



Mechanical Integrity Testing of the Wastewater Treatment Plant Injection Wells

Invitation for Bids # PSUT-20-12

| General Information | | |
|------------------------------------|--|-----------------|
| Project Cost Estimate | \$120,000 | Not Applicable |
| Project Timeline | Completed by March 15, 2021 (7 days prior to FDEP permit deadline) or within forty-five (45) days upon issuance of Notice to Proceed, whichever date is earlier. | See Section 1.4 |
| Evaluation of Proposals | Staff | See Section 1.7 |
| Non Mandatory Pre-Bid Meeting | 10:00 a.m. on October 20, 2020 at the Waste Water Treatment Plant 13975 Pembroke Road, Pembroke Pines, FL 33027 | See Section 1.8 |
| Question Due Date | October 26, 2020 | See Section 1.8 |
| Proposals will be accepted until | 2:00 p.m. on November 3, 2020 | See Section 1.8 |
| 5% Proposal Security / Bid Bond | Required in the event that the proposal exceeds \$200,000 | See Section 4.1 |
| 100% Payment and Performance Bonds | Required in the event that the proposal exceeds \$200,000 | See Section 4.2 |

THE CITY OF PEMBROKE PINES
PURCHASING DIVISION
8300 SOUTH PALM DRIVE
PEMBROKE PINES, FLORIDA 33025
(954) 518-9020



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ATTACHMENTS

Attachment A: Contact Information Form

Attachment B: Non-Collusive Affidavit

Attachment C: Proposer's Qualifications Statement

Attachment D: Sample Insurance Certificate

Attachment E: Specimen Contract - **Contractual Services Agreement**

Attachment F: References Form

Attachment G: Contract Documents



SECTION 1 - INSTRUCTIONS

1.1 NOTICE

Notice is hereby given that the City Commission of the City of Pembroke Pines is seeking sealed proposals for:

**IFB # PSUT-20-12
Mechanical Integrity Testing of the Wastewater Treatment
Plant Injection Wells**

Solicitations may be obtained from the City of Pembroke Pines website at <http://www.ppines.com/index.aspx?NID=667> and on the www.BidSync.com website.

If you have any problems downloading the solicitation, please contact the BidSync Support line at 1-800-990-9339.

If additional information help is needed with downloading the solicitation package please contact the Purchasing Office at (954) 518-9020 or by email at purchasing@ppines.com. The Purchasing Office hours are between 7:00 a.m. - 6:00 p.m. on Monday through Thursday and is located at 8300 South Palm Drive, Pembroke Pines, Florida 33025.

The City requires all questions relating to the solicitation be entered through the "Ask a Question" option tab available on the BidSync website. Responses to the questions will be provided online at www.bidsync.com. Such request must be received by the "Question Due Date" stated in the solicitation. The issuance of a response via BidSync is considered an Addendum and shall be the only official method whereby such an interpretation or clarification will be made.

Proposals will be accepted until 2:00 p.m., Tuesday, November 3, 2020. Proposals must be **submitted electronically at www.BidSync.com**. The sealed electronic proposals will be publicly opened at 2:30 p.m. by the City Clerk's Office, in the City Hall Administration Building, 4th Floor Conference Room located at 601 City Center Way, Pembroke Pines, Florida, 33025.

1.1.1 VIRTUAL BID OPENING

At the time of writing of this notice, Florida Governor Ron DeSantis' Executive Order No. 20-69 (extended by EO 20-150 and EO 20-179) on the Coronavirus health alert, is due to expire on October 1, 2020. If the executive order is not extended then meetings may be a combination of in-person and virtual, all as provided by law, or as otherwise entered via an executive order of the governor. **In any event, the public is encouraged to attend the bid opening process virtually in lieu of attending the meeting in person.**



In addition, at the time of writing this notice, the City will not be opening up the physical location for public access as **City offices are closed to the public**, due to the COVID-19 Coronavirus Pandemic.

Bid openings for this project will be live-streamed from the City Clerk's Office, in the City Hall Administration Building, 4th Floor Conference Room located at 601 City Center Way, Pembroke Pines, Florida, 33025 at **2:30 PM on the bid due date**.

While recognizing the importance of public accessibility to the bid openings, and considering public health concerns, in the abundance of caution, the City is requesting that interested parties utilize live streaming as a safe way for vendors and the public to view the bid opening process in lieu of attending the meeting in person.

The public is invited to attend the meeting virtually via the Cisco Webex Meetings platform.

- Cisco Webex Meeting Number: 717 019 586
- Join by Phone Number: +1-408-418-9388

The public may download the **Cisco Webex Meetings app** from <https://www.webex.com/downloads.html/>, to view and listen to the meeting, however please make sure to mute your phone/microphone/device's audio and camera as the **public may attend the meeting but will not be allowed to comment or participate in the proceedings.**

If any member of the public requires additional information about this meeting or has any questions about how to access the meeting, please contact:

Danny Benedit, Procurement Department
City of Pembroke Pines
8300 South Palm Drive,
Pembroke Pines, FL 33025
954-518-9022
purchasing@ppines.com

1.2 PURPOSE

The City of Pembroke Pines is seeking proposals from qualified firms, hereinafter referred to as the Contractor, to furnish all materials, equipment and labor and to perform all work in accordance with the Contract Documents for the City of Pembroke Pines Wastewater Treatment Plant Class 1 Injection Well Mechanical Integrity Testing, in accordance with the terms, conditions, and specifications contained in this solicitation.



1.3 SCOPE OF WORK

Refer to Attachment G – Contract Documents

1.4 PROJECT TIMELINE

Work to be completed by March 15, 2021 (7 days prior to FDEP permit deadline) or within forty-five (45) days upon issuance of Notice to Proceed, whichever date is earlier.

1.5 PROPOSAL REQUIREMENTS

The www.bidsync.com website allows for vendors to complete, scan and upload their documents as part of the bidder's submittal on the website. Prospective proposers interested in responding to this solicitation are requested to provide all of the information listed in this section. Submittals that do not respond completely to all of requirements specified herein may be considered non-responsive and eliminated from the process. Brevity and clarity are encouraged.

1.5.1 Attachment A: Contact Information Form

- a. Attached is contact information form (Attachment A) where the vendor will enter their contact information and complete the proposal checklist. The Contact information form shall be electronically signed by the contact person authorized to represent the contractor. This form must be completed and submitted through www.bidsync.com as part of the bidder's submittal.
- b. The vendor must provide their pricing through the designated lines items listed on the BidSync website.
- c. Please note vendors should be registered on BidSync under the name of the organization that they are operating as and it should match the organization name on the documents that they are submitting and utilizing when responding to the solicitation.
- d. The contact information form should contain an electronic signature of the authorized representative of the Proposer along with the address and telephone number for communications regarding the Proposal.
- e. Proposals by corporations should be executed in the corporate name by the President or other corporate officer accompanied by evidence of authority to sign. The corporate address and state of incorporation must also be shown.
- f. Proposals by partnerships should be executed in the partnership name and signed by a partner whose title and the official address of the partnership must be shown.

1.5.2 Attachment B: Non-Collusive Affidavit



1.5.3 Attachment C: Proposer's Qualifications Statement

1.5.4 Attachment F: References Form

- a. Complete **Attachment F: References Form**, preferably where the team was the same. References should be from the last five years and should be capable of explaining and confirming your firm's capacity to successfully complete the scope of work outlined herein. As part of the proposal evaluation process, the City may conduct an investigation of references, including a record check or consumer affairs complaints. Proposers' submission of a proposal constitutes acknowledgment of the process and consent to investigate. The City is the sole judge in determining Proposers qualifications.

1.5.5 Proposal Security (Bid Bond Form or Cashier's Check)

- a. Each Proposal should be accompanied by a certified or cashier's check or by a Bid Bond made payable to the City of Pembroke Pines on an approved form, duly executed by the Proposer as principal and having as surety thereon a surety company acceptable to CITY and authorized to write such Bond under the laws of the State of Florida, in an amount not less than five percent (5%) of the amount of the base Proposal price.
- b. Contingency is not to be counted in the total amount the proposal security is based on.
- c. Proposers must submit a scanned copy of their bid security (bid bond form or cashier's check) with their bid submittal through BidSync.
- d. Proposers should also submit their original bid security (bid bond form or cashier's check) at time of the bid due date, or they may be deemed as non-responsive.
- e. The original Bid Bond or Cashier's Check should be in a sealed envelope, plainly marked "**BID SECURITY - IFB # PSUT-20-12 Mechanical Integrity Testing of the Wastewater Treatment Plant Injection Wells**" and sent to the City of Pembroke Pines, City Clerk's Office, 4th Floor, 601 City Center Way, Pembroke Pines, Florida, 33025.
- f. Please see SECTION 4 - SPECIAL TERMS & CONDITIONS of this RFP for additional information.

1.6 VENDOR REGISTRATION AND QUALIFICATION DOCUMENTS

The City has implemented a new process that is intended to make the bidding process easier for vendors that bid on multiple City projects. This process will require vendors to complete and submit the following standard forms and documents at any time prior to bidding on a project. In



addition, the vendors will be able to utilize these same forms without the need to re-fill and re-submit the forms each time they bid on a City project.

Furthermore, please make sure to update this information on an as-needed basis so that all pertinent information is accurate, such as local business tax receipts, and any other relevant information.

These forms will be found under the “Vendor Registration” group of “Qualifications” on the BidSync website for the City of Pembroke Pines. Please note that the BidSync website requires bidders to complete all of these qualifications prior to being able to submit questions on any bids, therefore, please make sure to complete this information as soon as possible.

The following documents can be completed prior to the bidding process through the BidSync website and do not need to be attached to your submittal as the BidSync website will automatically include it.

1.6.1 Vendor Information Form

1.6.2 Form W-9 (Rev. October 2018)

- a. Previously dated versions of this form will delay the processing of any payments to the selected vendor.

1.6.3 Sworn Statement on Public Entity Crimes Form

1.6.4 Local Vendor Preference Certification

- a. If claiming Local Pembroke Pines Vendor Preference, business must attach a current business tax receipt from the City of Pembroke Pines
- b. If claiming Local Broward County Vendor Preference, business must attach a current business tax receipt from Broward County or the city within Broward County where the business resides.
- c. The Local Vendor Preference Certification form must be completed by/for the proposer; the proposer **WILL NOT** qualify for Local Vendor Preference based on their sub-contractors’ qualifications.

1.6.5 Local Business Tax Receipts

1.6.6 Veteran Owned Small Business Preference Certification

- a. If claiming Veteran Owned Small Business Preference Certification, business must attach the “Determination Letter” from the United States Department of Veteran Affairs Center for Verification and Evaluation notifying the business that they have been approved as a Veteran Owned Small Business (VOSB).



- b. The Veteran Owned Small Business Preference Certification form must be completed by/for the proposer; the proposer **WILL NOT** qualify for Veteran Owned Small Business Preference based on their sub-contractors' qualifications.

1.6.7 Equal Benefits Certification Form

1.6.8 Vendor Drug-Free Workplace Certification Form

1.6.9 Scrutinized Company Certification

1.7 EVALUATION OF PROPOSALS & PROCESS OF SELECTION

- A. Staff will evaluate all responsive proposals received from proposers who meet or exceed the bid requirements contained in the solicitation. Evaluations shall be based upon the information contained in the proposals as submitted.
- B. Staff will make a recommendation to the City Commission for award of contract.

1.8 TENTATIVE SCHEDULE OF EVENTS

| Event | Time &/or Date |
|---|---------------------------------------|
| Issuance of Solicitation (Posting Date) | October 13, 2020 |
| Non Mandatory Pre-Bid Meeting | 10:00 a.m. on October 20, 2020 |
| Question Due Date | October 26, 2020 |
| Anticipated Date of Issuance for the Addenda with Questions and Answers | October 28, 2020 |
| Proposals will be accepted until | 2:00 p.m. on November 3, 2020 |
| Proposals will be opened at | 2:30 p.m. on November 3, 2020 |
| Evaluation of Proposals by Staff | TBD |
| Recommendation of Contractor to City Commission award | TBD |

1.8.1 NON-MANDATORY PRE-BID MEETING / SITE VISIT

There will be a non-mandatory scheduled pre-bid meeting on **October 20, 2020 at 10:00 a.m.** Meeting location will be at the Wastewater Treatment Plant located at 13975 Pembroke Road, Pembroke Pines, FL 33027.

1.9 SUBMISSION REQUIREMENTS

Bids/proposals **must be submitted electronically** at www.bidsync.com on or before **2:00 p.m. on November 3, 2020.**



Please note vendors should be registered on BidSync under the name of the organization that they are operating as and it should match the organization name on the documents that they are submitting and utilizing when responding to the solicitation.

The vendor must provide their pricing through the designated lines items listed on the BidSync website. In addition, the vendor must complete any webforms on the BidSync website and provide any additional information requested throughout this solicitation. Any additional information requested in the solicitation should be scanned and uploaded. **Unless otherwise specified, the City requests for vendors to upload their documents as one (1) PDF document in the order that is outline in the bid package.**

The City recommends for proposers to submit their proposals as soon as they are ready to do so. Please allow ample time to submit your proposals on the BidSync website. Proposals may be modified or withdrawn prior to the deadline for submitting Proposals. BidSync Support is happy to help you with submitting your proposal and to ensure that you are submitting your proposals correctly, but we ask that you contact their support line at 1-800-990-9339 with ample time before the bid closing date and time.

PLEASE DO NOT SUBMIT ANY PROPOSALS VIA MAIL, E-MAIL OR FAX.

However, please note that any required Bid Bond or Cashier's Check should be in a sealed envelope, plainly marked "**BID SECURITY - IFB # PSUT-20-12 Mechanical Integrity Testing of the Wastewater Treatment Plant Injection Wells**" and sent to the City of Pembroke Pines, City Clerk's Office, 4th Floor, 601 City Center Way, Pembroke Pines, Florida, 33025.

**CONTACT INFORMATION FORM**

IN ACCORDANCE WITH "PSUT-20-12" titled "Mechanical Integrity Testing of the Wastewater Treatment Plant Injection Wells" attached hereto as a part hereof, the undersigned submits the following:

A) Contact Information

The Contact information form shall be electronically signed by one duly authorized to do so, and in case signed by a deputy or subordinate, the principal's properly written authority to such deputy or subordinate must accompany the proposal. This form must be completed and submitted through www.bidsync.com as part of the bidder's submittal. The vendor must provide their pricing through the designated lines items listed on the BidSync website.

COMPANY INFORMATION:

COMPANY: _____

STREET ADDRESS: _____

CITY, STATE & ZIP CODE: _____

PRIMARY CONTACT FOR THE PROJECT:

NAME: _____ TITLE: _____

E-MAIL: _____

TELEPHONE: _____ FAX: _____

AUTHORIZED APPROVER:

NAME: _____ TITLE: _____

E-MAIL: _____

TELEPHONE: _____ FAX: _____

SIGNATURE: _____

**B) Proposal Checklist**

Did you make sure to submit the following items, as stated in section 1.5 “Proposal Requirements” of the bid package?

| | |
|---|----------|
| Attachment A - Contact Information Form\ | Yes_____ |
| Attachment B - Non-Collusive Affidavit | Yes_____ |
| Attachment C - Proposer’s Completed Qualification Statement | Yes_____ |
| Attachment F - References Form | Yes_____ |

Did you make sure to update the following documents found under the “Vendor Registration” group of “Qualifications” on the BidSync website for the City of Pembroke Pines?

| | |
|---|----------|
| Vendor Information Form | Yes_____ |
| Form W-9 (Rev. October 2018) | Yes_____ |
| Sworn Statement on Public Entity Crimes Form | Yes_____ |
| Local Vendor Preference Certification | Yes_____ |
| Local Business Tax Receipts | Yes_____ |
| Veteran Owned Small Business Preference Certification | Yes_____ |
| Equal Benefits Certification Form | Yes_____ |
| Vendor Drug-Free Workplace Certification Form | Yes_____ |
| Scrutinized Company Certification | Yes_____ |

C) Sample Proposal Form

The following sample price proposal is for information only. The vendor must provide their pricing through the designated lines items listed on the BidSync website.

Base Option: Mechanical Integrity Testing of the Wastewater Treatment Plant Injection Wells

| Item # | Item Description | Total Cost |
|--------|-----------------------------|--|
| 1) | Mobilization/Demobilization | Price to be Submitted Via BidSync |



| | | |
|----|--|-----------------------------------|
| 2) | Downhole Video Survey (Additional video to be performed upon direction of Engineer after completing casing brushing if needed) | Price to be Submitted Via BidSync |
| 3) | Hydrostatic Pressure Test with Inflatable Packer | Price to be Submitted Via BidSync |
| 4) | Temperature, Background Gamma-Ray, RTS, Final Gamma-Ray Logging | Price to be Submitted Via BidSync |
| 5) | Standby Time Ordered by Engineer | Price to be Submitted Via BidSync |
| 6) | Casing Brushing | Price to be Submitted Via BidSync |

CITY OF PEMBROKE PINES

Environmental Services Division

8300 South Palm Drive
Pembroke Pines, FL 33025



Contract Documents

Mechanical Integrity Testing of the Wastewater Treatment Plant
Injection Wells

September 21, 2020

**Contract Documents
City of Pembroke Pines
Mechanical Integrity Testing of the Wastewater
Treatment Plant Injection Wells**

September 21, 2020

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**SECTION 01000
SUMMARY OF WORK AND GENERAL REQUIREMENTS**

PART I GENERAL

1.01 SCOPE OF WORK

- A. This section briefly describes the Work to be performed as part of the City of Pembroke Pines Wastewater Treatment Plant (WWTP) Class I Injection Well System Mechanical Integrity Test (MIT) activities. The injection well system is located at 13955 Pembroke Road, Pembroke Pines, Broward County, Florida 33027.

1.02 INTERPRETATION OF CONTRACT DOCUMENTS

- A. Specifications and supporting documents included in this Contract establish the performance quality requirements, location and general arrangement of materials and equipment, and establish the minimum standards for quality of workmanship and appearance.
- B. A part of the Work that is necessary or required to make each installation satisfactory and operable for its intended purpose, even though it is not specifically included in the Specifications or on the Drawings, shall be performed as incidental work as if it were described in the Specifications and shown on the Drawings.
- C. The testing of this injection well system must conform to this Contract and the MIT plan approved by Florida Department of Environmental Protection (FDEP) Underground Injection Control (UIC). If the Contract and approved plan conflict, the CONTRACTOR shall perform the more stringent requirement as determined by the opinion of the ENGINEER.

1.03 WORK COVERED BY CONTRACT DOCUMENTS

- A. The Work to be performed by the CONTRACTOR includes furnishing all materials, labor, tools, equipment, water, light, power, transportation, superintendence, temporary construction of every nature, and all other services and facilities of every nature whatsoever to perform the Mechanical Integrity Testing on the City of Pembroke Pines WWTP Injection Wells (IW-1 and IW-2) as herein described as specified. All Work shall be in accordance with the Contract Documents. The performance of the MITs shall incorporate the following criteria.
 - 1. Testing of IW-2 for mechanical integrity shall only be initiated when Injection Well IW-1 and its associated pumps are fully operational and when the 3-million gallon storage capacity of the existing emergency storage basin is fully available for effluent storage.
 - 2. Injection Well IW-2 must be returned to service before the emergency storage basin reaches its 3-million gallon capacity, or within four days of when it was removed from service, whichever occurs first.

3. Every 20 minutes, at a minimum, the surface water elevation of the existing emergency storage basin shall be monitored, and its remaining capacity to store effluent shall be recorded. These monitoring data shall be included with the MIT results.
4. Capability must be maintained to place IW-2 back into service within eight hours of being taken off-line.
5. If during mechanical integrity testing, the storage capacity of the existing emergency storage basin decreases to less than its 3-million gallon full capacity, IW-2 must be placed back into service no more than 72 hours after the storage basin begins to receive effluent. Should mechanical integrity testing be incomplete at this time, IW-2 may be again taken off-line for further testing after the 3-million gallon storage capacity of the existing emergency storage basin is again restored.
6. The Contractor shall provide 72 hours advance notice to the ENGINEER of intent to remove the well from service and commence testing work. The OWNER will make reasonable efforts to accommodate the shut-down request but reserves the right to delay testing as required to react to system flow events and/or facility performance.

1.04 WORK BY OTHERS

- A. Where two or more contracts are being performed at one time on the same Site or adjacent land in such manner that work under one contract may interfere with work under another, the OWNER will determine the sequence and order of the Work in either or both contracts. When the Site of one contract is the necessary or convenient means of access for performance of work under another, the OWNER may grant privilege of access or other reasonable privilege to the CONTRACTOR so desiring, to the extent, amount, and in manner and at time that the OWNER may determine. No OWNER determination of method or time or sequence or order of the work or access privilege shall be the basis for a claim for delay or damage except under provisions of the General Conditions for temporary suspensions of the work. The CONTRACTOR shall conduct its operations so as to cause a minimum of interference with the work of such other CONTRACTORS, and shall cooperate fully with such CONTRACTORS to allow continued safe access to their respective portions of the Site, as required to perform work under their respective contracts.
- B. Interference With Work On Utilities: The CONTRACTOR shall cooperate fully with all utility forces of the OWNER or forces of other public or private agencies engaged in the relocation, altering, or otherwise rearranging of any facilities which interfere with the progress of the WORK, and shall schedule the WORK so as to minimize interference with said relocation, altering, or other rearranging of facilities.

1.05 SEQUENCE OF WORK

- A. The following items represent and identify the general outline of work to be performed by the CONTRACTOR. The detailed requirements to complete the

testing activities for each injection well (IW-1 and IW-2) are provided in other specification sections.

1. Obtain necessary permits, provide submittals for approval and prepare a videotape record of pre-existing site conditions.
2. Coordinate with ENGINEER to ensure FDEP is properly notified of testing activities.
3. Mobilize and setup testing equipment at first Injection Well.
4. Coordinate with Operator and ENGINEER concerning plant and well operations.
5. Perform downhole video survey.
6. If required by ENGINEER, perform casing brushing.
7. Suppress head ('kill' well), install inflatable packer to bottommost casing setting, and perform hydrostatic pressure test.
8. Perform high-resolution temperature and background gamma-ray logging; locate base of casing using magnetic collar locator.
9. Perform radioactive tracer survey.
10. Restore wellhead and site to original conditions and coordinate with Operator to resume normal operations at that Injection Well.
11. Mobilize and setup testing equipment at second Injection Well.
12. Coordinate with Operator and ENGINEER concerning plant and well operations.
13. Perform downhole video survey.
14. If required by ENGINEER, perform casing brushing.
15. Perform hydrostatic pressure test.
16. Perform high-resolution temperature and background gamma-ray logging; locate base of casing using magnetic collar locator.
17. Perform radioactive tracer survey.
18. Restore wellhead and site to original conditions and coordinate with Operator to resume normal operations.
19. Demobilize from site

1.06 EXISTING UTILITIES AND STRUCTURES

- A. The existing facilities shown in Figure 1 were taken from a recent aerial photograph. All existing facilities may not be shown and there is no guarantee that the facilities shown are entirely accurate today. The CONTRACTOR shall assure himself of any utilities, structures, or facilities prior to performing any Work.
- B. Prior to the start of Work, the CONTRACTOR shall request each utility agency to advise him of the location of their facilities in the vicinity. The OWNER and the ENGINEER will assume no liability for damages sustained or costs incurred because of the CONTRACTOR's operations in the vicinity of existing utilities or structures. The CONTRACTOR shall notify the ENGINEER of any deviation between existing conditions and the drawings.
- C. When structures and utilities have been properly shown or marked and are disturbed or damaged in the execution of the Work, they must be repaired immediately in conformance with best standard practice and the approval of the OWNER of the damaged utility or structure. In the case of structures and utilities which have not been properly shown or located as outlined above and are disturbed or damaged in the prosecution of the Work, take whatever steps are necessary for safety and notify the affected utility OWNER and avoid any actions which might cause further damage to the structure or utility. Should the Work require repairs, changes, or modifications of the OWNER's utilities as well as other utilities, it is the responsibility of the CONTRACTOR to provide for the maintenance of continuous water, sewage, electric, telephone and other utility services to all present customers of such utilities, unless approval in writing is secured from the applicable utility company or OWNER for interpretation of such service.

1.07 FDEP APPROVED PLAN

- A. The work performed under these specifications shall fully comply with the requirements set forth in these documents and the approved FDEP plan for the Mechanical Integrity Tests. The plan has been submitted to the FDEP and will be added as an Addendum after approval by the FDEP.

1.08 PRESERVING WATER QUALITY

- A. It is essential that brackish or salty water produced from any source during drilling operations is prevented from contaminating the shallow aquifer which contains fresh water.
- B. Due precautions shall be taken to prevent spills. In the event of any unusual occurrences during testing activities, the CONTRACTOR shall inform the ENGINEER immediately and act in accordance with FDEP requirements.
- C. The CONTRACTOR shall be responsible for the cost of all cleanup activities attributable to his testing operations at the well construction site, including installation and pumping of additional monitor wells at the site, as directed by the ENGINEER.
- D. Flowing conditions in IW-1 and IW-2 shall be kept under control at all times. Salt may be used as a flow-suppression additive in IW-1 and IW-2 upon ENGINEER's approval.

1.09 WATER

- A. Potable water is available at the project site and will be provided to the CONTRACTOR at no additional cost. Supply is available from an existing hydrant located in the WWTP.
- B. When the CONTRACTOR utilizes the existing potable water supply at the plant, he shall provide all temporary piping with an in-line meter to quantify the flow rate and total amount of water utilized for this operation. The CONTRACTOR shall also install a pressure reducing backflow prevention device between the injection well and water source. The meter and backflow-preventer assembly shall be acceptable to the OWNER.
- C. Prior to final acceptance, temporary connections and piping installed by the CONTRACTOR shall be removed in a manner satisfactory to the ENGINEER.
- D. The CONTRACTOR shall be responsible for securing any permits, licenses, or approvals that must be obtained for sources of water required for construction.
- E. The CONTRACTOR shall provide the OWNER and ENGINEER a description of his water supply needs at a pre-construction meeting.
- F. The costs for the supplemental equipment and installation to connect the water supply shall be included in the lump-sum price for testing the injection well.

1.10 ELECTRICITY

- A. All necessary temporary electrical lines shall be furnished, installed, connected and maintained at the CONTRACTOR's expense in a manner satisfactory to the OWNER and ENGINEER and removed at the completion of the work.
- B. The CONTRACTOR shall perform all work, including utility installations, in accordance with all Federal, State, County and, if applicable, municipal codes and regulations.

1.11 SANITARY FACILITIES

- A. The CONTRACTOR shall provide temporary restroom facilities for field crews. Existing OWNER facilities are not available for use by the CONTRACTOR.

1.12 SAFETY PRECAUTIONS AND COMPLIANCE

- A. The CONTRACTOR is specifically cautioned that various dangerous chemicals and high voltage electrical power will be in routine use at the treatment plant. The CONTRACTOR shall educate all field and supervisory personnel regarding standard safety practices and first aid procedures for accidental exposure to any, and all, compounds in use at the site.

- B. By submitting a bid, Bidders agree that the products furnished and construction methods used will comply with the Williams-Steger Occupational Safety and Health Act of 1970 and/or the Florida Division of Safety, whichever is applicable.
- C. The selected Bidder shall provide a copy to the OWNER through the ENGINEER of the Material Safety Data Sheets (MSDS) for all chemicals used in the execution of their work in compliance with Chapter 442, Florida Statutes.

1.13 WORKING HOURS

- A. All work on this contract, shall be conducted during normal working hours (7 A.M. to 7 P.M.) on weekdays unless prior written approval is given by the ENGINEER. No work shall be permitted on weekends and ENGINEER observed holidays without approval from the ENGINEER. All work requiring FDEP attendance must be performed during regular FDEP working hours. Work also shall be in accordance with Part 1.03 of this specification.

1.14 SITE ACCESS

- A. The CONTRACTOR may use only the roads designated by the OWNER for access to the work locations. The CONTRACTOR shall be responsible for maintaining, protecting and restoring the routes to the satisfaction of the OWNER and ENGINEER.

1.15 VIDEO TAPING

- A. The CONTRACTOR, to the satisfaction of the ENGINEER, shall video tape or digitally photograph all areas of the construction, staging, etc. A copy of the video tapes shall be in DVD or flash drive format. Copies of the photographs shall be delivered to the ENGINEER and approved as acceptable before any work or site mobilization occurs.

1.16 FAMILIARITY WITH LAWS

- A. The CONTRACTOR is assumed to be in compliance with and familiar with all federal, state and local laws, ordinances, rules, codes and regulations that may in any manner affect the work. Failure to familiarize themselves with applicable laws, etc., shall in no way relieve the CONTRACTOR from responsibility.

1.17 RESTORATION OF SURFACES, STRUCTURES AND PROPERTY

- A. Where pavement, fences or other property or surface structures not designated as pay items, have been damaged, removed or disturbed by the CONTRACTOR, whether deliberately or through failure to carry out the requirements of the Contract Documents, State laws, municipal ordinances or the specific direction of the ENGINEER, or through failure to employ usual and reasonable safeguards, such property and surface structures shall be replaced or repaired at the expense of the CONTRACTOR to a condition equal to that before Work began within a time frame approved by the ENGINEER.

- B. Upon completion of the work, the CONTRACTOR shall disassemble all temporary piping and equipment modifications from the site and demobilize. The injection wellhead shall be reassembled to its original configuration and reconditioned by the CONTRACTOR. Any and all coatings damaged by the CONTRACTOR shall be recoated with one (1) coat of Tnemec Series 135 paint followed by one (1) coat of aluminum mastic. Surface preparation and coating thickness shall be in accordance with the manufacturer's specifications. All exposed wellhead valves, flanges, flange bolts and appurtenances shall be left in a condition acceptable to the ENGINEER and OWNER.

1.18 STANDARDS AND CODES

- A. All work performed on this project shall be in accordance with the OWNER's and other applicable standards. All conditions, as set forth in the respective permits shall be satisfied and adhered to by the CONTRACTOR.
- B. Where codes are referenced by the specific year established, it is the intent to cite the current applicable code requirements. In the event that any or all of the specific codes reference in the project documents have been revised and/or replaced with a newer version prior to issuance of a Certificate of Occupancy or substantial completion certificate the most current code requirements shall apply.

1.19 SECURITY

- A. Security at the construction site is given a very high priority by the OWNER. The CONTRACTOR shall recognize that this project is sensitive in nature as a result of homeland security concerns and the security criteria stipulated herein constitutes a material inducement of the OWNER to enter into this contract with the CONTRACTOR.
- B. It is noted that the OWNER has implemented site security measures which restrict and control entrance to and exit from the site. The CONTRACTOR shall anticipate and work within the requirements of the OWNER's security measures.
- C. The OWNER reserves the right to require the CONTRACTOR to perform a background check on all agents, licensees, invitees, employees, subcontractors, material-men, workers and suppliers entering the site and supply the results to the OWNER. Should this occur, the CONTRACTOR shall secure appropriate releases and authorizations from the affected parties prior to performing the background checks. All background checks shall be performed prior to allowing the workers on to the project site.
- D. The OWNER reserves the right but not the obligation to disallow entrance to the work site of any persons or entities as a result of the background check or other relevant information, regardless of the result of such background check or other relevant information.
- E. Background checks shall be in such form and fashion as is acceptable to the OWNER but at a minimum shall be performed through the Broward County Sheriff's Department and the Florida Department of Law Enforcement or such other entity, firm or individual acceptable to the OWNER, in its sole discretion. The

CONTRACTOR shall allow for the time to perform the necessary background checks within the project schedule.

- F. Nothing herein shall confer liability upon the OWNER as a result of the security steps and provisions set forth in this contract. Each party who has had a background check performed shall be required to carry a photo identification and clearance tag when entering the site. The identification and clearance tag shall be maintained with the person at all times while on site. The CONTRACTOR shall provide to the OWNER a complete roster of all parties to enter the work site pursuant to this project and keep said roster updated and current.

1.20 STAGING AREA

- A. All construction trailers and equipment storage shall occur only within the designated staging area. All CONTRACTOR parking shall be within the staging area unless prior written approval for additional parking areas is provided by the ENGINEER. The staging area will be identified at the pre-construction meeting.
- B. The CONTRACTOR shall take note that some improvements to the staging area may be required to facilitate its use. No vehicles may be stopped on existing pavement or walkways for parking or unloading without the approval of the ENGINEER. A site layout plan must be approved by the ENGINEER before any equipment or materials may be placed onsite.

1.21 EQUIPMENT REQUIREMENTS

- A. Equipment in first-class working order shall be provided. The CONTRACTOR shall provide personnel and equipment having the minimum capabilities necessary to do the described work. No unnecessary delays or work stoppages shall be tolerated because of equipment failure.

1.22 PROJECT MANAGER, PROJECT SUPERINTENDENT

- A. Project Manager: The CONTRACTOR shall provide a Project Manager to this project as a supervisor to oversee proper performance of the Work. The Project Manager shall have the authority to make decisions on behalf of the Prime CONTRACTOR. The Project Manager shall be responsible for all coordination, document handling, submittal review and processing, quality control and project scheduling. The Project Manager shall be a direct employee of the Prime CONTRACTOR and shall fluently speak, read and write English. The Project Manager, once approved by the OWNER and the ENGINEER shall not be replaced without prior consent by the ENGINEER.
- B. Superintendent: The CONTRACTOR shall provide, on a full-time basis, a dedicated Project Superintendent specific to this project as an onsite supervisor to oversee proper performance of the Work. The Superintendent shall be onsite during work activities. The Project Superintendent shall be a direct employee of the Prime CONTRACTOR. The Superintendent shall fluently speak, read and write English. The Project Superintendent, once approved by the OWNER and the ENGINEER shall not be replaced without prior consent by the ENGINEER. The Superintendent shall have successfully completed at least three separate Class I

MIT projects. The Superintendent shall have functioned in the capacity of the Superintendent on the named projects. Documentation to support compliance with the experience / qualifications required by the criteria set forth herein to the satisfaction of the ENGINEER and OWNER shall be provided upon request and accepted by the ENGINEER and OWNER. Such documentation shall include, but not be limited to, daily logs from the named injection wells or equivalent documentation. The CONTRACTOR shall be capable of staffing the project such that at least one Superintendent, meeting the criteria above, can be onsite at all times when there is onsite work being performed.

1.23 PROJECT INSPECTION

- A. The ENGINEER will be inspecting the work on a non-full-time basis. The CONTRACTOR shall provide appropriate notice of need for inspections and allow time for scheduling. No work shall be covered, nor test results accepted without prior witness by the ENGINEER. Inspections by the ENGINEER shall not be performed in lieu of other inspections required by County, State or Federal requirements. Many activities require inspection during the performance of the work.
- B. The CONTRACTOR shall provide the ENGINEER a 12-hour notice of the anticipated time the activity will begin. The CONTRACTOR shall provide a second notice at 2 hours prior to the scheduled start time. The intent of the second notice is to confirm activities are on schedule. Every effort shall be made to provide accurate scheduling to the ENGINEER.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

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 complete mechanical integrity testing services as specified.

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 perform certain portions of the work in advance of other portions without extra payment to the CONTRACTOR.
- D. Measurement methods delineated in the individual Specification sections are intended to complement the criteria of this Section. In the event of conflict, the requirements of the individual Specification 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, the CONTRACTOR shall include the cost for that Work in the other Bid Items so that the CONTRACTOR's proposal for the project reflects the 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 items as shown on the plans and indicated in the details for lump sum bid items.

1.05 UNIT PRICE ITEMS

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

1.06 SATISFACTORY COMPLETION

- A. Satisfactory completion shall include 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 the engineering drawings; 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. Present required information in type written form, or equivalent.
 - 2. Execute certification by signature of authorized officer.
 - 3. Use data from approved Schedule of Values. Provide dollar value in each column for each line item for portion of work performed.
 - 4. 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 three copies of each Application for Payment.
 - 2. Payment Period: Submit monthly as directed by the OWNER.
 - 3. 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 PAY ITEMS

A. PAY ITEM NO. 01 – MOBILIZATION/DEMOBILIZATION

Payment for all labor, materials and equipment will be made on a **lump sum basis** for mobilization/demobilization. This pay item shall include the costs for those operations necessary for the movement of personnel, equipment, supplies and incidentals to and from the project site, and for the establishment and removal of temporary offices, buildings, facilities, as required by these specifications, the special provisions, and state and local laws and regulations, and any other pre- or post-construction expense necessary for starting or completing the work. This item includes all site preparation and site restoration activities as required by these specifications. The amount assigned to mobilization shall not exceed 60% of the sum of the amount assigned to this bid item. The remaining 40% shall be assigned to demobilization.

B. PAY ITEM NO. 02 – DOWNHOLE VIDEO SURVEY

Payment for all labor, materials and equipment will be made on a **lump sum basis** to perform a downhole video survey of the entire casing string and accessible open hole interval as described in Section 03300. An additional downhole video survey may be required as directed by ENGINEER after completing casing brushing (if casing brushing is deemed necessary).

C. PAY ITEM NO. 03 – HYDROSTATIC PRESSURE TEST WITH INFLATABLE PACKER

Payment for all labor, materials, and equipment will be made on a **lump sum basis** for this item. The description for this item is provided in Section 03320. This item includes performing additional testing prior to the official test witnessed by FDEP. This item includes unlimited tests thereafter if failure of tests is due to faulty equipment of the CONTRACTOR or if due to faulty execution of the tests by the CONTRACTOR. If failure of tests occurs, by no fault of the CONTRACTOR or CONTRACTOR's equipment, this item includes up to three (3) additional settings of the inflatable packer at shallower depths as determined by the ENGINEER.

D. PAY ITEM NO. 04 – TEMPERATURE, BACKGROUND GAMMA-RAY, RTS, FINAL GAMMA-RAY LOGGING

Payment for all labor, materials and equipment will be made on a **lump sum basis** for this item. The description for this item is provided in Section 03330.

E. PAY ITEM NO. 05 – STANDBY TIME ORDERED BY ENGINEER

The OWNER and/or ENGINEER may order the CONTRACTOR to stop operations. The OWNER and ENGINEER will schedule the request so it causes a minimum of disruption. The CONTRACTOR shall be reimbursed at the hourly rates listed in the bid. This shall be applied only if the injection well(s) must be used by the OWNER during testing. This item shall also cover additional time and expense of the CONTRACTOR to return the wellhead piping to its original configuration for use by the OWNER if required prior to the completion of the testing. This item shall not apply for failure to complete within 36 hours of commencement of the test.

F. PAY ITEM NO. 06 – CASING BRUSHING

Payment for all labor, materials and equipment will be on a **lump sum basis** for this item. Casing brushing shall be performed as described in Section 03310. The ENGINEER will determine whether this item shall be performed after the completion of the initial downhole video. This item includes the cost of performing a minimum of three upward and three downward passes of the brush through the entire length of the casing string.

G. PAY ITEM NO. 07 – KILLING WELL

Payment for all labor, materials, and equipment will be made on a **lump sum basis** for this item. The description for this item is provided in Section 03320. The CONTRACTOR shall maintain the ability to return either injection well back in service within eight hours if required by OWNER. If the OWNER requests that the well be returned to service at a time when the well is suppressed (killed), the CONTRACTOR will be required to either remove the packer or deflate the packer so that the well may be returned to service within eight hours. Payment of this item will only occur when an additional well kill is necessary after the well was returned back into service for a period of time as requested by the OWNER. Payment for this item will not be made for any killing event that is necessary for normal installation and removal of the inflatable packer or any other activity necessary for the CONTRACTOR to complete work.

END OF SECTION

SECTION 01300

SUBMITTALS

PART 1 - GENERAL

1.01 PERFORMANCE

- A. Section generally defines CONTRACTOR's responsibilities, unless otherwise indicated, for the following:
 - 1. Submittal Procedures.
 - 2. Construction Progress Schedules.
 - 3. Well Testing Plans.

1.02 RELATED SECTIONS

- A. **Section 01400** - Quality Control: Manufacturers' field services and reports.

1.03 SUBMITTAL PROCEDURES

- A. Transmit each submittal with ENGINEER accepted form. All submittals shall be submitted electronically. Responses to submittals will also be performed electronically.
- B. Sequentially number the transmittal forms. Resubmittals to have original number with an alphabetic suffix.
- C. Identify Project, CONTRACTOR, Subcontractor or supplier; pertinent Drawing sheet and detail number(s), and specification Section number, as appropriate.
- D. Apply CONTRACTOR's stamp, signed or initialed certifying that review, verification of Products required, field dimensions, adjacent construction Work, and coordination of information, is in accordance with the requirements of the Work and Contract Documents.
- E. Schedule submittals to expedite the Project and deliver to ENGINEER at their business address. Coordinate submission of related items.
- F. Identify variations from Contract Documents and Product or system limitations which may be detrimental to successful performance of the completed Work.
- G. Provide space for CONTRACTOR and ENGINEER review stamps on each submittal.
- H. Only complete submittals will be reviewed. Partial or incomplete submittals for a product will be returned to the CONTRACTOR without review.
- I. Revise and resubmit submittals as required, identify all changes made since previous submittal.

- J. Distribute copies of reviewed submittals to concerned parties. Instruct parties to promptly report any inability to comply with provisions.
- K. Provide an updated Submittal Log at the end of each week that tracks the date the submittal was transmitted, the date the submittal was returned, and the status of each submittal.
- L. All approved submittals to be saved electronically, in PDF format, and provided on a CD or flash drive.

1.04 CONSTRUCTION PROGRESS SCHEDULES

- A. Submit initial progress schedule as required in the “General Conditions.”
- B. Revise and resubmit as required in the “General Conditions.”
- C. Submit revised schedules with each Application for Payment, identifying changes since previous version.
- D. Submit a horizontal bar chart with separate line for each major section of Work or operation, identifying first work day of each week.
- E. Show complete sequence of construction by activity, identifying Work of separate stages and other logically grouped activities. Indicate the early and late start, early and late finish, float dates, and duration.
- F. Indicate estimated percentage of completion for each item of Work at submission of each Application for Payment.

1.05 PROPOSED PRODUCTS LIST AND INFORMATION

- A. Submit the following information:
 - 1. Preconstruction video
 - 2. Downhole videos
 - 3. Inflatable packer product information
 - 4. Pressure gauge certification
 - 5. Iodine Assay label
 - 6. Flow meter calibration certificates.
 - 7. Diagram of RTS tool
 - 8. Geophysical log plots

PART 2 – PRODUCTS - NOT USED

PART 3 – EXECUTION - NOT USED

END OF SECTION

SECTION 01400

QUALITY CONTROL

PART 1 - GENERAL

1.01 PERFORMANCE

- A. Section generally defines CONTRACTOR's responsibilities, unless otherwise indicated, for the following:
 - 1. Quality assurance and control of installation.
 - 2. References.
 - 3. Inspection and testing laboratory services.

1.02 QUALITY ASSURANCE/CONTROL OF INSTALLATION

- A. Monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce Work of specified quality.
- B. Comply fully with manufacturers' instructions, including each step in sequence.
- C. Should manufacturers' instructions conflict with Contract Documents, request clarification from ENGINEER before proceeding.
- D. Comply with specified standards as a minimum quality for the Work except when more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.
- E. Perform work by persons qualified to produce workmanship of specified quality.
- F. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion or disfigurement.
- G. Provide devices or utilize methods necessary for compliance with the "Trench Safety Act."
- H. Maintain site control points (benchmarks) and stake/markers for easements throughout the project.

1.03 REFERENCES

- A. Conform to reference standard as identified in each individual technical specification section.
- B. Should specified reference standards conflict with Contract Documents, request clarification from ENGINEER before proceeding.
- C. The contractual relationship of the parties to the Contract shall not be altered from the Contract Documents by any reference standard or document.

1.04 INSPECTION AND TESTING LABORATORY SERVICES

- A. CONTRACTOR will appoint, employ, and pay for services of an independent firm to perform inspection and testing.
- B. The independent firm will perform inspections, tests, and other services specified in individual specification Sections and as required by the ENGINEER.
- C. Reports will be submitted by the independent firm to the ENGINEER, in duplicate, indicating observations and results of tests and indicating compliance or non-compliance with Contract Documents.
- D. Cooperate with independent firm; furnish samples of materials, design mix, equipment, tools, storage and assistance as requested.
 - 1. Notify ENGINEER and independent firm 24 hours prior to expected time for operations requiring services.
 - 2. Make arrangements with independent firm and pay for additional samples and tests required for CONTRACTOR's use.
- E. Retesting required because of non-conformance to specified requirements shall be performed by the same independent firm on instructions by the ENGINEER. The cost for retesting shall be the CONTRACTOR's responsibility.

PART 2 – PRODUCTS – NOT USED

PART 3 – EXECUTION – NOT USED

END OF SECTION

SECTION 03300

DOWNHOLE VIDEO LOGGING

PART I **GENERAL**

1.01 **SCOPE OF WORK**

- A. This section covers the equipment, work and materials necessary to perform video logging of the borehole.

PART II **PRODUCTS (NOT USED)**

PART III **EXECUTION**

3.01 **GENERAL**

- A. All logging shall be supervised by the ENGINEER with 24 hours advanced notice. The CONTRACTOR is responsible for ensuring that logs are complete and include the entire accessible borehole and cased intervals as directed by the ENGINEER.
- B. Each log must be run and recorded in a continuous fashion to qualify as an acceptable log.
- C. Prior to and during performance of the downhole video, CONTRACTOR shall pump clear, fresh water into the well as necessary to ensure the video is of sufficient clarity as determined by the ENGINEER. The CONTRACTOR shall anticipate the need to pump up to three casing volumes of freshwater. It is the CONTRACTOR's responsibility to ensure that the fluid within the casing and borehole is of sufficient clarity to allow the video to be conducted.
- D. All logs shall be labeled with all appropriate information. The CONTRACTOR shall furnish (2) two USB compatible flash drives or two DVD copies of the well video which shall be made available to the ENGINEER upon completion. Two (2) USB compatible flash drives or two DVD copies of the video are to be provided to the OWNER within two (2) weeks of completion.
- E. A down hole video log in DVD format shall be conducted to inspect the casing and open intervals of the well. The video shall be conducted in the presence of the ENGINEER. The video camera lens shall be color and capable of 360 degree movement; be controlled by the logging technician; be independent of the camera body; and have focus capability. The video camera shall be centralized in the borehole. The centralizers shall self-adjust to different casing and hole sizes as necessary. If the ENGINEER determines that the video is unacceptable due to poor quality, the CONTRACTOR at his expense shall obtain the necessary equipment to perform additional logging to the satisfaction of the ENGINEER.
- F. If directed by the ENGINEER, the CONTRACTOR shall perform both down-view and sideview videoing of the positive-seal packer area near the base of the steel injection tubing while adjusting annular pressures. The CONTRACTOR shall be prepared to adjust annulus pressures between 0 and 150 psi while videoing the

positive-seal packer. The intent is to observe any disturbance of the packer or release of annular fluids at different pressures. The CONTRACTOR shall furnish and operate the air compressor and/or other necessary equipment to adjust annulus pressures.

END OF SECTION

SECTION 03310

CASING BRUSHING

PART I GENERAL

1.01 SCOPE OF WORK

- A. This section covers the equipment, work, and materials necessary to brush the inner wall of the casing.

PART II PRODUCTS

2.01 SCOPE OF WORK

- A. The casing brush shall be of dimensions that permit it to be in contact with the entire circumference of the casing simultaneously. This brush shall be mounted on a drill string that allows the circulation of waste products from the well. The CONTRACTOR shall move the brush in such a way that the scraping action is applied to the entire circumference of the casing over its entire length.
- B. CONTRACTOR shall submit the proposed design and material of the casing brush for ENGINEER's approval. The submittal shall include the material of the bristles; stiff nylon, wire, or other materials.

PART III EXECUTION

3.01 GENERAL

- A. The casing brush shall be of dimensions that permit it to be in contact with the entire circumference of the casing simultaneously. This brush shall be mounted on a drill string that allows the circulation of waste products from the well. The CONTRACTOR shall move the brush in such a way that the scraping action is applied to the entire circumference of the casing over its entire length.
- B. The CONTRACTOR shall perform brushing as approved by the ENGINEER and at a minimum perform three upward and three downward passes with the brush throughout the entire length of the casing.
- C. After completion of the cleaning operation, a minimum of three well volumes of freshwater shall be injected into the well to clear remaining suspended solids removed from the casing wall from the brushing process.
- D. If directed by ENGINEER following cleaning operations, CONTRACTOR shall perform additional downhole video surveying as specified in Section 03300.

END OF SECTION

SECTION 03320

MECHANICAL INTEGRITY PRESSURE TESTING

PART 1 - GENERAL

1.01 SCOPE OF WORK

- A. This section covers the work, materials, and equipment necessary for performing hydrostatic pressure testing in a Class I Injection Well. The purpose of the tests is to demonstrate mechanical integrity of the wells.

1.02 SUBMITTALS

- A. Provide manufacturer's specification and technical information of proposed packer for the pressure tests.
- B. Provide information and calibration certificate of test pressure gauge.

PART 2 - PRODUCTS

2.01 GENERAL

- A. Furnish and install an inflatable packer, as manufactured by Baker, TAM J, Baski, or equal, of a diameter appropriate for the size of casing being tested.
- B. Calibrated Pressure Gauge: Six (6) inch dial pressure gauge, graduated from 0 to 200 psi, in increments of 1 psi, with an accuracy of +/- 0.25%.

PART 3 - EXECUTION

3.01 GENERAL

- A. The CONTRACTOR shall coordinate the date and time of pressure testing so that the FDEP has at least 72 hours' notice prior to the implementation of MIT procedures. Mechanical integrity tests shall be initiated during regular working hours for the Department, Monday through Friday.
- B. The pressure gauge utilized for each of the hydrostatic pressure tests shall be certified as calibrated within the previous 6-month period from the date of the pressure test. Copies of the pressure-gauge calibration certification shall be provided to the Engineer prior to the initiation of each pressure test and shall indicate the date and place of the pressure-gauge calibration.
- C. The resolution of the 6-inch dial pressure gauge shall be at least 1 pound per square inch (psi) and the pressure gauge shall be graduated from 0 to 200 psi (in increments of 1 psi) with an accuracy of +/- 0.25%. The resolution (precision) of the calibrated pressure gauge (1 psi) shall be sufficient to monitor the pressure in the casing and make a pressure change of less than the allowable 5% easily discernible. The pressure gauge shall be mounted on the wellhead at or near eye level, to make any change in pressure easily discernible.
- D. Three copies of the pressure gauge calibration certificate shall be provided to the ENGINEER prior to initiation of the pressure test. Copies shall also be provided to onsite FDEP representatives. The certificate must indicate the date and place of the pressure gauge calibration. The pressure gauge shall have an affixed identification number that matches the identification number shown on the calibration certificate.
- E. Preliminary pressure testing, witnessed by the ENGINEER, shall be conducted prior to performing the official pressure test with FDEP representatives onsite.
- F. The official pressure test shall be witnessed and certified in writing by the ENGINEER. A maximum pressure change of 5% is allowed over a 60-minute period. If a pressure change greater than 5% occurs, the test shall be repeated under controlled conditions to the satisfaction of the ENGINEER and FDEP. After completing the test, the CONTRACTOR shall relieve the pressure and measure the volume of fluid discharged.

3.02 HYDROSTATIC PRESSURE TESTING WITH PACKER

- A. An inflatable packer capable of seating against the casing/tubing shall be set within the bottommost tubing section approximately 10 feet above the base of the final casing/tubing. The actual setting depth shall be confirmed based on the results of the video survey.
- B. The CONTRACTOR may “kill” or suppress flow from the Injection Well to facilitate installation of the packer. The CONTRACTOR is responsible for an accurate measurement of the density of the weighted fluid (in pounds per gallon) prior to the pressurization of the casing.
- C. The casing/tubing shall be filled (topped off) with freshwater and placed under a pressure of approximately 150 psi for 60 minutes. If a significant pressure change (>5%) occurs, the test shall be repeated until satisfactory results are obtained.
- D. If after repeated attempts pressure changes exceed 5%, the CONTRACTOR shall deflate the inflatable packer and move the packer to a shallower depth within the injection tubing as determined by the ENGINEER. The CONTRACTOR shall repeat this process until a successful pressure test is performed.
- E. The CONTRACTOR shall relieve the pressure and measure the volume of water discharged. Pressure testing shall be witnessed and certified in writing by the ENGINEER.
- F. The CONTRACTOR shall not be reimbursed for the performance of any additional pressure tests to isolate any leak(s) in the casing or tubing.

END OF SECTION

SECTION 03330

RADIOACTIVE TRACER SURVEY (RTS)

PART I GENERAL

1.01 SCOPE OF WORK

- A. This section covers the work, materials, and equipment necessary for performing radioactive tracer survey (RTS) testing and associated geophysical logging in the injection wells.

1.02 SUBMITTALS

- A. Provide details of RTS tool. Details shall include distances between sensors and ejector port and calculations of ejection times.
- B. Provide Iodine 131 assay label.
- C. Provide flowmeter calibration certificate of flowmeter for RTS.
- D. Provide all geophysical logs as follows:
 - 1. Provide Log ACII Standard (LAS) format for each log performed immediately following logging activities and prior to commencing subsequent work activities.
 - 2. Provide Portable File (PDF) format for each log performed immediately following logging activities and prior to commencing subsequent work activities.
 - 3. Provide three (3) paper copies for each log performed immediately following logging activities and prior to commencing subsequent work activities.

PART II PRODUCTS

2.01 GENERAL

- A. The geophysical tool used for the RTSs must be capable of ejecting the radioactive tracer and simultaneously monitoring with “scintillation”-type gamma-ray detectors. A casing collar locator shall be positioned below the tool to precisely locate the bottom of the casing.
- B. The tool shall be configured such that one gamma-ray detector will be located above the ejector and two detectors will be located below the ejector.
- C. The radioactive material used for the testing shall be *medical grade* Iodine 131. The RTS tool shall be loaded with four (4) millicuries (mCi) of Iodine 131. The Contractor shall be required to demonstrate that the Iodine 131 tracer utilized for the RTS is not more than 6 days old on the day that the RTS is performed and the Contractor shall provide a copy of the Iodine 131 certification to the Engineer.
- D. The flowmeter utilized for the test shall be certified as calibrated within the

previous 6-month period from date of the RTS test and shall be capable of measuring the flow rate with an accuracy of 5%. The calibration certificate shall be provided *prior* to the initiation of the RTS procedures and shall indicate the date and place of the flowmeter calibration. Verification of the flowmeter calibration shall be submitted to the FDEP representative prior to commencement of the test.

PART III **EXECUTION**

3.01 **GENERAL**

- A. Upon completion of the video survey and hydrostatic pressure test, temperature, background gamma-ray, RTS, and final gamma-ray logs shall be performed:
 - 1. High-resolution temperature logging
 - 2. Background gamma-ray logging
 - 3. Magnetic casing-collar locator
 - 4. Radioactive tracer survey (RTS)
 - 5. Final gamma-ray logging

3.02 **TESTING PROCEDURE**

- A. The logging and testing procedure shall be performed as follows and in accordance with FDEP requirements:
 - 1. Prior to initiation of high-resolution temperature logging, approximately three (3) well volumes (81,300 gallons for IW-1 and 192,400 gallons for IW-2) of freshwater shall be injected in the injection well to establish a freshwater “bubble” below the final casing seat.
 - 2. A combination gamma-ray/temperature tool shall be used to initially log the injection well, recording temperature from land surface to the total well depth. The temperature log shall be performed on the downward pass as the combination tool is lowered down the well. The high-resolution temperature log shall include a differential temperature log on the same plot.
 - 3. A background gamma-ray log shall be conducted from the total open-hole depth to pad level. A casing-collar locator log shall be used during this survey to verify the base of final casing. The temperature log and background gamma-ray log shall be completed prior to loading Iodine 131 into the RTS tool.
 - 4. The RTS tool shall be loaded with four (4) mCi of medical grade Iodine 131.
 - 5. The RTS tool shall be positioned with the ejector located approximately 5 feet above the bottom of the casing, with one gamma-ray detector above the ejector (GRT), and two gamma-ray detectors below the ejector (one inside the casing

above the casing seat [GRM] and one outside the casing below the casing seat [GRB]).

6. A low-rate dynamic test shall be performed. A low injection rate shall be established using fresh water. The velocity for this test shall be between 3 and 5 feet per minute (equating to a flow rate between 28 and 46 gpm for IW-1 and between 65 and 108 gpm for IW-2). A calibrated flowmeter with totalizer and an instantaneous flow-rate indicator shall be installed to monitor the flow rate into the well.
7. Time-drive monitoring shall begin and a 1-mCi slug of tracer material shall be ejected. This release will be confirmed by the middle detector (GRM) and the bottom detector (GRB).
8. Gamma-ray levels shall be monitored for one hour while the tool is held stationary. In the event that the tracer slug is detected by the upper gamma-ray detector (GRT) during the one-hour monitoring period, the operator of the logging tool may log out of position to a new position approximately 20 feet above the previous position of the RTS tool and logging shall resume for the remainder of the one-hour monitoring period. If the logging tool is to be moved upwards in the event of detection of tracer by the upper detector, the tool should not be moved prior to the time period required for the tracer to travel from the middle detector to the lower detector (theoretically a minimum of 2 minutes for a 5-foot/minute flow rate). It is important to observe whether tracer material is also reaching the lower detector.
9. Following the end of the time-drive monitoring, the RTS tool shall log "out of position" (moving) to at least 200 feet above the highest point where the tracer was detected.
10. Following the out-of-position gamma-ray log, the RTS tool shall be repositioned with the ejector located approximately 5 feet above the bottom of the casing. If excessive staining (elevated readings) is observed, as determined by the ENGINEER or the FDEP onsite inspector, the injection casing shall be flushed by injecting freshwater up to one injection well volume (up to 27,100 gallons in IW-1 and 64,130 gallons in IW-2), and steps 12 and 13 (below) shall be completed. If excessive staining is not observed, the Contractor shall proceed to step 14 (below).
11. Following flushing, the combination logging tool shall be repositioned with the ejector located approximately 5 feet above the bottom of the casing and another gamma-ray log shall be run out of position to at least 200 feet above the highest point where tracer was detected.
12. If tracer movement continues to be detected, multiple out-of-position logs shall be conducted to identify the extent of tracer movement. The out-of-position logs shall be conducted at least 200 feet above the highest point where tracer was detected.
13. The combination logging tool shall then be repositioned with the ejector located approximately 5 feet above the bottom of the casing. This is the same depth as

that used for the first low-rate dynamic test. A low injection rate shall be established using potable water. The flow rate of the second low-rate dynamic test shall be the same as the first low-rate dynamic test. Time-drive monitoring shall begin, a 1.0-MCI slug of tracer material shall be ejected, and the release of the tracer material will be confirmed by detectors GRM and GRB.

14. Gamma-ray levels shall be monitored for 30 minutes while the tool is held stationary. In the event that the tracer slug is detected by the upper gamma-ray detector (GRT) during the one-hour monitoring period, the operator of the logging tool may log out of position to a new position approximately 20 feet above the previous position of the RTS tool and logging shall resume for the remainder of the 30-minute monitoring period. If the logging tool is to be moved upwards in the event of detection of tracer by the upper detector, the tool should not be moved prior to the time period required for the tracer to travel from the middle detector to the lower detector (theoretically a minimum of 2 minutes for a 5-foot/minute flow rate).
15. Following the end of the time-drive monitoring, the RTS tool shall log “out of position” (moving) to at least 200 feet above the highest point where the tracer was detected.
16. If tracer material is not detected in GRT after both “out of position” logs (steps 9 and 15 above), the RTS tool shall be lowered to approximately 5 feet above the uppermost transmissive injection interval in the open hole. The remaining tracer material shall be ejected while flushing with at least one casing volume of freshwater.
17. The RTS tool then shall be lowered to the total depth of the well and a final gamma-ray log shall be performed from the total depth to land surface.

END OF SECTION