

Bid Set No. _____

DOCUMENTS AND SPECIFICATIONS
FOR
**CLEANING AND REDEVELOPING
BEDROCK WELL No. 2**

TOWN OF SEABROOK
SEABROOK, NEW HAMPSHIRE

NOVEMBER 19, 2015

DOCUMENTS AND SPECIFICATIONS
FOR
**CLEANING AND REDEVELOPING
BEDROCK WELL No. 2**

TOWN OF SEABROOK
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SEABROOK, NEW HAMPSHIRE**

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DOCUMENT 00010

ADVERTISEMENT FOR BIDS

The Town Manager, Town Hall, 99 Lafayette Road, Seabrook, New Hampshire 03874, will receive sealed Bids for Cleaning and Redeveloping Bedrock Well No. 2, until 2:00 p.m. local time on Thursday, December 10, 2015, at the Town Hall in the Selectmen's Meeting Room, at which time and place all Bids will be publicly opened and read aloud. Bids submitted after this time will not be accepted.

The work consists of cleaning and redeveloping a 484-foot deep bedrock well. In addition, the inspection and cleaning of the submersible pump, motor, and appurtenances, will be required as part of this work.

The Contract Documents may be examined during normal business hours from 7:00 a.m. to 12:30 p.m. and from 1:00 p.m. to 3:00 p.m. at the following locations:

Geosphere Environmental Management, Inc.
51 Portsmouth Avenue
Exeter, NH 03833

Town Hall
99 Lafayette Road
Seabrook, NH 03874

No bidder may withdraw its Bid within 60 days after the actual date of the Bid opening.

A copy of the contract documents for the work may be obtained from the office of the Town Manager.

The Owner may waive any informalities or minor defects, or reject any or all Bids, if it is in the best interest of the Owner to do so.

TOWN MANAGER
SEABROOK, NEW HAMPSHIRE

END OF DOCUMENT

INSTRUCTIONS AND INFORMATION FOR BIDDERS

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1.04	Addenda and Interpretations	1.09	Inspection of the Work
		1.10	Guarantees

1.00 PROJECT IDENTIFICATION

- A. Owner: Town of Seabrook, New Hampshire
- B. Awarding Authority: Town Manager
- C. Mailing Address: Town Hall
99 Lafayette Road
P.O. Box 456
Seabrook, New Hampshire 03874
- D. Project Name: Cleaning and Redeveloping Bedrock Well No. 2

1.01 RECEIPT OF BIDS

- A. General Bids for this project will be received by the Awarding Authority, at the time and place stated in Document 00010, Advertisement for Bids, and then at said place publicly opened and read aloud.
- B. Each Bid must be submitted in a sealed envelope, addressed to the Awarding Authority. Each sealed envelope containing a Bid must be plainly marked on the outside with “**Bid for Cleaning and Redeveloping Bedrock Well No. 2**”, and the envelope should bear on the outside the name of the Bidder and its address. If forwarded by mail, the sealed envelope containing the Bid must be enclosed in another envelope addressed to the Awarding Authority at the above address.
- C. All bids must be made on the Bid form included in the specifications. All blank spaces for bid prices must be filled in, in ink or typewritten, and the Bid form must be completed and executed when submitted. Only one set of the bid documents is required.
- D. Bidders shall not remove and submit the Bid Documents separate from the volume of Contract Documents, but shall submit their bids bound with the complete volume of attached Contract Documents.

E. List of required Documents to be completed for General Bid submission:

1. Form for General Bid.....Document 00300

1.02 MODIFICATIONS AND WITHDRAWAL OF BIDS

- A. The Owner may waive any informalities or minor defects or reject any and all Bids. Any Bid may be withdrawn prior to the above scheduled time for the opening of Bids or authorized postponement thereof. Any Bid received after the time and date specified shall not be considered. No Bidder may withdraw a Bid within 60 days after the actual date of the opening of the Bids. Should there be reasons why the Contract cannot be awarded within the specified period, the time may be extended by mutual agreement between Owner and the Bidder.
- B. Prior to Bid Opening, Bids may be withdrawn upon written or telegraphic request of the Bidder provided conformation of any telegraphic withdrawal, signed by the Bidder, is placed in the mail and postmarked prior to the time set for the Bid Opening. Bid documents of any Bidder withdrawing its Bid in accordance with the foregoing conditions will be returned.

1.03 EXAMINATION OF CONTRACT DOCUMENTS AND SITE

- A. Each Bidder is responsible for inspecting the Project Site and for reading and being thoroughly familiar with the Contract Documents. The failure or omission of any Bidder to do any of the foregoing shall in no way relieve any Bidder from any obligation in respect to its Bid.
- B. Bidders must satisfy themselves of the accuracy of the estimated quantities for each Bid Item contained in Document 00300, Form for General Bid by examination of the Project Site and a review of the Contract Documents. After Bids have been submitted, the Bidder shall not assert that there was a misunderstanding concerning the quantities of Work or of the nature of the Work to be done.
- C. The Contract Documents contain the provisions required for the construction of the Project. Information obtained from an officer, agent, or employee of the Owner or any other person shall not affect the risks or obligations assumed by the Bidder or relieve it from fulfilling any of the conditions of the Contract.
- D. The Owner shall provide to Bidders, prior to bidding, all information that is pertinent to, and delineates and describes, the land owned and rights-of-way acquired or to be acquired.

1.04 ADDENDA AND INTERPRETATIONS

- A. All questions by prospective Bidders as to the interpretation of the Contract Documents shall be submitted in writing to the Owner and shall be in its possession at least ten (10) days before the date herein set for the receipt of Bids. The Owner will then notify via facsimile or mail delivery service, the Bidders who have taken out the Contract Documents,

at the addresses given by the Bidders, not less than five (5) calendar days before said date, interpretations of all questions so raised which, in its opinion, require interpretation.

- B. Each Bidder shall be responsible for determining that it has received all Addenda issued and shall acknowledge said receipt on Document 00300, Form for General Bid.

1.05 AWARD OF CONTRACT

- A. Each Bidder shall sign his name in the space provided therefore. If the Bid is made by a partnership or corporation, the name and address of the partnership or corporation shall be shown together with the names of the partners or officers. A Bid made by a partnership shall be acknowledged by one of the partners; a Bid made by a corporation shall be acknowledged by one of the authorized officers thereof, and the corporate seal attached.
- B. A conditional or qualified bid will not be accepted.
- C. Award will be made to the lowest responsible and qualified Bidder.
- D. The Owner may make such investigations as it deems necessary to determine the ability of the Bidder to perform the Work and the Bidder shall furnish to the Owner such information and data for this purpose as the Owner may request. The Owner reserves the right to reject any Bid if the evidence submitted by, or investigation of, such Bidder fails to satisfy the Owner that such Bidder is properly qualified to carry out the obligations of the Contract and to complete the Work contemplated therein.
- E. The low responsible and eligible Bidder shall supply the names and addresses of major material suppliers and subcontractors when required to do so by the Owner.

1.06 EXECUTION OF THE AGREEMENT

- A. The party to whom the Contract is awarded will be required to execute Document 00500, Form for Agreement and obtain the Certificates of Insurance within ten (10) calendar days from the date when Document 00430, Notice of Award is delivered to the Bidder. The Notice of Award shall be accompanied by the necessary Form for Agreement and Certificates of Insurance.
- B. The Owner within ten (10) days of receipt of acceptable Certificates of Insurance and Document 00500, Form for Agreement signed by the party to whom the Contract was awarded, shall sign Document 00500, Form for Agreement and return to such party an executed duplicate. Should the Owner not execute Document 00500, Form for Agreement within such period, the Bidder may by written notice withdraw its signed Document 00500, Form for Agreement. Such notice of withdrawal shall be effective upon written receipt of the notice by the Owner.

1.07 NOTICE TO PROCEED

- A. Document 00650, Notice to Proceed shall be issued within ten (10) days of the execution of Document 00500, Form for Agreement by the Owner. Should there be reasons why Document 00650, Notice to Proceed cannot be issued within such period, the time may be extended by mutual agreement between the Owner and Contractor. If Document 00650, Notice to Proceed has not been issued within the ten (10) day period or within the period mutually agreed upon, the Contractor may terminate Document 00500, Form for Agreement without further liability on the part of either party.

1.08 LAWS AND REGULATIONS

- A. All applicable laws, ordinances, and the rules and regulations of all authorities having jurisdiction over construction of the project shall apply to the Contract throughout.
- B. This Project is subject to all of the OSHA Safety and Health Regulations (see 29 CFR Part 1926/1910 and all subsequent amendments) as promulgated by the United States Department of Labor on June 24, 1974. Contractors shall be familiar with the requirements of these regulations.

1.09 INSPECTION OF THE WORK

- A. The Contractor shall provide at all times proper facilities for access and inspection by representatives of the Owner, federal, state or other agency having jurisdiction over the Work of this Project.

1.10 GUARANTEES

- A. In addition to other guarantees due the Owner, the Contractor guarantees that the Work and services to be performed under the Contract, and all workmanship, materials and equipment performed, furnished, used or installed shall be free from defects and flaws, and shall be performed and furnished in strict accordance with the Contract Documents, that the strength of all parts of all manufactured equipment shall be adequate and as specified and that the performance test requirements of the Contract shall be fulfilled. This guarantee shall be for a period of one (1) year from and after the date of completion and acceptance of the Work unless otherwise specified herein.
- B. If at any time within the said period of guarantee any part of the Work requires repairing, correction or replacement, the Owner may notify the Contractor in writing to make the required repairs, corrections, or replacements. If the Contractor neglects to commence making such repairs, corrections, or replacements to the satisfaction of the Owner within three (3) days from the receipt of such notice, or having commenced fails to prosecute such Work with diligence, the Owner may employ other persons to make the same, and all direct and indirect costs of making repairs, corrections or replacements, including compensation for additional professional services, shall be paid by the Contractor.

END OF DOCUMENT

FORM FOR GENERAL BID

PROPOSAL OF: _____
(hereinafter called "Bidder"), organized and existing under the laws of the State of _____
doing business as _____
(a corporation, or a partnership, or an individual), with its principal place of business at _____.

TO: The Town of Seabrook, Town Hall, 99 Lafayette Road, Seabrook, NH 03874, hereinafter called "Owner", acting by and through its Town Manager.

- A. In compliance with your Document 00010, Advertisement for Bids, Bidder hereby proposes to perform all Work for Cleaning and Redeveloping Bedrock Well No. 2, in strict accordance with the Contract Documents, within the time set forth herein and at the prices stated below.
- B. The Bidder further certifies under the penalties of perjury that this Bid is in all respects bona fide, fair and made without collusion or fraud with any other person. As used herein the word "person" shall mean natural person, joint venture, partnership, corporation or other business or legal entity.
- C. The Bidder hereby agrees to commence Work under this Contract within 10 consecutive calendar days after a date to be specified in Document 00650, Notice to Proceed and fully complete the Project by December 31, 2015, unless the time for completion is extended otherwise by the Contract Documents.
- D. The Bidder agrees not to withdraw his bid within 60 days after the actual date of the bid opening.
- E. Bidder acknowledges receipt of Addenda No. _____ through _____.
- F. The Bidder agrees that, if it is selected as Contractor, it will within ten (10) days after presentation thereof by the Awarding Authority, execute a Contract in accordance with the terms of this Bid and furnish Certificates of Insurance.

BID ITEMS

- G. Bidder agrees to perform all the Work, including all incidental labor, materials and equipment necessary for the satisfactory completion of the Work and in full compliance with the contents and intent of the Contract Documents, for the following prices listed below.
- H. All prices, except item totals, shall be stated in both words and figures. In the event of a discrepancy between the price in words and the price in figures, the words shall govern. In the event of a discrepancy between the total of the Items and the total stated, the total of the Items shall govern.
- I. Interlineation, alternation or erasure may void the bid. All prices shall be typewritten or written by hand in ink.

<u>Item</u>	<u>Quantity</u>	<u>Extended Total</u>
1. For mobilization and demobilization of well redevelopment and cleaning equipment, and all work not covered by Items 2 through 9, as specified, the sum of		
_____	L.S.	_____
Dollars (\$) _____) Lump Sum		
2. For cleaning and re-developing bedrock well using the “the Aqua Freed Process,” or an “Alternative/Equivalent Process” as specified, the sum of		
_____	L.S.	_____
Dollars (\$) _____) Lump Sum		
3. For additional hours required to clean or redevelop well using methods described in Item 2, the sum of		
_____	8	_____
Dollars (\$) _____) Per Hour		
4. For additional well cleaning chemicals (Aqua Freed or Alternative/Equivalent), as specified, the unit price of		
_____	1	_____
Dollars (\$) _____) Per Gallon		

<u>Item</u>	<u>Quantity</u>	<u>Extended Total</u>
5. For additional cleaning chemicals (Hydrochloric Acid, Acetic Acid, Neutralizer)		
_____ Dollars (\$) _____) Per Gallon	<u>1</u>	_____
6. For Pre & Post Redevelopment video inspection of Bedrock Well 2, as specified, the sum of		
_____ Dollars (\$) _____) Per Inspection	<u>2</u>	_____
7. For inspection and cleaning of submersible pump check valve as specified, the sum of		
_____ Dollars (\$) _____) Lump Sum	<u>L.S.</u>	_____
8. For inspection and cleaning of submersible pump electrical cable, piping, and appurtenances as specified, the sum of		
_____ Dollars (\$) _____) Lump Sum	<u>L.S.</u>	_____
9. For replacement of current stilling well (polyethylene), with a 1 1/4" threaded, rigid Sch. 40 PVC stilling well to a depth of 255 feet the sum of		
_____ Dollars (\$) _____) Lump Sum	<u>L.S.</u>	_____
10. For mobilizing and demobilizing of hydro fracturing rig and all related equipment to Bedrock Well No. 2 including, but not limited to, labor, transportation, insurance, and video inspection, as specified, the sum of		
_____ Dollars (\$) _____) Lump Sum	<u>L.S.</u>	_____
11. For zone-fracturing Bedrock Well No. 2 at ten (10) intervals, as specified, the sum of		
_____ Dollars (\$) _____) Lump Sum	<u>L.S.</u>	_____

<u>Item</u>	<u>Quantity</u>	<u>Extended Total</u>
12. For single-packer hydro-fracturing Bedrock Well No. 2, the sum of		
	L.S.	
Dollars (\$ _____) Lump Sum		

TOTAL AMOUNT OF BID BASED ON OWNER'S ESTIMATE OF QUANTITIES:
(Items 1 through 12, inclusive) - (BASIS OF AWARD)

Dollars (\$ _____).

- J. Bidder hereby certifies that it has visited the Project Site, received, and reviewed the Contract Drawings and Project Manual (Bidding Documents, Conditions and Technical Specifications) dated November 2015 and titled, Cleaning and Redeveloping Bedrock Well No. 2, Town of Seabrook, Seabrook, New Hampshire.
- K. Bidder hereby certifies that he is able to furnish labor that can work in harmony with all other labor employed or to be employed on the Work and that it will comply fully with all laws and regulations applicable to awards made in the State of New Hampshire.
- L. This Bid must bear the written signature of the Bidder or an authorized agent of the Bidder. If the Bidder is a corporation or a partnership, the Bid must be signed by a duly authorized officer of such corporation or by a partner and the title of such officer must be stated.

Respectfully submitted:

Date _____

By _____
(Signature and Title of Person Authorized to Sign Bid)

(Name of Bidder)

(Business Street Address)

(Town/City, State and Zip Code)

Business Phone: _____

Business Facsimile Number: _____

Business E-mail Address: _____

(SEAL – If Bid is by a corporation)

Attest: _____

END OF DOCUMENT

DOCUMENT 00430

NOTICE OF AWARD

TO: _____

Project Description: Cleaning and Redeveloping Bedrock Well No. 2, Town of Seabrook, New Hampshire.

The Owner has considered the Bid submitted by you for the above described Work in response to its Document 00010, Advertisement for Bids dated November 19, 2015, and Document 00100, Instructions and Information for Bidders. You are hereby notified that your Bid has been accepted in the amount of \$ _____.

You are required by the Document 00100, Instructions and Information for Bidders to execute the Document 00500, Form for Agreement and furnish the required Certificates of Insurance within ten (10) calendar days from the date of this Notice of Award. If you fail to execute said Agreement and to furnish said Certificates of Insurance within ten (10) days from the date of this Notice of Award, said Owner will be entitled to consider all your rights arising out of the Owner's acceptance of your Bid as abandoned. The Owner will be entitled to such other rights as may be granted by law.

You are required to return an acknowledged copy of this Notice of Award to the Owner.

Dated this _____ day of _____ 2015.

Owner: Town Of Seabrook, New Hampshire
99 Lafayette Road
Seabrook, NH 03874

By its Town Manager

William M. Manzi, III

Acceptance of Notice:

Receipt of the above Notice of Award is hereby acknowledged by _____ this
_____ day of _____, 2015.

By _____

(Authorized Signature)

Title _____

END OF DOCUMENT

00430-1

FORM FOR AGREEMENT

This Agreement, made this _____ day of _____ 2015 by and between the Town of Seabrook, New Hampshire, hereinafter called "Owner", acting by and through its Town Manager, and _____, hereinafter called "Contractor", doing business as _____ (a corporation, partnership, or an individual).

Witnesseth: That for and in consideration of the payments and agreements hereinafter mentioned:

1. The Contractor will commence and complete the work for Cleaning and Redeveloping Bedrock Well No. 2, Town of Seabrook, New Hampshire 03874.
2. The Contractor will furnish all of the materials, supplies, tools equipment, labor and other services necessary for the construction and completion of the Project described herein.
3. The Contractor will commence the Work required by the Contract Documents within ten (10) calendar days after a date to be specified in Document 00650, Notice to Proceed and will complete the Project by December 31, 2015 (removal of pumping equipment and cleaning bedrock well shall commence after receipt of Notice to Proceed), unless the period for Completion is extended otherwise by the Contract Documents.
4. The Contractor agrees to perform all of the Work described in the Contract Documents and comply with the terms therein for the sums shown in Document 00300, Form for General Bid.
5. The Contractor shall not discriminate against or exclude any person from participation herein on grounds of race religion, color, sex, age, or national origin; and that it shall take affirmative actions to insure that applicants are employed, and that employees are treated during their employment, without regard to race, religion, color, sex, age, handicapped status, or national origin.

5. The term “Contract Documents” means and includes the following:
 - (A) Advertisement for Bids
 - (B) Instructions and Information for Bidders
 - (C) Form for General Bid
 - (D) Notice of Award
 - (E) Form for Agreement
 - (F) Notice to Proceed
 - (G) General Conditions
 - (H) Special Conditions In General
 - (I) Change Order Form
 - (J) Certificate of Substantial Completion
 - (K) Waiver of Liens Prime Contractor
 - (L) Specifications prepared by the Town of Seabrook, dated November 2015
 - (M) Addenda No. _____

6. The Owner will pay to the Contractor in the manner and at such times as set forth in the Contract Conditions such amounts as required by the Contract Documents.

7. This Agreement shall be binding upon all parties hereto and their respective heirs, executors, administrators, successors, and assigns.

In witness whereof, the parties hereto have executed, or caused to be executed by their duly authorized officials, this Agreement in three (3) copies, each of which shall be deemed an original on the date first above written.

Owner: Town of Seabrook, NH

By its Town Manager

William M. Manzi III

(SEAL)

Attest:

Name _____

Title _____

Contractor:

Name _____

Title _____

Address _____

(SEAL)

Attest:

Name _____

END OF DOCUMENT

NOTICE TO PROCEED

TO: _____

Date: _____
Project: Cleaning and Redeveloping
Bedrock Well No. 2
Seabrook, New Hampshire

You are hereby notified to commence Work in accordance with the Agreement dated _____, 2015, on or before _____, 2015, and you are to complete the Work by December 31, 2015 (removal of pumping equipment and cleaning of bedrock well shall commence following receipt of Notice to Proceed). The date of completion of all Work is therefore December 31, 2015.

Owner: Town of Seabrook
99 Lafayette Road
Seabrook, NH 03874

By its Town Manager

William M. Manzi III

Acceptance of Notice to Proceed:

Receipt of the above Notice to Proceed hereby
acknowledged by _____, this
_____ day of _____, 2015

By _____
(Authorized Signature)

Title _____

END OF DOCUMENT

GENERAL CONDITIONS

1. **TIME OF COMPLETION:** Time of completion (stated elsewhere in the Contract Documents) is of the essence in this contract and is based upon maintenance by the Contractor of a regular and consistent rate of progress based upon the order of the Work and the time limits as stated elsewhere in the Contract.

2. **OTHER CONTRACTS:** The Owner may award other contracts for additional or adjoining work, equipment or supplies and the Contractor shall cooperate with such other contractors and suppliers and carefully fit his own work to that provided under other contracts as may be directed by the Owner. The Contractor shall not commit or permit any act which will interfere with the performance of work by any other Contractor.

3. **EXTRA WORK:**

3.1 **Performance:** The Contractor agrees to perform such Extra Work related to the subject matter of the Contract, as it may from time to time be directed to perform upon written order from the Owner.

3.2 **Payment:** Payment for such Extra Work will be made in accordance with one or more of the following procedures:

- (a) By a price based on the applicable unit prices of the Contract; or agreed upon mutually by the Contractor and the Owner.
- (b) By a lump-sum price agreed upon between the parties and stipulated in the order for the Extra Work.
- (c) By a price determined by adding 15% to the actual net cost of the Extra Work performed, such reasonable cost to be determined by the Owner when no agreement is reached on a unit price or on a lump-sum basis.

4. **REDUCTION OF QUANTITIES:** The Owner reserves the right to decrease the quantity of work. Should such reduction be made in the quantities of work originally called for, the Contractor shall have no claim for loss of anticipated profits for that portion of the work omitted. Unit prices, where prescribed in the Contract, shall apply without change to any reduction in the quantity of the items.

5. **PERMITS:** The Contractor shall procure and pay for all permits and licenses necessary for the execution of its work. The Owner shall obtain the NHDES Temporary Discharge Permit which shall become a part of this Contract.

6. INSURANCE REQUIREMENTS:

- 6.1 The Contractor shall carry, with an insurance company satisfactory to the Owner, the insurance coverages specified in this Section. Failure to provide and continue in force such insurance shall be deemed a material breach of the Contract and may at the Owner's election, with notice to the Contractor, operate as an immediate termination. No cancellation of such insurance whether by the insurer or by the insured shall be valid unless written notice of such cancellation is given by the party proposing cancellation to the other party and to the officer or agent who awarded the Contract at least 30 days prior to the intended effective date of such cancellation which date shall be expressed in said notice. Notice of cancellation sent by the party proposing cancellation with a return-receipt of the addressee requested shall be sufficient notice. An affidavit of any officer, agent, or employee of the insurer or of the insured, as the case may be, duly authorized for the purpose, that it has sent such notice addressed as aforesaid shall be prima facie evidence of the sending thereof as aforesaid. Prior to the effective date of any such cancellation the Contractor shall take out at its own cost new insurance to cover the policies so cancelled. This Section shall apply to the legal representatives, trustee in bankruptcy, receiver, assignee, trustee and the successor in interest of any such Contractor.
- 6.2 Prior to approval of the Contract by the Owner, the Contractor shall deposit Insurance Certificates with the Owner and a written statement from the insurers to the effect that the insurance coverage required by this Section have been issued to the Contractor. The certification shall reflect the non-cancellation provisions required above. All liability insurance shall include the Town of Seabrook, and its agents as additional insured.
- 6.3 Worker's Compensation Insurance and Employer's Liability Insurance: The Contractor shall procure and maintain during the Contract Time, in accordance with the provisions of the laws of the state in which the work is performed, Workmen's Compensation Insurance and Employer's Liability Insurance, including occupational disease provisions for all of their employees at the site of the project and in case any work is sublet, the Contractor shall require such subcontractor similarly to provide Workmen's Compensation Insurance and Employers Liability Insurance, including occupational disease provisions for all of the latter's employees unless such employees are covered by the protection afforded by the Contractor. In case any class of employees engaged in hazardous work under this Contract at the site of the project is not protected under Workman's Compensation statute, the Contractor shall provide, and shall cause each Subcontractor to provide adequate and suitable insurance for the protection of their employees not otherwise protected. The limit of Employer's Liability Insurance shall not be less than the following: \$100,000.00 each accident; \$500,000.00 disease-policy limit; \$100,000.00 disease-each employee.

- 6.4 Liability: The Contractor shall take out and maintain:
- (a) Contractors Comprehensive General Liability - Bodily Injury Insurance in the amount of \$1,000,000 on account of any one person or occurrence and \$1,000,000 of any claim or in the aggregate.
 - (b) Contractors Comprehensive General Liability - Property Damage Insurance. Blasting, collapse, and underground utilities damage is included and shall be so stated on the certificate.
 - (c) Owner's Protective Liability Policy including Bodily Injury & Property Damage.
- 6.5 All of the above shall be in the amounts stated in the Contract Documents. All coverages except protective shall include the hold harmless clause as stated in Section 7.1 and must be endorsed to provide contractual liability as stated.
- 6.6 Automobile Liability: The Contractor shall take out and maintain Automobile Bodily Injury and Property Damage Liability in the amount of \$1,000,000. The Automobile Bodily Injury Liability and Automobile Property Damage Liability shall each be taken out and maintained for owned automobiles, for hired automobiles and for non-owned automobiles.
- 6.7 For builder's risk insurance (fire and extended coverage) and until the work is completed and accepted by the Owner, the Contractor is required to maintain builder's risk type insurance on a 100 percent completed value basis on the insurable portion of the work for the benefit of the Owner, the Contractor, and Subcontractors as their interests may appear.

7. INDEMNITY:

- 7.1 The Contractor shall hold harmless, indemnify and defend the Owner, and their agents and employees while acting within the scope of their duties from and against any and all liability, claims, damages and cost of defense arising out of the Contractor's negligent performance of the Work or failure to comply with any part of this Contract, including any concurrent negligence of the Owner, the Engineer, and their agents or employees. The Contractor will require any and all Subcontractors to conform with the provisions of this clause prior to commencing any work and agrees to insure this clause in conformity with Section 6.
- 7.2 The Contractor shall bear all losses resulting from the use or storage of explosives and highly inflammable materials and shall save the Owner or its agents harmless from all claims for bodily injuries or death to any person and from all claims for property damage or destruction arising out of the use or storage of explosives and highly inflammable materials.

8. FAILURE OF PERFORMANCE: If the Work shall be abandoned or if the Contract or any part thereof shall be sublet without the previous written consent of the Owner, or if the Contractor shall be adjudged as bankrupt, or if it shall make a general assignment for the benefit of creditors, or if a receiver of its property shall be appointed, or if at any time the Owner shall be of the opinion that the Work, or any part of the Work, is unreasonably delayed or that the Contractor has violated any of the provisions of the Contract, or if the Contractor should repeatedly fail, except in cases for which extension of time is provided, to supply enough properly skilled persons or proper materials, or if it should fail to make prompt payment to Subcontractors or for material or labor, or persistently disregard laws, ordinances, or the instructions of the Owner, the Owner may, without prejudice to any other right or remedy and after giving the Contractor seven days written notice, terminate the employment of the Contractor and take possession of the premises and of all materials, tools and appliances and finish the Work by whatever method it may deem expedient. In such case the Contractor shall not be entitled to receive any further payment until the work is finished. If the unpaid balance of the contract price shall exceed the expense of finishing the Work including compensation for additional managerial and administrative services, such excess shall be paid to the Contractor. If such expense shall exceed such unpaid balance, the Contractor shall pay the difference to the Owner.

If the Owner shall certify by written notice to the Contractor that the rate of progress is not satisfactory, the Owner may, instead of notifying the Contractor to discontinue all of the work or any part thereof, notify it from time to time to increase the force, equipment and plant, or any of them, employed on the whole or any part of the Work, stating the amount of increase required. Unless the Contractor shall, within five (5) days after such notice, increase its force, equipment and plant to the extent required therein, and maintain and employ the same from day to day until the completion of the Work or such part thereof or until the conditions as to the rate of progress shall be fulfilled, the Owner may employ and direct the labors of such additional force for the Contractor's account, equipment and plant as may be necessary to insure the completion of the work or such part thereof within the time specified or at the earliest possible date thereafter, and charge the expense thereof to the Contractor. Neither the notice from the Owner to the Contractor to increase its force, equipment or plant, nor the employment of additional force, equipment or plant by the Owner shall be held to prevent a subsequent notice to the Contractor from the Owner to discontinue the work under the provisions of the preceding portion of this Section.

9. ANNULMENT OF CONTRACT: The Owner shall have the right at any time, for such reasons as shall appear good and sufficient to the Owner to annul this contract upon written notice to the Contractor. The Contractor shall be entitled to the full amount of the estimate for the Work done under the Contract and materials delivered upon the site of the Work up to the time of such annulment. Any additional sums which can be fairly justified to be due the Contractor due to moving on and off the site of the work and which the Owner determines are so justified, shall be paid to the Contractor.

10. PAYMENT TO CONTRACTOR: At least ten (10) days before each progress Payment falls due (but not more often than once a month), the Contractor shall submit to the Owner, a partial payment estimate filled out and signed by the Contractor covering the work performed during the period covered by the partial payment estimate and supported by such data as the Owner may reasonable require. If payment is requested on the basis of materials and equipment not incorporated in the work but delivered and suitably stored at or near the site, the partial payment estimate shall also be accompanied by such supporting data, satisfactory to the Owner, as will establish the Owner's title to the material and equipment and protect their interest therein, including applicable Insurance.

11. SAFETY PRECAUTIONS AND ACCIDENT PREVENTION:

11.1 The Contractor shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work.

11.2 The Contractor shall take all reasonable precautions for the safety of, and shall provide all reasonable protection to prevent damage, injury or loss to:

1. All employees on the Work and all other persons who may be affected thereby;
2. All the Work and all materials and equipment to be incorporated therein, whether in storage on or off the site, under the care, custody or control of the Contractor or any of his Subcontractors; and
3. Other property at the site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures and utilities.

11.3 The Contractor shall give all notices and comply with all applicable laws, ordinances, rules, regulations and lawful orders of any public authority bearing on the safety of persons or property or their protection from damage, injury or loss.

11.4 The Contractor shall erect and maintain, as required by existing conditions and progress of the Work, all reasonable safeguards for safety and protection, including posting danger signs and other warnings against hazards, promulgating safety regulations and notifying owners and users of adjacent utilities.

11.5 The safety provisions of applicable laws, OSHA, and Construction Codes shall be observed, and the Contractor shall take or cause to be taken such additional safety and health measures to insure that these provisions shall be complied with.

11.6 Machinery, equipment and other hazards shall be guarded in accordance with the safety provisions of the Manual of Accident Prevention in Construction, published by the Associated General Contractors of America, to the extent that such provisions are not in conflict of applicable law.

END OF DOCUMENT

SPECIAL CONDITIONS IN GENERAL

1.01 Statutory Requirements in General

- A. Keep fully informed of all existing and future State and Federal Laws and municipal ordinances and regulations in any manner affecting those engaged or employed in the Work, or the materials used or employed in the Work, or in any way affecting the conduct of the Work, and of all such orders and decrees of bodies or tribunals having any jurisdiction or authority over the same and of all provisions required by law to be made a part of this Contract, all of which provisions are hereby incorporated by reference and made a part thereof. If any discrepancy or inconsistency is discovered in the Contract Documents for this Work in relation to any such law, ordinance, regulation, order or decree, he shall forthwith report the same to the Owner in writing. At all times observe and comply with, and cause all agents and employees to observe and comply with all such existing and future laws, ordinances, regulations, orders and decrees; and shall protect and indemnify the Owner and Engineer and all of its and their officers, agents, and servants against any claim or liability arising from or based on the violation of any such law, ordinance, regulation, order or decree, whether by itself or its employees or subcontractors.
- B. All materials furnished and Work done is to comply with all State and Federal laws and regulations.

END OF DOCUMENT

DOCUMENT 00905
CHANGE ORDER FORM

DATE: _____

CHANGE ORDER NUMBER: _____

CONTRACT NUMBER: _____

PROJECT: _____

OWNER: _____

CONTRACTOR: _____

CONTRACT DATE: _____

TO: _____
(Contractor)

YOU ARE HEREBY AUTHORIZED AND DIRECTED TO MAKE THE CHANGES
NOTED BELOW IN THE SUBJECT CONTRACT:

APPROVED BY: _____
(Owner)

BY: _____
(Signature)

DATE: _____

DESCRIPTION OF CHANGE:

REASON FOR CHANGE:

These changes result in the following adjustment of CONTRACT PRICE and CONTRACT TIME:

Original CONTRACT PRICE: \$ _____

CONTRACT PRICE prior to this CHANGE ORDER: \$ _____

The CONTRACT PRICE due to this CHANGE ORDER will be (INCREASED) (DECREASED) by: \$ _____

The New CONTRACT PRICE including this CHANGE ORDER: \$ _____

This CHANGE ORDER (INCREASES) (DECREASES) the CONTRACT TIME by: _____ Calendar Days

The revised CONTRACT COMPLETION DATE is:

Other Contracts affected (if any): _____

REVIEWED BY: _____
(Owner)

(Signature)

(Date)

ACCEPTED BY: _____
(Contractor)

(Signature)

(Date)

END OF DOCUMENT

CERTIFICATE OF SUBSTANTIAL COMPLETION

Owner: Town of Seabrook, New Hampshire

Project Name: Cleaning and Redeveloping Bedrock Well No. 2

CONTRACTOR

Contract For Contract Date

This Certificate of Substantial Completion applies to all Work under the Contract Documents or to the following specified parts thereof:

To: Town of Seabrook, New Hampshire (Owner)

And To

.....
CONTRACTOR

The Work to which this Certificate applies has been inspected by authorized representatives of Owner, Contractor and Engineer and that Work is hereby declared to be substantially complete in accordance with the Contract Documents on

.....
DATE OF SUBSTANTIAL COMPLETION

A tentative list of items to be completed or corrected is attached hereto. This list may not be all-inclusive, and the failure to include an item in it does not alter the responsibility of Contractor to complete all the Work in accordance with the Contract Documents. The items in the tentative list shall be completed or corrected by Contractor within _____ days of the above date of Substantial Completion.

The responsibilities between Owner and Contractor for security, operation, safety, maintenance, heat, utilities, insurance and warranties shall be as follows:

RESPONSIBILITIES: ACCESS to WELL #2

OWNER: Available to open pump station for Contractor.

CONTRACTOR: Perform all work in accordance with specifications.

The following documents are attached to and made a part of this Certificate:

- 1. Electronic copies of Pre- and Post-Video Inspection
- 2. Well redevelopment report that includes a summary of all redevelopment activities including pre- and post-development specific capacity and pumping rate.

This certificate does not constitute an acceptance of Work not in accordance with the Contract Documents nor is it a release of Contractor's obligation to complete the Work in accordance with the Contract Documents.

CONTRACTOR accepts this Certificate of Substantial Completion on, 2015

.....
CONTRACTOR

By

OWNER accepts this Certificate of Substantial Completion on, 2015

.....
OWNER

By

END OF DOCUMENT

WAIVER OF LIENS

Agreement Date: _____

Owner: Town of Seabrook, New Hampshire

Project Name: Cleaning and Redeveloping Bedrock Well No. 2

Completion Date per Agreement and Change Orders: _____

The undersigned Contractor hereby swears under penalty of perjury that (1) all previous progress payments received from the Owner on account of Work performed under the Contract referred to above have been applied by the undersigned to discharge, in full, all obligations of the undersigned incurred in connection with Work covered by prior Estimates for Partial Payment under said contract, being Estimates Number 1 through _____ inclusive; and (2) all labor, materials and equipment incorporated in said Project or otherwise listed in or covered by these Estimates for Partial Payment are free and clear of all liens claims, security interests and encumbrances, except those listed below by obligee, nature and amount of obligation and covered by appropriate Bond or Bonds, as listed beside each obligation and attached to and made a part of this certification.

Obligation

Bond

Dated: _____

Contractor

Signed by Officer of Corporation

Title

COUNTY OF _____

STATE OF _____

Before me on this _____ day of _____ personally appeared _____ known to me, who being duly sworn, did depose and save that he is the _____ (Officer) of the Contractor above mentioned; that he executed the above statement on behalf of said Contractor and that all of the statements contained therein are true, correct and complete.

NOTARY PUBLIC

My Commission Expires

END OF DOCUMENT

SECTION 01015

SPECIAL REQUIREMENTS

PART 1 GENERAL

1.01 APPLICATION

- A. The “Special Requirements” under these specifications are applicable to all Work contemplated under this contract.

1.02 MEASUREMENT AND PAYMENT

- A. Measurement and payment for Work described in this section will be made in accordance with the provisions of Section 01025, Measurement and Payment.

1.03 SPECIFICATIONS AND PLATES

- A. All Work shall conform to these specifications entitled:

CLEANING AND REDEVELOPING BEDROCK
WELL NO. 2
TOWN OF SEABROOK, NEW HAMPSHIRE

dated November 2015 on file with the Owner, and any changes, drawings, plans, and directions that may be furnished from time to time by the Owner.

1.04 PROJECT LOCATION

- A. The site of the Work is located on the Owner’s property at 550 Route 107 in Seabrook, NH
- B. Bidders shall contact the Water Superintendent of the Town of Seabrook, Mr. Curtis Slayton, Telephone Number: (603) 474-9921 for review of the project site during the bidding process. The secure site location will require that personnel from the Town provide access for this site.

1.05 PROGRESS OF WORK

- A. The Contractor shall promptly start and continue actual cleaning and redevelopment activities. Work under this contract with the necessary equipment to properly execute and complete in the specified time. No cessation of cleaning and redevelopment activities will be allowed without the approval of the Owner. The Contractor shall furnish to the Owner a progress schedule for the Work.

- B. The Contractor shall provide the Owner with seven (7) days notice prior to pulling the pumping equipment for the well cleaning.
- C. The Contractor shall be responsible for securing the pumping station during the contract period and also locking the pumping station fence gates and access roadway entrance gate daily. Access keys will be provided by the Owner throughout the duration of the contract period.

1.06 CHANGES IN AMOUNT OF WORK

- A. The Owner reserves the right to increase or decrease the amount of any item of the Work listed as may be found desirable or necessary during the carrying out of this Contract and the prices quoted in the Document 00300, Form for General Bid shall apply without change to such variation in the quantity of each of the Bid Items.

1.07 VISIT TO THE PROJECT SITE

- A. Before submitting a Bid, prospective bidders may visit the Project Site, examine the existing conditions and become thoroughly acquainted with the effort required to perform the Work.
- B. Study the Contract Documents and compare the same with the information gathered during examination of the Project Site, as no extra compensation will be authorized for extra Work caused by unfamiliarity with the Project Site and/or Contract Documents or the conditions peculiar to this Project.

1.08 SHOP DRAWINGS

- A. The Contractor shall submit four (4) copies of shop drawings to the Owner for review. Submittals are required for Section 02660, Well Cleaning and Section 11213, Miscellaneous Work.

1.09 TECHNICAL SPECIFICATIONS

- A. Where reference is made to AWWA specifications or other associations, it is understood that the latest revisions as of the date of the Contract Documents shall apply.

1.10 CONTRACT DOCUMENTS IN THE FIELD

- A. The Contractor shall keep an unexecuted copy of this Contract at the site of the Work at all times while Work is being performed and said copy is to be available to those in charge of the Work.

1.11 TEMPORARY UTILITIES

- A. The Contractor shall make arrangements for, and furnish at its expense, all telephone, temporary power (generator), and other utility except for 115 volt electric required for construction purposes. The Contractor may use the available 115 volt electricity at the site for construction purposes.
- B. Sanitary conveniences shall not be placed within 400 feet of any well.

1.12 CLEANUP

- A. During the course of the Work, the Contractor shall keep the site of its operations in as clean and neat a condition as is possible on a daily basis.
- B. The Contractor shall dispose of all residue resulting from the construction work, and at the conclusion of the work day remove and haul away old parts, equipment, temporary structures, and any other refuse remaining from the Work, and shall leave the entire site of the Work in a neat and orderly condition.
- C. The interior of the pumping station shall be cleaned to its original condition or better after the well cleaning and pumping equipment installation.

1.13 COOPERATION WITH OTHER CONTRACTORS AND OWNER'S OPERATIONS

- A. The Contractor is advised that there may be other contractors on and adjacent to the site of this contract, and this Contractor shall cooperate with such other contractors and allow reasonable time for others to complete their work when working in or adjacent to the same areas.
- B. The Owner has facilities on and adjacent to the project site. The Contractor shall conduct its operations so as to minimize interference with the Owner's operations in these areas and shall allow the Owner access at all times.

1.14 PROTECTION OF PROPERTY

- A. The Contractor shall protect existing buildings, grounds and existing utilities. If damage is done to such areas, the Contractor shall make all repairs necessary to restore such areas to their original condition, at no expense to the Owner.

1.15 HOURS OF OPERATION

- A. The Contractor including all subcontractors and all others relating to this project shall conform to the following work schedule:
 - 1. No outdoor activity on or adjacent to the site will be permitted before 7:00 a.m. or after 6:00 p.m. All outdoor activity shall be confined to Monday through Friday except for emergency conditions which shall be reviewed and approved by the Owner in advance.

1.16 GUARANTEE

- A. The Contractor shall guarantee the material or equipment furnished and the performance thereof to be in accordance with the requirement of the Contract Documents and agrees upon written notice to make promptly and without charge, all necessary changes, corrections, and replacements (including installation of replacement parts) required to make good all defects developing in the material or equipment under ordinary use and proper care within a period of twelve months after acceptance of the work.

1.17 PRECONSTRUCTION CONFERENCE

- A. A preconstruction conference with the Contractor and Owner shall be held at the project site to determine the location of the sedimentation control basin and to discuss the details of the cleaning of the well.

1.18 CONTRACTOR'S EQUIPMENT (STEAM CLEAN)

- A. The Contractor shall steam clean all its well cleaning equipment prior to the cleaning of the well.

1.19 WORK BEING PERFORMED IN EXISTING WELLFIELDS

- A. The Contractor shall at all times perform all Work with the utmost caution as the location where the Work is being performed is within existing wellfields. These wellfield areas provide safe drinking water for the Town and are regulated by State and Regulatory Agencies. The Contractor shall be responsible for any and all requirements regarding any impact to these wellfields due to accidental or improper damage due to the results of any Work being performed. The Contractor shall immediately contact the Town, State and Regulatory Agencies regarding any accidents or damage that may occur during the Work of this contract. All related costs due to any situation noted and required to correct shall be the complete responsibility of the Contractor.
- B. The Contractor will not be permitted to perform any maintenance work or fueling activities, on construction equipment with 400 feet of any of the wells. Any construction equipment used that leaks any fluids shall be removed from the 400 foot buffer zone of the wells.

END OF SECTION

SECTION 01025

MEASUREMENT AND PAYMENT

PART 1 GENERAL

1.01 SCOPE

- A. The purpose of this section is to define the method of measurement and payment for each of the lump sums or unit prices listed in the Document 00300, Form for General Bid.
- B. The Contractor shall become acquainted with all Work associated with each Payment Item and shall have no claim for additional compensation due to unfamiliarity with the Work required to complete each Item in accordance with the Contract Documents.

1.02 PAYMENT ITEMS

A. ITEM DESCRIPTION

1. Mobilization and Demobilization.
2. Cleaning and Redeveloping Bedrock Well 2 Using “the Aqua Freed Process,” or an “Alternative/Equivalent Process”.
3. Additional Hours for Cleaning and Redevelopment – Aqua-Freed or Alternative/Equivalent Well Development.
4. Additional Well Cleaning Chemicals (Aqua-Freed or Alternative/Equivalent).
5. Additional Well Cleaning Chemicals (Hydrochloric Acid, Acetic Acid, or Neutralizer)
6. Video Inspections of Bedrock Well 2.
7. Submersible Pump and Motor Cleaning and Inspection.
8. Submersible Pump Electrical Cable Cleaning and Inspection
9. Replacement of Current Stilling Well with threaded, rigid PVC Stilling Well
10. Mobilization and Demobilization of hydro-fracturing equipment
11. Zone-hydro-fracturing of Bedrock Well No. 2 at ten (10) intervals
12. Single-packer hydro-fracturing of Bedrock Well No. 2

1.03 BASIS OF MEASUREMENT AND PAYMENT

ITEM 1 – MOBILIZATION AND DEMOBILIZATION

General. The price bid under Item 1 shall be considered fair compensation for all labor, equipment, tools and materials necessary to complete the Work as specified, which shall include: preconstruction conference, required submittals; mobilization and demobilization of equipment to and from the site; steam cleaning of equipment to be used for cleaning well, removal of existing submersible pumping equipment and appurtenances; cleaning existing submersible pump and motor assembly; inspection of existing pumping equipment; installation and removal of test pumping equipment; testing required for initial and final specific capacity tests, including discharge piping and orifice weir; installation and removal of waste discharge piping; installation of sedimentation basin consisting of haybales and filter fabric (haybales and filter fabric shall be provided by the Contractor); reinstallation of pumping equipment reinstallation of the stilling tubes; new gaskets, nuts and bolts for disassembled flanged discharge piping; final disinfection of the well; additional bacteriological, volatile organic (VOC) and general chemistry analyses; required well-cleaning and pumping-test reports; cleanup; and all other Work not included in Items 2 through 12.

Payment. Payment for mobilization and demobilization as specified, shall be made at the lump sum price bid under Item 1. No additional payment will be made for rechlorination and retesting of the well, should they be required to make the well acceptable for use.

ITEM 2 – CLEANING AND REDEVELOPING BEDROCK WELL USING THE AQUA FREED PROCESS OR AN ALTERNATIVE/EQUIVALENT PROCESS

General. The price bid under Item 2 shall be considered fair compensation for all labor, equipment, tools and materials necessary to complete the Work as specified. This item shall include furnishing, installing and removing Aqua Freed or Alternative/Equivalent well development tools such as submersible pumps, air-lift pumps, surge blocks and piping, high-pressure jetting equipment, test pumps for rating the well; or other equipment the Contractor suggests and the Owner agrees to. This item shall include all pumping, surging, and jetting activities, and rating the well. The price bid under Item 2 shall also include furnishing, installing and removing all equipment needed for chemical treatment; furnishing all chemicals and supplies; furnishing tools and a chemical neutralization tank; and furnishing other equipment the Contractor may suggest and the Owner agrees to. This item shall include furnishing, mixing and injecting chemicals; agitation of chemicals, surging and pumping with chemicals (for a minimum of 35 hours as specified), surging and pumping with clean water; pumping required to meet pH levels (for acid cleaning) and chlorine residual levels (for chlorination); rating the well; and neutralization of acid and chlorine. This item includes the time required to install and remove well cleaning equipment from the borehole.

Payment. Payment for cleaning and redeveloping using conventional equipment as specified shall be made at the lump sum price bid under Item 2.

ITEM 3 – ADDITIONAL HOURS FOR CLEANING AND REDEVELOPMENT-
CONVENTIONAL WELL DEVELOPMENT

General. The price bid under Item 3 shall be considered fair compensation for all labor, equipment, tools and materials necessary to furnish additional hours for cleaning and redeveloping as recommended by the Contractor and agreed to by the Owner.

Payment. Payment for additional hours of well cleaning and redevelopment shall be made at the unit price bid under Item 3.

ITEM 4 – ADDITIONAL WELL CLEANING CHEMICALS (AQUA FREED, ACID, OR
CHLORINE)

General. The price bid under Item 4 shall be considered fair compensation for all labor, equipment, tools and materials necessary to furnish additional chemicals for well cleaning above the amount specified as recommended by the Contractor and agreed to by the Owner.

Payment. Payment for additional well cleaning chemicals shall be made at the unit price bid under Item 4.

ITEM 5 – ADDITIONAL WELL CLEANING CHEMICALS (HYDROCHLORIC ACID,
ACETIC ACID, or NEUTRALIZER)

ITEM 6 – VIDEO INSPECTIONS OF BEDROCK WELL

General. The price bid under Item 6 shall be considered fair compensation for all labor, equipment, tools and materials necessary for Pre & Post-Redevelopment video inspections of the well prior to and after cleaning the Bedrock well.

Payment. Payment for video inspections shall be made at the unit price bid under Item 6.

ITEM 7 – SUBMERSIBLE PUMP CLEANING AND INSPECTION

General. The price bid under Item 7 shall be considered fair compensation for all labor, equipment, tools and materials necessary for removing, cleaning and inspecting the existing submersible pump and the existing pump column if deemed necessary by the CONTRACTOR.

Payment. Payment for cleaning and inspecting the submersible pump and existing pump column shall be made at the unit price under Item 7.

ITEM 8 – SUBMERSIBLE PUMP ELECTRICAL CABLE

General. The price bid under Item 8 shall be considered fair compensation for all labor, equipment, tools and materials necessary for cleaning and inspecting the submersible pump electrical cable.

Payment. Payment for cleaning and inspecting the submersible pump electrical cable shall be made at the unit price bid under Item 8.

ITEM 9 – STILLING WELL REPLACEMENT

General. The price bid under Item 9 shall be considered fair compensation for all labor, equipment, tools and materials necessary for replacing the current polyethylene stilling well with a 1 ¼” threaded, rigid Sch. 40 PVC stilling well.

Payment. Payment for cleaning for replacing the current polyethylene stilling well with a 1 ¼” threaded, rigid Sch. 40 PVC stilling well shall be made at the unit price bid under Item 9.

ITEM 10 – MOBILIZATION AND DEMOBILIZATION OF HYDRO-FRACTURING EQUIPMENT

General. The price bid under Item 10 shall be considered as full compensation for moving into the Bedrock Well No. 2 site all materials, tools, approved equipment, facilities, supplies, labor and supervision required to perform zone isolation and single-packer hydro-fracturing of Bedrock Well No. 2 and removal of the same at the completion of the work. The price shall include the cost of insurance, bonds, protecting work and property, cleanup. The price shall include the cost of video inspection of Bedrock Well No. 2 before hydro-fracturing. Note: the equipment required includes, but is not limited to inflatable packers, pumps, motors, water tanks, water-level measurement devices, hauling, and handling equipment as are required to complete the work within the scheduled time.

Payment. Payment for mobilization and demobilization of hydro-fracturing equipment shall be made at the unit price bid under Item 10.

ITEM 11 – ZONE HYDRO-FRACTURING OF BEDROCK WELL NO. 2 AT TEN (10) INTERVALS

General. The price bid under Item 11 shall be considered as full compensation for all labor, equipment, materials, tools and supplies necessary to install and remove hydro-fracturing equipment for zone-fracturing, including inflatable packers, piping, and all related equipment, and performing zone-fracturing, as specified.

Payment. Payment for zone hydro-fracturing of Bedrock Well No. 2 at ten (10) intervals shall be made at the unit price bid under Item 11.

Measurement. Payment for zone-isolation fracturing under Item 11 shall be measured via the Engineer, in consultation with the Contractor. If it is determined that zone-fracturing is inappropriate at all ten (10) intervals in Bedrock Well No. 2, the price will be prorated based on the actual number of intervals subjected to hydro-fracturing. In other words, if only five (5) zones are “fracked”, the Contractor will be due half of the price under Item 11. Conversely, if more than ten (10) zones are fractured in any particular borehole, the Contractor shall be given additional proportionate compensation based on the actual number of zones subjected to hydro-fracturing.

ITEM 12 – SINGLE-PACKER HYDRO-FRACTURING OF BEDROCK WELL NO. 2

General. The price bid under Item 12 shall be considered fair compensation for all labor, equipment, materials, tools and supplies necessary to install and remove hydro-fracturing equipment for single-packer fracturing, including inflatable packers, piping, and all related equipment, and performing hydro-fracturing, as specified.

Payment. Payment for cleaning single-packer hydro-fracturing of Bedrock Well No. 2 shall be made at the unit price bid under Item 12.

END OF SECTION

SECTION 02660

WELL CLEANING

PART 1 GENERAL

1.01 SCOPE OF WORK

- A. The Contractor shall furnish all labor, equipment, chemicals, and materials necessary to video inspect, rate, clean, redevelop, disinfect and return Bedrock Well No. 2 at Seabrook's Route 107 Wellfield to the historical specific capacity levels.

Bedrock Well #2 was constructed in 1980 and put into service in 1982. The well is 10" in diameter with an approximate depth of 484 - 500 feet according to recent borehole geophysics results. The well casing extends to a depth of 82 feet. Historical documentation shows that there are metal injection rods located in the bottom of the well. These rods are not expected to interfere with well redevelopment or pumping activities as part of this Work.

According to recent historical specific capacity results collected by Seabrook between 2008 and 2015, specific capacity in Bedrock Well #2 has ranged from 2.24 gpm/ft at 276 gpm to 0.80 gpm/ft at 114 gpm. The only redevelopment of Bedrock Well #2 since installation occurred in April 2008. Following the redevelopment activities, the Specific Capacity was measured to be 2.24 gpm/ft at 276 gpm.

- B. During the 2008 redevelopment activities, the well was zone packered at the following depths: 328' – 500', 328' – 288', 283' – 243', 238' – 198', 138' – 98', 158' – 118', and 198' – 158'. These depths may be used as a guideline, however the CONTRACTOR and OWNER may choose to add or remove zones depending on the results of the video inspection.

1.02 MEASUREMENT AND PAYMENT

- A. Measurement and payment for Work described in this section will be made in accordance with the provisions of Section 01025, Measurement and Payment.

1.03 CARE OF MATERIALS

- A. The Contractor shall have charge of, and be liable for the loss of, or injury to, any materials delivered to it. The Contractor shall keep all materials trimmed up in piles, in places so as not to endanger the work, until removed, and shall not occupy private land without the approval of the Owner or its authorized agent.

1.04 EXISTING PIPING AND EQUIPMENT

- A. Prior to beginning any Work, the Contractor and Owner shall closely examine all piping and equipment. The condition of the equipment as well as any operating irregularities with the equipment and the variable frequency drive units (VFDs) shall be duly recorded by both parties. The Contractor shall take special precautions to protect and cover the equipment within the station during the well cleaning operation.
- B. The Contractor shall dismantle and remove any existing piping and pumping equipment, as necessary for the television inspection and well cleaning. Any pipes, services, or equipment broken during the course of the Work, shall be promptly repaired or replaced by the Contractor at its own expense. Upon completion of the well cleaning and reinstallation of the pump and motor, the pump shall be run in the presence of the Contractor and Owner to verify that it is working properly.
- C. The Contractor shall provide its own equipment to power its pumps and equipment. The Owner's VFD equipment shall not be used during the well cleaning process. If the Contractor uses the Owner's pumping equipment during the Pre & Post-redevelopment flow test, the Owner shall be present to operate the VFDs.

1.05 RECORDS, ACCESS, PERFORMANCE

- A. Upon completion of all work, the Contractor shall deliver to the Owner two (2) copies of all records, measurements, pumping rates, water quality data, pumping tests, water levels, chemical treatment, equipment used and actual steps taken to clean the well to the Owner.
- B. Prior to submitting the bid, the Contractor shall inspect the Project Site for access to the well.
- C. All Work shall conform to the standard practice and requirement of the American Water Works Association (AWWA) and these specifications.

1.06 SUBMITTALS

- A. The following submittals shall be made in accordance with the provisions of the General Conditions.
 - 1. Acknowledgement that Contractor has examined the Project Site and specifications prior to bidding as stated in Document 00300, Form for General Bid.
 - 2. Contractor's description of all equipment to be used.
 - 3. Contractor's description of proposed cleaning and redevelopment methodology.
 - 4. Work schedules.

5. All chemicals to be used in well cleaning.
6. Equipment and methodology for surging and pumping for well redevelopment
7. Methodology for well pumping testing and replacement equipment.
8. Methodology for bacteriological and chemical testing.
9. Methodology for acid waste neutralization.
10. Methodology for de-chlorination of wastewater after chlorination work.
11. The Contractor shall submit to the Engineer, in advance, the Material Safety Data Sheets (MSDS) for all potentially hazardous substance, other than chlorine bleach and fuel intended to be used on site.
12. The Owner may request a copy of the Contractors Health and Safety Plan (HASP) before the commencement of the work.

PART 2 PRODUCTS

2.01 ACID

The CONTRACTOR is responsible for obtaining approval of their chemicals by the OWNER before well rehabilitation/cleaning.

- A. The acid used shall be 27.92% acid grade inhibited MURIATIC ACID (Hydrochloric acid). If inhibited acid is unavailable, one ounce of KNOX gelatin, dissolved in warm water shall be mixed with each gallon of acid.

2.02 POLYPHOSPHATE (Not to be Used)

- A. The polyphosphate used shall be sodium hexametaphosphate, and it shall be introduced to the well as a water solution, after it has been dissolved by placing the phosphate in a wire basket or burlap bag and then suspending the container in water or as directed by the manufacturer's recommendations. The concentration of sodium polyphosphate in the well shall be 10 pounds of polyphosphate per 100 gallons of well water volume.

2.03 CHLORINE

- A. Calcium hypochlorite and sodium hypochlorite, which meet the requirements of AWWA B-300, shall be used for chlorine treatment of the well. A concentration of not less than 500 parts per million and not more that 1000 parts per million of free available chlorine shall be maintained in the well during the cleaning process.

2.04 REPLACEMENT PARTS

- A. The Contractor shall notify the OWNER if any replacement parts are required as part of the Work. An itemized list of parts and labor costs must be provided to the Owner and approved by the Owner prior to replacements taking place.

2.05 WATER SUPPLY

- A. The Owner will supply the Contractor with water as needed for well-cleaning operations, including video inspections.

2.06 VIDEO INSPECTION EQUIPMENT

- A. Video inspections shall be performed using a video camera capable of recording video images in color and suitable for submerged use in a 10-inch diameter well. The video camera and associated equipment shall be capable of televising the inside of the well (including the integrity of the casing, seal, and bedrock fracture zones) complete from top to bottom and transmitting a clear visual image to the viewing monitor screen.
- B. A video monitor shall be provided for viewing the video inspection work. The monitor shall be housed in a weatherproof enclosure.
- C. If cloudy water exists within the well during the inspection, the Contractor shall pump water out of the well using a small pump.
- D. Two (2) DVD copies of the video tape of each well inspection shall be delivered to the Owner at the completion of each video inspection for the well.

PART 3 EXECUTION

3.01 EQUIPMENT REMOVAL

- A. The Contractor shall perform an inspection of equipment, piping and appurtenances in the pumping station with the Owner and make a written summary of any observed irregularities or apparent damaged piping, etc. The Contractor is to carefully disassemble piping as required. The Contractor shall provide the necessary pump equipment and necessary apparatus for well cleaning operations.

3.02 CHEMICAL FOR USE IN CLEANING

- A. The Contractor shall furnish the required amount of chemical(s) to effectively treat the water in and surrounding the well in order to remove all incrustation residue or deposits, to restore the capacity of the well to the specific capacity specified. The quantity of any chemicals shall be sufficient to obtain the required results. The amounts and types of chemicals to be used shall be submitted to the Owner for review, prior to use.

- B. The Contractor shall provide and post at the project site Material Safety Data Sheets (MSDS) for each chemical brought to the site.

3.03 METHOD OF WELL CLEANING

- A. The Contractor shall complete the following:

1. Measure and record the static water level and the depth of the well before, during, and after each cleaning treatment.
2. Determine the specific capacity of the well according to the following schedule:
 - a. Before well cleaning. Specific capacity is to be determined utilizing the existing SEABROOK pump. After Bedrock Well #2 well has been pumped continuously and drawdown has reached a steady state under current system operating conditions a pre-redevelopment specific capacity rating will be recorded. The Contractor is to coordinate with the Town to assist in operating the well pump in advance of specific capacity measurements. The specific capacity test shall be conducted after Bedrock Well #2 has been offline for a minimum of 24 hours. Rating will be conducted using Contractor's flow measuring equipment (orifice weir).
 - b. Throughout the redevelopment process, each time the CONTRACTOR ceases the surging process to pump from the well, a specific capacity rating shall be recorded.
 - c. Following redevelopment/SEABROOK pump installation:: Determine the specific capacity after pumping continuously and drawdown has reached a steady state at a pumping rate to be determined by the Contractor and Engineer. The specific capacity test shall be conducted after Bedrock Well #2 has been shut down for a minimum of 24 hours. Rating will be conducted using Contractor's flow measuring equipment (orifice weir).
3. The Owner will obtain water samples from the well and have them analyzed for the following water quality parameters prior to cleaning the well and at the completion of the well cleaning treatment.

- | | | |
|--------------------|---------------|-----------------------------|
| 1. pH (field test) | 4. Manganese | 7. Volatile Organics (VOCs) |
| 2. Iron | 5. Alkalinity | |
| 3. Color | 6. Sodium | |

The Owner will deliver the water samples to a State certified laboratory for the analysis.

4. During the well cleaning, pump and rate the well with the Contractor's pumping equipment and flow measurement equipment. Measure and record pumping water levels, test flow rate, specific capacity, rate of recovery at time of shut down, and estimate quantity of fines removed. These measurements shall be taken and recorded before, during, and after the cleaning and redeveloping of the well.

5. When the permanent well equipment has been installed, the Contractor may pump and rate the well with Owner's pumping equipment and the Contractor's flow measurement equipment with the assistance of the Owner. Measure and record pumping water levels, test flow rate, specific capacity of the well, rate of recovery at time of shutdown, and estimate quantities of fines removed.
 6. Discharge of waste and chemicals. The Contractor shall discharge all wastes from the cleaning operations at a minimum of 200 feet from the well and any other existing well, at a location to be determined in the field acceptable to the Owner and approved as part of the NH DES Temporary Groundwater Discharge Permit. Acid and chlorine shall be neutralized in an approved tank prior to discharge to the environment. The Contractor shall discharge the water from the neutralizing tank into a sedimentation basin constructed with haybales and filter fabric. The Contractor shall check the pH and chlorine residual of the neutralized water frequently. No chemicals or waste shall be discharged directly into surface water.
- B. Cleaning the Well. The procedure to be used by the Contractor to clean the well shall be generally as outlined below. The Contractor may submit a method other than that outlined below, however, the method must be reviewed and approved by the Owner prior to the start of work.
1. Surging Method: The Contractor shall use appropriately sized surge block and pumping equipment to clean the well prior to the addition of any chemical additions. All cleaning equipment to be used shall be reviewed and approved by the Owner prior to starting the work.
 2. Mixing Chemicals: Mix the required amount of each chemical, according to the manufacturers' recommendations, and pour (inject) it into the well by means appropriate injection equipment into the predetermined packered zones.
 3. Injecting Chemicals: Any acids, Aqua-Freed, or Alternative/Equivalent chemicals shall be injected into the well using the method described above. Chemicals should be allowed to react over night for at least 12 hours and then be pumped to the neutralization tank throughout the entirety of the redevelopment process. The pH of the chemicals injected shall be determined by the contractor and approved by the Owner.
 4. Aqua-Freed or Alternative/Equivalent Procedures: The well rehabilitation process shall be a four (4) phase system utilizing the injection of 99.9% liquefied carbon dioxide (CO₂). The column of CO₂ injected into the well shall be sufficient to effectively fill the well bore and surrounding fractures. A packer shall be set to confine the injection of Aqua-Freed gases to the water producing zones. Injection pressures shall not exceed 325 psi and temperatures shall be at zero (0) degree F to insure penetration of the gas and liquefied gasses into the surrounding formation. Down hole pressures shall range between 0 – 70 psi and down-hole temperature of the CO₂ shall range between 32 F and -110 degrees F.

Temperature and pressures shall be regulated by the Contractor to encourage rapid expansion of the liquefied CO₂ and release of energy sufficient to dislodge encrusted minerals and biological growth from the well and surrounding water bearing formation. The Contractor shall allow a minimum of 12 hours contact time for the CO₂ in the sealed well. The process shall be conducted and monitored by personnel specifically trained and authorized to apply the Aqua-Freed or Alternate/Equivalent process.

5. Redevelopment: The Contractor shall modify the top of well casing as necessary to utilize appropriate adapters and sealing appurtenances to properly control and implement the process. The Contractor shall install an injection line system with a packer or isolation assembly to seal the well at a desired depth to confine the treatment area.

The Contractor shall introduce a minimum of 4,000 lbs (pounds) of liquefied or gaseous CO₂ through a controlled injector process into the well and surrounding fractures at such a rate as determined necessary to best conduct and control the rehabilitation process. This process may be conducted over a period of two (2) days to properly introduce the material into the well system. This phase of the process shall produce carbonic acid within the fractures and provide sufficient physical agitation of the carbonic acid and water within the fractures to initiate the rehabilitation process through the rapid expansion of the liquefied gas.

The Contractor shall introduce approximately 4,000 additional lbs of CO₂ into the well and fractures at pressures and temperatures that will assure the CO₂ will undergo phase changes to release sufficient energy to achieve the removal of deposited material.

The Contractor shall mechanically develop the well at rates sufficient to remove newly dislodged particles and plugging material from the well and fractures. Wastewater must be neutralized and discharged in compliance with NH DES Temporary Discharge Permit requirements and NH DES and EPA discharge regulations.

6. Mechanical Redevelopment: Mechanical redevelopment of the well shall consist of pumping and surging with high capacity surge equipment until such time that the water is deemed to be clear and sand-free. The well shall be considered thoroughly developed when the specific capacity is relatively constant, or is considered sufficiently redeveloped by the Owner. The Contractor shall supply the Owner a written report on the final specific capacity of the well once it is thoroughly redeveloped.

The Contractor shall discharge all wastes from the cleaning operation at a safe distance away from the radius around the well and any other existing wells, wetlands, or waterways, and in accordance with the requirements of the Temporary Groundwater Discharge Permit. The contractor shall discharge the water produced from the well during the cleaning process through a sediment and neutralization tank. Water and sediment pumped from the well during redevelopment shall be discharged into an approved orifice into an energy dissipater erosion control system. No discharge water shall be discharged directly into any surface waters.

7. Contractor Qualifications and Training: All personnel involved in the well cleaning shall be certified and trained in the Aqua-Freed or Alternative/Equivalent process. The Contractor must provide proof documentation as part of the bid requirements that all personnel that will be involved in on-site work are properly trained in utilizing all equipment and chemicals involved in the proposed well cleaning process. The Contractor shall provide documentation of having treated a minimum of 25 wells utilizing the proposed well cleaning and rehabilitation process since 2010. Site workers shall wear personal protective clothing and devices as necessary to meet all health and safety requirements in order to perform the work in a safe manner that meets all OSHA requirements.

3.04 HYDRO-FRACTURING METHODS

- A. Following the Aqua Freed or Alternative/Equivalent method of redevelopment of Bedrock Well No. 2, the well may be redeveloped by hydro-fracturing methods. This procedure is to be done by isolating zones of the borehole with a pair of inflatable packers, and pressurizing these zones with water. Pressures of up to 3,000 psi shall be attained; and injection rates of 200 gpm shall be attained. The Contractor shall inject a minimum of 1,500 gallons per zone on a continuous basis.
- B. Bedrock Well No. 2 is approximately 484 – 500 feet in depth. The Contractor shall plan to isolate up to ten (10) zones between the bottom of the well casing (84 feet) and the bottom of the borehole.
- C. The Contractor shall video inspect the borehole following Aqua Freed or Alternative/Equivalent method of redevelopment to inspect work and to identify the fracture zones, and potential hazards, such as enlargement of the borehole wall that would compromise the setting of a packer.
- D. The Owner will provide the Contractor with water from nearby town hydrants at no expense to the Contractor. Operation of the hydrants and valves will be the sole responsibility of the Owner. Under no circumstances will surface water be allowed for redevelopment purposes. The water shall be chlorinated before it is injected into the borehole. The chlorine concentration shall be discussed with the Engineer in advance.
- E. The Contractor shall prepare detailed records of the well development work. In the heading, the record shall include Contractor's name and contact information, the well identification, date of work, and name of the client (Town of Seabrook), and the equipment used on the project. Beneath the heading, the Contractor shall record, in chart form, the actual time, water levels in observation wells, depth of pressurization, maximum and minimum water pressure (psi) attained, injection rate (gpm), and any changes in these during the development process.

3.05 REPLACEMENT OF PUMPING EQUIPMENT

- A. Clean the pump, discharge piping, and appurtenances and replace after the well has been satisfactorily cleaned. Prior to reinstallation of the pumping unit, the Contractor shall inspect the pump column piping, and motor and report the condition of the unit to the Owner.

- B. Carefully reinstall the pumping unit, stilling tubes with transducer guards, new bolts and gaskets on the dismantled discharge head and piping, stilling tubes, and water level transducer to the original depth.
- C. The Contractor shall perform all electrical operations necessary for the removal of the existing pumping unit and reinstallation. All electrical work shall conform to the latest standards of all state and local requirements having jurisdiction. In general, all work shall comply with the latest requirements of the National Electrical Code.
- D. The Contractor shall furnish corrosion resistant power cable clamps along the pump column located every 10 feet and a steel cable guard where it passes the stage assembly to prevent damage from contact with the well casing.
- E. The Owner shall be satisfied that the pump and piping have been restored to the same condition that existed prior to disassembly by the Contractor.
- F. The Contractor shall remove the current 1" polyethylene stilling well and replace it with 1 1/4" threaded, rigid schedule 40 PVC. The bottom 10 feet of the PVC shall be perforated as to allow flow of water. A threaded cap shall be installed on the bottom of the stilling well. The stilling well shall be connected and hung on the 4" galvanized steel drop pipe and shall be installed to the same depth as the current polyethylene stilling well (255 feet). No glue is to be used during construction of the PVC stilling well.

3.06 DISINFECTION OF WELL AND WATER QUALITY TESTING

- A. Prior to putting the well into operation, the Contractor shall disinfect the well. The method of disinfection shall be approved by the Owner prior to use and shall result in a chlorine residual concentration in the well of at least 50 ppm. The solution shall remain in the well at least 8 hours prior to flushing. The Contractor shall pump the water in the well to waste, following NHDES discharge permit approval and dechlorination procedures, until the chlorinated water has cleared. The Owner will collect water samples and deliver them to a state approved laboratory for bacteriological, VOC, and general chemistry analysis.
- B. Upon receipt of successful bacteriological, VOC and general chemistry test results the well shall be acceptable for pumping into the system.
- C. In the event that positive reports of contamination or excessive chemical parameters are received, the well and discharge line shall be flushed and chlorinated as many times as necessary to meet the approval of the NHDES at no additional cost to the Owner.
- D. The Owner will pay for the bacteriological, VOC and general chemistry testing as described in Article 3.03.A.3 and Article 3.06 B. The Contractor shall pay for any additional testing required to meet NHDES approval in the event that positive reports of contamination or excessive chemical parameters are received.

3.07 CLEAN-UP AND BASIS OF ACCEPTANCE

- A. Upon completion of all specified work at the well site, the pump station and surrounding area shall be left in a condition equal to or better than existed prior to the work. All materials used in the work but not permanently installed shall be removed from the site.
- B. Final acceptance of the specified work for the well will be made by the Owner, based upon the well meeting the capacity criteria as follows:
 - 1. Specific capacity of Bedrock Well #2: The 2008 well cleaning produced a specific capacity of 2.24 gallons per minute per foot of drawdown (gpm/ft) at a 276 gallon per minute pumping rate at the end of a four hour pumping test. The original specific capacity of the well is unknown. The Contractor shall attempt to return the specific capacity of Bedrock Well #2 to the 2008 rate of 2.24 gpm/ft at 276 gpm or better.

END OF TEXT

See Attached Plates:

Plate 1 – Bedrock Well #2 Redevelopment Report (April 2008)
Plate 2 – Bedrock Well #2 Pump Setting Diagram (October 2010)

SECTION 11213
MISCELLANEOUS WORK

Not Applicable

END OF SECTION