

*The Law Office of*  
**BRENDON D. MILLER**

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Jackson, Kentucky 41339  
Email: [bdmiller@setel.com](mailto:bdmiller@setel.com)

Phone: (606) 666-4400

Fax: (606) 666-4422

November 30, 2007

**RECEIVED**

DEC 03 2007  
PUBLIC SERVICE  
COMMISSION

Ms. Beth O'Donnell  
Executive Director  
Public Service Commission  
P.O. Box 615  
Frankfort, Kentucky 40602

RE: Breathitt County Water District  
Case No. – 2007- 497

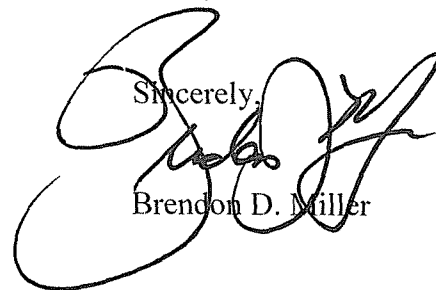
Dear Ms. O'Donnell:

Enclosed please find the original and ten (10) copies of the Application of the Breathitt County Water District for a Certificate of Public Convenience and Necessity to construct and finance pursuant to KRS 278.023(2).

Also enclosed are eleven (11) copies of the exhibits required pursuant to 807 KAR 5.069.

If you need any additional information or documentation, please let us know.

Sincerely,



Brendon D. Miller

Enclosures  
CC: Distribution List

COMMONWEALTH OF KENTUCKY  
BEFORE THE PUBLIC SERVICE COMMISSION  
CASE NO. 2007- 497

RECEIVED

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PUBLIC SERVICE  
COMMISSION

**In the Matter of:**

**THE APPLICATION OF THE BREATHITT COUNTY WATER DISTRICT OF  
BREATHITT COUNTY, KENTUCKY, FOR A CERTIFICATE OF PUBLIC  
CONVENIENCE AND NECESSITY TO CONSTRUCT AND FINANCE,  
PURSUANT TO KRS 278.023(2).**

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**APPLICATION**

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This Application of the Breathitt County Water District ("Applicant") of Breathitt County, Kentucky, respectfully shows:

1. That the Applicant is a water district of Breathitt County, Kentucky, created and existing under and by virtue of Chapter 74 of the Kentucky Revised Statutes.
2. That the post office address of the Applicant is:  
Breathitt County Water District  
1137 Main Street  
Jackson, Kentucky 41339
3. That Applicant pursuant to the provisions of KRS 278.020 and 278.023, seeks (i) a Certificate of Public Convenience and Necessity, permitting Applicant to construct a waterworks construction project, consisting of extensions, additions, and improvements (the "Project") to the existing waterworks system of Applicant; and (ii) approval of the proposed plan of financing said project.
4. That the KY 15 & WATTS project consists of the construction and installation of approximately 37,200 linear feet of 8 inch water line; 17,700 feet of 6 inch water line; 11,500 linear feet of 4 inch water line; and 1,750 linear feet of 2 inch water line and appurtenances.
5. That Applicant proposes to finance the construction of the Project through (i) a Kentucky Area Development District Leasing Trust (Bond), and (ii) a U.S. Housing and Urban Development Community Development Block Grant. Applicant has a commitment from CDBG for funds that will be used on this project filed herewith as an exhibit.
6. That Applicant does not contemplate having the project constructed with any deviation from minimum construction standards of this Public Service Commission.
7. That Applicant files herewith the following Exhibits pursuant to 807 KAR 5:069 in support of this Application:

- A. Copy of CDBG Grant Agreement attached as Appendix "A-2" of the Final Engineering Report.
- B. Copy of Engineer's Concurrence in Bid Award attached as Appendix "C" of Final Engineering Report.
- C. Copy of Preliminary Engineering Report Amended to the Final Engineering Report, based on bids received on August 15, 2007.
- D. Certified statement from the Chairperson of the Applicant, based upon statements of the Engineers for Applicant, concerning the following:
  - (1) The proposed plans and specifications for the Project have been designated to meet the minimum construction and operating requirements set out in 807 KAR 5:066, Section 4(3) and (4); Section 5 (1); Sections 6 and 7; Section 8 (1) through (3); Section 9 (1) and Section 10.
  - (2) All other state approvals have already been obtained, including the approval of the Kentucky Division of Water, attached as Appendix "D" of the Final Engineering Report.
  - (3) The Existing rates of Applicant shall produce the total revenue requirements set out in the engineering reports, therefore no rate increase is necessary, and
  - (4) Setting out the date of December, 2007, when it is anticipated that construction will begin and August 2008, when it is anticipated to end.

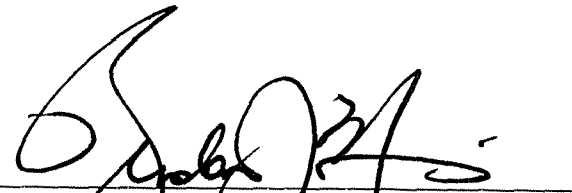
8. That the foregoing constitutes the documents necessary to obtain the approval of the Kentucky Public Service Commission in accordance with Section 278.023 of the Kentucky Revised Statutes and in accordance with the "Filing Requirements" specified in 807 KAR 5:609, Section 1.

WHEREFORE, Applicant the Breathitt County Water District asks that the Public Service Commission of the Commonwealth of Kentucky grant to Applicant the following:

- a. A Certificate of Public Convenience and Necessity permitting Applicant to construct a waterworks project consisting of extensions, additions, and improvements to the existing waterworks system of Applicant.
- b. An Order approving the financing arrangements made by Applicant, viz. through (i) a Kentucky Area Development District Leasing Trust (Bond), and (ii) a U.S. Housing and Urban Development Community Development Block Grant.

BREATHITT COUNTY WATER DISTRICT

By:  \_\_\_\_\_  
JOHN LESTER SMITH, Chairperson



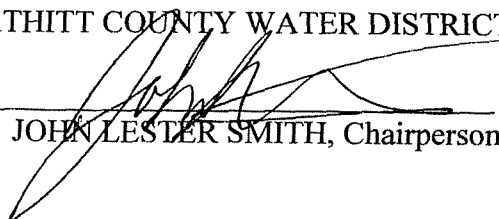
HON. BRENDON D. MILLER  
Breathitt County Attorney  
Counsel for Applicant  
1149 Main Street  
Jackson, Kentucky 41339  
(606) 666-3809

VERIFICATION

The undersigned, JOHN LESTER SMITH, being duly sworn, deposes and states that he is the Chairperson of the Board of Commissioners of the Breathitt County Water District, Applicant, in the above proceedings; that he has read the foregoing Application and has noted the contents thereof; that the same is true of his own knowledge, except as to matters which are therein stated on information or belief, and as to those matters, he believes same to be true.

IN TESTIMONY WHEREOF, witness the signature of the undersigned on this the 29 day of November, 2007

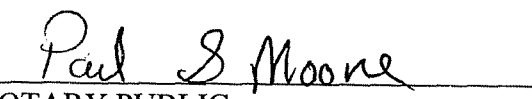
BREATHITT COUNTY WATER DISTRICT

By:   
JOHN LESTER SMITH, Chairperson

COMMONWEALTH OF KENTUCKY

COUNTY OF BREATHITT

The foregoing was subscribed and sworn to before me by John Lester Smith, Chairperson of the Board of Commissioners of the Breathitt County Water District, on this the 29 day of November, 2007.

  
NOTARY PUBLIC  
Commission Expires: 10-4-09

CERTIFICATE OF CHAIRPERSON OF BREATHITT COUNTY  
WATER DISTRICT, AS TO STATEMENT REQUIRED BY  
SECTION 1 (5) OF 807 KAR 5:069

I, JOHN LESTER SMITH, hereby certify that I am the duly qualified and acting Chairperson of the Breathitt County Water District, and that said District is in the process of arranging to finance the construction of extensions, additions and improvements to the existing waterworks system of the District (the "Project"), in cooperation with Nesbitt Engineering, Inc., Lexington, Kentucky, the Engineers for the District (the "Engineers").

Based on information furnished to me by said Engineers for the District, I hereby certify as follows:

1. The proposed plans and specifications for the Project have been designated to meet the minimum construction and operating requirements set out in 807 KAR 5:066, Section 4 (3) and (4); Section 5 (1); Sections 6 and 7; Section 8 (1) through (3); Section 9 (1) and Section 10.

2. All other state approvals have already been obtained, including the approval of the Kentucky Division of Water, attached as Appendix "D" of the Final Engineering Report.

3. The Existing rates of the District filed with the Public Service Commission of Kentucky are contemplated to produce total revenue requirements set out in the Engineering Reports, prepared by the Engineers and filed with the Public Service Commission.

4. That it is now contemplated that construction of the Project will begin on or about December 15, 2007, and will end on or about August 15, 2008.

IN TESTIMONY WHEREOF, witness my signature this 29 day of November, 2007.

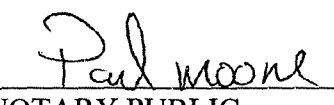
BREATHITT COUNTY WATER DISTRICT

By:   
JOHN LESTER SMITH, Chairperson

STATE OF KENTUCKY

COUNTY OF BREATHITT

Subscribed and sworn to before me by John Lester Smith, Chairperson of the Board of Commissioners of the Breathitt County Water District, on this the 29 day of November, 2007.

  
NOTARY PUBLIC  
Commission Expires: 10-4-09

DISTRIBUTION LIST

Case No. 2007-\_\_\_\_\_

Re: Breathitt County Water District Application

RECEIVED

DEC 03 2007

PUBLIC SERVICE  
COMMISSION

Project Administrator

Mr. Bryan Kirby  
WJL/CEDA  
P.O. Box 855  
Richmond, Kentucky 40476

Telephone: (859) 624-3396  
Fax: (859) 624-3396

District Officials

Mr. John L. Smith, Chairperson  
Mr. Shannon Moore, Manager  
Breathitt County Water District  
1137 Main Street  
Jackson, Kentucky 41339

Telephone: (606) 666-3800  
Fax: (606) 666-2860

Engineer

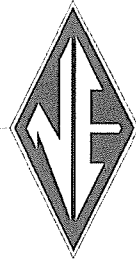
Mr. Ora C. Main, PE  
Nesbitt Engineering, Inc.  
227 North Upper Street  
Lexington, Kentucky 40507

Telephone: (859) 233-3111  
Fax: (859) 259-2717

Local Counsel

Hon. Brendon D. Miller  
Breathitt county Attorney  
1149 Main Street  
Jackson, Kentucky 41339

Telephone: (606) 666-3809  
Fax: (606) 666-4422



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*providing proven solutions since 1976*

227 North Upper Street  
Lexington, KY 40507-1016

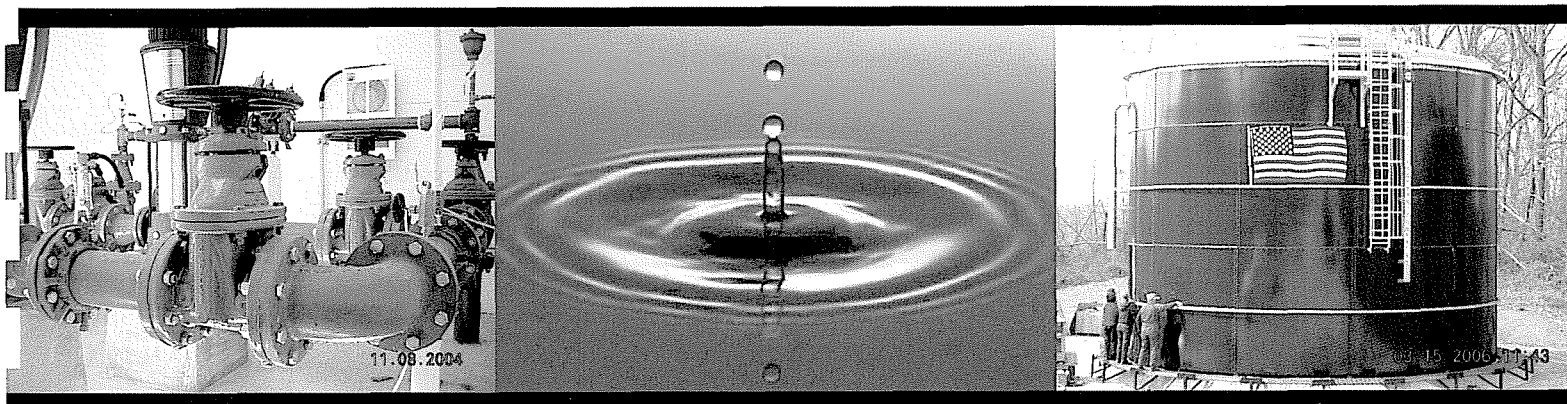
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DEC 03 2007  
PUBLIC SERVICE  
COMMISSION

November 2007

**Breathitt County Water District**  
**KY 15 South Watts Waterline Extension**  
**Jackson, Kentucky**

**Preliminary Engineering Report**  
Amended to  
**Final Engineering Report**



Jason Richardson, Judge/Executive

Breathitt County Water District Commissioners  
John Lester Smith, Chairman

Jay Watts, Vice Chairman  
Homer Johnson

Alma Noble, Secretary/Treasurer  
Vurl Fugate

**SUBMITTED TO:**  
Breathitt County Water District

**PREPARED BY:**  
Nesbitt Engineering, Inc.  
Offices in Lexington—Hazard—Prestonsburg

*Providing*  
*Proven*  
*Solutions Since 1976*

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**Chapter 1 – General**

Breathitt County, which encompasses the City of Jackson, is located in the eastern coalfields of Kentucky, approximately 85 miles south and east of Lexington on KY 15, and approximately 34 miles north of Hazard. Jackson, the county seat, is a fourth class city located near the center of Breathitt County. The County borders Wolfe, Lee, Owsley, Perry, Knott, and Magoffin Counties. (See Figure 1)

The 2000 US Census figure for Breathitt County is 16,100 persons. There are 6,170 occupied housing units in Breathitt County and therefore 2.61 persons per household.

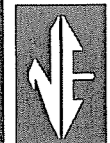
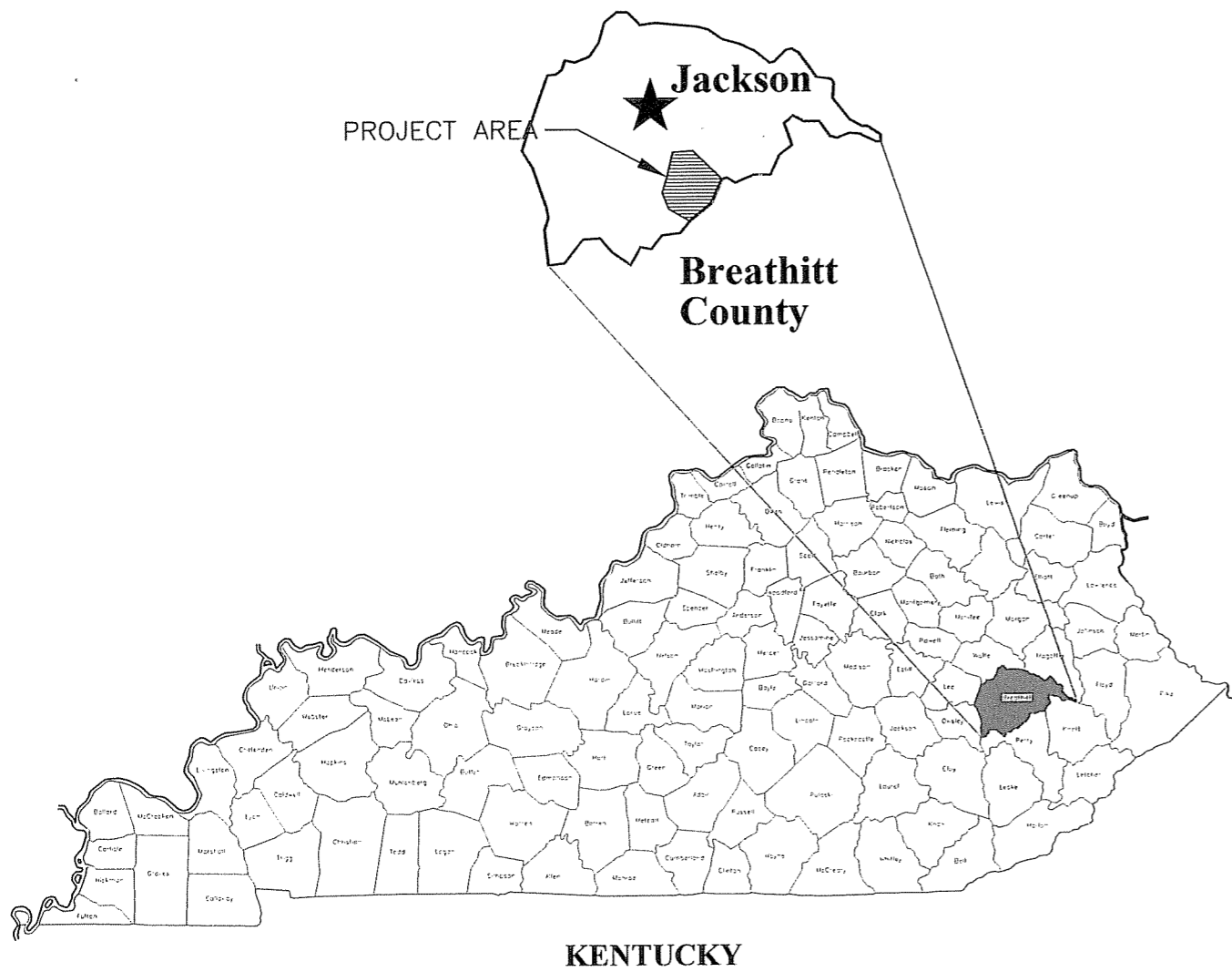
Major highways passing through Jackson and/or Breathitt County are KY 15, KY 30, KY 52, KY 315, KY 1110, KY 476 and KY 205. Some of these areas already have potable water available for residents and this proposed project will bring potable water to the residents along KY 15, KY 1278 and including portions of McIntosh Fork, Right Fork, and Little Leatherwood as well as other minor roads.

The construction for the project along KY 15 includes approximately 13 miles of 8-inch, 6-inch, 4-inch, 3-inch and 2-inch diameter potable water main, two new ground storage tanks totaling 150,000 gallons, a maximum potential of 232 service meters, and one booster station. Necessary easements and property for installation of the main and ancillary facilities will be secured for the project as soon as funding is solidified.

Construction costs for the KY 15-S and Watts waterline project are given in Appendix "A" Table A - 1. Project Costs for this project are also shown in Appendix "A". These costs were based on unit bid prices received on August 15, 2007.

Funding for this project will come from a United States Housing & Urban Development through a Community Development Block Grant (CDBG), and Interim financing as presented in Appendix "A" Table A-2.

Depending upon the amount of Grant funding obtained, there could be some debt service required for this project. Currently, the District does not have any long term debt on their other projects so customer service rates should be minimally affected, dependent upon the amount of debt required for this project.



**NESBITT ENGINEERING, INC.**  
ENGINEERS • SURVEYORS • SCIENTISTS

**LOCATION MAP**  
**KY 15 & WATTS WATERLINE EXTENSION**  
**BREATHITT COUNTY WATER DISTRICT**

**FIGURE 1**

<b>DRAWN BY:</b> JCW	<b>DISK/FILE NAME:</b> \\FER FIGURE 1.DWG	<b>JOB NO.:</b> 998.18
<b>DATE:</b> 01/25/07	<b>LAST PLOT DATE:</b> 01/25/07	<b>SCALE:</b> NOT TO SCALE

**NESBITT ENGINEERING INC.**

**Chapter 2 – Project Planning Area**

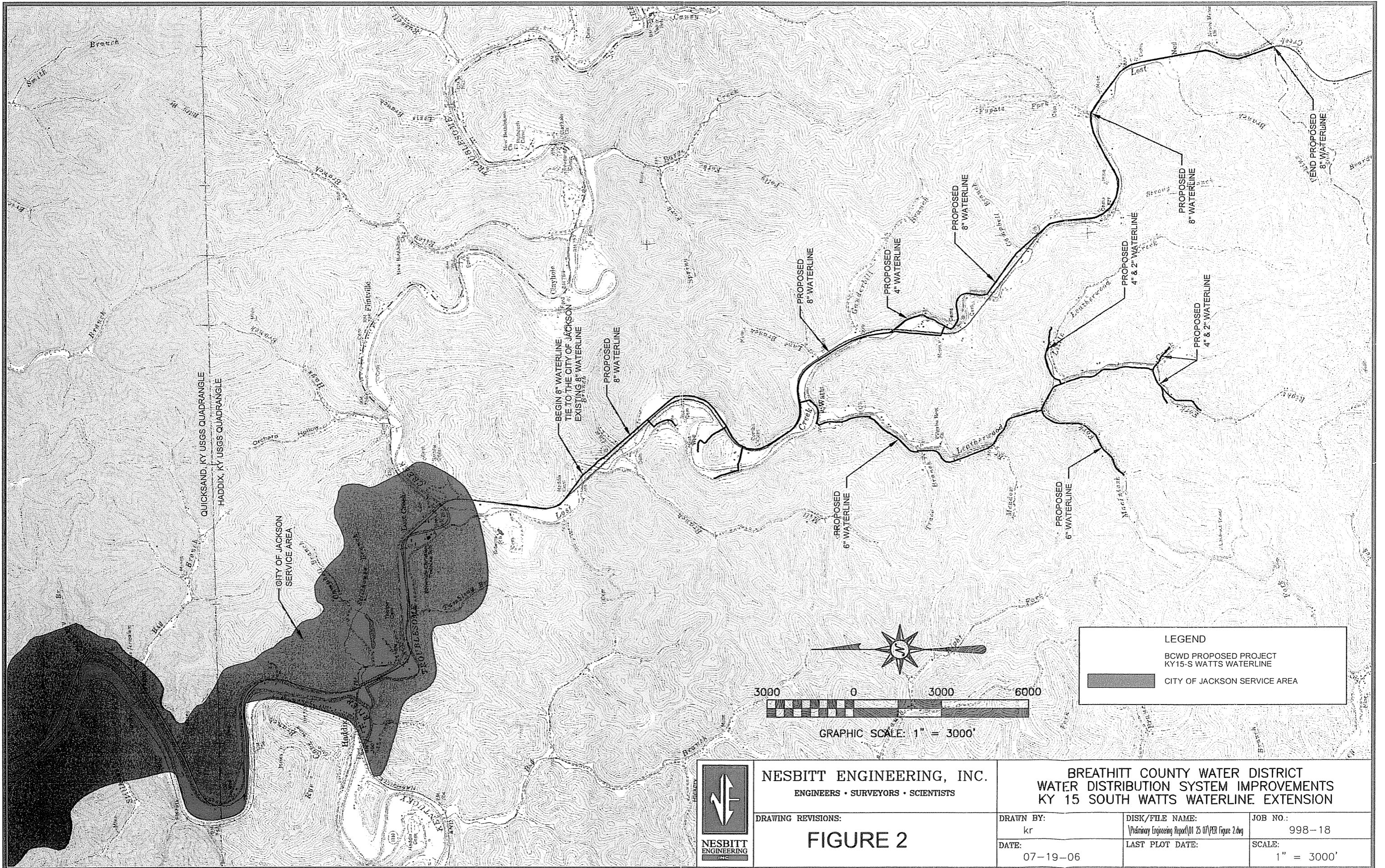
Breathitt County Water District (BCWD) is a Class "C" Water District organized in August 2003 by the Breathitt County Judge Executive. The County Judge then appointed the Chairman and four other commissioners to serve on the Water District's Board.

Currently, the BCWD has approximately 300 customers. In addition to these existing customers, at the completion of the KY 541 and KY 205 Waterline Extension (estimated to be September 2007) the District's customer base will increase to approximately 500 households.

Jackson, the county seat, operates an independent water system (Jackson Municipal Water Works), drawing water from the North Fork of the Kentucky River. The system currently serves 2,000 households. The water treatment plant (WTP), capable of producing 2.5 MGD, is expected to supply the potable water product to the various county water line extensions. Daily production by Jackson Municipal Water Works is currently 800,000 gallons (33% of plant capacity) and their storage capacity is presently 925,000 gallons. The 300,000-gallon Quicksand water storage tank will provide storage for the proposed KY 15-S / KY 1278 extension. This proposed project is the continuation of BCWD's effort to deliver potable drinking water to all residents outside Jackson's service area. Jackson's WTP is expected to have more than adequate capacity to supply the needed potable water for this proposed project.

See Figure 2 which shows the Water Distribution Project Area for this project.

Breathitt County has 6,170 occupied housing units per the 2000 US Census report. The KY 15-S and KY 1278 Water Main Extension project area has approximately 232 residential households. This project has a maximum concentration of approximately 18 homes per mile. Most of the housing is currently served by privately operated wells. Most of the water obtained from drilled wells in Breathitt County is extremely hard and contains noticeable amounts of iron.



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DRAWING REVISIONS:

**FIGURE 2**

**BREATHITT COUNTY WATER DISTRICT  
WATER DISTRIBUTION SYSTEM IMPROVEMENTS  
KY 15 SOUTH WATTS WATERLINE EXTENSION**

DRAWN BY:

kr

DISK/FILE NAME:

\\Preliminary Engineering Report\01 25 07\PER Figure 2.dwg

JOB NO.:

998-18

DATE:

07-19-06

LAST PLOT DATE:

SCALE:

1" = 3000'

**Chapter 3 – Existing Facilities/Need For Project**

There is no potable water to the proposed project area. Residents in this area must rely either on wells, springs or hauled water for their domestic water needs. Breathitt County is one of the last counties in the Commonwealth to be provided treated water in the rural areas of the County.

The well water is extremely hard and contains noticeable amounts of iron. Salty water may be found from 50 feet to several hundred feet below the level of the principal valley bottoms. Where springs supply water, the yield is rarely more than 5 GPM. A more reliable and healthy source for water is needed.

The proposed project will consist of approximately 13 miles of various sized water lines ranging in sizes from 8-inch to 2-inch. These waterlines will be served by a connection between BCWD and Jackson Municipal Water Works along KY 15 South.

This proposed project would bring potable water service to some 218 homes, a volunteer Fire Department, some small businesses and churches in the project area. This waterline could later be extended to make an connection with the City of Hazard's waterline on KY 15 in Perry County to provide supply redundancy to both systems.

The 2000 US Census reports 2.61 persons per household so the maximum total service population will be approximately (2.61 x 232) 606 persons. At a conservative usage rate of 100 gallons per person per day, this would equate to a base water supply requirement of approximately 60,000 GPD.

**Preliminary Engineering Report Amended to Final Engineering Report**  
**KY 15 South Watts Waterline Extension**  
**Breathitt County Water District, Jackson, Kentucky**

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**Chapter 4 – Proposed Project/Project Cost/Financing**

The proposed potable KY 15 South Watts Water Extension Project was bid on August 15, 2007. There were nine bidders on Contract 1 – the waterline contract and two bidders on Contract 2 – the tank contract. Bids which were submitted were very competitive as shown in the Certified Bid Tabs for both contracts provided in Appendix "B".

After the Certified Bid Tabs were prepared, a reference check for both contractors was eliminated, since both Nesbitt Engineering, Inc. (NEI) and the District have conducted multiple successful projects with each contractor. Based upon NEI and the BCWD's past working relationship with both contractors NEI provided a recommendation letter stating that both contracts should be awarded to both low bidders contingent upon total funding being secured. A copy of the recommendation letter from NEI to the BCWD Chairman is included in Appendix "C".

The Construction Cost, Project Cost, and Proposed Funding Sources are provided in Appendix "A" based upon the bids that were received on August 15, 2007.

Once funding has been secured the construction phase should commence shortly there after. It is desirable to get to construction as soon as possible in order to make as much progress as can be made before inclement weather begins.

**Chapter 5 – Conclusions & Recommendations**

To provide water service to the residents within the project area, the new water lines, booster station and storage tanks are necessary. In addition, the water main extensions along the branch roads off KY 1278 (McIntosh and Right Forks, and Little Leatherwood Creek) and KY 15 appear to be fiscally feasible.

The health, environmental, land use, and economic enhancement issues combined necessitate the need for this water system extension in Breathitt County.

The existing City of Jackson water main on KY 15 south, stops short of the Watts area, the targeted service vicinity. This project will also provide a reliable water supply to the additional customers along the branches off KY 15-S and KY 1278. Additionally, the availability of reliable, clean, and chlorinated water from the centralized source will improve the economy of scale for both the BCWD and the Jackson Municipal Water Works.

**Preliminary Engineering Report Amended to Final Engineering Report**  
**KY 15 South Watts Waterline Extension**  
**Breathitt County Water District, Jackson, Kentucky**

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**Appendix "A" – Funding**

**Table A – 1** KY 15 South Watts Waterline Extension w/ Booster Station & Storage Tanks Construction Cost

**Table A – 2** KY 15 South Watts Waterline Extension w/ Booster Station & Storage Tanks Project Cost & Funding Sources

- Letter of \$1,000,000.00 Grant Approval from GOLD
- Letter of Commitment from KADD for low interest loan amount of \$1,261,000.00



# Breathitt County Water District

## Table A-1

### KY15 South Watts Waterline Extension w/ Booster Station & Storage Tanks

#### Base Bid Schedule (Bids received 8/15/07)

##### Breathitt County, Kentucky

Item	Unit	Quantity	Unit Cost	Total Cost
<b>Contract 1 - Water Main Extension and Booster Station</b>				
Tie Into Existing Waterline	LS	1	\$ 2,500.00	\$ 2,500
Air Relief Valve	EA	5	\$ 850.00	\$ 4,250
8" PVC SDR-21 waterline	LF	35,900	\$ 12.50	\$ 448,750
6" PVC SDR-21 waterline	LF	17,700	\$ 11.00	\$ 194,700
4" PVC SDR-21 waterline	LF	11,500	\$ 7.50	\$ 86,250
2" PVC SDR-21 waterline	LF	1,750	\$ 4.00	\$ 7,000
8" D.I. CL 350 waterline	LF	1,300	\$ 21.00	\$ 27,300
8" D.I.M.J. Gate Valve & Box	EA	13	\$ 900.00	\$ 11,700
6" D.I.M.J. Gate Valve & Box	EA	7	\$ 650.00	\$ 4,550
4" D.I.M.J. Gate Valve & Box	EA	9	\$ 425.00	\$ 3,825
8" Blow off Assembly	EA	1	\$ 1,300.00	\$ 1,300
6" Blow off Assembly	EA	1	\$ 1,000.00	\$ 1,000
2" Blow off Assembly	EA	7	\$ 550.00	\$ 3,850
6" Fire Hydrant Assembly	EA	10	\$ 2,200.00	\$ 22,000
Valve Vault w/ Master Meter	EA	1	\$ 14,000.00	\$ 14,000
Valve Vault w/ Leak Detection Assembly	EA	3	\$ 5,000.00	\$ 15,000
Concrete Driveway Replacement 4 1/2" depth	SY	900	\$ 50.00	\$ 45,000
Bituminous Paving 3" depth	SY	750	\$ 40.00	\$ 30,000
DGA at Driveways 6" depth	SY	1,800	\$ 20.00	\$ 36,000
Booster Station	LS	1	\$ 170,000.00	\$ 170,000
Telemetry & Tower @ Booster Sta	LS	1	\$ 72,000.00	\$ 72,000
5/8 x 3/4 Indiv Radio Read meters	EA	66	\$ 700.00	\$ 46,200
5/8 x 3/4 Indiv Radio Read meters w/priv	EA	166	\$ 800.00	\$ 132,800
3/4" Polyethylene service line	LF	11,000	\$ 6.00	\$ 66,000
1" Polyethylene service line	LF	100	\$ 7.00	\$ 700
Hwy Xing-Bore & Jack w/12" steel casing	LF	220	\$ 130.00	\$ 28,600
Hwy Xing-Bore & Jack w/10" steel casing	LF	650	\$ 110.00	\$ 71,500
Type I - A Creek Crossing	LF	730	\$ 35.00	\$ 25,550
Waterline marker (Rhino # 70453 w/decal)	EA	20	\$ 35.00	\$ 700
<b>Subtotal - Construction Cost of Contract 1 =</b>				<b>\$ 1,573,025</b>
<b>Contract 2 - Ground Storage Tanks</b>				
10' Wide Access Road, Excav. and Aggred	LF	2000	\$ 8	\$ 16,000
24" CMP, Installed	LF	60	\$ 20	\$ 1,200
Unclassified Tank Site Excav. both sites	LS	1	\$ 40,000	\$ 40,000
Chain link fencing (8-feet high) - both sites	LS	1	\$ 16,000	\$ 16,000
48,000 Gal Tank Install Complete w/Valve	LS	1	\$ 94,000	\$ 94,000
w/Valve Vault, Tie-In, DGA, Seed, Fert. &	LS	1	\$ 130,000	\$ 130,000
<b>Subtotal - Construction Cost of Contract 2 =</b>				<b>\$ 297,200</b>
<b>Total - Construction Cost of Contract 1 &amp; Contract 2 =</b>				<b>\$ 1,870,225</b>



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 Lexington KY 40507-1016

**Breathitt County Water District**  
**Table A-2**  
**KY15 S & Watts Waterline Extension**  
**Opinion of Probable Project Cost<sup>1</sup> & Possible Funding Sources**  
**Breathitt County, Kentucky**

<b>Total - Construction Cost of Contract 1 &amp; Contract 2 =</b>	<b>\$ 1,870,225</b>
<b>Other Project Related Costs</b>	
Legal and Administrative	\$ 42,000
Land Acquisition for Booster Station & Tank Site	\$ -
Interest during construction	\$ -
Engineering	
Preliminary Engr.	\$ 15,000
Design and Contract Admin.	\$ 146,000
Resident Observation	\$ 88,500
Hydraulic Analysis	\$ 20,000
Operation & Maintenance Manual	\$ 3,000
Additional-surveying, DOT permit, etc.	\$ 20,000
Project Contingencies	\$ 90,275
<b>Total Opinion of Probable Project Cost</b>	<b>\$ 2,295,000</b>
<b>Possible Funding Sources</b>	
CDBG Grant	\$ 1,000,000.00
Interim Financing (KADD Leasing Trust 4.3% variable rate with a commitment of \$ 1,261,000, ann payment = \$ 55,900)	\$ 1,261,000.00
Tap fees for over CDBG assisted income - 80 x \$ 425.	\$ 34,000.00
<b>Total of Possible Project Funding Sources</b>	<b>\$ 2,295,000</b>

<sup>1</sup> Based upon bids received on 8/15/07





OFFICE OF THE GOVERNOR  
GOVERNOR'S OFFICE FOR LOCAL DEVELOPMENT

Ernie Fletcher  
Governor

1024 Capital Center Drive, Suite 340  
Frankfort, Kentucky 40601  
Phone (502) 573-2382  
Fax (502) 573-2939  
Toll Free (800) 346-5606  
www.gold.ky.gov

Steve Robertson  
Commissioner

November 8, 2007

The Honorable Harvey Richardson  
Breathitt County Judge/ Executive  
1137 Main Street  
Jackson, Kentucky

Dear Judge Richardson:

RE: Watts Waterline Extension Project  
07-015

On behalf of Governor Ernie Fletcher, I, along with the staff of the Governor's Office for Local Development (GOLD), am pleased to inform you of your selection as a recipient of Community Development Block Grant (CDBG) funds. Preliminary approval has been given to your CDBG project shown above in the amount of \$1,000,000. This approval is based on your acceptance of the conditions outlined below:

1. Applicant will enter into a grant agreement with the Commonwealth.
2. Applicant must have the project advertised for bids six (6) months from the date of the fully executed grant agreement and the project must be completed by December 31, 2009.

Please provide this office with your written acceptance of these conditions on or before November 26, 2007. A grant agreement will then be prepared between your community and the Commonwealth. Once the grant agreement has been drafted, GOLD staff will contact you to schedule a grant agreement meeting.


Please note, at this time you may not incur any costs to be reimbursed with project funds, except for certain costs relating to engineering and planning, until you have entered into a grant agreement with the Commonwealth and then received Environmental Clearance.



The Honorable Harvey Richardson  
December 8, 2007  
Page 2

This documentation should be sent to Myralee Smith-Cowley, Executive Director, Office of Federal Grants, Governor's Office for Local Development, 1024 Capital Center Drive, Suite 340, Frankfort, Kentucky 40601. Please contact Jeff Hanna at 502/573-2382, ext. 233, if you have questions concerning this commitment letter.

Sincerely,



Colleen Chaney  
Acting Commissioner

c: Bryan Kirby, CEDA

| |

August 3, 2007

P.O. Box 398  
Frankfort, KY  
40602

502/695-7353  
fax: 502/695-2897

INVESTMENT  
BANKING

FINANCIAL  
ADVISORY

PUBLIC  
FINANCE

DEPOSIT  
SERVICES

Bryan Kirby  
Community & Economic Development Associates  
P.O. Box 855  
Richmond, KY 40476

Bryan:

After reviewing the provided financial information regarding the Breathitt County Water District, we have determined that we can obtain funding through a municipal tax-exempt bond issue, through the Kentucky Area Development District (KADD) Program. As requested, we can provide interim financing for the project in the form of a two year Bond Anticipation Note. The par amount of the notes issued will be approximately \$1,285,000, with \$1,261,000 deposited into the project fund and the remaining monies allocated to pay the underwriter and various costs of issuance. In the event the District is not able to secure Coal Development allocations for takeout of the notes, long-term financing is available through the same KADD program. Enclosed in this letter is a copy of our preliminary numbers based on current rates for the issue. If you have any questions feel free to contact us anytime, as we look forward to working with you during this process.

Thanks

  
Ryan Barrow

Financial Advisor  
Ross, Sinclair and Associates, LLC

PO Box 398  
Frankfort, KY 40602  
(t) 502.695.7353  
(f) 502.695.2897  
rbarrow@rsamuni.com

1013 Assembly  
Street  
Columbia, SC  
29201  
803/765-1004  
fax: 803/765/1059

700 Walnut Street  
Cincinnati, OH  
45202  
513/391-3934  
fax: 513/391-0124

20 Riverside Plaza  
401 West Main  
Street, Suite 2110  
Louisville, KY  
40202  
502/491-3309  
fax: 502/491-9979

ROSS, SINCLAIRE & ASSOCIATES, LLC



**Preliminary Engineering Report Amended to Final Engineering Report**  
**KY 15 South Watts Waterline Extension**  
**Breathitt County Water District, Jackson, Kentucky**

---

**Appendix "B" – Bid Results**

**Table B – 1** Contract 1 Waterlines – Certified Bid Tabulation

**Table B – 2** Contract 2 Tanks – Certified Bid Tabulation

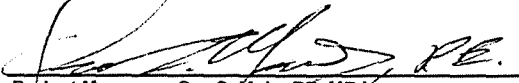
**Breathitt County Water District (BCWD)**  
**Contract # 1 - KY 15 South Watts Waterline Extension**  
 Bid Opening: 1:00 PM Local Time, August 15, 2007

**Certified Bid Tabulation**

Item No.	Description	Unit	Quantity	Ronnie Mullins & Sons, Inc. Elkhorn City, KY		Music Construction, Inc. Mt. Sterling, KY		Stotts Construction Co., Inc. Columbia, KY		Little Creek Construction, Inc. Greenup, KY		D. F. Bailey, Inc. Owingsville, KY	
				Unit Cost	Total Cost	Unit Cost	Total Cost	Unit Cost	Total Cost	Unit Cost	Total Cost	Unit Cost	Total Cost
1	Tie Into Existing Waterline	LS	1	\$ 2,500.00	\$ 2,500.00	\$ 2,000.00	\$ 2,000.00	\$ 2,200.00	\$ 2,200.00	\$ 2,500.00	\$ 2,500.00	\$ 2,033.05	\$ 2,033.05
2	Air Relief Valve	EA	5	\$ 850.00	\$ 4,250.00	\$ 600.00	\$ 3,000.00	\$ 880.00	\$ 4,400.00	\$ 950.00	\$ 4,750.00	\$ 1,171.18	\$ 5,855.90
3	8" PVC SDR-21 waterline	LF	35,900	\$ 12.50	\$ 448,750.00	\$ 13.00	\$ 466,700.00	\$ 15.50	\$ 556,450.00	\$ 15.00	\$ 538,500.00	\$ 12.11	\$ 434,749.00
4	6" PVC SDR-21 waterline	LF	17,700	\$ 11.00	\$ 194,700.00	\$ 8.50	\$ 150,450.00	\$ 10.00	\$ 177,000.00	\$ 12.50	\$ 221,250.00	\$ 9.10	\$ 161,070.00
5	4" PVC SDR-21 waterline	LF	11,500	\$ 7.50	\$ 86,250.00	\$ 5.50	\$ 63,250.00	\$ 8.00	\$ 92,000.00	\$ 10.00	\$ 115,000.00	\$ 6.75	\$ 77,625.00
6	2" PVC SDR-21 waterline	LF	1,750	\$ 4.00	\$ 7,000.00	\$ 4.50	\$ 7,875.00	\$ 7.50	\$ 13,125.00	\$ 7.32	\$ 12,810.00	\$ 5.20	\$ 9,100.00
7	8" D.I. CL 350 waterline	LF	1,300	\$ 21.00	\$ 27,300.00	\$ 24.00	\$ 31,200.00	\$ 22.00	\$ 28,600.00	\$ 22.00	\$ 28,600.00	\$ 22.41	\$ 29,133.00
8	8" D.I.M.J. Gate Valve & Box	EA	13	\$ 900.00	\$ 11,700.00	\$ 1,200.00	\$ 15,600.00	\$ 750.00	\$ 9,750.00	\$ 820.00	\$ 10,660.00	\$ 834.50	\$ 10,848.50
9	6" D.I.M.J. Gate Valve & Box	EA	7	\$ 650.00	\$ 4,550.00	\$ 800.00	\$ 5,600.00	\$ 650.00	\$ 4,550.00	\$ 650.00	\$ 4,550.00	\$ 578.53	\$ 4,049.71
10	4" D.I.M.J. Gate Valve & Box	EA	9	\$ 425.00	\$ 3,825.00	\$ 600.00	\$ 5,400.00	\$ 550.00	\$ 4,950.00	\$ 450.00	\$ 4,050.00	\$ 468.83	\$ 4,219.47
11	8" Blow off Assembly	EA	1	\$ 1,300.00	\$ 1,300.00	\$ 1,400.00	\$ 1,400.00	\$ 1,150.00	\$ 1,150.00	\$ 1,500.00	\$ 1,500.00	\$ 1,718.32	\$ 1,718.32
12	6" Blow off Assembly	EA	1	\$ 1,000.00	\$ 1,000.00	\$ 1,000.00	\$ 1,000.00	\$ 850.00	\$ 850.00	\$ 950.00	\$ 950.00	\$ 1,256.68	\$ 1,256.68
13	2" Blow off Assembly	EA	7	\$ 550.00	\$ 3,850.00	\$ 700.00	\$ 4,900.00	\$ 450.00	\$ 3,150.00	\$ 550.00	\$ 3,850.00	\$ 628.56	\$ 4,399.92
14	6" Fire Hydrant Assembly	EA	10	\$ 2,200.00	\$ 22,000.00	\$ 3,000.00	\$ 30,000.00	\$ 2,000.00	\$ 20,000.00	\$ 2,300.00	\$ 23,000.00	\$ 2,960.34	\$ 29,603.40
15	Valve Vault w/ Master Meter	EA	1	\$ 14,000.00	\$ 14,000.00	\$ 10,000.00	\$ 10,000.00	\$ 14,000.00	\$ 14,000.00	\$ 1,400.00	\$ 1,400.00	\$ 15,701.34	\$ 15,701.34
16	Valve Vault w/ Leak Detection Assembly	EA	3	\$ 5,000.00	\$ 15,000.00	\$ 6,000.00	\$ 18,000.00	\$ 10,000.00	\$ 30,000.00	\$ 9,000.00	\$ 27,000.00	\$ 11,305.76	\$ 33,917.28
17	Concrete Driveway Replacement 4 1/2" depth	SY	900	\$ 50.00	\$ 45,000.00	\$ 80.00	\$ 72,000.00	\$ 14.70	\$ 13,230.00	\$ 20.00	\$ 18,000.00	\$ 75.81	\$ 68,229.00
18	Bituminous Paving 3" depth	SY	750	\$ 40.00	\$ 30,000.00	\$ 50.00	\$ 37,500.00	\$ 13.20	\$ 9,900.00	\$ 15.00	\$ 11,250.00	\$ 44.96	\$ 33,720.00
19	DGA at Driveways 6" depth	SY	1,800	\$ 20.00	\$ 36,000.00	\$ 20.00	\$ 36,000.00	\$ 3.50	\$ 6,300.00	\$ 6.00	\$ 10,800.00	\$ 39.12	\$ 70,416.00
20	Booster Station	LS	1	\$ 170,000.00	\$ 170,000.00	\$ 120,000.00	\$ 120,000.00	\$ 170,000.00	\$ 170,000.00	\$ 120,000.00	\$ 120,000.00	\$ 115,259.30	\$ 115,259.30
21	Telemetry & Tower @ Booster Sta	LS	1	\$ 72,000.00	\$ 72,000.00	\$ 80,000.00	\$ 80,000.00	\$ 60,000.00	\$ 60,000.00	\$ 60,000.00	\$ 60,000.00	\$ 43,763.79	\$ 43,763.79
22	5/8 x 3/4 Indiv Radio Read meters	EA	66	\$ 700.00	\$ 46,200.00	\$ 750.00	\$ 49,500.00	\$ 675.00	\$ 44,550.00	\$ 750.00	\$ 49,500.00	\$ 832.36	\$ 54,935.76
23	5/8 x 3/4 Indiv Radio Read meters w/priv	EA	166	\$ 800.00	\$ 132,800.00	\$ 875.00	\$ 145,250.00	\$ 795.00	\$ 131,970.00	\$ 910.00	\$ 151,060.00	\$ 932.29	\$ 154,760.14
24	3/4" Polyethylene service line	LF	11,000	\$ 6.00	\$ 66,000.00	\$ 5.00	\$ 55,000.00	\$ 6.25	\$ 68,750.00	\$ 5.55	\$ 61,050.00	\$ 9.79	\$ 107,690.00
25	1" Polyethylene service line	LF	100	\$ 7.00	\$ 700.00	\$ 6.00	\$ 600.00	\$ 6.80	\$ 680.00	\$ 5.65	\$ 565.00	\$ 8.32	\$ 832.00
26	Hwy Xing-Bore & Jack w/12" steel casing	LF	220	\$ 130.00	\$ 28,600.00	\$ 120.00	\$ 26,400.00	\$ 100.00	\$ 22,000.00	\$ 175.00	\$ 38,500.00	\$ 120.23	\$ 26,450.60
27	Hwy Xing-Bore & Jack w/10" steel casing	LF	650	\$ 110.00	\$ 71,500.00	\$ 115.00	\$ 74,750.00	\$ 90.00	\$ 58,500.00	\$ 125.00	\$ 81,250.00	\$ 109.30	\$ 71,045.00
28	Type I - A Creek Crossing	LF	730	\$ 35.00	\$ 25,550.00	\$ 80.00	\$ 58,400.00	\$ 50.00	\$ 36,500.00	\$ 50.00	\$ 36,500.00	\$ 138.56	\$ 101,148.80
29	Waterline marker (Rhino # 70453 w/decal)	EA	20	\$ 35.00	\$ 700.00	\$ 150.00	\$ 3,000.00	\$ 35.00	\$ 700.00	\$ 32.00	\$ 640.00	\$ 59.96	\$ 1,199.20
<b>Total Base Bid (items 1 through 29)</b>				<b>\$ 1,573,025.00</b>	<b>\$ 1,574,775.00</b>	<b>\$ 1,585,255.00</b>	<b>\$ 1,639,485.00</b>	<b>\$ 1,674,730.16</b>					

Notes:

I hereby certify that the above tabulation accurately represents bids, received, opened and read in the Breathitt County Fiscal Court Room for the BCWD in Jackson, Kentucky on August 15, 2007.

  
 Project Manager - Ora C. Main, PE, MBA

8/15/07  
 Date



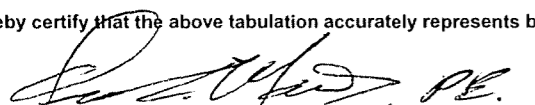
**Breathitt County Water District (BCWD)**  
**Contract # 1 - KY 15 South Watts Waterline Extension**  
 Bid Opening: 1:00 PM Local Time, August 15, 2007

**Certified Bid Tabulation**

Item No.	Description	Unit	Quantity	G & W Construction, Inc. Morehead, KY		H2O Construction Co., Inc Pikeville, KY		B. P. Pipeline, LLC Quincy, KY		Kenny, Inc. Mt. Sterling, KY		Unit Cost	Total Cost
				Unit Cost	Total Cost	Unit Cost	Total Cost	Unit Cost	Total Cost	Unit Cost	Total Cost		
1	Tie Into Existing Waterline	LS	1	\$ 2,995.27	\$ 2,995.27	\$ 2,500.00	\$ 2,500.00	\$ 2,000.00	\$ 2,000.00	\$ 3,632.00	\$ 3,632.00		\$ -
2	Air Relief Valve	EA	5	\$ 659.02	\$ 3,295.10	\$ 1,200.00	\$ 6,000.00	\$ 500.00	\$ 2,500.00	\$ 681.00	\$ 3,405.00		\$ -
3	8" PVC SDR-21 waterline	LF	35,900	\$ 14.37	\$ 515,883.00	\$ 16.00	\$ 574,400.00	\$ 16.00	\$ 574,400.00	\$ 16.90	\$ 606,710.00		\$ -
4	6" PVC SDR-21 waterline	LF	17,700	\$ 10.87	\$ 192,399.00	\$ 14.00	\$ 247,800.00	\$ 13.00	\$ 230,100.00	\$ 13.40	\$ 237,180.00		\$ -
5	4" PVC SDR-21 waterline	LF	11,500	\$ 8.38	\$ 96,370.00	\$ 11.00	\$ 126,500.00	\$ 11.00	\$ 126,500.00	\$ 11.70	\$ 134,550.00		\$ -
6	2" PVC SDR-21 waterline	LF	1,750	\$ 6.42	\$ 11,235.00	\$ 10.00	\$ 17,500.00	\$ 8.00	\$ 14,000.00	\$ 9.10	\$ 15,925.00		\$ -
7	8" D.I. CL 350 waterline	LF	1,300	\$ 26.29	\$ 34,177.00	\$ 20.00	\$ 26,000.00	\$ 30.00	\$ 39,000.00	\$ 28.40	\$ 36,920.00		\$ -
8	8" D.I.M.J. Gate Valve & Box	EA	13	\$ 985.30	\$ 12,808.90	\$ 1,100.00	\$ 14,300.00	\$ 950.00	\$ 12,350.00	\$ 965.00	\$ 12,545.00		\$ -
9	6" D.I.M.J. Gate Valve & Box	EA	7	\$ 705.48	\$ 4,938.36	\$ 800.00	\$ 5,600.00	\$ 700.00	\$ 4,900.00	\$ 852.00	\$ 5,964.00		\$ -
10	4" D.I.M.J. Gate Valve & Box	EA	9	\$ 569.95	\$ 5,129.55	\$ 600.00	\$ 5,400.00	\$ 500.00	\$ 4,500.00	\$ 740.00	\$ 6,660.00		\$ -
11	8" Blow off Assembly	EA	1	\$ 1,199.27	\$ 1,199.27	\$ 1,400.00	\$ 1,400.00	\$ 1,200.00	\$ 1,200.00	\$ 1,590.00	\$ 1,590.00		\$ -
12	6" Blow off Assembly	EA	1	\$ 936.22	\$ 936.22	\$ 1,000.00	\$ 1,000.00	\$ 700.00	\$ 700.00	\$ 1,360.00	\$ 1,360.00		\$ -
13	2" Blow off Assembly	EA	7	\$ 591.65	\$ 4,141.55	\$ 600.00	\$ 4,200.00	\$ 600.00	\$ 4,200.00	\$ 1,135.00	\$ 7,945.00		\$ -
14	6" Fire Hydrant Assembly	EA	10	\$ 2,584.13	\$ 25,841.30	\$ 2,800.00	\$ 28,000.00	\$ 2,500.00	\$ 25,000.00	\$ 2,838.00	\$ 28,380.00		\$ -
15	Valve Vault w/ Master Meter	EA	1	\$ 14,476.89	\$ 14,476.89	\$ 15,000.00	\$ 15,000.00	\$ 10,000.00	\$ 10,000.00	\$ 17,000.00	\$ 17,000.00		\$ -
16	Valve Vault w/ Leak Detection Assembly	EA	3	\$ 8,635.00	\$ 25,905.00	\$ 6,500.00	\$ 19,500.00	\$ 6,000.00	\$ 18,000.00	\$ 9,080.00	\$ 27,240.00		\$ -
17	Concrete Driveway Replacement 4 1/2" depth	SY	900	\$ 60.00	\$ 54,000.00	\$ 80.00	\$ 72,000.00	\$ 40.00	\$ 36,000.00	\$ 22.70	\$ 20,430.00		\$ -
18	Bituminous Paving 3" depth	SY	750	\$ 40.00	\$ 30,000.00	\$ 50.00	\$ 37,500.00	\$ 30.00	\$ 22,500.00	\$ 20.50	\$ 15,375.00		\$ -
19	DGA at Driveways 6" depth	SY	1,800	\$ 30.00	\$ 54,000.00	\$ 18.00	\$ 32,400.00	\$ 25.00	\$ 45,000.00	\$ 11.35	\$ 20,430.00		\$ -
20	Booster Station	LS	1	\$ 148,763.02	\$ 148,763.02	\$ 120,000.00	\$ 120,000.00	\$ 125,000.00	\$ 125,000.00	\$ 96,000.00	\$ 96,000.00		\$ -
21	Telemetry & Tower @ Booster Sta	LS	1	\$ 46,732.80	\$ 46,732.80	\$ 64,000.00	\$ 64,000.00	\$ 50,000.00	\$ 50,000.00	\$ 58,000.00	\$ 58,000.00		\$ -
22	5/8 x 3/4 Indiv Radio Read meters	EA	66	\$ 695.19	\$ 45,882.54	\$ 750.00	\$ 49,500.00	\$ 850.00	\$ 56,100.00	\$ 850.00	\$ 56,100.00		\$ -
23	5/8 x 3/4 Indiv Radio Read meters w/priv	EA	166	\$ 776.01	\$ 128,817.66	\$ 850.00	\$ 141,100.00	\$ 1,000.00	\$ 166,000.00	\$ 908.00	\$ 150,728.00		\$ -
24	3/4" Polyethylene service line	LF	11,000	\$ 6.20	\$ 68,200.00	\$ 5.00	\$ 55,000.00	\$ 6.00	\$ 66,000.00	\$ 5.70	\$ 62,700.00		\$ -
25	1" Polyethylene service line	LF	100	\$ 6.32	\$ 632.00	\$ 6.00	\$ 600.00	\$ 6.50	\$ 650.00	\$ 9.10	\$ 910.00		\$ -
26	Hwy Xing-Bore & Jack w/12" steel casing	LF	220	\$ 103.95	\$ 22,869.00	\$ 125.00	\$ 27,500.00	\$ 160.00	\$ 35,200.00	\$ 227.00	\$ 49,940.00		\$ -
27	Hwy Xing-Bore & Jack w/10" steel casing	LF	650	\$ 89.48	\$ 58,162.00	\$ 125.00	\$ 81,250.00	\$ 150.00	\$ 97,500.00	\$ 190.00	\$ 123,500.00		\$ -
28	Type I - A Creek Crossing	LF	730	\$ 88.90	\$ 64,897.00	\$ 50.00	\$ 36,500.00	\$ 110.00	\$ 80,300.00	\$ 68.00	\$ 49,640.00		\$ -
29	Waterline marker (Rhino # 70453 w/decal)	EA	20	\$ 58.27	\$ 1,165.40	\$ 150.00	\$ 3,000.00	\$ 30.00	\$ 600.00	\$ 114.00	\$ 2,280.00		\$ -
<b>Total Base Bid (items 1 through 29)</b>				<b>\$ 1,675,852.83</b>	<b>\$ 1,675,852.83</b>	<b>\$ 1,815,450.00</b>	<b>\$ 1,815,450.00</b>	<b>\$ 1,850,200.00</b>	<b>\$ 1,850,200.00</b>	<b>\$ 1,853,039.00</b>	<b>\$ 1,853,039.00</b>	<b>\$ -</b>	<b>\$ -</b>

Notes:

I hereby certify that the above tabulation accurately represents bids, received, opened and read in the Breathitt County Fiscal Court Room for the BCWD in Jackson, Kentucky on August 15, 2007.

  
 Project Manager - Ora C. Main, PE, MBA

8/15/07  
 Date





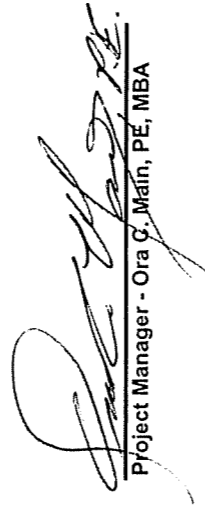
**Breathitt County Water District (BCWD)**  
**Contract # 2 - KY 15 South Watts Ground Storage Tanks**  
**Bid Opening: 1:00 PM Local Time, August 15, 2007**

**Certified Bid Tabulation**

Item No.	Description	Unit	Quantity	Laurel Construction, Inc. London, KY		Weiding Incorporated Charleston, WV		Total Cost	
				Unit Cost	Total Cost	Unit Cost	Total Cost	Unit Cost	Total Cost
1	10' Wide Access Road, Excav. and Aggregate	LF	2000	\$ 8.00	\$ 16,000.00	\$ 30.00	\$ 60,000.00	\$	\$ -
2	24" CMP, Installed	LF	60	\$ 20.00	\$ 1,200.00	\$ 50.00	\$ 3,000.00	\$	\$ -
3	Unclassified Tank Site Excav. both sites	LS	1	\$ 40,000.00	\$ 40,000.00	\$ 120,000.00	\$ 120,000.00	\$	\$ -
4	Chain link fencing (8-foot high) - both sites	LS	1	\$ 16,000.00	\$ 16,000.00	\$ 30,000.00	\$ 30,000.00	\$	\$ -
5	48,000 Gal Tank Install Complete w/Valve Vau	LS	1	\$ 94,000.00	\$ 94,000.00	\$ 120,000.00	\$ 120,000.00	\$	\$ -
6	105,000 Gal Tank Install Complete w/Valve Va	LS	1	\$ 130,000.00	\$ 130,000.00	\$ 200,000.00	\$ 200,000.00	\$	\$ -
<b>Total Base Bid (items 1 through 6)</b>					\$ 297,200.00		\$ 533,000.00	\$	\$ -

Sheet 1 of 1

I hereby certify that the above tabulation accurately represents bids, received, opened and read in the Breathitt County Fiscal Court Room for the BCWD in Jackson, Kentucky on August 15, 2007.

  
 Project Manager - Ora C. Main, PE, MBA

8/15/07  
 Date



**nesbitt engineering, inc.**  
*providing proven solutions since 1976*  
 227 North Upper Street  
 Lexington, KY 40507-1016

**Preliminary Engineering Report Amended to Final Engineering Report**  
**KY 15 South Watts Waterline Extension**  
**Breathitt County Water District, Jackson, Kentucky**

---

**Appendix "C" – Engineer's Letter of Recommendation to Bid Award**



August 15, 2007

Mr. J. L. Smith, Chairman  
Breathitt County Water District  
1137 Main Street  
Jackson, Kentucky 41339

RE: Award of Construction Contracts  
Contract # 1: KY 15 South Watts Waterline Project  
Contract # 2: KY 15 South Watts Ground Storage Tanks

Dear Mr. Smith:

On August 15, 2007 at the Breathitt County Court House, nine (9) bids were received for Contract # 1, and two (2) bids were received for Contract # 2. Certified bid tabulations were prepared by our office for each contract and then presented to you at the board meeting later that evening.

After the Certified Bid Tabulations were prepared, a reference check was eliminated, since both Nesbitt Engineering, Inc. (NEI) and the District have conducted multiple successful project with both of the apparent low bidders. Based on past experiences, we conclude that both, Ronnie Mullins & Sons, Inc. (Contract 1) and Laurel Construction Company, Inc. (Contract 2), qualify as responsive and responsible bidders, and are unaware of any reason a construction contract should not be awarded to them. Therefore, NEI recommends that Breathitt County Water District (BCWD) award Contract # 1 to Ronnie Mullins & Sons, Inc in the amount of \$1,573,025.00 and Contract #2 to Laurel Construction Company, Inc for \$297,200.00.

Issuance of the "Notice of Award" for each Contract is recommended pending concurrence of the Kentucky Public Service Commission, and all other Funding Agencies.

Please feel free to call me if you have any questions. Thank you for your time and attention to this matter.

Sincerely,

Ora C. Main, PE, MBA  
Project Manager

c: Jason Richardson, Judge-Executive  
Shannon Moore, BCWD Superintendent  
Bryan Kirby, CEDA  
Ronnie Mullins, Ronnie Mullins & Sons, Inc.  
Demas Philpot, Laurel Construction Co., Inc.

P:\Breathitt\1998-18\Bidding\JL Re Cont. Award 08-15-07.doc

**Preliminary Engineering Report Amended to Final Engineering Report**  
KY 15 South Watts Waterline Extension  
Breathitt County Water District, Jackson, Kentucky

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**Appendix "D" – Kentucky Division of Water Approval Letter**



ENVIRONMENTAL AND PUBLIC PROTECTION CABINET  
DEPARTMENT FOR ENVIRONMENTAL PROTECTION

Ernie Fletcher  
Governor

Division of Water  
14 Reilly Road  
Frankfort, Kentucky 40601-1190  
www.kentucky.gov

Teresa J. Hill  
Secretary

July 31, 2007

Mr. John Lester Smith, Chairman  
Breathitt County Water District  
1137 Main Street  
Jackson, Kentucky 41339

RE: Breathitt County Water District  
AI: 45303  
DW No. 0131012-07-001  
KY 15 South Watts WLE  
Storage Tanks and Pump Station  
Activity ID: APE20070001  
Breathitt County

Dear Mr. Smith:

We have reviewed the plans and specifications for the above referenced project. The Plans include the construction of 32,709 LF of 8-inch PVC, 18,910 LF of 6-inch PVC, 10,038 LF of 4-inch PVC, 1,603 LF of 2-inch PVC, 1,240 LF of 8-inch Ductile Iron waterline, one pump station, a 48,000 gallon ground storage tank and a 105,000 gallon ground storage tank. This is to advise that plans and specifications for the above referenced project are APPROVED with respect to sanitary features of design, as of this date with the requirements contained in the enclosed waterline extension construction permit.

For the purpose of review, DOW will not approve lines less than 3-inches for distribution. When 2-inch lines are proposed for distribution they are approved on a case-by-case basis with the stipulations that such cannot be extended. In areas where lines may be extended in the future, DOW reserves the right to approve 3-inch waterlines as a minimum diameter

If you have any questions regarding this decision, please contact Joe Manley, at (502) 564-3410.

Sincerely,

*Joe Manley*  
Donna S. Marlin, Manager  
Drinking Water Branch  
Division of Water

DSM/MR/JAM  
Enclosure

CC: Ora Main, P.E., Nesbitt Engineering, Inc.  
Breathitt County Health Department  
Public Service Commission

KentuckyUnbridledSpirit.com



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An Equal Opportunity Employer M/F/D

**Distribution-Major Construction**

Breathitt Co Water District  
Subject Item Inventory

Activity ID No.: APE20070001

**Subject Item Inventory:**

ID	Designation	Description
AIOO45303		
PORT8	Waterline	32,709 LF of 8-inch PVC, 18,910 LF of 6-inch PVC, 10,038 LF of 4-inch PVC, 1,603 LF of 2-inch PVC & 1,240 LF of Ductile Iron Pipe
PORT9	2-7.5 hp pumps	2-7.5 hp pumps, 130gpm, & 140 TDH
STOR6	Ground Storage Tank	48,000 gallon storage tank
STOR7	Ground Storage Tank	105,000 gallon storage tank

**Subject Item Groups:**

ID	Description	Components
GACT5	32,709 LF of 8-inch PVC, 18,910 LF of 6-inch PVC, 10,038 LF of 4-inch PVC, 1,603 LF of 2-inch PVC, 1,240 LF of 8-inch Ductile Iron waterline, 1-Pump Station, 2-Storage Tanks.	PORT9 2-7.5 hp pumps, 130gpm, & 140 TDH
		STOR6 48,000 gallon storage tank
		STOR7 105,000 gallon storage tank

**Distribution-Major Construction**

Breathitt Co Water District  
Subject Item Inventory

Activity ID No.: APE20070001

ID	Description	Components
GACT5	32,709 LF of 8-inch PVC, 18,910 LF of 6-inch PVC, 10,038 LF of 4-inch PVC, 1,603 LF of 2-inch PVC, 1,240 LF of 8-inch Ductile Iron waterline, 1-Pump Station, 2-Storage Tanks.	PORT8 32,709 LF of 8-inch PVC, 18,910 LF of 6-inch PVC, 10,038 LF of 4-inch PVC, 1,603 LF of 2-inch PVC

**KEY**

ACTV = Activity  
AREA = Area  
EQPT = Equipment  
PERS = Personnel  
STOR = Storage  
TRMT = Treatment

AIOO = Agency Interest  
COMB = Combustion  
MNPT = Monitoring Point  
PORT = Transport  
STRC = Structure

**Distribution-Major Construction**

Breathitt Co Water District  
Facility Requirements

Activity ID No.: APE20070001

GACT5 (KY 15 S. Watts WLE) 32,709 LF of 8-inch PVC, 18,910 LF of 6-inch PVC, 10,038LF of 4-inch PVC, 1,603 LF of 2-inch PVC, 1,240 LF of 8-inch Ductile Iron waterline. 1-Pump Station. 2-Storage Tanks.: Monitoring Requirements:

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Condition No.	Parameter	Condition
M-1	Coliform	The presence or absence of total Coliform monitored by sampling and analysis as needed shall be determined for the new or relocated water line(s). Take samples at connection points to existing lines, at 1 mile intervals, and at dead ends without omitting any branch of the new or relocated water line. Sample bottles shall be clearly identified as "special" construction tests. [401 KAR 8:100 Section 1(7), 401 KAR 8:150 Section 4, Recommended Standards for Water Works 8.5.6] This requirement is applicable during the following months: All Year. Statistical basis: Instantaneous determination.
M-2	Coliform	The presence or absence of total Coliform monitored by sampling and analysis as needed shall be determined for the new storage structure(s). With at least 1 sample taken at least 24 hours after the first construction complete sample(s), take 2 or more samples from the yard hydrant, the outlet piping from the storage structure, or a sample tap directly connected to the storage structure. Sample bottles shall be clearly identified as "special" construction tests. [Recommended Standards for Water Works 7.0.18, 401 KAR 8:150 Section 4] This requirement is applicable during the following months: All Year. Statistical basis: Instantaneous determination.
M-3	Coliform	The presence or absence of total Coliform monitored by sampling and analysis as needed shall be determined for the new pump(s). If the pump(s) are independent of (not directly connected to) the new or relocated lines, take at least 1 sample at the discharge side pitcock. Otherwise, no additional sampling beyond the sampling required for new or relocated lines shall be required in association with the pump(s). Sample bottles shall be clearly identified as "special" construction tests. [401 KAR 8:100 Section 1(7)] This requirement is applicable during the following months: All Year. Statistical basis: Instantaneous determination.

**Submittal/Action Requirements:**

**Coliform:**

Condition No.	Condition
S-1	Coliform For new construction projects, the distribution system, using the most expedient method, shall submit Coliform test results to the Cabinet: Due immediately following disinfection and flushing. [401 KAR 8:150 Section 4(2)]



**Distribution-Major Construction**

Breathitt Co Water District  
Facility Requirements

Activity ID No.: APE20070001

**GACT5 (continued):**

**Submittal/Action Requirements:**

Condition No.	Condition
S-2	For proposed changes to the approved plan, submit information: Due prior to any modification to the Cabinet for approval. Changes to the approved plan shall not be implemented without the prior written approval of the Cabinet. [401 KAR 8:100 Section 1(8)]
S-3	The person who presented the plans shall submit the professional engineer's certification: Due when construction is complete to the Division of Water. The certification shall be signed by a registered professional engineer and state that the water project has been constructed and tested in accordance with the approved plans, specifications, and requirements. [401 KAR 8:100 Section 1(8)]

**Narrative Requirements:  
Additional Limitations:**

Condition No.	Condition
T-1	Additional Limitations: Chlorinated water resulting from disinfection of project components shall be disposed in a manner which will not violate 401 KAR 5:031. [401 KAR 8:020 Section 2(20)]

Condition No.	Condition
T-2	This project has been permitted under the provisions of KRS Chapter 224 and regulations promulgated pursuant thereto. Issuance of this permit does not relieve the applicant from the responsibility of obtaining any other approvals, permits or licenses required by this Cabinet and other state, federal and local agencies. Further, this permit does not address the authority of the permittee to provide service to the area to be served. [401 KAR 8:100 Section 1(7)]
T-3	Unless construction of this project is begun within 1 year from the issuance date of this permit, the permit shall expire. If requested prior to the permit expiration, an official extension from the Division of Water may be granted. If this permit expires, the original plans and specifications may be resubmitted for a new comprehensive review. If you have any questions concerning this project, please contact the Drinking Water Branch at 502/564-3410. [401 KAR 8:100 Section 1(9)]

**Distribution-Major Construction**  
Breathitt Co Water District  
Facility Requirements

Activity ID No.: APE20070001

**GACT5 (continued):**

**Narrative Requirements:**

Condition No.	Condition
T-4	During construction, a set of approved plans and specification shall be available at the job site at all times. All work shall be performed in accordance with the approved plans and specifications. [401 KAR 8:100 Section 1(7)(a)]

## Distribution-Major Construction

Breathitt Co Water District  
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### PORT8 (Waterline) 32,709 LF of 8-inch PVC, 18,910 LF of 6-inch PVC, 10,038 LF of 4-inch PVC, 1,603 LF of 2-inch PVC & 1,240 LF of Ductile Iron Pipe:

#### Limitation Requirements:

Condition No.	Parameter	Condition
L-1	Depth	A continuous and uniform bedding shall be provided in the trench for all buried pipe. Backfill material shall be tamped in layers around the pipe and to a sufficient height above the pipe to adequately support and protect the pipe. Stones found in the trench shall be removed for a Depth $\geq 6$ in below the bottom of the pipe. [Recommended Standards for Water Works 8.5.2] This requirement is applicable during the following months: All Year. Statistical basis: Not applicable.
L-2	Depth	All water lines shall be covered to a Depth $\geq 30$ in to prevent freezing. [Recommended Standards for Water Works 8.5.3, 401 KAR 8:100 Section 1(7)] This requirement is applicable during the following months: All Year. Statistical basis: Minimum.
L-3	Diameter	Water Lines in the area may have Diameter $\geq 2$ in inch but such lines shall not be extended. [Recommended Standards for Water Works 8.1.4] This requirement is applicable during the following months: All Year. Statistical basis: Minimum.
L-4	Diameter	Water lines with Diameter $< 6$ in shall not have fire hydrants. [Recommended Standards for Water Works 8.1.5] This requirement is applicable during the following months: All Year. Statistical basis: Minimum.
L-5	Diameter	All new and existing water lines serving fire hydrants or where fire protection is provided shall have Diameter $\geq 6$ in. [Recommended Standards for Water Works 8.1.2] This requirement is applicable during the following months: All Year. Statistical basis: Minimum.
L-6	Distance	Water lines shall have a sufficient quantity of valves so that inconvenience and sanitary hazards will be minimized during repairs. A valve spacing Distance $\leq 1.0$ mi should be utilized. [Recommended Standards for Water Works 8.2] This requirement is applicable during the following months: All Year. Statistical basis: Not applicable.
L-7	Distance	Hydrant drains shall not be connected to sanitary sewers or storm drains and shall be located a Distance $> 10$ ft from sanitary sewers and storm drains. [Recommended Standards for Water Works 8.3.4] This requirement is applicable during the following months: All Year. Statistical basis: Not applicable.
L-8	Distance	Except when not practical, water lines shall be laid a horizontal Distance $\geq 10$ ft from any existing or proposed sewer. The distance shall be measured edge to edge. In cases where it is not practical to maintain a 10 foot separation, water lines may be installed closer to a sewer provided that the water lines shall be laid in a separate trench or on an undisturbed shelf located on one side of the sewer at such an elevation that the bottom of the water line is at least 18 inches above the top of the sewer. [Recommended Standards for Water Works 8.6.2] This requirement is applicable during the following months: All Year. Statistical basis: Not applicable.

## Distribution-Major Construction

Breathitt Co Water District  
Facility Requirements

Activity ID No.: APE20070001

### PORTS (continued):

#### Limitation Requirements:

Condition No.	Parameter	Condition
L-9	Distance	<p>When water lines and sewers cross, 1) water lines shall be laid such that either a) the top of the water line is a vertical Distance <math>\geq</math> 18 in below the bottom of the sewer line or b) the bottom of the water line is a vertical Distance <math>\geq</math> 18 in above the top of the sewer line, 2) 1 full length of the water pipe shall be located so that both joints of the water pipe will be as far from the sewer as possible, and 3) special structural support for the water and sewer pipes may be required. [Recommended Standards for Water Works 8.6.3] This requirement is applicable during the following months: All Year. Statistical basis: Not applicable.</p>
L-10	Distance	<p>The open end of an air relief pipe from automatic valves shall be extended a Distance <math>\geq</math> 1.0 ft above grade and provided with a screened, downward-facing elbow. The pipe from a manually operated valve shall be extended to the top of the pit. Use of manual air relief valves is recommended wherever possible. [Recommended Standards for Water Works 8.4.2] This requirement is applicable during the following months: All Year. Statistical basis: Not applicable.</p>
L-11	Pressure	<p>Pipes shall not be installed unless all points of the distribution system remain designed for ground level Pressure <math>\geq</math> 20 psi under all conditions of flow. [Recommended Standards for Water Works 8.1.1] This requirement is applicable during the following months: All Year. Statistical basis: Minimum.</p>
L-12	Pressure	<p>Pressure <math>\geq</math> 30 psi must be available on the discharge side of all meters. [401 KAR 8:100 Section 4(2)] This requirement is applicable during the following months: All Year. Statistical basis: Instantaneous determination.</p>
L-13	Residual Disinfection	<p>New or relocated water lines shall be thoroughly disinfected (in accordance with AWWA Standard C651) upon completion of construction and before being placed into service. To disinfect the new or relocated lines use chlorine or chlorine compounds in such amounts as to produce an initial disinfectant concentration of at least 50 ppm and a Residual Disinfection <math>\geq</math> 25 ppm at the end of 24 hours. Follow the line disinfection with thorough flushing and place the lines into service if, and only if, Coliform monitoring applicable to the line does not show the presence of Coliform. If Coliform is detected, repeat flushing of the line and Coliform monitoring. If Coliform is still detected, repeat disinfection and flushing as if the line has never been disinfected. Continue the described process until monitoring does not show the presence of Coliform. [401 KAR 8:150 Section 4(1), Recommended Standards for Water Works 8.5.6] This requirement is applicable during the following months: All Year. Statistical basis: Minimum.</p>

**Distribution-Major Construction**

Breathitt Co Water District  
Facility Requirements

Activity ID No.: APE20070001

**PORT8 (continued):**

**Limitation Requirements:**

Condition No.	Parameter	Condition
L-14	Velocity	Each blow-off, fire hydrant, or flush hydrant shall be sized so that Velocity $\geq$ 2.5 ft/sec can be achieved in the water main served by the blow-off or hydrant during flushing. [Recommended Standards for Water Works 8.1.6.b, 401 KAR 8:100 Section 1(7)] This requirement is applicable during the following months: All Year. Statistical basis: Minimum.

**Monitoring Requirements:**

Condition No.	Parameter	Condition
M-1	leaks	The presence or absence of leaks monitored by physical testing as needed shall be determined in all types of installed pipe. Pressure testing and leakage testing shall be in accordance with the latest edition of AWWA Standard C600. [Recommended Standards for Water Works 8.5.5] This requirement is applicable during the following months: All Year. Statistical basis: Instantaneous determination.

**Narrative Requirements:**

**Additional Limitations:**

Condition No.	Condition
T-1	<b>Additional Limitations:</b> Water line installation shall be in accordance with AWWA standards or manufacturer recommendations. [Recommended Standards for Water Works 8.5.1]
T-2	<b>Additional Limitations:</b> Pipes, fittings, valves and fire hydrants shall conform to the latest standards issued by the AWWA or NSF (if such standards exist). PVC and PE piping used must be certified to ANSI/NSF Standard 61. [Recommended Standards for Water Works 8.0.1]
T-3	<b>Additional Limitations:</b> At high points in water lines, where air can accumulate, provisions shall be made to remove the air by means of hydrants or air relief valves. Automatic air relief valves shall not be used in situations where manhole or chamber flooding may occur. [Recommended Standards for Water Works 8.4.1]

**Distribution-Major Construction**

Breathitt Co Water District  
Facility Requirements

Activity ID No.: APE20070001

**PORT8 (continued):**

**Narrative Requirements:  
Additional Limitations:**

Condition No.	Condition
T-4	<p><b>Additional Limitations:</b> All tees, bends, plugs and hydrants shall be provided with reaction blocking, tie rods or joints designed to prevent movement. [Recommended Standards for Water Works 8.5.4]</p>
T-5	<p><b>Additional Limitations:</b> For lines that dead end, a fire hydrant or blow-off shall be required at the end of each 6 inch or larger diameter line and a flush hydrant or blow-off shall be required at the end of each line that is less than 6 inches in diameter. [Recommended Standards for Water Works 8.1.6]</p>
T-6	<p><b>Additional Limitations:</b> For each fire or flush hydrant, auxiliary valves shall be installed in the hydrant lead pipe. [Recommended Standards for Water Works 8.3.3]</p>
T-7	<p><b>Additional Limitations:</b> No flushing device, blow-off, or air relief valve shall be directly connected to any sewer. Chambers, pits or manholes containing valves, blow-offs, meters, or other such appurtenances shall not be directly connected to any storm drain or sanitary sewer. Such chambers, pits or manholes shall be drained to absorptions pits underground or to the surface of the ground where they are not subject to flooding by surface water. [Recommended Standards for Water Works 8.1.6, Recommended Standards for Water Works 8.4.3]</p>
T-8	<p><b>Additional Limitations:</b> If water lines are installed or replaced in areas of organic contamination or in areas within 200 ft of underground or petroleum storage tanks, ductile iron or other nonpermeable materials shall be used in all portions of the water line installation or replacement. [401 KAR 8:100 Section 1(5)(d)6, Recommended Standards for Water Works 8.0.2]</p>
T-9	<p><b>Additional Limitations:</b> No water pipe shall pass through or come in contact with any part of a sewer manhole. [Recommended Standards for Water Works 8.6.6]</p>
T-10	<p><b>Additional Limitations:</b> If a fire sprinkler system is to be installed, a double check detector assembly approved for backflow prevention shall be utilized. The double check detector assembly of the system shall be accessible for testing. [401 KAR 8:100 Section 1(7)]</p>
T-11	<p><b>Additional Limitations:</b> If water lines cross a stream or wetland, the provisions in the attached Water Quality Certification shall apply. If you have any questions please contact the Water Quality Certification Supervisor of the Water Quality Branch at (502) 564-2225. [401 KAR 8:100 Section 1(7)]</p>

**Distribution-Major Construction**

Breathitt Co Water District  
Facility Requirements

Activity ID No.: APE20070001

**PORT8 (continued):**

**Narrative Requirements:**

**Subfluvial Pipe Crossings:**

Condition No.	Condition
T-12	<p>Subfluvial Pipe Crossings: For subfluvial pipe crossings, a floodplain construction permit will not be required pursuant to KRS 151.250 if the following requirements of 401 KAR 4:050 Section 2 are met.</p> <ol style="list-style-type: none"><li>1) No material may be placed in the stream or in the flood plain of the stream to form construction pads, coffer dams, access roads, etc. during construction of pipe crossings.</li><li>2) Crossing trenches shall be backfilled as closely as possible to the original contour.</li><li>3) All excess material resulting from construction displacement in a crossing trench shall be disposed of outside the flood plain.</li><li>4) For erodible channels, there shall be at least 30 inches of backfill on top of all pipe or conduit points in the crossing.</li><li>5) For nonerodible channels, pipes or conduits in the crossing shall be encased on all sides by at least 6 inches of concrete with all pipe or conduit points in the crossing at least 6 inches below the original contour of the channel. [401 KAR 8:100 Section 1(7)]</li></ol>
T-13	<p>Subfluvial Pipe Crossings: For subfluvial pipe crossings greater than 15 feet in width,</p> <ol style="list-style-type: none"><li>1) the pipe shall be of special construction, having flexible, restrained, or welded watertight joints, and</li><li>2) valves shall be provided at both ends of water crossings so that the section can be isolated for testing or repair.</li></ol> <p>Valves shall</p> <ol style="list-style-type: none"><li>a) be easily accessible,</li><li>b) not be subject to flooding, and</li><li>c) if closest to the supply source, be in a manhole with permanent taps made on each side of the valve to allow insertion of a small meter to determine leakage and for sampling purposes. [Recommended Standards for Water Works 8.7.2]</li></ol>

## Distribution-Major Construction

Breathitt Co Water District  
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### PORT9 (2-7.5 hp pumps) 2-7.5 hp pumps, 130gpm, & 140 TDH:

#### Limitation Requirements:

Condition No.	Parameter	Condition
L-1	Pressure	Pump stations shall be located or controlled so that intake Pressure $\geq$ 20 psi is maintained during normal pump operation. [Recommended Standards for Water Works 6.4.b] This requirement is applicable during the following months: All Year. Statistical basis: Minimum.
L-2	Pressure	Pump stations shall be located or controlled so that an automatic cutoff or a low pressure controller maintains a Pressure $\geq$ 10 psi in the suction line under all operating conditions. [Recommended Standards for Water Works 6.4.c] This requirement is applicable during the following months: All Year. Statistical basis: Minimum.
L-3	Residual Disinfection	New pumps shall be thoroughly disinfected (in accordance with AWWA Standard C651) upon completion of construction and before being placed into service. To disinfect new pumps use chlorine or chlorine compounds in such amounts as to produce an initial disinfectant concentration of at least 50 ppm and a Residual Disinfection $\geq$ 25 ppm at the end of 24 hours. Follow the disinfection with thorough flushing and place each pump into service if, and only if, Coliform monitoring applicable to the pump does not show the presence of Coliform. If Coliform is detected, repeat flushing of the pump and Coliform monitoring. If Coliform is still detected, repeat disinfection and flushing as if the pump has never been disinfected. Continue the described process until monitoring does not show the presence of Coliform. [401 KAR 8:100 Section 1(7)] This requirement is applicable during the following months: All Year. Statistical basis: Minimum.
L-4	Slope	Pumping facilities shall be located and designed to maintain the sanitary quality of pumped water. As part of this, all pump station floors shall have Slope $\geq$ 3 in per 10 ft to a suitable drain. [Recommended Standards for Water Works 6.2.e, Recommended Standards for Water Works 6.0, Recommended Standards for Water Works 6.1] This requirement is applicable during the following months: All Year. Statistical basis: Minimum.
L-5	Air Change Rate	Ventilation shall conform to existing local and/or state codes. At a minimum forced ventilation shall produce an Air Change Rate $\geq$ 6 air change(s)/hr. [401 KAR 8:100 Section 1(7), Recommended Standards for Water Works 6.2.5] This requirement is applicable during the following months: All Year. Statistical basis: Minimum.



**Distribution-Major Construction**  
Breathitt Co Water District  
Facility Requirements

Activity ID No.: APE20070001

**PORT9 (continued):**

**Limitation Requirements:**

Condition No.	Parameter	Condition
L-6	Height	<p>Pumping stations shall not be subject to flooding. To this end,</p> <ol style="list-style-type: none"> <li>1) grading around stations shall lead surface drainage away and</li> <li>2) stations shall be elevated or protected to a Height <math>\geq</math> 3 ft above the highest of the following:               <ol style="list-style-type: none"> <li>a) the 100-year flood elevation, or</li> <li>b) the highest recorded flood elevation. [Recommended Standards for Water Works 6.1.1, Recommended Standards for Water Works 6.0] This requirement is applicable during the following months: All Year. Statistical basis: Minimum.</li> </ol> </li> </ol> <p>When a pump station has pits or compartments which must be entered, stairways or ladders shall be provided between all floors. Stairs shall have risers with a Height <math>\leq</math> 9 in, handrails on both sides, and treads with non-slip material wide enough for safety. [Recommended Standards for Water Works 6.2.3] This requirement is applicable during the following months: All Year. Statistical basis: Maximum.</p>
L-7	Height	<p>When a pump station has pits or compartments which must be entered, stairways or ladders shall be provided between all floors. Stairs shall have risers with a Height <math>\leq</math> 9 in, handrails on both sides, and treads with non-slip material wide enough for safety. [Recommended Standards for Water Works 6.2.3] This requirement is applicable during the following months: All Year. Statistical basis: Maximum.</p>

**Narrative Requirements:**

**Additional Limitations:**

Condition No.	Condition
T-1	<p><b>Additional Limitations:</b> Pumping stations shall be so located that the proposed site will meet the requirements for hydraulics of the system. [Recommended Standards for Water Works 6.1]</p>
T-2	<p><b>Additional Limitations:</b> Pumping stations shall be readily accessible at all times for servicing and repairs. [Recommended Standards for Water Works 6.1.1.b, Recommended Standards for Water Works 6.4.3]</p>
T-3	<p><b>Additional Limitations:</b> Pumping stations shall be designed to prevent vandalism and protect against entrance of animals or unauthorized persons. [Recommended Standards for Water Works 6.1.1.d]</p>
T-4	<p><b>Additional Limitations:</b> Pumping stations shall be of durable construction with outward-opening doors. [Recommended Standards for Water Works 6.2.b]</p>

**Distribution-Major Construction**  
Breathitt Co Water District  
Facility Requirements

Activity ID No.: APE20070001

**PORT9 (continued):**

**Narrative Requirements:**

**Additional Limitations:**

Condition No.	Condition
T-5	<p><b>Additional Limitations:</b> Pumping stations shall be fire and weather resistant. [Recommended Standards for Water Works 6.2.b]</p>
T-6	<p><b>Additional Limitations:</b> Pumping stations shall have suitable pump gland discharges so that drainage from the glands is not onto the floor. [Recommended Standards for Water Works 6.2.f]</p>
T-7	<p><b>Additional Limitations:</b> If underground structures are present at pumping stations, they shall be waterproofed. [Recommended Standards for Water Works 6.2.d]</p>
T-8	<p><b>Additional Limitations:</b> Pumping stations shall have adequate space for the installation of additional pumps. [Recommended Standards for Water Works 6.2.a]</p>
T-9	<p><b>Additional Limitations:</b> Pumping stations shall have adequate space for the safe servicing of all equipment. [Recommended Standards for Water Works 6.2.a]</p>
T-10	<p><b>Additional Limitations:</b> Pump stations shall have crane-ways, hoist beams, eyebolts, or other adequate facilities for servicing or removal of pumps, motors or other heavy equipment. [Recommended Standards for Water Works 6.2.2.a]</p>
T-11	<p><b>Additional Limitations:</b> Pump stations shall have openings as needed for removal of heavy or bulky equipment. [Recommended Standards for Water Works 6.2.2.b]</p>
T-12	<p><b>Additional Limitations:</b> Pump stations shall have a convenient tool board, or other facilities as needed, for proper maintenance of equipment. [Recommended Standards for Water Works 6.2.2.c]</p>
T-13	<p><b>Additional Limitations:</b> In areas where excess moisture could cause safety hazards or damage to equipment, dehumidification shall be provided. [401 KAR 8:100 Section 1(7), Recommended Standards for Water Works 6.2.6]</p>
T-14	<p><b>Additional Limitations:</b> Electrical controls shall be located above grade. [Recommended Standards for Water Works 6.6.5]</p>

**Distribution-Major Construction**

Breathitt Co Water District  
Facility Requirements

Activity ID No.: APE20070001

**PORT9 (continued):**

**Narrative Requirements:**

**Additional Limitations:**

Condition No.	Condition
T-15	<p><b>Additional Limitations:</b> All electrical equipment and work shall conform with the applicable state and local electrical codes and the National Electrical Code. [Recommended Standards for Water Works 6.5, Recommended Standards for Water Works 6.2.7]</p>
T-16	<p><b>Additional Limitations:</b> Pump stations shall be adequately lighted throughout. [Recommended Standards for Water Works 6.2.7]</p>
T-17	<p><b>Additional Limitations:</b> All automatic pump stations shall be provided with automatic signaling apparatus which will report when the station is out of service. All remote controlled stations shall be electrically operated and controlled and shall have signaling apparatus of proven performance. [Recommended Standards for Water Works 6.5]</p>
T-18	<p><b>Additional Limitations:</b> Automatic or remote control pump stations shall be located or shall have control devices setup so that the range between start and cutoff pressure prevents excessive pump cycling. [Recommended Standards for Water Works 6.4.d]</p>
T-19	<p><b>Additional Limitations:</b> Equipment shall be provided or other arrangements made to prevent surge pressures from activating controls which switch on pumps or activate other equipment outside the normal design cycle of operation. [Recommended Standards for Water Works 6.6.5]</p>
T-20	<p><b>Additional Limitations:</b> Provisions shall be made to prevent energizing the motor in the event of a backspin cycle. [Recommended Standards for Water Works 6.6.5]</p>
T-21	<p><b>Additional Limitations:</b> Pump stations shall be provided with enough heat to prevent freezing of equipment or treatment processes. [Recommended Standards for Water Works 6.2.4]</p>
T-22	<p><b>Additional Limitations:</b> Pump stations shall have at least 2 pumps. Pumps shall be sized so that if any single pump is out of service, the remaining pump or pumps shall be capable of providing the peak demand on the station. [Recommended Standards for Water Works 6.3, Recommended Standards for Water Works 6.4.1]</p>
T-23	<p><b>Additional Limitations:</b> Provisions shall be made for pump alternation. [Recommended Standards for Water Works 6.6.5]</p>

**Distribution-Major Construction**  
Breathitt Co Water District  
Facility Requirements

Activity ID No.: APE20070001

**PORT9 (continued):**

**Narrative Requirements:  
Additional Limitations:**

Condition No.	Condition
T-24	<p>Additional Limitations: Pumps shall</p> <ul style="list-style-type: none"><li>a) have ample capacity to supply the peak demand against the required distribution system pressure without dangerous overloading,</li><li>b) be driven by prime movers able to meet the maximum horsepower condition of the pumps,</li><li>c) be provided readily available spare parts and tools, and</li><li>d) be served by control equipment that is properly protected against temperatures to be encountered. [Recommended Standards for Water Works 6.3]</li></ul>
T-25	<p>Additional Limitations: Pumps, their prime movers and accessories shall be controlled in such a manner that they will operate at rated capacity without dangerous overload. [Recommended Standards for Water Works 6.6.5]</p>
T-26	<p>Additional Limitations: Pump stations shall be located or controlled so that a bypass is available. [Recommended Standards for Water Works 6.4.e]</p>
T-27	<p>Additional Limitations: Pump stations shall contain indicating and totalizing metering of the total water pumped. Each pump shall have</p> <ul style="list-style-type: none"><li>a) a standard pressure gauge on its discharge line and</li><li>b) a compound gauge on its suction line.</li></ul> <p>Each pump should have a means for measuring the instantaneous volume per time discharge. [401 KAR 8:100 Section 1(7), Recommended Standards for Water Works 6.4.2, Recommended Standards for Water Works 6.6.3]</p>
T-28	<p>Additional Limitations: Pumps shall be adequately valved to permit satisfactory operation, maintenance and repair of the equipment. Each pump shall have a positive-acting check valve on the discharge side between the pump and the shut-off valve. [Recommended Standards for Water Works 6.6.1]</p>

**Distribution-Major Construction**

Breathitt Co Water District  
Facility Requirements

Activity ID No.: APE20070001

**PORT9 (continued):**

**Narrative Requirements:**

**Additional Limitations:**

Condition No.	Condition
T-29	<p>Additional Limitations: Piping for pumps shall, in general,</p> <ol style="list-style-type: none"><li>1) be designed so that the friction losses will be minimized,</li><li>2) not be subject to contamination,</li><li>3) have watertight joints,</li><li>4) be protected against surge or water hammer,</li><li>5) be provided with restraints where necessary, and</li><li>6) a) be such that each pump has an individual suction line or b) be manifolded such that the lines insure similar hydraulic and operating conditions. [Recommended Standards for Water Works 6.6.2]</li></ol>
T-30	<p>Additional Limitations: To ensure continuous service when the primary power is interrupted, power supplied to pump stations shall be</p> <ol style="list-style-type: none"><li>a) from at least 2 independent sources or</li><li>b) from a primary source with a standby or auxiliary source provided.</li></ol> <p>If standby power is provided by onsite generators or engines, the fuel storage and fuel line must be designed to protect the water supply from contamination. [Recommended Standards for Water Works 6.6.6]</p>

**Distribution-Major Construction**

Breathitt Co Water District  
Facility Requirements

Activity ID No.: APE20070001

**STOR6 (Ground Storage Tank) 48,000 gallon storage tank:**

**Limitation Requirements:**

Condition No.	Parameter	Condition
L-1	Depth	High and low level Depth $\geq$ 30 ft apart should not be allowed in storage structures providing pressure to a distribution system. [Recommended Standards for Water Works 7.3.2] This requirement is applicable during the following months: All Year. Statistical basis: Maximum.
L-2	Depth	Water Depth $\geq$ 50 percent of the total water depth should be above grade. [Recommended Standards for Water Works 7.0.2.b] This requirement is applicable during the following months: All Year. Statistical basis: Not applicable.
L-3	Distance	Sewers, drains, standing water and similar sources of possible contamination shall be a Distance $\geq$ 50 ft from ground-level storage structures. The only exception allowed is for gravity sewers. Gravity sewers are allowed within 50 ft of ground-level storage structures only if they are a) greater than 20 ft from all ground-level storage structures and b) constructed of water main pipe pressure tested in place to 50 psi without leakage. [Recommended Standards for Water Works 7.0.2.b] This requirement is applicable during the following months: All Year. Statistical basis: Minimum.
L-4	Distance	To prevent excessive erosion of storage structure foundations, the overflow and main drain shall either a) discharge to concrete or other stable surfaces (splash pads) which extend a Distance $\geq$ 10 ft away from the base of the storage structure or b) discharge directly into a crushed stone pit that is at least 2' x 2' x 2' which is a Distance $\geq$ 10 ft away from the base of the storage structure. [401 KAR 8:100 Section 1(7)] This requirement is applicable during the following months: All Year. Statistical basis: Minimum.
L-5	Height	Tanks shall have an overflow which is a) brought down to a Height $\geq$ 12 and $\leq$ 24 in above the ground surface, b) of sufficient diameter to permit waste of water in excess of the filling rate, c) open downward, d) screened with twenty-four mesh noncorrodible screen installed within the pipe at a location least susceptible to damage by vandalism, and e) located on the outside of the tank so that any discharge is visible. [Recommended Standards for Water Works 7.0.7] This requirement is applicable during the following months: All Year. Statistical basis: Not applicable.

**Distribution-Major Construction**  
Breathitt Co Water District  
Facility Requirements

Activity ID No.: APE20070001

**STOR6 (continued):**

**Limitation Requirements:**

Condition No.	Parameter	Condition
L-6	Height	Tanks shall have manholes that are a) framed a Height $\geq 4$ in above the surface of the roof at the opening and b) fitted with a solid watertight cover which overlaps the framed opening and extends down around the frame at least 2 inches. Manholes should be hinged at one side and shall have a locking device. [Recommended Standards for Water Works 7.0.8] This requirement is applicable during the following months: All Year. Statistical basis: Minimum.

**Narrative Requirements:  
Additional Limitations:**

Condition No.	Condition
T-1	<b>Additional Limitations:</b> The materials and designs used for storage structures shall provide stability and durability as well as protection for the quality of the stored water. Steel structures shall follow the AWWA standards wherever they are applicable. Other materials of construction are acceptable when properly designed to meet the requirements in this permit. [Recommended Standards for Water Works 7.0]
T-2	<b>Additional Limitations:</b> The safety of employees must be considered in the design of any storage structure. The design of storage structures shall a) meet or exceed the minimum requirements of pertinent safety laws and regulations in the areas where the structures are constructed, b) include ladders, ladder guards and balcony railings (where applicable), c) locate entrance hatches in safe places, and d) consider confined space entry requirements. [Recommended Standards for Water Works 7.0.12]
T-3	<b>Additional Limitations:</b> Storage structures shall be designed with reasonably convenient access to the interior for cleaning and maintenance. Where space permits, at least 2 manholes shall be provided above the waterline at each water compartment. [Recommended Standards for Water Works 7.0.8]
T-4	<b>Additional Limitations:</b> Fencing, locks on access manholes, and other necessary precautions shall be provided to prevent trespassing, vandalism, and sabotage. [Recommended Standards for Water Works 7.0.4]

**Distribution-Major Construction**

Breathitt Co Water District  
Facility Requirements

Activity ID No.: APE20070001

**STOR6 (continued):**

**Narrative Requirements:  
Additional Limitations:**

Condition No.	Condition
T-5	<p><b>Additional Limitations:</b> All storage structures and their appurtenances, especially the riser pipes, overflows, and vents, shall be designed to prevent freezing. [Recommended Standards for Water Works 7.0.13]</p>
T-6	<p><b>Additional Limitations:</b> Tanks shall be constructed with no openings except properly constructed vents, manholes, overflows, risers, drains, pump mountings, control ports, and piping for inflow and outflow. For steel tanks, any pipes running through the roof or sidewall must be welded or properly gasketed. For concrete tanks, any pipes running through the roof or sidewall shall be connected to standard wall castings which were poured in place during the forming of the concrete and which should have seepage rings imbedded in the concrete. [Recommended Standards for Water Works 7.0.10]</p>
T-7	<p><b>Additional Limitations:</b> All finished water storage structures shall have suitable watertight roofs and sidewalls which exclude birds, animals, insects, and excessive dust. [Recommended Standards for Water Works 7.0.3, Recommended Standards for Water Works 7.0.10]</p>
T-8	<p><b>Additional Limitations:</b> The roof of each storage structure shall be well drained. Downspout pipes shall not enter or pass through storage structures. Parapets or similar structures which would tend to hold water and snow on a storage structure roof shall not be approved unless adequate waterproofing and drainage are provided. [Recommended Standards for Water Works 7.0.11]</p>
T-9	<p><b>Additional Limitations:</b> Storage structures shall be designed so they can be isolated from the distribution system and drained for cleaning or maintenance without necessitating loss of pressure in the distribution system. [Recommended Standards for Water Works 7.3.2, Recommended Standards for Water Works 7.0.5]</p>
T-10	<p><b>Additional Limitations:</b> Storage structure drains shall discharge to the ground surface at a drainage structure inlet or splash plate. [Recommended Standards for Water Works 7.3.2, Recommended Standards for Water Works 7.0.7]</p>
T-11	<p><b>Additional Limitations:</b> No drain on a storage structure may have a direct connection to a sewer or storm drain. [Recommended Standards for Water Works 7.0.5, Recommended Standards for Water Works 7.0.7, Recommended Standards for Water Works 7.3.2]</p>



**Distribution-Major Construction**  
Breathitt Co Water District  
Facility Requirements

Activity ID No.: APE20070001

**STOR6 (continued):**

**Narrative Requirements:  
Additional Limitations:**

Condition No.	Condition
T-12	<p><b>Additional Limitations:</b> Main drains from storage structures shall have a twenty-four mesh noncorrodible screen installed within the drain pipe at a location least susceptible to damage by vandalism. [401 KAR 8:100 Section 1(7)]</p>
T-13	<p><b>Additional Limitations:</b> Storage structures shall be designed to facilitate turn over of water. [401 KAR 8:100 Section 1(7), Recommended Standards for Water Works 7.0.6]</p>
T-14	<p><b>Additional Limitations:</b> Ground level storage tanks and standpipes shall be equipped with separate inlet/outlet pipes installed on opposite sides of the tank. A check valve shall be installed in the outlet pipe to insure turnover of the water. The inlet pipe a) shall be installed near the overflow elevation and b) shall not interfere with the overflow discharge. [401 KAR 8:100 Section 1(7)]</p>
T-15	<p><b>Additional Limitations:</b> Storage structures shall have sufficient capacity, as determined from engineering studies, to meet domestic demands. Additionally, if fire protection is provided, capacity shall also be sufficient to meet fire flow demands. [401 KAR 8:100 Section 1(7), Recommended Standards for Water Works 7.0.1]</p>
T-16	<p><b>Additional Limitations:</b> The bottom of the structure shall be above a) the maximum flood level and b) the groundwater level. [Recommended Standards for Water Works 7.0.2]</p>
T-17	<p><b>Additional Limitations:</b> Storage structure discharge pipes shall be located in a manner that will prevent the flow of sediment into the distribution system. Additionally, removable silt stops should be provided. [Recommended Standards for Water Works 7.0.15]</p>
T-18	<p><b>Additional Limitations:</b> Appropriate sampling tap(s) shall be provided to facilitate collection of water samples for both bacteriologic and chemical analyses. [Recommended Standards for Water Works 7.0.19]</p>

**Distribution-Major Construction**

Breathitt Co Water District  
Facility Requirements

Activity ID No.: APE20070001

**STOR6 (continued):**

**Narrative Requirements:**

**Additional Limitations:**

Condition No.	Condition
T-19	<p><b>Additional Limitations:</b> Storage structures shall be vented. Overflows shall not be considered as vents. Open construction between the sidewall and roof is not permitted. Vents shall</p> <ul style="list-style-type: none"><li>a) prevent the entrance of rainwater,</li><li>b) exclude birds and animals, and</li><li>c) exclude insects and dust (as much as compatible with effective venting).</li></ul> <p>Vents may use four-mesh noncorrodible screen. [Recommended Standards for Water Works 7.0.9]</p>
T-20	<p><b>Additional Limitations:</b> Adequate controls shall be provided to maintain levels in storage structures. The level controls shall be acceptable to the Division of Water. Level indicating devices should be provided at a central location. Overflow and low-level warnings or alarms should be located at places in the community where they will be under responsible surveillance 24 hrs a day. [401 KAR 8:100 Section 1(7), Recommended Standards for Water Works 7.3.3]</p>
T-21	<p><b>Additional Limitations:</b> If storage structures have a catwalk over the water, the catwalk floor shall be solid with raised edges so that shoe scrapings and dirt will not fall into the water. [Recommended Standards for Water Works 7.0.14]</p>
T-22	<p><b>Additional Limitations:</b> The area around the storage structure shall be graded in a manner that will prevent surface water from standing within 50 ft of the storage structure. [Recommended Standards for Water Works 7.0.16]</p>
T-23	<p><b>Additional Limitations:</b> Proper protection shall be given to metal surfaces by</p> <ul style="list-style-type: none"><li>a) paints or other protective coatings and/or</li><li>b) cathodic protective devices. [Recommended Standards for Water Works 7.0.17]</li></ul>
T-24	<p><b>Additional Limitations:</b> If cathodic protection is utilized,</p> <ul style="list-style-type: none"><li>a) competent technical personnel should design and install the protection and</li><li>b) a maintenance contract should be provided. [Recommended Standards for Water Works 7.0.17]</li></ul>

**Distribution-Major Construction**  
 Breathitt Co Water District  
 Facility Requirements

Activity ID No.: APE20070001

**STOR6 (continued):**

**Narrative Requirements:  
 Additional Limitations:**

Condition No.	Condition
T-25	<p><b>Additional Limitations:</b>                      If the interior of the storage structure is coated or lined, the coating or lining shall be of a type approved by the Division of Water for use in contact with potable water. [401 KAR 8:020 Section 2(19)]</p>
T-26	<p><b>Additional Limitations:</b>                      Paints and coatings                      a) shall meet NSF standard 61,                      b) shall be acceptable to the Division of Water,                      c) shall be properly applied and cured, and                      d) shall not transfer any substance to the water which will be toxic or cause tastes or odors (following curing).                      Wax coatings shall not be used in any storage structure and must be completely removed before using other paints or coatings in an existing storage structure. [401 KAR 8:100 Section 1(7), Recommended Standards for Water Works 7.0.17]</p>
T-27	<p><b>Additional Limitations:</b>                      New water storage structures shall be thoroughly disinfected (in accordance with AWWA Standard C652) upon completion of construction and before being placed into service. To disinfect new storage structures                      1) remove all scaffolding, planks, tools, rags, and other items that are not part of the structural or operational facilities of the storage structure,                      2) clean thoroughly by sweeping, scrubbing, using high-pressure water jets, or some equivalently effective means, and                      3) use chlorine or chlorine compounds as subsequently described.                      Finalize disinfection by                      a) chlorination method 1, described in detail at AWWA Standard C652 Section 4.3.1,                      b) chlorination method 2, described in detail at AWWA Standard C652 Section 4.3.2, or                      c) chlorination method 3, described in detail at AWWA Standard C652 Section 4.3.3.                      See the following conditions for abbreviated descriptions of the methods.                      Following the finalization of disinfection, place storage structures into service if, and only if, Coliform monitoring applicable to the storage structure does not show the presence of Coliform.                      If Coliform is detected, flush the tank and repeat Coliform monitoring. If Coliform is still detected, repeat disinfection and flushing as if the tank has never been disinfected. Continue the described process until monitoring does not show the presence of Coliform. [Recommended Standards for Water Works 7.0.18]</p>

**Distribution-Major Construction**  
Breathitt Co Water District  
Facility Requirements

Activity ID No.: APE20070001

STOR6 (continued):

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**Narrative Requirements:**

Condition No.	Condition
T-28	<p>If applicable, chlorination method 1 generally requires</p> <ul style="list-style-type: none"><li>a) filling a storage structure to the overflow level with water providing a free chlorine Residual Disinfection <math>\geq</math> 10 ppm and</li><li>b) i) completely draining the storage facility and refilling or</li><li>b) ii) otherwise reducing (in accordance with method 1) the free chlorine residual to a level appropriate for distribution. [Recommended Standards for Water Works 7.0.18]</li></ul>
T-29	<p>If applicable, chlorination method 2 generally requires</p> <ul style="list-style-type: none"><li>a) scrubbing or spraying the water-contact surfaces of a storage structure with a water solution having an available chlorine concentration = 200 ppm and</li><li>b) purging of the strong chlorine solution and filling to the overflow level. [Recommended Standards for Water Works 7.0.18]</li></ul>
T-30	<p>If applicable, chlorination method 3 generally requires</p> <ul style="list-style-type: none"><li>a) filling a storage structure to approximately 5% of the total storage volume with water having an available chlorine concentration of 50 ppm,</li><li>b) continued filling of the storage structure to the overflow level with normal potable water, and</li><li>c) purging the storage structure so that various disinfection by-products do not reach water consumers. [Recommended Standards for Water Works 7.0.18, 401 KAR 8:100 Section 1(7)]</li></ul>

## Distribution-Major Construction

Breathitt Co Water District  
Facility Requirements

Activity ID No.: APE20070001

### STOR7 (Ground Storage Tank) 105,000 gallon storage tank:

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#### Limitation Requirements:

Condition No.	Parameter	Condition
L-1	Depth	High and low level Depth $\geq 30$ ft apart should not be allowed in storage structures providing pressure to a distribution system. [Recommended Standards for Water Works 7.3.2] This requirement is applicable during the following months: All Year. Statistical basis: Maximum.
L-2	Depth	Water Depth $\geq 50$ percent of the total water depth should be above grade. [Recommended Standards for Water Works 7.0.2.b] This requirement is applicable during the following months: All Year. Statistical basis: Not applicable.
L-3	Distance	Sewers, drains, standing water and similar sources of possible contamination shall be a Distance $\geq 50$ ft from ground-level storage structures. The only exception allowed is for gravity sewers. Gravity sewers are allowed within 50 ft of ground-level storage structures only if they are a) greater than 20 ft from all ground-level storage structures and b) constructed of water main pipe pressure tested in place to 50 psi without leakage. [Recommended Standards for Water Works 7.0.2.b] This requirement is applicable during the following months: All Year. Statistical basis: Minimum.
L-4	Distance	To prevent excessive erosion of storage structure foundations, the overflow and main drain shall either a) discharge to concrete or other stable surfaces (splash pads) which extend a Distance $\geq 10$ ft away from the base of the storage structure or b) discharge directly into a crushed stone pit that is at least 2' x 2' x 2' which is a Distance $\geq 10$ ft away from the base of the storage structure. [401 KAR 8:100 Section 1(7)] This requirement is applicable during the following months: All Year. Statistical basis: Minimum.
L-5	Height	Tanks shall have an overflow which is a) brought down to a Height $\geq 12$ and $\leq 24$ in above the ground surface, b) of sufficient diameter to permit waste of water in excess of the filling rate, c) open downward, d) screened with twenty-four mesh noncorrodible screen installed within the pipe at a location least susceptible to damage by vandalism, and e) located on the outside of the tank so that any discharge is visible. [Recommended Standards for Water Works 7.0.7] This requirement is applicable during the following months: All Year. Statistical basis: Not applicable.

## Distribution-Major Construction

Breathitt Co Water District  
Facility Requirements

Activity ID No.: APE20070001

STOR7 (continued):

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### Limitation Requirements:

Condition No.	Parameter	Condition
L-6	Height	Tanks shall have manholes that are a) framed a Height $\geq 4$ in above the surface of the roof at the opening and b) fitted with a solid watertight cover which overlaps the framed opening and extends down around the frame at least 2 inches. Manholes should be hinged at one side and shall have a locking device. [Recommended Standards for Water Works 7.0.8] This requirement is applicable during the following months: All Year. Statistical basis: Minimum.

### Narrative Requirements:

#### Additional Limitations:

Condition No.	Condition
T-1	<p>Additional Limitations: The materials and designs used for storage structures shall provide stability and durability as well as protection for the quality of the stored water. Steel structures shall follow the AWWA standards wherever they are applicable. Other materials of construction are acceptable when properly designed to meet the requirements in this permit. [Recommended Standards for Water Works 7.0]</p>
T-2	<p>Additional Limitations: The safety of employees must be considered in the design of any storage structure. The design of storage structures shall a) meet or exceed the minimum requirements of pertinent safety laws and regulations in the areas where the structures are constructed, b) include ladders, ladder guards and balcony railings (where applicable), c) locate entrance hatches in safe places, and d) consider confined space entry requirements. [Recommended Standards for Water Works 7.0.12]</p>
T-3	<p>Additional Limitations: Storage structures shall be designed with reasonably convenient access to the interior for cleaning and maintenance. Where space permits, at least 2 manholes shall be provided above the waterline at each water compartment. [Recommended Standards for Water Works 7.0.8]</p>
T-4	<p>Additional Limitations: Fencing, locks on access manholes, and other necessary precautions shall be provided to prevent trespassing, vandalism, and sabotage. [Recommended Standards for Water Works 7.0.4]</p>

**Distribution-Major Construction**

Breathitt Co Water District  
Facility Requirements

Activity ID No.: APE20070001

**STOR7 (continued):**

**Narrative Requirements:**

**Additional Limitations:**

Condition No.	Condition
T-5	<p><b>Additional Limitations:</b> All storage structures and their appurtenances, especially the riser pipes, overflows, and vents, shall be designed to prevent freezing. [Recommended Standards for Water Works 7.0.13]</p>
T-6	<p><b>Additional Limitations:</b> Tanks shall be constructed with no openings except properly constructed vents, manholes, overflows, risers, drains, pump mountings, control ports, and piping for inflow and outflow. For steel tanks, any pipes running through the roof or sidewall must be welded or properly gasketed. For concrete tanks, any pipes running through the roof or sidewall shall be connected to standard wall castings which were poured in place during the forming of the concrete and which should have seepage rings imbedded in the concrete. [Recommended Standards for Water Works 7.0.10]</p>
T-7	<p><b>Additional Limitations:</b> All finished water storage structures shall have suitable watertight roofs and sidewalls which exclude birds, animals, insects, and excessive dust. [Recommended Standards for Water Works 7.0.3, Recommended Standards for Water Works 7.0.10]</p>
T-8	<p><b>Additional Limitations:</b> The roof of each storage structure shall be well drained. Downspout pipes shall not enter or pass through storage structures. Parapets or similar structures which would tend to hold water and snow on a storage structure roof shall not be approved unless adequate waterproofing and drainage are provided. [Recommended Standards for Water Works 7.0.11]</p>
T-9	<p><b>Additional Limitations:</b> Storage structures shall be designed so they can be isolated from the distribution system and drained for cleaning or maintenance without necessitating loss of pressure in the distribution system. [Recommended Standards for Water Works 7.3.2, Recommended Standards for Water Works 7.0.5]</p>
T-10	<p><b>Additional Limitations:</b> Storage structure drains shall discharge to the ground surface at a drainage structure inlet or splash plate. [Recommended Standards for Water Works 7.3.2, Recommended Standards for Water Works 7.0.7]</p>
T-11	<p><b>Additional Limitations:</b> No drain on a storage structure may have a direct connection to a sewer or storm drain. [Recommended Standards for Water Works 7.0.5, Recommended Standards for Water Works 7.0.7, Recommended Standards for Water Works 7.3.2]</p>

**Distribution-Major Construction**  
Breathitt Co Water District  
Facility Requirements

Activity ID No.: APE20070001

**STOR7 (continued):**

**Narrative Requirements:  
Additional Limitations:**

Condition No.	Condition
T-12	<p><b>Additional Limitations:</b> Main drains from storage structures shall have a twenty-four mesh noncorrodible screen installed within the drain pipe at a location least susceptible to damage by vandalism. [401 KAR 8:100 Section 1(7)]</p>
T-13	<p><b>Additional Limitations:</b> Storage structures shall be designed to facilitate turn over of water. [401 KAR 8:100 Section 1(7), Recommended Standards for Water Works 7.0.6]</p>
T-14	<p><b>Additional Limitations:</b> Ground level storage tanks and standpipes shall be equipped with separate inlet/outlet pipes installed on opposite sides of the tank. A check valve shall be installed in the outlet pipe to insure turnover of the water. The inlet pipe</p> <ul style="list-style-type: none"><li>a) shall be installed near the overflow elevation and</li><li>b) shall not interfere with the overflow discharge. [401 KAR 8:100 Section 1(7)]</li></ul>
T-15	<p><b>Additional Limitations:</b> Storage structures shall have sufficient capacity, as determined from engineering studies, to meet domestic demands. Additionally, if fire protection is provided, capacity shall also be sufficient to meet fire flow demands. [401 KAR 8:100 Section 1(7), Recommended Standards for Water Works 7.0.1]</p>
T-16	<p><b>Additional Limitations:</b> The bottom of the structure shall be above</p> <ul style="list-style-type: none"><li>a) the maximum flood level and</li><li>b) the groundwater level. [Recommended Standards for Water Works 7.0.2]</li></ul>
T-17	<p><b>Additional Limitations:</b> Storage structure discharge pipes shall be located in a manner that will prevent the flow of sediment into the distribution system. Additionally, removable silt stops should be provided. [Recommended Standards for Water Works 7.0.15]</p>
T-18	<p><b>Additional Limitations:</b> Appropriate sampling tap(s) shall be provided to facilitate collection of water samples for both bacteriologic and chemical analyses. [Recommended Standards for Water Works 7.0.19]</p>



**Distribution-Major Construction**  
Breathitt Co Water District  
Facility Requirements

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**STOR7 (continued):**

**Narrative Requirements:  
Additional Limitations:**

Condition No.	Condition
T-19	<p><b>Additional Limitations:</b> Storage structures shall be vented. Overflows shall not be considered as vents. Open construction between the sidewall and roof is not permitted. Vents shall</p> <ul style="list-style-type: none"><li>a) prevent the entrance of rainwater,</li><li>b) exclude birds and animals, and</li><li>c) exclude insects and dust (as much as compatible with effective venting).</li></ul> <p>Vents may use four-mesh noncorrodible screen. [Recommended Standards for Water Works 7.0.9]</p>
T-20	<p><b>Additional Limitations:</b> Adequate controls shall be provided to maintain levels in storage structures. The level controls shall be acceptable to the Division of Water. Level indicating devices should be provided at a central location. Overflow and low-level warnings or alarms should be located at places in the community where they will be under responsible surveillance 24 hrs a day. [401 KAR 8:100 Section 1(7), Recommended Standards for Water Works 7.3.3]</p>
T-21	<p><b>Additional Limitations:</b> If storage structures have a catwalk over the water, the catwalk floor shall be solid with raised edges so that shoe scrapings and dirt will not fall into the water. [Recommended Standards for Water Works 7.0.14]</p>
T-22	<p><b>Additional Limitations:</b> The area around the storage structure shall be graded in a manner that will prevent surface water from standing within 50 ft of the storage structure. [Recommended Standards for Water Works 7.0.16]</p>
T-23	<p><b>Additional Limitations:</b> Proper protection shall be given to metal surfaces by</p> <ul style="list-style-type: none"><li>a) paints or other protective coatings and/or</li><li>b) cathodic protective devices. [Recommended Standards for Water Works 7.0.17]</li></ul>
T-24	<p><b>Additional Limitations:</b> If cathodic protection is utilized,</p> <ul style="list-style-type: none"><li>a) competent technical personnel should design and install the protection and</li><li>b) a maintenance contract should be provided. [Recommended Standards for Water Works 7.0.17]</li></ul>

## Distribution-Major Construction

Breathitt Co Water District  
Facility Requirements

Activity ID No.: APE20070001

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### STOR7 (continued):

#### Narrative Requirements:

#### Additional Limitations:

Condition No.	Condition
T-25	<p><b>Additional Limitations:</b> If the interior of the storage structure is coated or lined, the coating or lining shall be of a type approved by the Division of Water for use in contact with potable water. [401 KAR 8:020 Section 2(19)]</p>
T-26	<p><b>Additional Limitations:</b> Paints and coatings</p> <ol style="list-style-type: none"><li>shall meet NSF standard 61,</li><li>shall be acceptable to the Division of Water,</li><li>shall be properly applied and cured, and</li><li>shall not transfer any substance to the water which will be toxic or cause tastes or odors (following curing).</li></ol> <p>Wax coatings shall not be used in any storage structure and must be completely removed before using other paints or coatings in an existing storage structure. [401 KAR 8:100 Section 1(7), Recommended Standards for Water Works 7.0.17]</p>
T-27	<p><b>Additional Limitations:</b> New water storage structures shall be thoroughly disinfected (in accordance with AWWA Standard C652) upon completion of construction and before being placed into service. To disinfect new storage structures</p> <ol style="list-style-type: none"><li>remove all scaffolding, planks, tools, rags, and other items that are not part of the structural or operational facilities of the storage structure,</li><li>clean thoroughly by sweeping, scrubbing, using high-pressure water jets, or some equivalently effective means, and</li><li>use chlorine or chlorine compounds as subsequently described.</li></ol> <p>Finalize disinfection by</p> <ol style="list-style-type: none"><li>chlorination method 1, described in detail at AWWA Standard C652 Section 4.3.1,</li><li>chlorination method 2, described in detail at AWWA Standard C652 Section 4.3.2, or</li><li>chlorination method 3, described in detail at AWWA Standard C652 Section 4.3.3.</li></ol> <p>See the following conditions for abbreviated descriptions of the methods. Following the finalization of disinfection, place storage structures into service if, and only if, Coliform monitoring applicable to the storage structure does not show the presence of Coliform. If Coliform is detected, flush the tank and repeat Coliform monitoring. If Coliform is still detected, repeat disinfection and flushing as if the tank has never been disinfected. Continue the described process until monitoring does not show the presence of Coliform. [Recommended Standards for Water Works 7.0.18]</p>

**Distribution-Major Construction**  
Breathitt Co Water District  
Facility Requirements

Activity ID No.: APE20070001

STOR7 (continued):

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Narrative Requirements:

Condition No.	Condition
T-28	<p>If applicable, chlorination method 1 generally requires</p> <ul style="list-style-type: none"><li>a) filling a storage structure to the overflow level with water providing a free chlorine Residual Disinfection <math>\geq</math> 10 ppm and</li><li>b) i) completely draining the storage facility and refilling or</li><li>b) ii) otherwise reducing (in accordance with method 1) the free chlorine residual to a level appropriate for distribution. [Recommended Standards for Water Works 7.0.18]</li></ul>
T-29	<p>If applicable, chlorination method 2 generally requires</p> <ul style="list-style-type: none"><li>a) scrubbing or spraying the water-contact surfaces of a storage structure with a water solution having an available chlorine concentration = 200 ppm and</li><li>b) purging of the strong chlorine solution and filling to the overflow level. [Recommended Standards for Water Works 7.0.18]</li></ul>
T-30	<p>If applicable, chlorination method 3 generally requires</p> <ul style="list-style-type: none"><li>a) filling a storage structure to approximately 5% of the total storage volume with water having an available chlorine concentration of 50 ppm,</li><li>b) continued filling of the storage structure to the overflow level with normal potable water, and</li><li>c) purging the storage structure so that various disinfection by-products do not reach water consumers. [Recommended Standards for Water Works 7.0.18, 401 KAR 8:100 Section 1(7)]</li></ul>