equipment, tools and labor necessary to restore the site complete and accepted by the OWNER.

3.03 PART 3 – S1 DEEPENING AND TESTING

W. PAY ITEM NO. 25 – MOBILIZATION/DEMobilIZATION

The work specified in this item consists of the work and operations necessary in mobilizing and demobilizing for the work as described by the contract documents, including but not limited to, those operations necessary for the movement of personnel, equipment, supplies and incidentals to and from the project site, as required by these specifications, including but not limited to, staging and storage areas, security facilities and services, temporary environmental controls, sanitary facilities, and the special provisions made by State and local laws and regulations. This item also includes any costs incurred to comply with the General Conditions of the contract. Payment for this item shall be: made at 50% of the Contract Lump Sum Price upon completion of mobilization to the S1 well site where OWNER has authorized CONTRACTOR to rehabilitate the well; and made at 50% of the Contract Lump Sum Price following completion of well rehabilitation and returned to service and accepted the OWNER. Maximum allowable price for mobilization shall not exceed 8% of the total project cost.

X. PAY ITEM NO. 26 – PULL EXISTING PUMP AND MOTOR

The CONTRACTOR shall remove OWNER's wellhead, column pipe, pump and motor including all OWNER's appurtenances within well to the extent required for the Work. Payment for this item shall be at the Contract Lump Sum Price as listed on the Bid Form and as specified in the Contract Documents and accepted by the HYDROGEOLOGIST.

Y. PAY ITEM NO. 27 – PRELIMINARY DOWNHOLE VIDEO (STATIC AND DYNAMIC)

The video log shall be paid following the successful video log at the Contract Lump Sum Price listed on the Bid Form as specified in the Contract Documents and accepted by the HYDROGEOLOGIST. Video logging (in both static and dynamic conditions) shall include but not be limited to the furnishing of all material, labor and equipment required, as specified in Summary of Work. Only video logs accepted by the HYDROGEOLOGIST shall be paid for under this pay item.

Z. PAY ITEM NO. 28 – FORMATION WATER DISPOSAL SYSTEM

This pay item includes the costs to supply and install required tie-ins, temporary above grade HDPE formation water disposal piping from the well to CONTRACTOR'S settling tanks, to the designated discharge point as determined by OWNER, sampling and compliance with FDEP Permit for the discharge of Produced Groundwater from a non-contaminated site activity (62-621.300(2) FAC), complete restoration of all areas used for formation water discharge as described in Summary of Work and as specified in the Contract Documents and accepted by the HYDROGEOLOGIST. This item includes all labor, material and equipment and removal of the piping from the project site after construction is complete. This pay item also includes the cost to maintain the disposal and settling system and shall include but not be limited to piping, fittings, pumps, monitoring, operation and maintenance. Payment shall be made per Contract Lump Sum Price as listed on the Bid Form.

AA. PAY ITEM NO. 29 – DEEPENING OF EXISTING BOREHOLE FROM 800 to 1,500 FEET BELOW LAND SURFACE (BLS)

Payment of this item shall be on a unit price basis. The item shall be paid for at the Contract Unit Price per foot and shall include the actual length of drilled borehole measured and approved by the ENGINEER. The item shall include but not be limited to the furnishing of all material, labor and equipment necessary to complete the work as described in Summary of Work.

BB. PAY ITEM NO. 30 – GEOPHYSICAL LOGGING SUITE

Logging shall be paid for at the Contract Lump Sum Cost as listed on the Bid Form for all logs specified in Summary of Work for the well(s) and shall include but not be limited to furnishing all material, labor and equipment necessary to complete the item work in accordance with the Contract Documents and accepted by the HYDROGEOLOGIST.

CC. PAY ITEM NO. 31 – INSTALL INFLATABLE STRADDLE PACKER FROM 850-900 FEET BLS AND PERFORMANCE OF PUMPING TEST OF CONFINING UNIT

This pay item includes all materials, labor, and equipment necessary to install (and remove) a straddle packer assembly and successfully complete a pump test to evaluate the confining layer, as described in the Summary of Work. The installation of the straddle packer and performance of the pump test shall be paid for at the Contract Lump Sum Cost listed in the Bid Form.

DD. PAY ITEM NO. 32 – INSTALL INFLATABLE OFF BOTTOM PACKER AT APPROXIMATELY 900 FT BLS

This pay item includes all materials, labor, and equipment necessary to successfully install (and remove) an off bottom packer assembly to perform two aquifer performance tests (one for the APPZ and another for the UFA). The installation of the off-bottom packer shall be paid for at the Contract Lump Sum Cost listed in the Bid Form. This pay item is for the installation and removal of the inflatable off bottom packer only. The successful installation of the packer will facilitate the performance of pump tests itemized below.

EE. PAY ITEM NO. 33 – 24-HOUR CONSTANT RATE PUMPING TEST OF APPZ

This pay item includes all materials, labor and equipment necessary to perform a constant rate pump test of the Avon Park Permeable Zone (APPZ) as outlined in Summary of Work and accepted by the HYDROGEOLOGIST. The APPZ Pump Test shall be paid for at the Contract Lump Sum Price as listed on the Bid Form.

FF. PAY ITEM NO. 34– 24-HOUR CONSTANT RATE PUMPING TEST OF UFA

This pay item includes all materials, labor and equipment necessary to perform a constant rate pump test of the Upper Floridan Aquifer (UFA) as outlined in Summary of Work and accepted by the HYDROGEOLOGIST. The UFA Pump Test shall be paid for at the Contract Lump Sum Price as listed on the Bid Form.

GG. PAY ITEM NO. 35 – SET UP TO BACKPLUG BOREHOLE

This pay item includes all equipment, labor, operations, setup and removal of equipment necessary for emplacement of grout as specified in Pay Item No. 36. This item shall be paid for at the Contract Lump Sum Price listed in the Bid Form.

HH. PAY ITEM NO. 36 – BACK PLUG BOREHOLE WITH NEAT CEMENT GROUT FROM APPROXIMATELY 1,250 FEET TO 1,500 FEET AND FROM 850 FEET TO 900 FEET

Cement required to back plug the nominal 12-inch diameter borehole shall be paid for per linear foot of borehole cemented in place and accepted by the

HYDROGEOLOGIST, as listed on the Bid Form and described in Summary of Work. Price per linear foot includes but is not limited to materials, labor, delivery charges, additives, operations, and grout emplacement as specified in the Contract Documents and accepted by the HYDROGEOLOGIST.

II. PAY ITEM NO. 37 – GRAVEL BACKFILL APPZ FROM APPROXIMATELY 900 FEET TO 1,250 FEET BLS

Payment of this item shall be paid for per linear foot of borehole backfilled, as described in the Summary of Work. Price per linear foot includes, but is not limited to equipment, materials, labor, delivery charges, additives, operations and emplacement of gravel and sand backfill as specified in the Summary of Work and accepted by the HYDROGEOLOGIST.

JJ. PAY ITEM NO. 38– WELL ACIDIZATION SETUP

This pay item includes the mobilization and demobilization of equipment necessary to acidize the well. The setup and removal of equipment, materials and personnel required to acidize well shall be paid for at the Contract Lump Sum Price as listed on the BID FORM as specified in the Contract Documents and accepted by the HYDROGEOLOGIST. This pay item includes the cost to remove and treat spent acid solution up to a pH of 6.0.

KK. PAY ITEM NO. 39 – WELL ACIDIZATION

The acid treatment of the wells shall be paid for at the Contract Unit Price per gallon as listed on the BID FORM. The said Contract Unit Price shall include but not be limited to furnishing and placing the acid as specified in the Summary of Work and as specified in the Contract Documents and accepted by the HYDROGEOLOGIST.

LL. PAY ITEM NO. 40 – INSTALLATION AND REMOVAL OF PUMP DISCHARGE APPARATUS

Payment of this item shall be on a lump sum basis at the Contract price listed in the Bid Form. The item shall include the work required to perform pump development of the well, including installation and removal of temporary wellhead, development pump and piping, and maintenance of formation water disposal system to the satisfaction of the HYDROGEOLOGIST and as described in the Summary of Work.

MM. PAY ITEM NO. 41– PUMP DEVELOP WELL

Well Development shall be paid for at the Contract Unit Cost Price as listed on the BID FORM as determined by the HYDROGEOLOGIST as development and as described in Summary of Work. The said Contract Unit Price shall include only hours of actual pumping as approved by the HYDROGEOLOGIST, and shall not be limited to the furnishing of all material,

labor and equipment necessary to complete development in accordance with the Contract Documents and accepted by the HYDROGEOLOGIST.

NN. PAY ITEM NO. 42 – CONDUCT STEP-RATE PUMPING TEST

Payment of this item shall be on a unit price basis. The item shall be paid for at the Contract Unit Price per hour of step-rate pump testing performed and shall include the furnishing of all material, labor and equipment necessary to complete the test as specified in Summary of Work.

OO. PAY ITEM NO. 43 – FINAL DOWNHOLE VIDEO LOG (STATIC AND DYNAMIC)

Payment of this item shall be on a lump sum basis. The item includes acceptable video logs, as specified in Summary of Work, including time, equipment and materials necessary to complete the work.

PP. PAY ITEM NO. 44 – REINSTALL PERMANENT WELL PUMP

The CONTRACTOR shall re-install OWNER's wellhead, column pipe, pump and motor including all OWNER's appurtenances removed by CONTRACTOR for the initiation of Work. Payment for this item shall be at the Contract Lump Sum Price as listed on the Bid Form and as specified in the Contract Documents and accepted by the HYDROGEOLOGIST.

QQ. PAY ITEM NO. 45 – WELL DISINFECTION AND BACTERIOLOGICAL CLEARANCE

Payment of this item shall be on a lump sum basis. The item includes but not be limited to, all equipment, materials and labor to satisfactorily disinfect the well and perform bacteriological sampling and testing, as required by, state and local laws and regulations as related to this pay item. The CONTRACTOR shall be responsible for costs associated with re-chlorination, re-sampling, and re-testing as needed to satisfactorily disinfect the well and obtain bacteriological clearance for the well to be placed in service as described in the Summary of Work.

RR. PAY ITEM NO. 46 – SITE RESTORATION

The work specified under this pay item includes restoring the site to its original condition, the intended grades as shown on the site plan, restoring site conditions to the satisfaction of the HYDROGEOLOGIST and OWNER and as described in Section 02300. Payment shall be at the Contract Lump Sum Price as listed on the Bid Form and shall include all equipment, tools and labor necessary to restore the site complete and accepted by the OWNER.