

EXHIBIT A

SECTION 2 – SUMMARY AND SPECIFICATIONS

2.1. Summary: Construction and installation of one monitoring well to a depth of between 100 and 125 feet below land surface with casing, screen, and related appurtenances.

2.2. Specifications:

2.2.1. SCOPE OF WORK: The work to be done hereunder includes the furnishing of all labor, material, transportation, tools, supplies, plant, equipment and appurtenances, unless hereinafter specifically exempted, necessary for the complete and satisfactory construction, disinfection, and testing of the proposed groundwater monitoring wells.

The AWWA Standard for Deep Wells, published by the American Water Works Association, and the Illinois Water Well Construction Code, shall govern the construction of the proposed improvements except as herein specified. In case of conflict these specifications herein shall govern.

2.2.2. PERMITS, CERTIFICATES, LAWS AND ORDINANCES: The Contractor shall, at his own expense, procure all permits, certificates and licenses required by the Contractor by law for the execution of his work. He shall comply with all federal, state or local laws, ordinances, or rules and regulations relating to the performance of the work.

2.2.3. LOCATION: The well to be constructed herein is located at the Urbana Landfill in the approximate location shown on Figure 1 and is a replacement for present Monitoring well 4G105. The exact location of the well shall be staked by the Consultant prior to the arrival of the Contractor's equipment. A pre-bid site visit will be scheduled to examine the proposed well location.

2.2.4. LOCAL CONDITIONS: One 2" well will be constructed to monitor the quality of water in the Glasford Formation, the top of which is reported to be located about 600 feet NGVD, approximately 100 to 125 feet below land surface in this area. Logs of wells on or adjacent to the landfill property have encountered the Formation at depths of 75 to 95 feet below land surface and were finished in sand and/or gravel at depths above 550 feet NGVD. The logs of Monitoring Wells 5G101 and 5G102 as well as that of Monitoring Well 4G105 are provided herein to show the probable geologic materials that might or will be encountered during drilling. Monitoring Well 5G101 is located approximately 1480 feet west of the proposed site of the new well. Monitoring Well 5G102 is located approximately 1700 feet northwest and Monitoring Well 4G105 is located approximately 675 feet north (Figure 1). Subsurface waste is not likely to be encountered.

This information regarding subsurface conditions is intended to assist the Contractor in preparing his bid. However, the Owner does not guarantee its accuracy, nor that it is necessarily indicative of conditions to be encountered in sinking the well to be constructed hereunder, and the Contractor shall satisfy himself regarding all local conditions affecting his work by personal investigations, and neither the information contained in this section nor that derived from maps or plans or from the Owner or his agents or employees, shall act to relieve the Contractor from any responsibility hereunder or from fulfilling any and all of the terms and requirements of his contract.

2.2.5. BOUNDARIES OF WORK: The Owner shall provide land or right-of-way for the work specified in this contract and make suitable provisions for ingress and egress, and the Contractor shall not enter on or occupy with men, tools, equipment or material, any ground outside the property of the Owner without the written consent of the Owner of such ground. Other Contractors and employees or agents of the Owner may for all necessary purposes enter upon the work and premises used by the Contractor, and the Contractor shall conduct his work so as not to impede unnecessarily any work being done by others on or adjacent to the site.

2.2.6. PROTECTION OF SITE: Excepting as otherwise provided herein, the Contractor shall protect all structures including walks, pipelines, and roads during the progress of his work. The Contractor shall remove from the site all cuttings, drilling debris, and unused materials. The Contractor shall, upon completion of the work, restore the site as nearly as possible to its original condition, including the replacement, at the Contractor's sole expense, of any facility or landscaping which has been damaged beyond restoration to its original condition.

2.2.7. PROTECTION OF UTILITIES: There are no utilities at the proposed well location. However, the Contractor shall maintain in full operating condition all active utilities, sewers and drains encountered along the destination to this work. Any damage to the existing utilities as a result of this construction shall be repaired to the satisfaction of the Owner of the utility at the Contractor's expense. Existing utilities may be relocated with the approval of the Owner of the utility. This relocation shall be at the Contractor's expense, as specified by the utility Owner, and shall be sufficient to clear the proposed improvement.

2.2.8. WATER AND ELECTRICITY: The Contractor shall provide a means for discharging all water produced during the drilling operation. The Contractor shall provide a means for obtaining and transporting the water. All temporary water piping, valves, hose connections, etc. incidental to the use of water by the Contractor, shall be provided by the Contractor at no additional cost to the Owner. At completion of the contract, all temporary water piping, etc. shall be removed from the premises. The method shall be approved by the Consultant. Electrical services, if required during construction, shall be provided by the Contractor. Electrical Power is not available at the site.

2.2.9. MEASUREMENT AND PAYMENT: The CONSULTANT shall be the sole judge of measurements of depth and other tests necessary to fulfill requirements of these Contract Documents. Variations in the amount of work accomplished under this Contract from that shown in the Contract Documents will be reflected by an addition to or deduction from the Contract Price for such variations in the quantities and the change shall be fixed in accordance with the Contractor's Bid and the Contract Documents.

2.2.10. STORED MATERIALS: If it is necessary to store materials, they shall be protected in such a manner as to insure the preservation of their quality and fitness for the work. All stored materials shall be inspected at the time of use in the work, even though they may have been inspected and approved before being placed in storage.

The Contractor may use the proposed site to stockpile materials and equipment incidental to its construction. Stockpiling shall be confined to such cleared areas as may be approved by the Consultant. Any permits, rights of access and egress, and easements if required for the construction indicated shall be obtained for the Contractor by the Owner.

2.2.11. BARRICADES AND WARNING SIGNS: There is no traffic at the proposed well location. If applicable however, when any section of road is closed to traffic, the Contractor shall provide, erect, and maintain barricades, red flags, and torches or lights at each end of the closed section and at all intersecting roads.

If during the progress of the work it is necessary to provide access to private property along the road, the Contractor shall provide, erect and maintain within the closed portion of the road, such barricades, signs, flags and torches or lights as may be necessary to protect the work and to safeguard local traffic.

When traffic is to be permitted to use the road during construction, the Contractor shall protect the work and provide for safe and convenient public travel by providing, erecting, and maintaining such barricades, red flags and torches or lights as are necessary.

2.2.12. CLEAN-UP: The Contractor shall leave the construction site and all material and equipment and storage areas neat and clean on a daily basis. The Contractor shall not allow trash and debris to accumulate during the construction period and shall remove all trash and debris before final acceptance will be granted. Under no circumstances will trash or debris from construction be permitted on properties adjoining the project site. Open burning of trash will not be permitted.

2.2.13. SUBMITTAL OF APPLICATION FOR PAYMENT: Payment requests will be considered by the Owner at the completion of the work. In order for the review

process to be completed, the Contractor shall submit his application for payment to the Consultant.

2.2.14. CONSULTANT'S REVIEW: Within seven (7) days after receipt of the Contractor's progress payment request, the Consultant shall advise the Contractor whether or not he will recommend its payment. If he will not recommend it, the Contractor shall within three (3) days make revisions suggested by the Consultant and return the request to the Consultant for further review.

2.2.15. NEW MONITORING WELL : A nominal 6-inch diameter inner hole to a depth sufficient to penetrate no less than 10-feet into the first permeable (target) zone of the Glasford Formation. Formation samples will be collected from several depth intervals as directed by the Consultant: samples may be collected by drill-core methods including shelby tube apparatus. The depth of penetration will be determined by the Consultant based on these geologic samples.

A well screen of 2-inch diameter with an overall length of 10 feet will be set. The depth of the setting of the screen, and casing is subject to the Consultant's approval. The casing shall be secured to the well screen by appropriate threaded couplings. A filter pack consisting of appropriately sized sand grains will be placed between the 6-inch nominal hole and the screen from the base of the screen to 1-foot above the top of the screen.

A 2-inch I.D. inner casing pipe extending from the top of the screen in the target zone encountered to 2.5 feet above existing land surface shall be installed. A grout seal shall be placed around the 2-inch I.D. casing from 1-foot above the target zone to the surface.

2.2.16. METHOD OF DRILLING: The Contractor is not restricted to any drilling method from the surface to 50 feet below the surface. Below 60 feet from the land surface or into the Glasford Formation, the Contractor shall not use any drilling method that has the potential to introduce any material except clean water into the Glasford Formation. Reverse circulation, center stem recovery, reverse-circulation air rotary, or hollow-stem, continuous-flight auger are preferred as the method of drilling into the Glasford Formation. Contractor must indicate the drilling method(s) proposed with the submission of bid.

2.2.17. FORMATION SAMPLE COLLECTION: The Contractor will cooperate with and assist the Consultant in the collection of formation samples during well construction. Consultant will collect samples on a regular basis from all formations penetrated.

2.2.18. GEOPHYSICAL DATA COLLECTION: Following completion of the borings but prior to the well construction (installation of casing), the Contractor will cooperate with and assist the Consultant in the collection of geophysical data if deemed

necessary. These data will be obtained by the Illinois State Geological Survey using downhole logging methods.

2.2.19. MONITORING WELL CASINGS: The inner casing to be used hereunder as a part of the permanent well shall be new, threaded PVC (Schedule 80) water well casing having a 2-inch minimum I.D. Casings shall be completed with a locking cap.

2.2.20. SCREEN: The screens to be furnished and installed hereunder shall be of the continuous slot type and be constructed of Stainless Steel or equivalent. Contractor shall verify formation samples with sieve analysis prior to ordering the screen.

2.2.21. SCREEN OPENING: The screen slot size shall be selected by the CONSULTANT after a sieve analysis is run on formation samples by the CONTRACTOR. The openings shall be free of jagged edges, irregularities, or anything that will accelerate or contribute to clogging or corrosion.

2.2.22. STRENGTH: The screen shall have adequate strength to resist external forces applied to it after installation and minimize the likelihood of damage during installation. If required by the Consultant, the Contractor shall submit for approval drawings and other information showing the design and method of construction of the screen.

2.2.23. FITTINGS: The screen shall be provided with such fittings as are necessary to seal tightly the top to the casing and to close the bottom. The screen shall be attached to the casing with a suitable coupling. All fittings, except plugs and seals, but including couplings, where required for joining sections of the screen, shall be constructed of the same material as the screen.

2.2.24. FILTER PACK: The filter pack to be used around the screen and adjoining casing pipe shall be a commercial filter sand pack of size to be determined by the CONSULTANT from the sieve analysis of the formation materials provided by the CONTRACTOR. The calculated volume of the pack material will be compared to the actual volume utilized. The filter pack will be installed in such a manner to allow for the measurement of the pack material and in such a manner to prevent any bridging of the pack material during installation. The pack material will extend to a measured one foot above the top of the screen interval. A bentonite seal of at least two feet in length shall be placed on top of the filter sand. The remaining annular space will be grouted from the top of the bentonite seal to land surface through a tremie pipe.

2.2.25. WELL DEVELOPMENT: The Contractor shall furnish all necessary pumps, compressors, plungers, bailing, or other needed equipment and shall develop each well by such approved methods as shall be necessary to give the maximum yield of water per foot of the drawdown and extract from the water-bearing formation the maximum practical quantity of such sands as may, during the life of the well, be

drawn through the screen when the well is pumped under maximum conditions of drawdown.

2.2.26. STEEL PROTECTIVE COVERS: The Contractor shall furnish and install an appropriately sized steel protective cover with hinged and locking covers as manufactured by Timco Manufacturing Co. Inc., Prairie Du Sac, WI 53578, or equivalent. The steel protective covers shall be 5-feet in length extending six inches above the top of the monitoring well casing. The steel protective cover shall be encased in concrete sufficient to secure it to the monitoring well casing and provide a secure foundation. The concrete foundation and surrounding area shall be graded so as to prevent surface water from collecting around the well casing.

2.2.27. GROUTING MATERIAL: Grout shall be proportioned of bentonite and the minimum quantity of water required to give a mixture of such consistency that it can be forced through the grout pipes. The mixture, method of mixing, and consistency of grout shall be approved by the Consultant.

2.2.28. PLACEMENT OF GROUT: Before proceeding with the placing of the grout, the Contractor shall secure the Consultant's approval of the method for grouting. No method will be approved that does not specify the forcing of grout from the bottom of the space to be grouted towards the surface. The grouting shall be done continuously and in such a manner as will insure the entire filling of the annular space in one operation. No drilling operations or other work in the well will be permitted within 72 hours after the grouting of casings. If quick-setting cement is used, this period may be reduced to 24 hours.

2.2.29. GROUTING LINERS: Where required by the Consultants, liners shall be grouted. The method to be used shall be detailed by the Contractor for the approval of the Consultant.

2.2.30. TESTING FOR PLUMBNESS AND ALIGNMENT: All holes shall be constructed, and all casing and liners set round, plumb, and true to line as defined herein. To demonstrate the compliance of his work with this requirement, the Contractor shall furnish all labor, tools, and equipment and shall make the tests described herein in the manner prescribed by, and to the satisfaction of, the Consultant. Tests for plumbness and alignment must be made after the complete construction of the well and before its acceptance. Additional tests, however, may be made by the Contractor during the performance of the work. No specific payments shall be made by the Owner for making these tests.

2.2.31. DESCRIPTION OF TEST: Plumbness and alignment shall be tested by lowering into the well to the finished depth a section of pipe 20 feet long or a dummy of the same length. The outer diameter of the plumb shall not be more than ½ inch smaller than the diameter of that part of the casing or hole being tested. If a dummy is used,

it shall consist of a rigid spindle with three rings of appropriate width. The rings shall be truly cylindrical and shall be spaced one at each end of the dummy and one ring in the center thereof. The central member of the dummy shall be rigid so that it will maintain the alignment of the axes of the rings.

2.2.32. REQUIREMENTS FOR PLUMBNESS AND ALIGNMENT: Should the plumb or dummy fail to move freely throughout the length of the casing or hole to a depth of 40 feet or should the well vary from the vertical in excess of two-thirds the smallest inside diameter of that part of the well being tested per 40 feet of depth, or beyond limitations of this test, the plumbness and alignment of the well shall be corrected by the Contractor at his own expense. Should the Contractor fail to correct such faulty alignment or plumbness, the Consultant may refuse to accept the well. The Consultant may waive the requirements of this paragraph for plumbness if, in his judgement: (a) The Contractor has exercised all possible care in constructing the well and the defect is due to circumstances beyond his control; (b) the utility of the completed well will not be materially affected; (c) the cost of necessary remedial measures will be excessive. In no event will the provisions of this paragraph with respect to alignment be waived.

2.2.33. TIME OF DISINFECTION: After the well has been completely constructed, it shall be thoroughly cleaned of all foreign substances, including tools, timbers, rope, debris of any kind, cement, oil, grease, joint dope and scum. The casing pipe shall be thoroughly swabbed, using alkalis if necessary, to remove oil, grease, or joint dope. The well shall then be disinfected with a chlorine solution.

2.2.34. CHLORINE SOLUTION: The chlorine solution used for disinfecting the well shall be of such volume and strength and shall be so applied that a concentration of at least 100 ppm of chlorine shall be obtained in all parts of the well. Chlorine solution shall be prepared and applied in accordance with the directions of, and to the satisfaction of, the Consultant, and shall remain in the well for a period of at least twelve hours.

2.2.35. SAMPLES AND RECORDS: The Contractor shall keep an accurate record of the location of the top and bottom of each stratum penetrated and other pertinent data and an accurate record as to the size and length of casing pipe installed in the well. The Contractor shall save and deliver to the Illinois State Geological Survey, Urbana, Illinois, a copy of the record and a sample of material taken from each stratum penetrated during the drilling and at each change in formation. Samples shall be forwarded to the State Geological Survey in accordance with their instructions.

The Contractor shall also submit a daily report describing the nature of material encountered, the Work done during each day, including the items of Work accomplished, such as depth drilled, casing set, etc., the water level in the well at the beginning and end of each shift and such other pertinent data as he is requested to make a record of by the Consultant.

Copies of all reports are to be furnished to the Consultant and Owner. No specific payments shall be made by the Owner or Consultant for these reports.

In addition to the above, adequate formation samples shall be taken for sieve analysis to verify screen slot size. The Contractor shall have the sieve analysis performed and shall bear all costs necessary for the test.

2.2.36. COMPLETION DATE

All work subject to this ITB shall be completed by April 1, 2022 unless a modification is mutually agreed to by the parties.



