

Lexington • Louisville • STWENG.COM

August 11, 2015

Re: Proposal for a Geothermal Test Bore  
For: New Cecilia Valley Elementary School  
Cecilia, Kentucky (Hardin County)

Gentlemen:

Please send to us by August 19, 2015, a proposal to provide geothermal test bore services for the above referenced project in Cecilia, Kentucky on Highway 86 southeast of Cecilia.. The services required by this proposal request are as follows:

1. Provide one 350-foot test bore with associated report delineating geological materials and conditions encountered.
2. Provide one-inch polyethylene piping in the test bore. The test bore shall be backfilled with no. 9 stone. A certified water well driller should provide this installation to ensure that no encountered aquifers are compromised.
3. Provide complete removal of excess material and cleanup of site. All drilling and cleanup of site to be completed by September 30, 2015.
4. Provide a thermal conductivity test report for the completed test well. The thermal conductivity test shall be performed in accordance with recommendations from The American Society of Heating, Refrigeration, and Air-Conditioning Engineers (ASHRAE). Some of these recommended procedures are as follows:
  - a. Required Test Duration – The minimum test duration is to be 48 hours.
  - b. Power Quality – The standard deviation of the power should be less than or equal to 1.5% of the average power, with maximum power variation of less than or equal to 10% of the average power. The heat flux rate should be 51 Btu/hr (15W) to 85 Btu/hr (25 W) per foot of borehole depth to best simulate the expected peak loads on the u-bend.
  - c. Undisturbed Formation Temperature Measurement – The undisturbed formation temperature should be determined by recording the minimum loop temperature as the water returns from the u-bend at test startup.
  - d. Installation Procedures for Test Loops – The bore diameter is to be no larger than 6 inches, with 4.5 inches being the target diameter. Indicate bore diameter and quantity of rock used for back filling on the report and cross-reference with IGSPA's measurement guidelines to ensure quantity of rock used matches up with the quantity required to ensure no geothermal bridging and voids in the test well.
  - e. Time Between Loop Installation and Testing – A minimum delay of five days between loop installation and test startup is required.
5. Provide pricing breakdown as follows:
  - a. Lump sum price to perform services listed in items 1-4.

If your proposal is accepted, there will be more detailed information available and an engineer will assist in locating the test bore location at the site.

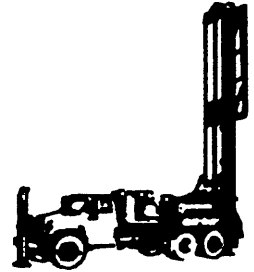
\$ 9,092.00

8-21-15  
E Mailed

LEXINGTON 628 Winchester Road  
Lexington, KY 40505  
(859) 277-8177

LOUISVILLE 207 West Market Street, Suite 300  
Louisville, KY 40202  
(502) 829-3001

- GEOTermal / GLHE Manufacture / HVAC Loop Contractor
- Water Wells
- Monitoring Wells
- Specialized Drilling Services
- Environmental Drilling Services
- Groundwater Exploration and Development
- Pumps
- Water Treatment
- Consulting
- Engineering



## *Eastern Well & Pump. Inc.*

—5th Generation Serving You Since 1893—  
Hwy 119, Fresh Meadows

P.O. BOX 1156 • HARLAN, KY 40831 • Ph. (606) 573-3069 • Fax (606) 573-3108

Re: New Cecilia Valley Elementary Geothermal Test Bore

Mr. Glen Knauer ,

Eastern Well & Pump can provide a 350' test bore with (1) Thermal Conductivity test and analysis for the amount of \$ 9,092.00. This price will also include 21 feet of temp PVC casing.

Thank You for the opportunity to quote .

Sincerely,

Sandi Collins, EWP/ Office Mgr.



**Proposal for Test Well for New Cecilia Elementary School, KY**

**8/11/2015**

**By Brad Cross**

**Proposal for Test well to include:**

- 1 wells @ 350ft w/ 1" DR 9 loop.
- Backfill with #9 Stone
- Drilling and site clean-up
- Thermal Conductivity Test Report will be provided.
- 100ft of Casing will be included

<b>Drilling (1) 350 ft well w/Bentonite Grout Cap &amp; #9</b>	<b>\$5,250.00</b>
<b>Thermal Conductivity Test for 1 Well</b>	<b>\$4,500.00</b>
<b>Travel</b>	<b>\$1,500.00</b>
<b>Site Clean Up</b>	<b>\$500.00</b>
<b>Casing if required \$19.00/ft</b>	<b>\$1,900.00</b>

**Proposed Invoice                      \$13,650.00**

Brad Cross, President  
485 Hammitt Hill Rd.  
Bowling Green, KY 42101  
Phone: 270-842-3940  
Fax: 270-393-0558

# PROPOSAL

**Withers Geothermal Drilling, Inc.**

*Need Drillin', We're Willin'*

41 N Bramblett St.

Columbia, KY 42728

Phone 270.384.5455

Fax 270.384.1721

[dwithers@withersgeothermal.com](mailto:dwithers@withersgeothermal.com)

STATEMENT # 001

DATE: AUGUST 19, 2015

SHROUT TATE WILSON

ATTN: GLEN KNAUER

RE: NEW CECILIA VALLEY ELEM SCH  
CECILIA, KY

[illegible]

September 22, 2015

Tom Smith  
Sherman, Carter, Barnhart Architects  
2405 Harrodsburg Road  
Lexington, Ky 40504

Re: Geothermal Test Well for  
Cecilia Valley Elementary School  
Cecilia, KY

Dear Mr. Smith:

Please find attached the quotes for one (1) test well at the site of the proposed Cecilia Valley Elementary School. The quotes received were from Eastern Well & Pump, Inc., Withers Geothermal and Geothermal Earthworks, Inc.

Upon review of the quotes, we recommend that Eastern Well & Pump, Inc. be selected to do the test well work. Their base quote for this work is \$9,092.00. This is the lowest quote out of the three quotes received.

If you agree with our recommendation and wish to have us authorize Eastern Well & Pump, Inc. to do the test well work at the Cecilia Valley Elementary School site, please have a school representative sign this letter where indicated below and return to our office. We will assist the contractor in finding the proposed well field site and locate the test well. The test well will be located where it can be used in the final well field layout.

If you would like to further discuss this issue, please feel free to call us at your convenience.

Sincerely,

*Brandon Cecil*

Brandon Cecil  
Mechanical Project Manager

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Hardin County Schools

File: 1454