

ADVERTISEMENT FOR BIDS

City of Caro
Caro, MI
Type I Water Supply Well #9

General Notice

The City of Caro is requesting Bids for the construction of the following Project:
Type I Water Supply Well #9

Sealed Bids for the construction of the Project will be received at the Caro Municipal Building, 317 S. State Street, Caro, MI 48723 until Monday, October 30th, 2023 at 10:00 am local time. At that time, the Bids received will be publicly opened and read.

The Project includes the following Work:

Mobilization 1- Pilot Boring, Geophysical Logging, Observation Well OW-1 Installation, and Short-Term Aquifer Test (Step Test) (8 Hours)

Mobilization 2 - Observation Well OW-2 Installation, Test (Production) Well TW-1 Installation, Step Test and Long-Term Aquifer Testing (24 Hours)

Bids will be received for a single prime Contract.

Obtaining the Bidding Documents

Prospective Bidders may examine the Bidding Documents at the Caro City Hall on Monday through Friday 8 a.m. to 5 p.m. and may obtain copies of the Bidding Documents from the City Clerk.

The City will not be responsible for full or partial sets of Bidding Documents, including Addenda if any, obtained from sources other than the City.

Pre-bid Conference

A pre-bid conference will be held at the proposed well site (next to 130 Northview Drive, Caro MI) on October 13, 2023 at 11:00 am.

Instructions to Bidders

The City of Caro, hereinafter called the Owner, reserves the right to reject any or all Proposals and to waive any formality or technicality in any Proposal in the interest of the Owner.

+ + END OF ADVERTISEMENT FOR BIDS + +



Request for Quotation (RFQ)
City of Caro Type I Water Supply Well #9
Mary Jane Court Site
October 5, 2023

WSP USA Environment & Infrastructure, Inc. (WSP) has been retained by the City of Caro (City) to procure estimated costs for drilling contracting (Contractor) services to assist with an ongoing water supply evaluation for the City. Any addendums to this RFQ will be provided under separate cover. A mandatory pre-bid walk-through will be held at the proposed well site on October 13th, 2023, at 11:00am. For reference the pre-bid walk will be held across the street from 130 Northview Drive, Caro, Michigan.

The proposed Type I well location parcel, which is the same parcel that contains the City's current production Well #6, is located on the north side of Mary Jane Court, and is east, south and west of Northview Drive in Section 34, Almer Township, Tuscola County, Michigan. The Site is owned by the City of Caro and is currently a park (Northwood Heights Park) that also contains the well house for the City's production Well #6. The proposed production well location is approximately 100 feet northwest of Well #6 and approximately 1,250 feet east of Luder Road and 2,150 feet north of Gilford Road in the City of Caro, Michigan.

Please prepare proposed costs for the required work activities as outlined below and as provided in the attached well specifications for the installation of observation wells, and a Type I water supply well (test well) with an anticipated test well capacity that will be between 300 to 400-gpm and potentially up to 1,030-gpm. It is expected that the test (production) well will be constructed using open hole construction methods in bedrock. However, depending on the geology encountered, it is also possible that the (production) well may need to be constructed with a well screen. Anticipated construction details of the water supply well and observation wells are included the attachment. Also included in the attachment is a site schematic that shows the locations of the water supply and observation wells and other pertinent site information.

Costs should be separated into mobilizations as listed below. If Contractor has alternate suggestions for changes to the proposed scope listed below, they should be discussed with WSP prior to making changes. Any agreed upon changes will be documented with an Addendum to this RFQ.

Feel free to call or email with questions or suggestions. Any questions regarding this RFQ and/or this project must be directed to Mark Sweatman at WSP.

Drilling will be conducted using rotary methods. Contractor shall propose the method to be used in the quotation. Contractor shall determine if a large diameter surface casing



(conductor pipe) will be needed to facilitate well installation activities, and if necessary how the pipe would be installed and grouted. The proposed depths of the test wells listed below are for budgeting purposes only. The selected Contractor will be responsible for documenting final depths of the well casings (screens if used) and boreholes.

Contractor shall have a demonstrated high level of experience installing large diameter production wells, over 12-inch, and while not part of this RFQ, shall be experienced with the installation and operation of large capacity submersible pumps.

Three brief project descriptions of applicable work experience and references shall also be submitted.

Mobilization 1- Pilot Boring, Geophysical Logging, Observation Well OW-1 Installation, and Short-Term Aquifer Test (Step Test) (8 Hours)

- Install any required soil erosion control materials such as silt fence and materials to ensure aquifer testing discharge water does not produce erosion for both Mobilization 1 and 2.
- Drill one pilot hole at the proposed location of Observation Well (OW-1) using rotary methods to a depth of approximately 365 feet below ground surface (bgs).
- The top of the bedrock surface is at an estimated depth of 220-ft (bgs).
- Install 8-inch casing into the bedrock and develop a 7.75-inch diameter open hole observation well to a total depth of 365-feet bgs.
- Collect and retain soil and bedrock samples at 5-foot depth intervals.
- Upon completion of the pilot boring complete a geophysical logging including natural gamma radiation and electrical resistivity and conduct a hole caliper log. This pilot boring is to be converted into one of the two observation wells.
- Maintain a boring log of earth materials encountered during drilling and provide the log of the pilot boring upon completion. The boring log must, at a minimum, identify water loss, pull down pressure, earth materials encountered, geophysical information, and other pertinent information.
- Grout the well with neat cement in accordance with the attached specifications.
- Leave the well casing above grade with locking cap.
- Fully develop and disinfect the well in accordance with the attached requirements/specifications.
- Complete the well installation log, and a digital video log of the well, as listed in the attached specifications.
- Conduct an 8-hour aquifer specific capacity test (step) on the 8-inch observation well. Anticipated discharge volume will be 100 and 200 gpm for the first and second steps (at one hour each), with the third step completed at a pumping rate of 300-gpm for a period of 6 hours. Provide all equipment required to perform



the test including a submersible pump drop pipe, up to 300-feet of discharge hose/pipe, flow meter/totalizer, orifice discharge, flow rate control valve, and a generator with fuel to run the pump.

- The standard short-term pumping test shall consist of a 12-hour rest period, an 8-hour pumping period, and a minimum of an 8-hour recovery period. Contractor shall measure and record both electronic water level data and manual water levels from the well during the pumping test.
- Provide pressure transducers, data logging equipment, and any other equipment necessary to measure and record the water level data. The measurement of water levels shall meet the requirements outlined in Michigan's Department of Environment, Great Lakes, and Energy (EGLE) guidance document titled, "Aquifer Test Requirements for Public Water Supply Wells" (ODWMA-399-003), dated January 14, 2013. The proposed frequency of water level measurements shall be discussed with WSP for concurrence prior to initiation of the pumping test. Electronic data shall be provided to WSP in the datalogger format and in Microsoft Excel format.
- The aquifer test discharge line must have a groundwater collection sample port. The Contractor shall assist WSP with the collection of water samples near the end of each pumping test via a Contractor installed sample port. Selection of the analytical laboratory and water samples analyses will be performed by WSP.
- Remove equipment when test is complete.
- All data and notes collected prior to, during, and after the pumping phase of the aquifer performance tests shall be provided to WSP and the City within one week of the completion of the aquifer performance testing.
- Provide recommendations, if need be, for the large diameter Type I Test Well.

Mobilization 2 - Observation Well OW-2 Installation, Test (Production) Well TW-1 Installation, Step Test and Long-Term Aquifer Testing (24 Hours)

- Mobilization 2 work shall only be approved to commence once Mobilizing 1 work is completed and results are analyzed and determined to be satisfactory and determined by the WSP and the City of Caro.
- Drill and construct one 5-inch observation well (OW-2) using rotary methods to an estimated depth of 365-ft bgs.
- Install the casing into the bedrock and develop a 4.5-inch diameter open hole observation well to the total anticipated depth of 365-feet bgs.
- Grout the well with neat cement in accordance with the attached specifications.
- Fully develop and disinfect the well in accordance with the attached requirements.



- Keep a log of earth materials encountered and provide log of well when complete. Leave casing above grade with locking cap.
- Drill and construct one 16-inch diameter Type I Test Well (TW-1) using rotary methods.
- Test Well should be black steel casing well installed and grouted into the bedrock at an estimate depth of 220-feet bgs.
- No sooner than 24-hours after setting the Test Well casing, develop the remainder of the Test Well using 13.5+/- inch diameter open hole Test Well to an estimated depth of 365-feet bgs. Final design of the Test Well will be determined from data generated in Mobilization 1.
- Grout the well with neat cement grout in accordance with the attached specifications, and appropriate sand pack if pipe size screen is used.
- Keep a log of earth materials encountered and provide log of well when complete. Leave casing above grade with locking cap.
- Fully develop and disinfect the well in accordance with the attached requirements.
- Complete well installation log, and a digital video log of the well as listed in the attached specifications.
- Conduct an 8-hour aquifer specific capacity test (step) on the 16-inch production well. Anticipated discharge volume will be 100 and 200 gpm for the first and second steps (at one hour each step), with the third step completed for 6 hours at a rate of 300-gpm. Provide all equipment to perform the test including a submersible pump drop pipe, up to 300-feet of discharge hose/pipe, flow meter/totalizer, orifice discharge, flow rate control valve and generator with fuel to run the pump.
- The standard short-term pumping test consists of a 12-hour rest period, an 8-hour pumping period, and a minimum of an 8-hour recovery period. Collect both electronic water level data and manual water levels from the well during the pumping test.
- Conduct a long-term 24-hour constant rate aquifer pumping test with pre and post pumping data collection on the 16-inch production well. Anticipated discharge volume will be 300-gpm. Provide all equipment required to perform the test including a submersible pump, stilling tube for use in collecting water levels, drop pipe, up to 300-feet of discharge hose/pipe, flow meter/totalizer, orifice discharge, flow rate control valve and generator with fuel to run the pump.
- Measure and record both electronic water level data and manual water levels from the three wells (TW-1, OW-1 and OW-2) during the pumping test. Provide pressure transducers, data logging equipment, and any other equipment necessary to obtain and retrieve the water level data. The measurement of water levels shall meet the requirements outlined in Michigan's Department of



Environment, Great Lakes, and Energy (EGLE) guidance document titled, "Aquifer Test Requirements for Public Water Supply Wells" (ODWMA-399-003), dated January 14, 2013. The recommended maximum time-interval between pressure transducer readings is one minute. The proposed frequency of water level measurements shall be discussed with WSP for concurrence prior to initiation of the pumping test. Electronic data shall be provided to WSP in the datalogger format and in Microsoft Excel format.

- The aquifer test discharge line must have a groundwater collection sample port. Contractor shall assist WSP with the collection of water samples near the end of each pumping test via a Contractor installed sample port. Selection of the analytical laboratory and water samples analyses will be performed by WSP.
- Remove equipment when test is complete.
- Restore well sites to pre-existing conditions.
- All data and notes collected prior to, during, and after the pumping phase of the aquifer performance tests shall be provided to WSP and the City within one week of the completion of the aquifer performance testing.

WSP and the City appreciate your submittal to this RFQ for the Mary Jane Court well site. We look forward reviewing the bids, procuring a contractor, and implementing the outlined scope of work.

If you have any questions, please contact us.

Sincerely,

A handwritten signature in blue ink that reads "Mark B. Sweatman".

Mark B. Sweatman
Vice President, Geologist
(517) 404-7165
mark.sweatman@wsp.com

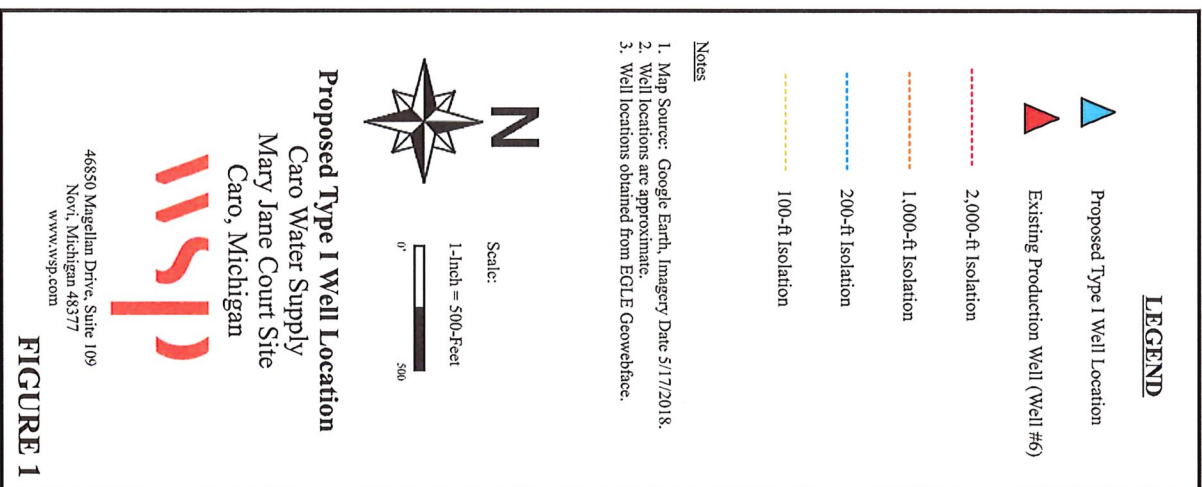
A handwritten signature in blue ink that reads "Robin S. DeWyre".

Robin S. DeWyre
Vice President, Geologist
(517) 404-0586
robin.dewyre@wsp.com

Attachments: Site Schematic
Bid Specifications
Bid Form
Attachment A
Attachment B
Attachment C



P:\Municipal\Caro Water Supply Evaluation Report\Figures\Figure 2-Proposed Type 1 Well Location



Type I
WATER WELLS

PART 1 - GENERAL

1.01 Work Included

As shown in the Request for Quotation (RFQ), this work includes the mobilization, furnishing of all labor, material and equipment for the construction and testing of proposed well(s), baseline video inspection, aquifer performance testing, water quality testing, and site restoration.

1.02 Contract

The Contractor shall be retained directly by City of Caro (City) and shall perform all work in accordance with the agreement between the City and Contractor.

1.03 Regulations

All work completed under this contract shall be completed in accordance with Part 127, 1978 P.A. 368 (Michigan Public Health Code), Section 12704, and all rules promulgated thereunder.

All work shall comply with the current Well Construction Code Administrative Rules.

Further, all work shall comply with local, state, and federal rules, guidelines, and regulations.

If discrepancies are noted between regulations as noted above and this request for quotation, these discrepancies should be discussed and corrected at the time of submittal of the quotation.

1.04 Certificate of Registration

The Contractor shall have a current State of Michigan certificate of registration and shall not subcontract any work related to this work without prior approval of WSP and the City.

1.05 Records Required

The well drilling contractor shall provide the Owner with water well and pump records for all wells (Michigan Department of Environmental Quality form EQP-2017). The record shall be submitted electronically via EGLE's Wellogic program following review and approval by WSP.

1.06 Scheduling of Well Construction

The Contractor shall work with WSP to coordinate and schedule any drilling or testing. The coordination of the schedule will be dependent on the Contractor's, WSP's, and City of Caro's schedules.

The Contractor shall construct, if required, observation wells before the test well is constructed. Logs of the observation wells are to be provided to the WSP for review before the test well is constructed.

PART 2 - PRODUCTS

2.01 Material

A. Casing

The steel pipe that is used as the permanent well casing shall be new pipe that is manufactured in compliance with the standards of ASTM specification A53, A106, AP15L or A589. Steel pipe which is used as permanent well casing shall be at least standard weight. Suggested weights and dimensions shall be supplied in accordance with the following table.

STEEL WELL CASING PIPE WEIGHTS AND DIMENSIONS*						
Nominal Pipe Size (Inches)	Weight Weight/ Schedule	Lbs Plain End	Per Ft. Threaded/ Couplings	Wall Thickness (Inches)	Outside Diameter (Inches)	Inside Diameter (Inches)
1 1/4	Std. 40	2.27	2.30	.140	1.660	1.380
1 1/2	Std. 40	2.72	2.75	.145	1.900	1.610
2	Std. 40	3.65	3.75	.154	2.375	2.067
2 1/2	Std. 40	5.79	5.90	.203	2.875	2.469
3	Std. 40	7.58	7.70	.216	3.500	3.068
3 1/2	Std. 40	9.11	9.25	.226	4.000	3.548
4	Std. 40	10.79	11.00	.237	4.500	4.026
5	Std. 40	14.62	15.00	.258	5.563	5.047
6	Std. 40	18.97	19.45	.280	6.625	6.065
8	Std. 40	28.55	29.35	.322	8.625	7.981
10	Std. 40	40.48	41.85	.365	10.750	10.020
12	Std.	49.56	51.15	.375	12.750	12.000
14	Std.	54.57	57.00	.375	14.000	13.250
16	Std.	62.58	65.30	.375	16.000	15.250

The casing shall extend not less than 25 feet below, and terminate not less than 12 inches above, the ground surface. The top 25 feet of a well casing shall not be used as a suction line. Casing may be beveled for field welding or threaded for couplings. Couplings shall be field welded to the pipe.

The casing pipe includes a seal casing or packer, a pitless adapter when required, and a drive shoe as necessary for casing installation.

B. Screens

Screens, if used, shall be factory constructed of 304 stainless steel, and wire wound with a 304 stainless steel bottom plate. Gravel packing to obtain effective groundwater supply to the pumping station shall be included in the screen assembly. Slot openings ranging from 0.040 to 0.250 inch with a maximum percentage of open area of 20 percent are generally recommended. Proper screen length is to be accomplished by welding or couplings.

The length and slot size of the screen shall be designed by the Contractor, based upon the gradation and thickness of the water bearing formation. The gravel filter media used in conjunction with the screen shall be designed by the Contractor as a complete system to provide production of the design rate indicated. All well design should be reviewed with WSP prior to construction.

C. Neat Cement Grout

Grouting shall be performed in accordance with EGLE DWRP-03-016 – Grouting of Community Water Supply Wells.

The Contractor shall place neat cement grout in the annular space between the casing and bore hole for the entire length of the casing pipe. The mixture should weigh 15 lbs/gallon.

A mixture of Portland cement (ASTM C150, TYPE 1) and not more than six gallons of clean water per bag (one cubic foot or 94 pounds) of cement shall be used. The use of special cements such as bentonite to reduce shrinkage or other admixtures referenced in ASTM C494 to reduce permeability, increase fluidity, and/or control time of set, and the composition of the result slurry must be approved by the WSP before use.

The grout is to be placed from the bottom to the top in one continuous operation. All placements shall conform to the provisions of AWW-A100.

D. Gravel Pack Material

Gravel, if used for stabilizing the annular space between the screen and well bore, shall be at least 94 percent silica having a uniformity coefficient of no greater than 1.55. The gradation of the gravel shall be suitable for use with the screen and characteristics of the water bearing formation. Gravel pack shall be designed for the design flow indicated for the well.

PART 3 - EXECUTION

3.01 Method

The exact method of construction shall be left to the option of the Contractor. However, all holes shall be excavated by a rotary drilling method. The proposed method of drilling shall be reviewed with the WSP prior to beginning construction.

3.02 Construction of Wells

The steel pipe that is used for the permanent well casing shall be watertight throughout its length and shall have threaded or welded joints.

Couplings that are used on threaded steel casing shall be recessed or reamed and drifted couplings that are manufactured in compliance with the standards of ASTM specification A 589. Couplings shall have a design, taper and type of thread that is consistent with the thread of the pipe and threads shall not be exposed on the pipe.

Welded joints shall be in compliance with the specifications of table 2 and provide a structurally sound and watertight joint. Pipe ends shall be free of oil, grease, heavy rust, paint, or other foreign materials, except for tightly adherent mill scale. The weld bead shall be chipped and brushed to remove slag and other extraneous materials between passes.

MINIMUM NUMBER OF PASSES
FOR WELDING STEEL CASING

Pipe Diameter (inches)	Minimum Number Passes
4	2
5	2
6	3
8	3
10 or larger	4

The jointed casing string shall be lowered into the predrilled hole utilizing the drilling machine.

3.03 Driller's Report

During the drilling of the test hole, the Contractor shall prepare and keep a complete log setting forth the following:

1. The reference point for all depth measurements.
2. The depth at which each change of formation occurs.
3. The depth at which the first water was encountered.
4. The depth at which each lithologic stratum was encountered.
5. The thickness of each stratum.
6. The identification of the material of which each stratum is composed, such as:
 - a. Clay
 - b. Sand or Silt
 - c. Sand and Gravel-Indicate whether gravel is loose, tight, angular or smooth, color.
 - d. Cemented Formation-Indicate whether grains (if present) have natural cementing material between them, e.g., silica, calcite, etc.
 - e. Hard Rock-Indicate whether sedimentary bedrock, or igneous (granite-like, basalt-like, etc.) and rock type (limestone, shale, sandstone, etc.)
7. The depth interval from which each water and formation sample was taken.
8. The depth to the static water level (SWL) and changes in SWL with well depth.
9. Mud loss.

10. Down pressure and rate of drill advancement.

As a test well or an observation well is constructed, the Contractor shall also report:

1. Total depth of completed well.
2. All other pertinent information for a complete and accurate log; e.g., temperature, pH, and appearance (color) of any water samples taken.
3. Depth or location of any lost drilling fluid, drilling materials or tools.
4. The depth of the surface seal, if applicable.
5. The nominal hole diameter of the well bore above and below casing seal.
6. The amount of cement (number of sacks) installed for the seal, if applicable.
7. The depth and description of the well casing.
8. The description (to include length, diameter, depth, slot sizes, material, and manufacturer) and location of well screens or number, size and location of perforations.
9. The sealing off of water-bearing strata, if any, and the exact location thereof.

3.04 Formation Sampling Methods

The method of sampling will be left to the discretion of the Contractor; however, Contractor must collect, identify and store representative formation samples, collected with sufficient frequency and at sufficient increments of depth (5-foot minimum) to permit a thorough evaluation of the water-bearing properties of the formations encountered in drilling the test hole. Samples shall be stored by the Contractor and supplied to WSP, if requested.

3.05 Temporary Capping

The completed test well and the completed observation well(s) shall be capped with a water-tight welded or threaded cap or equipped with some other type of "vandal-proof" cover satisfying applicable state or local regulations or recommendations.

3.06 Sanitary Protection of Well

At all times during the progress of the work, the Contractor shall install a suitable threaded, flanged, or welded cap or compression seal so as to prevent any pollutants from entering the well. The watertight casing of any well shall extend not less than 18 inches above the final ground level elevation and not less than 36 inches above the normally anticipated flood level of record. Any equipment which will permit direct open access to the well shall also meet the above height requirements and shall be sealed or screened so as to prevent entrance of foreign matter or contaminants. The ground immediately surrounding the top of the well casing or pitless unit shall be sloped away from the well.

3.07 Casing Seating

A. Unconsolidated Formations

In unconsolidated formations the casing is supported by the collapse and compaction during well development. The completion of the sanitary surface seal will assist in supporting the casing.

B. Consolidated Formations

In consolidated formations the casing should extend to a specified depth into the formation to assure a proper seat and bottom seal. It shall be the responsibility of the Contractor to affect a proper seal. Where the casing is to be driven it shall be fitted with a drive shoe and shall be driven to refusal. Where the casing is to be placed (rather than driven), cement grout shall be placed in the bottom of the hole.

3.08 Grouting

After installation of the well casing, the casing shall be pressure grouted with neat cement. The Contractor shall verify the volume of neat cement used.

3.09 Screen for Test/Production Wells

The Contractor shall be responsible for providing the proper size screen opening, if used, and, if used, gravel pack material to stabilize the native formation. The Contractor shall also be responsible for providing a sand free water. The screen entrance velocity, for the proposed equipping rate of the well, shall not exceed 0.1 foot per second.

3.10 Placement of Stabilizing Gravel

If used, the contractor shall ensure that the method selected for placement of gravel allows proper placement around the well screen.

3.11 Well Alignment

The well(s) shall be constructed, and casing set round, plumb, and true to a line defined herein. If requested, to demonstrate compliance, the Contractor shall be prepared to provide all labor, tools, and equipment, and shall make the alignment tests described to the satisfaction, and in the presence of, the WSP.

If requested, plumbness and alignment shall be measured by lowering a "bird cage" plumb bob down the casing and measuring the deflection and direction of deflection every 5 feet for the entire length of the casing. The plumb bob shall be not more than 1/2 inch smaller than the inside diameter of the casing being tested.

Vertical variance of the casing pipe, more than 2/3 the inside diameter per 100 feet, shall be corrected by the Contractor at their own expense.

3.12 Well Development

The initial well development shall be by flushing and/or pumping to clear all drill cuttings from the bore hole and shall continue until clear water is obtained. It is suggested that the well shall be further developed by surging and over pumping until the water remains clear. For consolidated formations, the Contractor shall recommend the most appropriate development method such as jetting, air lift, air pressurizing, or other based on the encountered formation and discuss the possible options with WSP.

The Contractor shall maintain a log describing the development efforts, including hours worked, with a minimum of one hour per foot of screen if a well screen is used. If upon evaluation of aquifer test data by the WSP it appears that the well lacked proper well development, it will be the Contractor's responsibility to complete additional development and repeat the aquifer testing activities. Well disinfection will be considered inclusive of the development.

3.13 Video Inspection

Prior to any aquifer testing the contractor shall complete a downhole video record (i.e., video well inspection) of the test water supply wells. Any deficiencies noted by the video log shall be corrected by the Contractor at the Contractor's expense.

3.14 Aquifer Testing

Aquifer testing will consist of 8-hour step tests and a 24-hour long term aquifer test. The testing procedures shall meet the requirements outlined in Michigan's Department of Environment, Great Lakes, and Energy (EGLE) guidance document titled, "Aquifer Test Requirements for Public Water Supply Wells" (ODWMA-399-003), dated January 14, 2013. Data logging requirements shall be confirmed with WSP prior to initiating aquifer testing.

The placement and depth of the test pump shall be discussed with WSP for concurrence prior to installation of the pump. In general, the pump shall be installed near the top of the well screen, or in the case of an open hole bedrock well, above the bottom of the well casing. The pumping rate shall be at the apparent capacity of Observation Well OW-1 and Test Well TW-1. Contractor shall collect electronic digital data from the pumped test water supply well. Contractor shall install necessary transducers and data loggers in the test water supply wells. The measurement of water levels shall meet the requirements outlined in EGLE's guidance document titled, "Aquifer Test Requirements for Public Water Supply Wells" (ODWMA-399-003), dated January 14, 2013. The recommended maximum time-interval between pressure transducer readings is one minute. The proposed frequency of water level measurements shall be discussed with WSP for concurrence prior to initiation of the pumping test.

Contractor shall provide a sample port, and orifice plate. Contractor may, in addition to the orifice plate, use a flow volume totalizer and flow rate meter to be utilized during the aquifer performance testing. If flow meter is used, Contractor shall ensure that the flow meter is calibrated and installed in accordance with the manufacture's requirements which shall be provided to WSP. Water discharged during the pumping tests shall be piped away from the pumping and observation wells at the locations recommended by WSP (see Section 2.06) and the City and ensure that the discharged water does not pond, erode the soil, or can recirculate into the aquifer. Contractor shall furnish and fuel generator during the testing. Contractor personnel are required to be present during the aquifer performance testing to operate the generator and monitor/adjust the pumping rate, as needed.

Near the end of each pumping test the Contractor shall assist WSP in collecting a water sample from the Contractor installed sample port for analyses of water quality parameters at a State certified water testing laboratory.

Contractor shall provide all equipment required including a submersible pump drop pipe, up to 300-feet of discharge hose/pipe, flow meter/totalizer, orifice discharge, flow rate control valve and generator with fuel to run the pump.

Aquifer Testing - Step 8-hour Tests

Step tests of observation well OW-1 and test well TW-1 shall be completed by conducting three successive constant rate pumping tests on each well. Anticipated discharge volumes shall be proposed to WSP for approval.

Aquifer Test – Long Term 24-hour Test

Long term aquifer testing shall be completed by conducting a constant rate pumping test. The standard test shall consist of a 12-hour rest period, a 24-hour pumping period, and up to a 24-hour recovery period. The pumping rate shall be at the proposed rated capacity of the well. Contractor will collect digital data from the test well and two observation wells. Contractor shall install the transducer in the test well within a stilling tube. Other transducers may be installed directly within the wells, without stilling tubes.

3.15 Aquifer Performance Testing Records

Complete well pumping test records and other information shall be provided by the Contractor including the following information:

- Total measured depth of the test water supply and observation wells.
- Static water levels within the test water supply and observation wells.
- Locations and descriptions/specifications of the test water supply and observation wells.
- The video determined screened interval depths.
- The transducer pressure rating, the installed depth of the pressure transducers, and the brand and serial number of the pressure transducers.
- The start and stop times/dates of the pre-test resting water level readings, pumping test water level readings, and the recovery water level readings.
- The times/dates of periodic pumping rate readings and any adjustments to the pumping rates.

3.16 Location of Discharge

Discharge water shall be conducted from the pump to the nearest surface-water body, storm sewer, or ditch, as approved by the WSP and the City, or at least a distance of 300 feet through approved piping or lined ditches to prevent recirculation of discharged water into the aquifer being tested. It is imperative to ensure that no damage by flooding or erosion is caused to the chosen drainage structure or disposal site.

3.17 Record of Pumping Tests

The Contractor shall keep accurate records of the pumping test and furnish copies of all records to the WSP upon request.

3.18 Measurement of Water Levels

The Contractor will measure and record digital water level readings and measure and record water levels manually with a water level meter at regular intervals.

3.19 Well Logs and Tests

Complete well logs and other information shall be provided by the Contractor including the following information:

- Lithology/geologic descriptions at 5-foot intervals or at strata changes.
- Total drilled depth of the well.
- Static water level.
- Geophysical logs of wells including caliper, electric and or gamma-ray type.
- Length, location, and description/specifications of the borehole.
- If used, screen design criteria (e.g., slot size) and supporting sieve analysis from screen manufacturer.

3.20 Collection of Water Samples

The Contractor shall assist the WSP with the collection of water samples during the pumping tests. Laboratory analysis of the samples will be coordinated by WSP.

3.21 Restoration

The Contractor shall ensure that no damage by flooding or erosion is caused to the chosen drainage structure or disposal sites by implementing appropriate soil erosion and sedimentation controls, as needed. The Contractor shall restore the work areas to their original conditions and repair or replace any property damaged by Contractor's operations.

END OF SECTION

BID PROPOSAL FORM

TO:
City of Caro
ATTN: City Clerk
317 S. State Street
Caro, MI 48723
O: 989-673-7671

FROM: _____
Hereinafter referred to as Contractor

The undersigned having examined the Request for Quotation, Specifications, Site Schematic for the proposed work (Work) at the **City of Caro (City) Type I water supply well site located at the Mary Jane Court site** and having reviewed site conditions, the City's requirements, and examined other conditions affecting the work, hereby proposes and agrees to furnish all labor, materials, and equipment to perform operations necessary to complete the Work as required by said specifications and drawings, for the stipulated sum of:

_____ DOLLARS (\$ _____)
(Written) (Numerical)

which shall be called the Base Bid. Said price to be subject to all of the terms of the Contract and to include all money allowances called for in the Lump Sum Price Schedule, and Request of Quotation Breakdown, and Specifications. Specifically, final Contractor invoice totals should be based on actual units incurred with cost corresponding to the unit pricing provided.

ADDENDA

The following addenda covering changes in the Work have been received during the bidding period. The Work described therein has been included in this proposal.

Addendum No.: _____ Date: _____
Addendum No.: _____ Date: _____
Addendum No.: _____ Date: _____

LUMP SUM PRICE SCHEDULE AND REQUEST FOR QUOTATION BREAKDOWN

Submitted by: _____

Caro reserves the right to delete or add work items during the term of this contract in accordance with the lump sum prices listed below. Contractor shall complete the following table. Additionally, the Contractor shall provide an estimated work schedule.

City of Caro Mary Jane site Type I Water Supply Well Testing Bid Items First Mobilization			
Bid Item	Bid Unit	Unit Price	Bid Total
1) First mobilization / demobilization	Lump Sum/One Occurrence	\$ _____ /LS	\$ _____
2) Pilot boring, and geophysical logging	Lump Sum/One Occurrence	\$ _____ /LS	\$ _____
3) First observation well installation and development	Lump Sum/One Occurrence	\$ _____ /LS	\$ _____
4) Short-term individual well aquifer testing (step test) and water level collection	<u>Lump Sum/One Occurrence</u>	\$ _____ /LS	\$ _____
6) Soil erosion and sedimentation control and site restoration	<u>Lump Sum/One Occurrence</u>	\$ _____ /LS	\$ _____
Mobilization 1 - Total Bid:			\$ _____

City of Caro Mary Jane Court site Type I Water Supply Well Testing Bid Items Second Mobilization			
Bid Item	Bid Unit	Unit Price	Bid Total
1) Second mobilization / demobilization	Lump Sum/One Occurrence	\$ _____ /LS	\$ _____
2) Second observation well installation and development	Lump Sum/One Occurrence	\$ _____ /LS	\$ _____
3) Test/Production well installation and development	Lump Sum/One Occurrence	\$ _____ /LS	\$ _____
4) Geophysical logging of Test/Production well	Lump Sum/One Occurrence	\$ _____ /LS	\$ _____
5) Short-term individual well aquifer testing (step test) and Long-term aquifer testing and water level collection	<u>Lump Sum/One Occurrence</u>	\$ _____ /LS	\$ _____
6) Soil erosion and sedimentation control and site restoration	<u>Lump Sum/One Occurrence</u>	\$ _____ /LS	\$ _____
Mobilization 2 - Total Bid:			\$ _____

Total Bid: \$ _____

The undersigned Contractor does hereby declare that the Contractor has the legal status indicated below by signing:

_____ Individual
(Signature of Individual)

_____ Co-partnership
(Signature of Partner)

_____ Corporation Incorporated
(Signature of Officer) Under the Laws of the
State of _____

_____ Doing Business Under
(Signature of Authorized Person) an Assumed Name

The names and addresses of all persons indicated as partners in this proposal are as follows:

Name:	Address:
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

The names and phone numbers of references (please provide a minimum of three):

Name:	Phone Number:
_____	_____
_____	_____
_____	_____
_____	_____

Please provide, on a separate sheet, a list of all assumptions and clarifications.

CITY OF CARO

EXHIBIT B, page 1 of 2

Minimum Insurance Requirements for Contractors

Summary Statement and Purpose

The provision of adequate insurance by persons and businesses working for the City of Caro or on street rights-of-way is essential to protect the public from the costs of injury or damage and to protect the City from unnecessary liability resulting from the acts of persons and businesses working for the City of Caro. Minimum insurance requirements are needed to provide this protection.

Persons or businesses which provide professional services to the City of Caro under the terms of a written contract or to provide labor and/or material to accomplish work for the City of Caro or for others on or over street right-of-way and/or other City of Caro property shall carry insurance and bonds to protect the public and the City of Caro from exposure to unnecessary financial risks.

Prior to signing of contracts, issuance of purchase orders or permits, or other authorization to begin work, certificates of insurance evidencing the purchase of insurance in amounts not less than required by this City policy or the bid specifications, whichever is greater, shall be filed with the City Clerk for the City of Caro.

Such certificates shall:

- a. Show that the insurance is currently in force and termination date of each policy.
- b. State the limits of liability of the policies covered by the certificate.
- c. Be issued to the City of Caro as the certificate holder.
- d. Provide that the City of Caro will receive not less than ten (10) days written notice of the cancellation of any listed policy.
- e. Be issued in the name of an insurance company authorized to conduct business in the State of Michigan.

Insurance shall meet or exceed the following requirements. Exceptions to recognize more or less hazardous operations and financial risks may be considered, and with approval of the City of Caro, may be made in specifications or contract requirements prior to awarding contracts or issuing purchase orders.

CITY OF CARO
EXHIBIT B, page 2 of 2
MINIMUM INSURANCE REQUIREMENTS

The limits of liability for the insurance required by the City of Caro shall provide coverage for not less than the following amounts or greater where required by Laws and Regulations:

	<u>WORKERS COMPENSATION</u>	<u>MINIMUM AMOUNT</u>
1.	a. Part One: Compensation	Statutory
	b. Part Two: Employees Liability:	
	Accident	\$1,000,000
	Disease	\$1,000,000
	Aggregate Disease	\$1,000,000
2.	<u>GENERAL LIABILITY</u>	
	a. Combined Single Limit Each Occurrence Limit	\$1,000,000
	b. Combined Single Limit Aggregate Limit	\$1,000,000
3.	<u>COMPREHENSIVE AUTOMOBILE LIABILITY</u>	
	a. Combined Single Limit:	\$1,000,000
	b. No Fault:	Statutory
4.	<u>OWNERS AND CONTRACTORS PROTECTIVE LIABILITY</u>	
	a. Combined Single Limit	\$1,000,000
5.	<u>UMBRELLA or EXCESS LIABILITY</u>	\$1,000,000
6.	The Owners and Contractors Protective Liability Insurance shall include the following persons or entities as additional named insured:	
	a. The CITY OF CARO, its employees, elected officials, officers, designees and assigns.	

EXHIBIT A
CERTIFICATIONS AND ASSURANCES

THIS FORM MUST BE COMPLETED AND RETURNED WITH YOUR BID
FAILURE TO SUBMIT THIS COMPLETED FORM MAY RESULT IN DISQUALIFICATION

Firm Name: _____

I/we make the following statement of assurances as a required element of the bid to which it is attached, understanding that the truthfulness of the facts affirmed here and the continuing compliance with these requirements are conditions precedent to the award or continuation of the related contract(s):

1. The prices and/or data have been determined independently, without consultation, communication, or agreement with other proposers for the purpose of restricting competition. However, I/we may freely join with other persons or organizations for the purpose of presenting a single bid or bid.
2. The attached bid or bid is a firm offer for a period of 60 days following receipt, and it may be accepted by the City of Caro without further negotiation (except where obviously required by lack of certainty in key terms) at any time within the 60-day period.
3. In preparing this bid or bid, I/we have not been assisted by any current or former employee of City of Caro whose duties relate (or did relate) to this bid, bid, or prospective contract, and who was assisting in other than his or her official, public capacity. Neither does such a person nor any member of his or her immediate family have any financial interest in the outcome of bid bid. (Any exceptions to these assurances are described in full detail on a separate page and attached to this document.)
4. I/we understand that City of Caro will not reimburse me/us for any costs incurred in the preparation of this bid or bid. All bids or bids become the property of City of Caro, and I/we claim no proprietary right to the ideas, writings, items, or samples, unless so stated in this bid.
5. Unless otherwise required by law, the prices and/or cost data which have been submitted have not been knowingly disclosed by the proposer and will not knowingly be disclosed by him/her prior to opening, in the case of a bid directly or indirectly to any other proposer or to any competitor.
6. No attempt has been made or will be made by the proposer to induce any other person or firm to submit or not to submit a bid for the purpose of restricting competition.
7. I/we agree that submission of the attached bid constitutes acceptance of the solicitation contents and the attached sample contract and general terms and conditions. If there are any exceptions to these terms, I/we have described those exceptions in detail on a page attached to this document.
8. I/we acknowledge communication of any kind regarding my/our bid directed to parties other than the Program Administrator may result in my/our disqualification.
9. I/we warrant that no conflict of interest knowingly exists for any member of the Program team that contributed to this bid or prospective contract.

Signature

Date

Title

Name of Company

EXHIBIT C PERFORMANCE BOND

<p>Contractor</p> <p>Name:</p> <p>Address (<i>principal place of business</i>):</p>	<p>Surety</p> <p>Name: [Full formal name of Surety]</p> <p>Address (<i>principal place of business</i>): [Address of Surety's principal place of business]</p>
<p>Owner</p> <p>Name: City of Caro</p> <p>Mailing address: 317 S. State Street, Caro MI 48723</p>	<p>Contract</p> <p>Description:</p> <p>Contract Price:</p> <p>Effective Date of Contract:</p>
<p>Bond</p> <p>Bond Amount:</p> <p>Date of Bond: (<i>Date of Bond cannot be earlier than Effective Date of Contract</i>):</p> <p>Modifications to this Bond Form: <input type="checkbox"/> None <input type="checkbox"/> See Paragraph 16</p>	
<p>Surety and Contractor, intending to be legally bound hereby, subject to the terms set forth in this Performance Bond, do each cause this Performance Bond to be duly executed by an authorized officer, agent, or representative.</p>	
Contractor as Principal	Surety
<i>(Full formal name of Contractor)</i>	<i>(Full formal name of Surety) (Corporate seal)</i>
By: _____ <i>(Signature)</i>	By: _____ <i>(Signature) (Attach Power of Attorney)</i>
Name: _____ <i>(Printed or typed)</i>	Name: _____ <i>(Printed or typed)</i>
Title: _____	Title: _____
Attest: _____ <i>(Signature)</i>	Attest: _____ <i>(Signature)</i>
Name: _____ <i>(Printed or typed)</i>	Name: _____ <i>(Printed or typed)</i>
Title: _____	Title: _____
<p><i>Notes: (1) Provide supplemental execution by any additional parties, such as joint venturers. (2) Any singular reference to Contractor, Surety, Owner, or other party shall be considered plural where applicable.</i></p>	

1. The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to the Owner for the performance of the Construction Contract, which is incorporated herein by reference.
2. If the Contractor performs the Construction Contract, the Surety and the Contractor shall have no obligation under this Bond, except when applicable to participate in a conference as provided in Paragraph 3.
3. If there is no Owner Default under the Construction Contract, the Surety's obligation under this Bond shall arise after:
 - 3.1 The Owner first provides notice to the Contractor and the Surety that the Owner is considering declaring a Contractor Default. Such notice may indicate whether the Owner is requesting a conference among the Owner, Contractor, and Surety to discuss the Contractor's performance. If the Owner does not request a conference, the Surety may, within five (5) business days after receipt of the Owner's notice, request such a conference. If the Surety timely requests a conference, the Owner shall attend. Unless the Owner agrees otherwise, any conference requested under this Paragraph 3.1 will be held within ten (10) business days of the Surety's receipt of the Owner's notice. If the Owner, the Contractor, and the Surety agree, the Contractor shall be allowed a reasonable time to perform the Construction Contract, but such an agreement does not waive the Owner's right, if any, subsequently to declare a Contractor Default;
 - 3.2 The Owner declares a Contractor Default, terminates the Construction Contract, and notifies the Surety; and
 - 3.3 The Owner has agreed to pay the Balance of the Contract Price in accordance with the terms of the Construction Contract to the Surety or to a contractor selected to perform the Construction Contract.
4. Failure on the part of the Owner to comply with the notice requirement in Paragraph 3.1 does not constitute a failure to comply with a condition precedent to the Surety's obligations, or release the Surety from its obligations, except to the extent the Surety demonstrates actual prejudice.
5. When the Owner has satisfied the conditions of Paragraph 3, the Surety shall promptly and at the Surety's expense take one of the following actions:
 - 5.1 Arrange for the Contractor, with the consent of the Owner, to perform and complete the Construction Contract;
 - 5.2 Undertake to perform and complete the Construction Contract itself, through its agents or independent contractors;
 - 5.3 Obtain bids or negotiated proposals from qualified contractors acceptable to the Owner for a contract for performance and completion of the Construction Contract, arrange for a contract to be prepared for execution by the Owner and a contractor selected with the Owners concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the bonds issued on the Construction Contract, and pay to the Owner the amount of damages as described in Paragraph 7 in excess of the Balance of the Contract Price incurred by the Owner as a result of the Contractor Default; or

- 5.4 Waive its right to perform and complete, arrange for completion, or obtain a new contractor, and with reasonable promptness under the circumstances:
 - 5.4.1 After investigation, determine the amount for which it may be liable to the Owner and, as soon as practicable after the amount is determined, make payment to the Owner; or
 - 5.4.2 Deny liability in whole or in part and notify the Owner, citing the reasons for denial.
6. If the Surety does not proceed as provided in Paragraph 5 with reasonable promptness, the Surety shall be deemed to be in default on this Bond seven days after receipt of an additional written notice from the Owner to the Surety demanding that the Surety perform its obligations under this Bond, and the Owner shall be entitled to enforce any remedy available to the Owner. If the Surety proceeds as provided in Paragraph 5.4, and the Owner refuses the payment or the Surety has denied liability, in whole or in part, without further notice the Owner shall be entitled to enforce any remedy available to the Owner.
7. If the Surety elects to act under Paragraph 5.1, 5.2, or 5.3, then the responsibilities of the Surety to the Owner will not be greater than those of the Contractor under the Construction Contract, and the responsibilities of the Owner to the Surety will not be greater than those of the Owner under the Construction Contract. Subject to the commitment by the Owner to pay the Balance of the Contract Price, the Surety is obligated, without duplication for:
 - 7.1 The responsibilities of the Contractor for correction of defective work and completion of the Construction Contract;
 - 7.2 Additional legal, design professional, and delay costs resulting from the Contractor's Default, and resulting from the actions or failure to act of the Surety under Paragraph 5; and
 - 7.3 Liquidated damages, or if no liquidated damages are specified in the Construction Contract, actual damages caused by delayed performance or non-performance of the Contractor.
8. If the Surety elects to act under Paragraph 5.1, 5.3, or 5.4, the Surety's liability is limited to the amount of this Bond.
9. The Surety shall not be liable to the Owner or others for obligations of the Contractor that are unrelated to the Construction Contract, and the Balance of the Contract Price will not be reduced or set off on account of any such unrelated obligations. No right of action will accrue on this Bond to any person or entity other than the Owner or its heirs, executors, administrators, successors, and assigns.
10. The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders, and other obligations.
11. Any proceeding, legal or equitable, under this Bond must be instituted in any court of competent jurisdiction in the location in which the work or part of the work is located and must be instituted within two years after a declaration of Contractor Default or within two years after the Contractor ceased working or within two years after the Surety refuses or fails to perform its obligations under this Bond, whichever occurs first. If the provisions of this paragraph are void or prohibited by law, the minimum periods of limitations available to sureties as a defense in the jurisdiction of the suit will be applicable.

12. Notice to the Surety, the Owner, or the Contractor must be mailed or delivered to the address shown on the page on which their signature appears.
13. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement will be deemed deleted therefrom and provisions conforming to such statutory or other legal requirement will be deemed incorporated herein. When so furnished, the intent is that this Bond will be construed as a statutory bond and not as a common law bond.
14. Definitions
 - 14.1 Balance of the Contract Price- The total amount payable by the Owner to the Contractor under the Construction Contract after all proper adjustments have been made including allowance for the Contractor for any amounts received or to be received by the Owner in settlement of insurance or other claims for damages to which the Contractor is entitled, reduced by all valid and proper payments made to or on behalf of the Contractor under the Construction Contract.
 - 14.2 Construction Contract- The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and changes made to the agreement and the Contract Documents.
 - 14.3 Contractor Default- Failure of the Contractor, which has not been remedied or waived, to perform or otherwise to comply with a material term of the Construction Contract.
 - 14.4 Owner Default- Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.
 - 14.5 Contract Documents- All the documents that comprise the agreement between the Owner and Contractor.
15. If this Bond is issued for an agreement between a contractor and subcontractor, the term Contractor in this Bond will be deemed to be Subcontractor and the term Owner will be deemed to be Contractor.
16. Modifications to this Bond are as follows: None.