



Steven L. Beshear
Governor

Leonard K. Peters
Secretary
Energy and Environment Cabinet

Commonwealth of Kentucky
Public Service Commission
211 Sower Blvd.
P.O. Box 615
Frankfort, Kentucky 40602-0615
Telephone: (502) 564-3940
Fax: (502) 564-3460
psc.ky.gov

David L. Armstrong
Chairman

James Gardner
Vice-Chairman

John W. Clay
Commissioner

Leihman Howard, Jr.
Manager
Hyden-Leslie County Water District
325 Wendover Road
Hyden, KY 41749

January 12, 2009

RE: Case No. 2009-00013
Hyden-Leslie County Water District
(Construct)

This letter is to acknowledge receipt of initial application in the above case. The application was date-stamped received January 12, 2009 and has been assigned Case No. 2009-00013. In all future correspondence or filings in connection with this case, please reference the above case number.

If you need further assistance, please contact my staff at (502) 564-3940.

Sincerely,

A handwritten signature in black ink, appearing to read "Jeff Derouen".

Jeff Derouen
Executive Director

JD/tw



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Commissioner

Honorable W. Randall Jones
Attorney at Law
Rubin & Hays
Kentucky Home Trust Building
450 South Third Street
Louisville, KY 40202

January 12, 2009

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(Construct)

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Executive Director

JD/tw

SERVICE LIST

Re: 2009 Hyden-Leslie County Water District PSC Application

Mr. Leihman Howard, Jr., Manager
Hyden-Leslie County Water District
325 Wendover Road
Hyden, Kentucky 41749

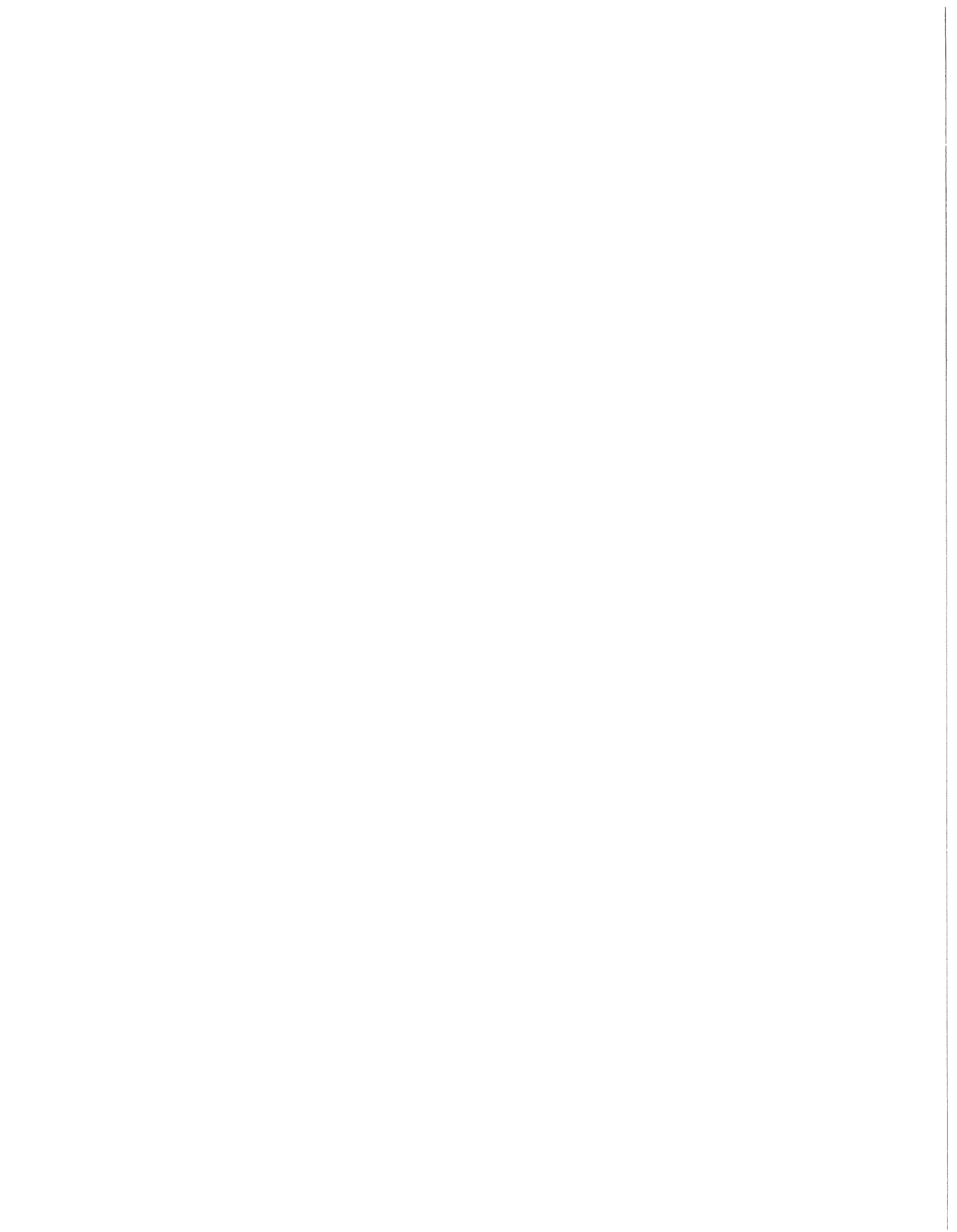
Telephone: (606) 672-2791

Mr. Mike Maggard
Sisler - Maggard Engineering, PLLC
P.O. Box 23780
Lexington, Kentucky 40523

Telephone: (859) 271-2978
Fax: (859) 271-5670

W. Randall Jones, Esq.
Rubin & Hays
Kentucky Home Trust Building
450 South Third Street
Louisville, Kentucky 40202

Telephone: (502) 569-7525
Fax: (502) 569-7555



RECEIVED

JAN 12 2009

PUBLIC SERVICE
COMMISSION

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

In the matter of:

APPLICATION OF THE HYDEN-LESLIE COUNTY)
WATER DISTRICT FOR A CERTIFICATE)
OF PUBLIC CONVENIENCE AND NECESSITY)
TO CONSTRUCT AN IMPROVEMENTS PROJECT)
PURSUANT TO KRS 278.020)

Case No. 2009 - 00013

APPLICATION

The Hyden-Leslie County Water District (the "District"), by counsel, pursuant to KRS 278.020, petitions the Commission for a certificate of public convenience and necessity to construct a waterworks improvement project. The following information is filed in accordance with the Commission's regulations:

1. The District's office address is 325 Wendover Road, Hyden, Kentucky 41749. Its principal officers are listed in its 2007 Annual Report, which is filed with the Commission;
2. The District is a non-profit water district organized under KRS Chapter 74 and has no separate articles of incorporation or by-laws;
3. A description of the District's water system and its property stated at original cost by accounts is contained in its Annual Report, which is incorporated by reference pursuant to 807 KAR 5:001 Section (5)(5). All required normal financial schedules and other data are in the Annual Report;
4. The water system improvements project consists of the construction and installation of approximately (i) 20,000 linear feet of 6" waterline; (ii) 58,500 linear feet of 4" waterline; (iii)

Introduction

The purpose of this document is to provide a comprehensive overview of the project's objectives and scope. It details the key components and the methodology used to achieve the desired outcomes.

Methodology

The methodology employed in this project involves a series of well-defined steps, including data collection, analysis, and reporting. Each step is carefully documented to ensure transparency and reproducibility.

The data collected during the project is analyzed using advanced statistical techniques to identify trends and patterns. This analysis is crucial for understanding the underlying factors influencing the results.

The findings of the project are presented in a clear and concise manner, supported by relevant data and visual aids. This ensures that the information is easily accessible and understandable to all stakeholders.

The project's success is measured against a set of predefined criteria, which are outlined in the following section. These criteria serve as a benchmark for evaluating the project's performance and impact.

In conclusion, this project has provided valuable insights into the subject matter and has demonstrated the effectiveness of the chosen methodology.

33,000 linear feet of 3" waterline; (iv) 15,000 linear feet of 2" waterline; (v) a 150,000 gallon ground water storage tank; and (vi) a 50,000 gallon ground water storage tank.

5. The project is in the public interest and is necessary in order to serve approximately 121 households with potable water.

6. The total project cost is approximately \$2,000,000, as set forth in the Final Engineering Cost Estimate attached hereto as **Exhibit A**;

7. The District has obtained all easements are required for the Project;

8. This service will not compete with any other utility in the area;

9. Based on these facts, the District believes that it is in the public interest that this certificate of public convenience and necessity be granted;

10. Copies of the certified bid tabulations are attached hereto as **Exhibit B**;

11. The following information is provided in response to 807 KAR 5:001 Section (8)(3);

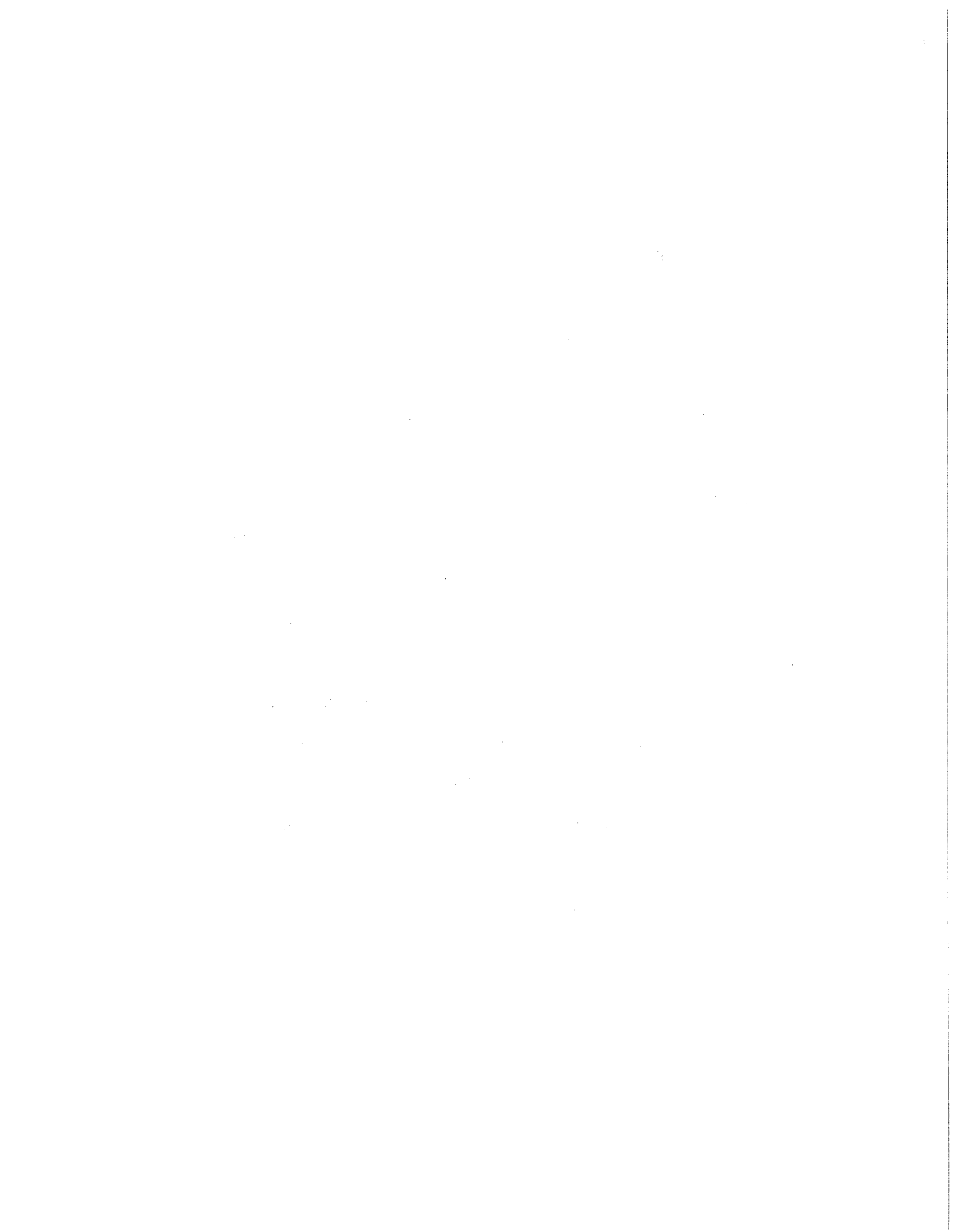
a. Articles of Incorporation - None, the District is a statutorily created water district under KRS Chapter 74;

12. The following information is supplied to 807 KAR 5:001 Section (9)(2);

a. Facts relied upon to show that the Project is in the public interest: the project will provide water service to approximately 121 households.

b. No new franchises are required. Copies of the necessary permits are attached hereto as **Exhibit C**;

c. Diagrams of the proposed construction and construction specifications are contained in the Plans and Specifications on file with the Commission;



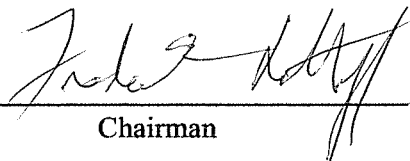
d. Three (3) maps of suitable scale showing location of the proposed facilities are filed with this Application;

e. The construction costs will be funded by various Coal Severance Grants (“CSG”) in the aggregate amount of \$2,000,000;

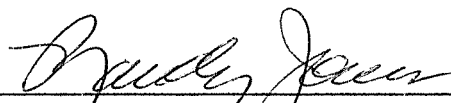
f. The estimated cost of operation of the system after construction is completed is attached hereto as **Exhibit D**;

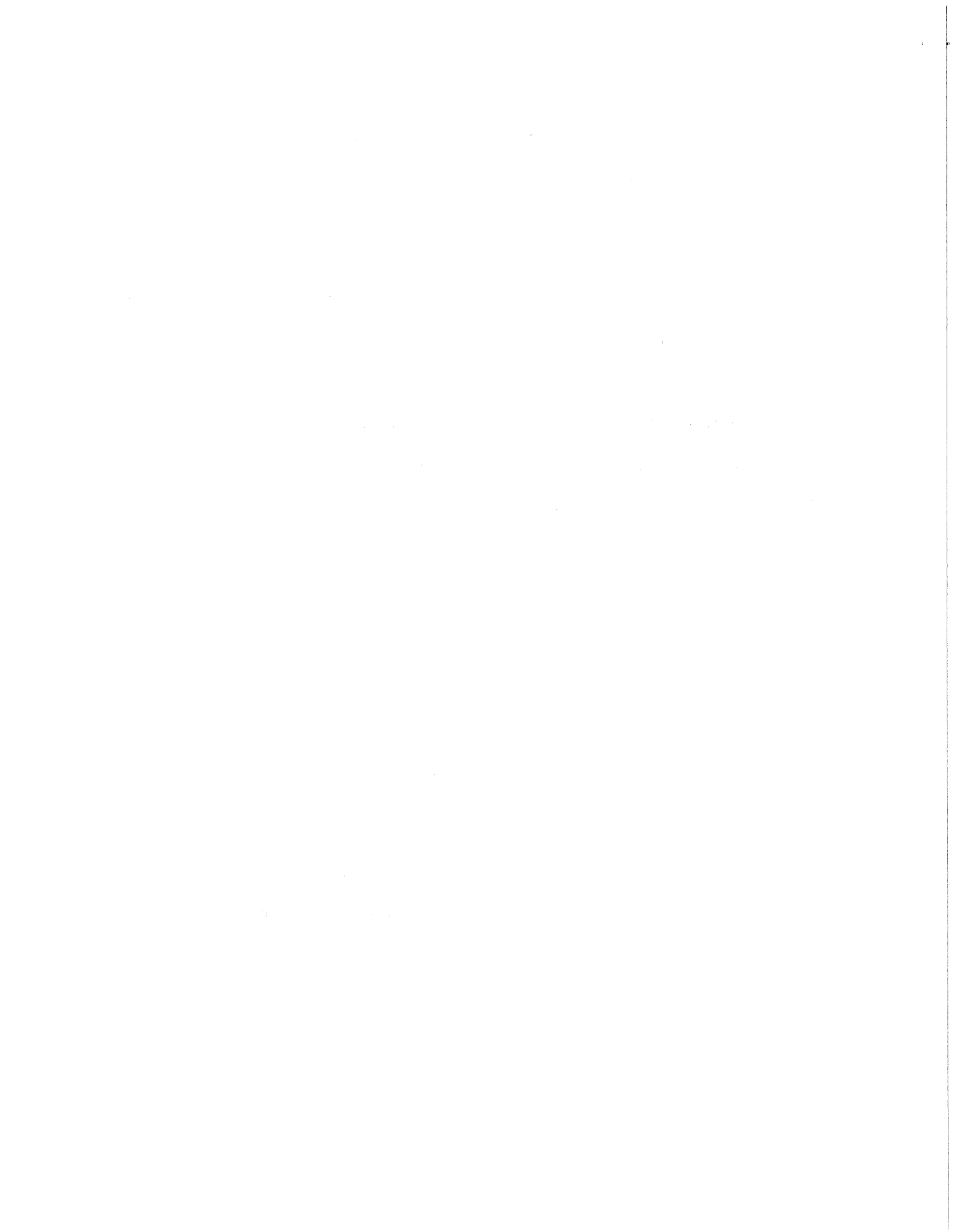
WHEREFORE, the Applicant, Hyden-Leslie County Water District requests that the Public Service Commission of Kentucky grant to the Applicant a Certificate of Public Convenience and Necessity permitting the Applicant to construct the water system improvement project.

Hyden-Leslie County Water District

By 
Chairman

Rubin & Hays


By 
Kentucky Home Trust Building
450 South Third Street
Louisville, Kentucky 40202
(502) 569-7525



COMMONWEALTH OF KENTUCKY)
) SS
COUNTY OF LESLIE)

The undersigned, Dr. Fred Ratliff, being duly sworn, deposes and states that he is the Chairman of the Hyden-Leslie County Water District, Applicant; 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 January 8, 2009.



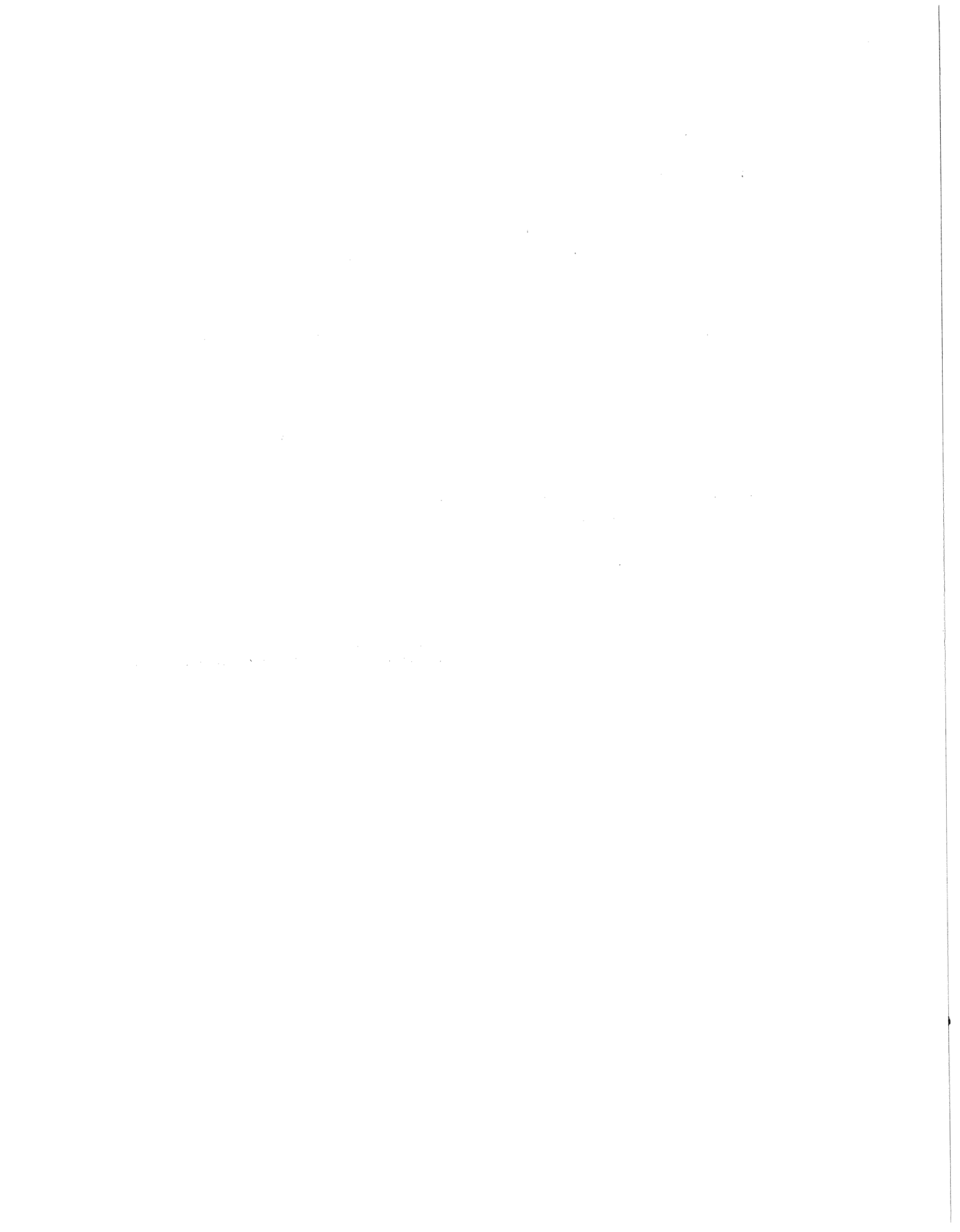
Dr. Fred Ratliff, Chairman
Hyden-Leslie County Water District

Subscribed and sworn to before me by Dr. Fred Ratliff, Chairman of the Hyden-Leslie County Water District, on this January 8, 2009.

My Commission expires 4.7-2009.



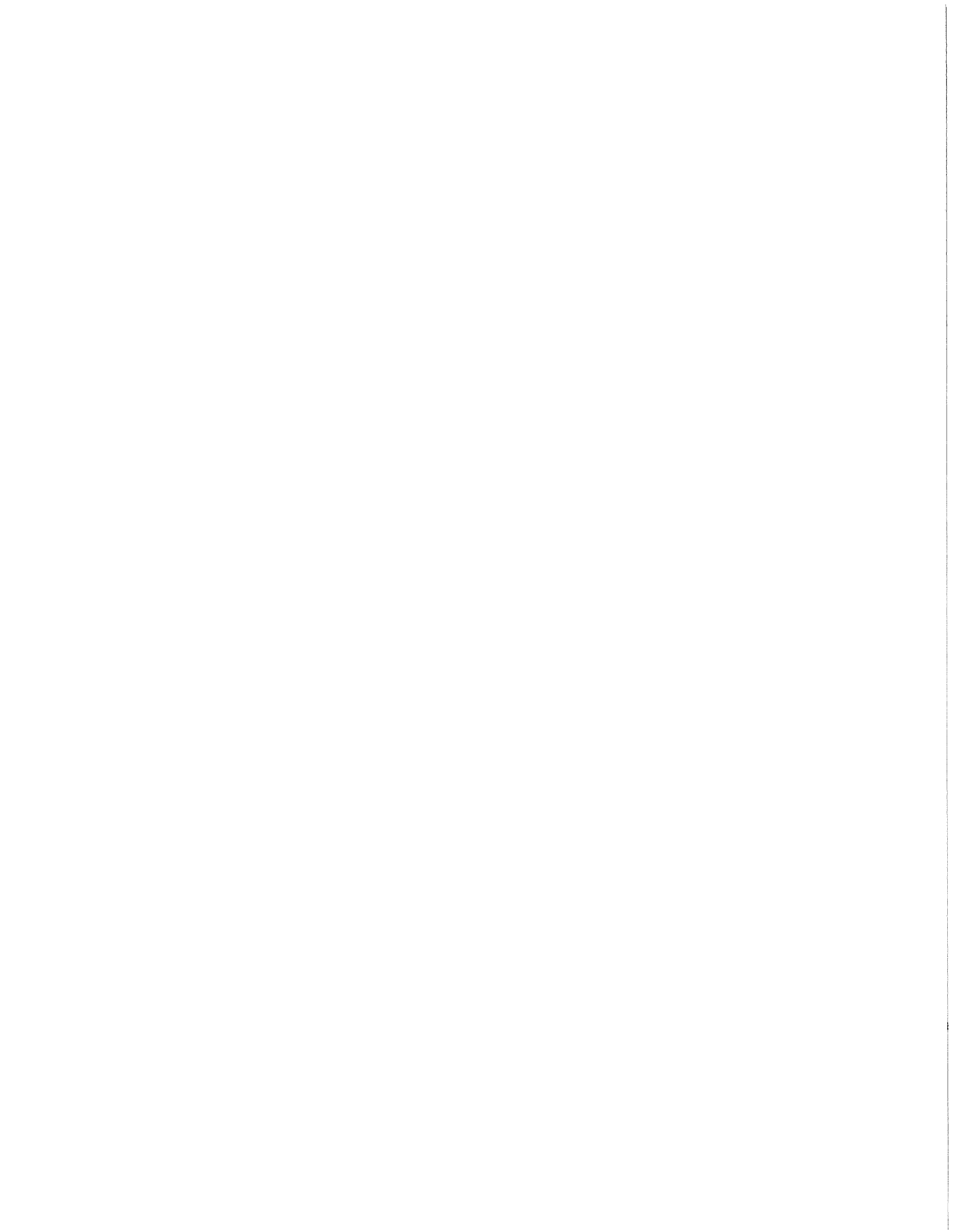
Notary Public, in and for said County and State



Hyden - Leslie County Water District
 Water Line Extension Projects
 SME Project Codes - #03004, #05092, #07080
 12/22/2008

| Phase 1 Estimated Project Cost | Actual Bid |
|------------------------------------|----------------|
| Estimated Water Line Construction | \$1,557,850.00 |
| Estimated Water Tanks Construction | \$375,000.00 |
| Contingency | \$153,418.00 |
| Engineering Design @ 7.62% | \$155,700.00 |
| Engineering Inspection @ 4.58% | \$93,600.00 |
| Legal & Administrative | \$10,000.00 |
| Additional Engineering | \$30,000.00 |
| Estimated Total Funds Needed | \$2,375,568.00 |
| | \$2,000,000.00 |

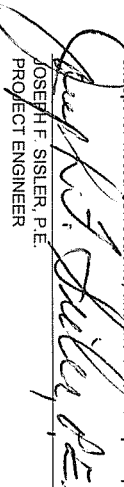
| 2004 Water Line Extension Project - Phase 1 Funding Grants | | | |
|--|-----------------------|----------------|----------------|
| Project ID # | Description | Amount | # of Customers |
| WX21131007 | Sizerock Community | \$185,568.08 | 215 |
| WX21131100 | Camp Creek Area | \$500,000.00 | 50 |
| WX21131010 | Simms Br, Stone Coal | \$250,000.00 | 40 |
| WX21131101 | Cutshin Area | \$600,000.00 | 110 |
| WX21131008 | | \$234,431.92 | |
| | Various Water Line Ex | \$230,000.00 | |
| Total | | \$2,000,000.00 | 415 |



RE BID OPENING 4:00 PM, NOVEMBER 20, 2008

| ITEM NO. | ITEM DESCRIPTION | UNIT QUANTITY | ENGINEERS ESTIMATE | | Knight Electric, Inc. Russellville, KY | | Kentucky Glass Lined Tanks Lexington, KY | | Welding, Inc. Charleston, WV | |
|-------------------------------------|--|---------------|--------------------|--------------|---|--------------|---|--------------|---------------------------------|--------------|
| | | | UNIT COST | TOTAL COST | UNIT COST | TOTAL COST | UNIT COST | TOTAL COST | UNIT COST | TOTAL COST |
| 1 | 50,000 Gallon Ground Storage Tank (Leeco Road) and appurtenances | 1 LS | \$135,000.00 | \$135,000.00 | \$161,689.50 | \$161,689.50 | \$196,075.00 | \$196,075.00 | \$179,000.00 | \$179,000.00 |
| 2 | 150,000 Gallon Ground Storage Tank (Rockhouse) and appurtenances | 1 LF | \$235,000.00 | \$235,000.00 | \$224,500.00 | \$224,500.00 | \$241,309.00 | \$241,309.00 | \$270,000.00 | \$270,000.00 |
| TOTAL AMOUNT BID (ITEMS 1-2) | | | | \$370,000.00 | | \$386,189.50 | | \$437,384.00 | | \$449,000.00 |

Certification: Sisler-Maggard Engineering, PLLC
 We hereby certify that the above bid tabulations accurately represents bids received,
 except for noted corrections, and the bids were promptly opened and read.


 JOSEPH F. SISLER, P.E.
 PROJECT ENGINEER

12/12/08
 DATE





STEVEN L. BESHEAR
GOVERNOR

LEONARD K. PETERS
SECRETARY

03004 LUV

ENERGY AND ENVIRONMENT CABINET
DEPARTMENT FOR ENVIRONMENTAL PROTECTION
DIVISION OF WATER
200 FAIR OAKS, 4TH FLOOR
FRANKFORT, KENTUCKY 40601
www.kentucky.gov

December 8, 2008

RECEIVED

2008

SISLER-MAGGARD

Mr. Leihman Howard Jr, Manager
Hyden-Leslie Co Water District
325 Windover Rd
Hyden, KY 41749

RE: Hyden Leslie Co Water District
AI # 2649, APE20080003
PWSID # 0660204-08-003
2004 WLE Ph 1 Cont. #8 WL & P. Station Cont.
#9 WS Tank
Leslie County, KY

Dear Mr. Howard:

We have reviewed the plans and specifications for the above referenced project. The plans include the construction of approximately 20,000 feet of 6 inch, 53,000 feet of 4 inch, 34,000 feet of 3 inch, & 14,000 feet of 2 inch PVC waterlines; 150,000 Gallon Water Storage Tank; 50,000 Gallon Water Storage Tank; & a 20 HP, 588 TDH, 110 gpm Booster Pump Station. 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 attached construction permit.

Based on the hydraulic analysis/data submitted, the areas served known as Mudlick Branch Road and Leeco Road are considered to be underserved. This designation indicates that without improvements to the existing infrastructure, future extensions may not be able to provide the required minimum pressure of 30 psi on the discharge side of customers' meters. Without improvements to the infrastructure, future extensions may be denied. The underserved designation may be used to help prioritize areas under the Governor's 2020 plan for funding future infrastructure improvements

Construction shall include the "red line" deletion as shown on Plan Sheet 37 for Contract No. 8 of the approved plans pursuant to the conversation with Mr. Mike Maggard of Sisler-Maggard Engineering. This regards the deletion of the hypo-chlorinator in the Rockhouse Booster Pump Station.

If you have any questions concerning this project, please contact Mr. Jonathan Reynolds at 502-564-8158 extension 4834.

Sincerely,

Solitha Dharman, PE
Supervisor, Engineering Section
Water Infrastructure Branch
Division of Water

SD:JR

Enclosures

C: Sisler-Maggard Eng



Leslie County Health Department
Public Service Commission

Distribution-Major Construction

Hyden Leslie Co Water District
Subject Item Inventory

Activity ID No.: APE20080003

Subject Item Inventory:

| ID | Designation | Description |
|----------|----------------------|---|
| A1002649 | | |
| PORT7 | Water lines | 20,000 ft of 6", 53,000 ft of 4", 34,000 ft of 3", & 14,000 ft of 2" PVC waterlines |
| PORT8 | Booster Pump Station | 20 HP, 588 TDH, 110 gpm Booster Pump Station |
| STOR2 | Water Storage Tank | 150,000 Gallon Water Storage Tank |
| STOR3 | Water Storage Tank | 50,000 Gallon Water Storage Tank |

Subject Item Groups:

| ID | Description | Components |
|-------|--|---|
| GACT8 | 20,000 feet of 6 inch, 53,000 feet of 4 inch, 34,000 feet of 3 inch, & 14,000 feet of 2 inch PVC waterlines; 150,000 Gallon Water Storage Tank; 50,000 Gallon Water Storage Tank; & a 20 HP, 588 TDH, 110 gpm Booster Pump Station | PORT8 20 HP, 588 TDH, 110 gpm Booster Pump Station STOR2 150,000 Gallon Water Storage Tank STOR3 50,000 Gallon Water Storage Tank |

Distribution-Major Construction

Hyden Leslie Co Water District
Subject Item Inventory

Activity ID No.: APE20080003

| ID | Description | Components |
|-------|--|---|
| GACT8 | 20,000 feet of 6 inch, 53,000 feet of 4 inch, 34,000 feet of 3 inch, & 14,000 feet of 2 inch PVC waterlines; 150,000 Gallon Water Storage Tank; 50,000 Gallon Water Storage Tank; & a 20 HP, 588 TDH, 110 gpm Booster Pump Station | PORT7 20,000 ft of 6", 53,000 ft of 4", 34,000 ft of 3", & 14,000 ft of 2" PVC waterlines |

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

Hyden Leslie Co Water District
Facility Requirements

Activity ID No.: APE20080003

Page 1 of 29

GACT8 (Contract 8&9) 20,000 feet of 6 inch, 53,000 feet of 4 inch, 34,000 feet of 3 inch, & 14,000 feet of 2 inch PVC waterlines; 150,000 Gallon Water Storage Tank; 50,000 Gallon Water Storage Tank; & a 20 HP. 588 TDH. 110 gpm Booster Pump Station:
Monitoring Requirements:

| 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

Hyden Leslie Co Water District
Facility Requirements

Activity ID No.: APE20080003

GACT8 (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

Hyden Leslie Co Water District
Facility Requirements

Activity ID No.: APE20080003

GACT8 (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

Hyden Leslie Co Water District
Facility Requirements

Activity ID No.: APE20080003

Page 4 of 29

PORT7 (Water lines) 20,000 ft of 6", 53,000 ft of 4", 34,000 ft of 3", & 14,000 ft of 2" PVC waterlines

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 ≥ 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 ≥ 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 may have Diameter ≤ 2 in 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 ≥ 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 ≤ 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 ≥ 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

Hyden Leslie Co Water District
Facility Requirements

Activity ID No.: APE20080003

Page 5 of 29

PORT7 (continued):

Limitation Requirements:

| Condition No. | Parameter | Condition |
|---------------|-----------------------|---|
| L-9 | Distance | <p>When water lines and sewers cross,</p> <ol style="list-style-type: none">1) water lines shall be laid such that eithera) the top of the water line is a vertical Distance ≥ 18 in below the bottom of the sewer line orb) the bottom of the water line is a vertical Distance ≥ 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, and3) 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>The open end of an air relief pipe from automatic valves shall be extended a Distance ≥ 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-10 | Distance | <p>Pipes shall not be installed unless all points of the distribution system remain designed for ground level Pressure ≥ 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-11 | Pressure | <p>Pressure ≥ 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-12 | Pressure | <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 ≥ 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.</p> <p>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> |
| L-13 | Residual Disinfection | |

Distribution-Major Construction

Hyden Leslie Co Water District
Facility Requirements

Activity ID No.: APE20080003

Page 6 of 29

PORT7 (continued):

Limitation Requirements:

| Condition No. | Parameter | Condition |
|---------------|-----------|--|
| L-14 | Velocity | Except in underserved areas, each blow-off, fire hydrant, or flush hydrant shall be sized so that Velocity ≥ 2.5 ft/sec can be achieved in the water main served by the blow-off or hydrant during flushing. Based on the hydraulic analysis/data submitted, the areas served by the following extension(s) are considered to be underserved: a) Mudlick Branch Rd, b) Leeco Rd. This designation indicates that without improvements to the existing infrastructure, future extensions may not be able to provide the required minimum pressure of 30 psi on the discharge side of customers' meters. Without improvements to the infrastructure, future extensions may be denied. The underserved designation may be used to help prioritize areas under the Governor's 2020 plan for funding future infrastructure improvements. [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 | Additional Limitations: Water line installation shall be in accordance with AWWA standards or manufacturer recommendations. [Recommended Standards for Water Works 8.5.1] |

Distribution-Major Construction

Hyden Leslie Co Water District
Facility Requirements

Activity ID No.: APE20080003

PORT7 (continued):

Narrative Requirements: Additional Limitations:

| Condition No. | Condition |
|---------------|---|
| T-2 | <p>Additional Limitations: 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]</p> |
| T-3 | <p>Additional Limitations: 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]</p> |
| T-4 | <p>Additional Limitations: 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>Additional Limitations: A flush hydrant or blow-off shall be required at the end of each dead end line that is less than 6 inches in diameter. [Recommended Standards for Water Works 8.1.6]</p> |
| T-6 | <p>Additional Limitations: 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>Additional Limitations: 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>Additional Limitations: 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>Additional Limitations: 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> |

Distribution-Major Construction

Hyden Leslie Co Water District
Facility Requirements

Activity ID No.: APE20080003

PORT7 (continued):

Narrative Requirements:

Additional Limitations:

| Condition No. | Condition |
|---------------|---|
| T-10 | <p>Additional Limitations: 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>Additional Limitations: 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> |

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">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.2) Crossing trenches shall be backfilled as closely as possible to the original contour.3) All excess material resulting from construction displacement in a crossing trench shall be disposed of outside the flood plain.4) For erodible channels, there shall be at least 30 inches of backfill on top of all pipe or conduit points in the crossing.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)] |

Distribution-Major Construction

Hyden Leslie Co Water District
Facility Requirements

Activity ID No.: APE200800003

PORT7 (continued):

Narrative Requirements:

Subfluvial Pipe Crossings:

| Condition No. | Condition |
|---------------|---|
| T-13 | <p data-bbox="569 1638 602 1936">Subfluvial Pipe Crossings:</p> <p data-bbox="602 1298 636 1936">For subfluvial pipe crossings greater than 15 feet in width,</p> <ol data-bbox="636 680 784 1936" style="list-style-type: none"><li data-bbox="636 787 669 1936">1) the pipe shall be of special construction, having flexible, restrained, or welded watertight joints, and<li data-bbox="669 680 702 1936">2) valves shall be provided at both ends of water crossings so that the section can be isolated for testing or repair. <p data-bbox="702 1787 726 1936">Valves shall</p> <ol data-bbox="726 1532 854 1936" style="list-style-type: none"><li data-bbox="726 1638 751 1936">a) be easily accessible,<li data-bbox="751 1532 784 1936">b) not be subject to flooding, and<li data-bbox="784 148 854 1936">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] |

Distribution-Major Construction

Hyden Leslie Co Water District
Facility Requirements

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PORT8 (Booster Pump Station) 20 HP, 588 TDH, 110 gpm Booster Pump Station:

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

Hyden Leslie Co Water District
Facility Requirements

Activity ID No.: APE20080003

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PORT8 (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">1) grading around stations shall lead surface drainage away and2) stations shall be elevated or protected to a Height \geq 3 ft above the highest of the following:<ol style="list-style-type: none">a) the 100-year flood elevation, orb) 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. <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 \leq 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 | |

Narrative Requirements:

Additional Limitations:

| Condition No. | Condition |
|---------------|--|
| T-1 | <p>Additional Limitations: 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>Additional Limitations: 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>Additional Limitations: 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>Additional Limitations: Pumping stations shall be of durable construction with outward-opening doors. [Recommended Standards for Water Works 6.2.b]</p> |

Distribution-Major Construction

Hyden Leslie Co Water District
Facility Requirements

Activity ID No.: APE20080003

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PORT8 (continued):

Narrative Requirements:

Additional Limitations:

| Condition No. | Condition |
|---------------|---|
| T-5 | <p>Additional Limitations: Pumping stations shall be fire and weather resistant. [Recommended Standards for Water Works 6.2.b]</p> |
| T-6 | <p>Additional Limitations: 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>Additional Limitations: If underground structures are present at pumping stations, they shall waterproofed. [Recommended Standards for Water Works 6.2.d]</p> |
| T-8 | <p>Additional Limitations: Pumping stations shall have adequate space for the installation of additional pumps. [Recommended Standards for Water Works 6.2.a]</p> |
| T-9 | <p>Additional Limitations: 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>Additional Limitations: 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>Additional Limitations: 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>Additional Limitations: 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>Additional Limitations: 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>Additional Limitations: Electrical controls shall be located above grade. [Recommended Standards for Water Works 6.6.5]</p> |

Distribution-Major Construction

Hyden Leslie Co Water District
Facility Requirements

Activity ID No.: APE20080003

PORT8 (continued):

Narrative Requirements:

Additional Limitations:

| Condition No. | Condition |
|---------------|---|
| T-15 | <p>Additional Limitations: 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>Additional Limitations: Pump stations shall be adequately lighted throughout. [Recommended Standards for Water Works 6.2.7]</p> |
| T-17 | <p>Additional Limitations: 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>Additional Limitations: 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>Additional Limitations: 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>Additional Limitations: 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>Additional Limitations: 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>Additional Limitations: Pump stations shall have at least 2 pumps. Pumps shall be sized so that if any single pump is out 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>Additional Limitations: Provisions shall be made for pump alternation. [Recommended Standards for Water Works 6.6.5]</p> |

Distribution-Major Construction

Hyden Leslie Co Water District
Facility Requirements

Activity ID No.: APE200800003

PORT8 (continued):

Narrative Requirements: Additional Limitations:

| Condition No. | Condition |
|---------------|--|
| T-24 | <p>Additional Limitations: Pumps shall</p> <ul style="list-style-type: none">a) have ample capacity to supply the peak demand against the required distribution system pressure without dangerous overloading,b) be driven by prime movers able to meet the maximum horsepower condition of the pumps,c) be provided readily available spare parts and tools, andd) be served by control equipment that is properly protected against temperatures to be encountered. [Recommended Standards for Water Works 6.3] |
| 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">a) a standard pressure gauge on its discharge line andb) a compound gauge on its suction line. <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

Hyden Leslie Co Water District
Facility Requirements

Activity ID No.: APE20080003

PORT8 (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">1) be designed so that the friction losses will be minimized,2) not be subject to contamination,3) have watertight joints,4) be protected against surge or water hammer,5) be provided with restraints where necessary, and6) a) be such that each pump has an individual suction line or6) b) be manifolded such that the lines insure similar hydraulic and operating conditions. [Recommended Standards for Water Works 6.6.2] |
| 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">a) from at least 2 independent sources orb) from a primary source with a standby or auxiliary source provided. <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

Hyden Leslie Co Water District
Facility Requirements

Activity ID No.: APE20080003

STOR2 (Water Storage Tank) 150,000 Gallon Water 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 $>$ 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

Hyden Leslie Co Water District
Facility Requirements

Activity ID No.: APE20080003

STOR2 (continued):

Limitation Requirements:

| Condition No. | Parameter | Condition |
|---------------|-----------|---|
| L-6 | Height | Tanks shall have manholes that are a) framed a Height ≥ 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

Hyden Leslie Co Water District
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STOR2 (continued):

Narrative Requirements:

Additional Limitations:

| Condition No. | Condition |
|---------------|---|
| T-5 | <p>Additional Limitations: 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>Additional Limitations: 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>Additional Limitations: 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>Additional Limitations: 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>Additional Limitations: 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>Additional Limitations: 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>Additional Limitations: 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

Hyden Leslie Co Water District
Facility Requirements

Activity ID No.: APE20080003

STOR2 (continued):

Narrative Requirements:

Additional Limitations:

| Condition No. | Condition |
|---------------|--|
| T-12 | <p>Additional Limitations: 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>Additional Limitations: 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>Additional Limitations: 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">a) shall be installed near the overflow elevation andb) shall not interfere with the overflow discharge. [401 KAR 8:100 Section 1(7)] |
| T-15 | <p>Additional Limitations: 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>Additional Limitations: The bottom of the structure shall be above</p> <ul style="list-style-type: none">a) the maximum flood level andb) the groundwater level. [Recommended Standards for Water Works 7.0.2] |
| T-17 | <p>Additional Limitations: 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>Additional Limitations: 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> |

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Activity ID No.: APE20080003

STOR2 (continued):

Narrative Requirements: Additional Limitations:

| Condition No. | Condition |
|---------------|---|
| T-19 | <p>Additional Limitations: 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">a) prevent the entrance of rainwater,b) exclude birds and animals, andc) exclude insects and dust (as much as compatible with effective venting). <p>Vents may use four-mesh noncorrodible screen. [Recommended Standards for Water Works 7.0.9]</p> |
| T-20 | <p>Additional Limitations: 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>Additional Limitations: 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>Additional Limitations: 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>Additional Limitations: Proper protection shall be given to metal surfaces by</p> <ul style="list-style-type: none">a) paints or other protective coatings and/orb) cathodic protective devices. [Recommended Standards for Water Works 7.0.17] |
| T-24 | <p>Additional Limitations: If cathodic protection is utilized,</p> <ul style="list-style-type: none">a) competent technical personnel should design and install the protection andb) a maintenance contract should be provided. [Recommended Standards for Water Works 7.0.17] |

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Hyden Leslie Co Water District
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Activity ID No.: APE20080003

STOR2 (continued):

Narrative Requirements:

Additional Limitations:

| Condition No. | Condition |
|---------------|---|
| T-25 | <p>Additional Limitations: 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>Additional Limitations: Paints and coatings</p> <ul style="list-style-type: none">a) shall meet NSF standard 61,b) shall be acceptable to the Division of Water,c) shall be properly applied and cured, andd) shall not transfer any substance to the water which will be toxic or cause tastes or odors (following curing). <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>Additional Limitations: 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> <ul style="list-style-type: none">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, and3) use chlorine or chlorine compounds as subsequently described. <p>Finalize disinfection by</p> <ul style="list-style-type: none">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, orc) chlorination method 3, described in detail at AWWA Standard C652 Section 4.3.3. <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
Hyden Leslie Co Water District
Facility Requirements

Activity ID No.: APE20080003

STOR2 (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">a) filling a storage structure to the overflow level with water providing a free chlorine Residual Disinfection ≥ 10 ppm andb) i) completely draining the storage facility and refilling orii) 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] |
| T-29 | <p>If applicable, chlorination method 2 generally requires</p> <ul style="list-style-type: none">a) scrubbing or spraying the water-contact surfaces of a storage structure with a water solution having an available chlorine concentration = 200 ppm andb) purging of the strong chlorine solution and filling to the overflow level. [Recommended Standards for Water Works 7.0.18] |
| T-30 | <p>If applicable, chlorination method 3 generally requires</p> <ul style="list-style-type: none">a) filling a storage structure to approximately 5% of the total storage volume with water having an available chlorine concentration of 50 ppm,b) continued filling of the storage structure to the overflow level with normal potable water, andc) 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)] |

Distribution-Major Construction

Hyden Leslie Co Water District
Facility Requirements

Activity ID No.: APE20080003

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STOR3 (Water Storage Tank) 50,000 Gallon Water 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

Hyden Leslie Co Water District
Facility Requirements

Activity ID No.: APE20080003

STOR3 (continued):

Limitation Requirements:

| Condition No. | Parameter | Condition |
|---------------|-----------|---|
| L-6 | Height | Tanks shall have manholes that are a) framed a Height ≥ 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 | 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] |
| T-2 | 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] |
| T-3 | 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] |
| T-4 | 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] |

Distribution-Major Construction

Hyden Leslie Co Water District
Facility Requirements

Activity ID No.: APE20080003

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STOR3 (continued):

Narrative Requirements:

Additional Limitations:

| Condition No. | Condition |
|---------------|---|
| T-5 | <p>Additional Limitations: 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>Additional Limitations: 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>Additional Limitations: 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>Additional Limitations: 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>Additional Limitations: 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>Additional Limitations: 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>Additional Limitations: 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

Hyden Leslie Co Water District
Facility Requirements

Activity ID No.: APE20080003

STOR3 (continued):

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Narrative Requirements:

Additional Limitations:

| Condition No. | Condition |
|---------------|--|
| T-12 | <p>Additional Limitations: 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>Additional Limitations: 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>Additional Limitations: 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">a) shall be installed near the overflow elevation andb) shall not interfere with the overflow discharge. [401 KAR 8:100 Section 1(7)] |
| T-15 | <p>Additional Limitations: 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>Additional Limitations: The bottom of the structure shall be above</p> <ul style="list-style-type: none">a) the maximum flood level andb) the groundwater level. [Recommended Standards for Water Works 7.0.2] |
| T-17 | <p>Additional Limitations: 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>Additional Limitations: 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
Hyden Leslie Co Water District
Facility Requirements

Activity ID No.: APE20080003

STOR3 (continued):

**Narrative Requirements:
Additional Limitations:**

| Condition No. | Condition |
|---------------|---|
| T-19 | <p>Additional Limitations: 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"> a) prevent the entrance of rainwater, b) exclude birds and animals, and c) exclude insects and dust (as much as compatible with effective venting). <p>Vents may use four-mesh noncorrodible screen. [Recommended Standards for Water Works 7.0.9]</p> |
| T-20 | <p>Additional Limitations: 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>Additional Limitations: 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>Additional Limitations: 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>Additional Limitations: Proper protection shall be given to metal surfaces by</p> <ul style="list-style-type: none"> a) paints or other protective coatings and/or b) cathodic protective devices. [Recommended Standards for Water Works 7.0.17] |
| T-24 | <p>Additional Limitations: If cathodic protection is utilized,</p> <ul style="list-style-type: none"> a) competent technical personnel should design and install the protection and b) a maintenance contract should be provided. [Recommended Standards for Water Works 7.0.17] |

Distribution-Major Construction

Hyden Leslie Co Water District
Facility Requirements

Activity ID No.: APE20080003

STOR3 (continued):

Narrative Requirements:

Additional Limitations:

| Condition No. | Condition |
|---------------|---|
| T-25 | <p>Additional Limitations: 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>Additional Limitations: Paints and coatings</p> <ol style="list-style-type: none">shall meet NSF standard 61,shall be acceptable to the Division of Water,shall be properly applied and cured, andshall not transfer any substance to the water which will be toxic or cause tastes or odors (following curing). <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>Additional Limitations: 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">remove all scaffolding, planks, tools, rags, and other items that are not part of the structural or operational facilities of the storage structure,clean thoroughly by sweeping, scrubbing, using high-pressure water jets, or some equivalently effective means, anduse chlorine or chlorine compounds as subsequently described. <p>Finalize disinfection by</p> <ol style="list-style-type: none">chlorination method 1, described in detail at AWWA Standard C652 Section 4.3.1,chlorination method 2, described in detail at AWWA Standard C652 Section 4.3.2, orchlorination method 3, described in detail at AWWA Standard C652 Section 4.3.3. <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

Hyden Leslie Co Water District
Facility Requirements

Activity ID No.: APE20080003

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STOR3 (continued):

Narrative Requirements:

| Condition No. | Condition |
|---------------|--|
| T-28 | <p>If applicable, chlorination method 1 generally requires</p> <ul style="list-style-type: none">a) filling a storage structure to the overflow level with water providing a free chlorine Residual Disinfection ≥ 10 ppm andb) i) completely draining the storage facility and refilling orb) 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] |
| T-29 | <p>If applicable, chlorination method 2 generally requires</p> <ul style="list-style-type: none">a) scrubbing or spraying the water-contact surfaces of a storage structure with a water solution having an available chlorine concentration = 200 ppm andb) purging of the strong chlorine solution and filling to the overflow level. [Recommended Standards for Water Works 7.0.18] |
| T-30 | <p>If applicable, chlorination method 3 generally requires</p> <ul style="list-style-type: none">a) filling a storage structure to approximately 5% of the total storage volume with water having an available chlorine concentration of 50 ppm,b) continued filling of the storage structure to the overflow level with normal potable water, andc) 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)] |

O & M

Hyden - Leslie County Water District
 Operation and Maintenance Cost
 SME Project # 03004

Item

| | | |
|--|------------------------|---|
| 1 | Labor: | <p>The Camp Creek Booster Pump Station will require an average of 10 hours production per day to supply the demand. Due to telemetry system, it will only require 1 hour of operator time.</p> <p>Using an average labor rate of \$19.00 per hour including benefits for an operator, the plant cost will be:</p> <p>0.5 hours per day X 365 days = 183 183 hours \$19.00 per hour = \$ 3,477 \$3,477 / 12 months = <u>\$ 290 per month</u></p> |
| 2 | Electricity | <p>A similar water booster station of comparable size will cost \$0.05 per 1000 gallons for pumped water.</p> <p>The pump will pump 50,000 gallons per day X 30 days, it will produce 1,500,000 per month, so the cost of electricity will be:</p> <p>1,500,000 X \$0.05 per 1,000 gallons = <u>\$ 75 per month</u></p> |
| 3 | BPS Maintenance | <p>An average booster pump station with similar design and production will cost <u>\$ 25 per month</u></p> |
| 4 | Administration | <p>The overhead cost of administration would be shared with the distribution system as well. We would estimate the cost to be: <u>\$ 25 per month</u></p> |
| 5 | Insurance | <p>A booster pump station will cost on an average of: <u>\$ 50 per month</u></p> |
| Total Monthly Cost of Operation and Maintenance will be estimated: | | <u>\$ 465 per month</u> |
| Total Annual Cost of Operation and Maintenance will be estimated: | | <u>\$ 5,577 per year</u> |

