Wyoming Water Development Commission  
Herschler Building, 4th Floor, West Wing  
122 West 25th Street  
Cheyenne, WY 82002  

January 17, 1994

Project: Osage Water Supply Study - Level II  
Subject: Final Report : Executive Summary

Ladies and Gentlemen:

Pursuant to our agreement dated May 18, 1993, Banner Associates, Inc. is pleased to present Fifty (50) copies of an Executive Summary. Thirty-five (35) copies of the subject report, and one (1) Project Notebook are included with this report under separate cover. This report summarizes our study effort and presents conclusions and facilities development recommendations for consideration by the Commission and Project Sponsors.

The least capital-intensive system alternative is described within this report as "System Development Alternative Number One". This alternative features; (1) purchasing of the Osage Community Water Distribution System for $100,000; (2) purchasing treated water from Black Hills Power and Light Company (BHP&L) for approximately $15,000 per year, and; (3) constructing recommended system improvements. This recommended development alternative will feature; (1) primary use of existing Wells No. 2 and 3; (2) use of Well No. 4 as a reserve well; (3) addition of approximately 15,000 lineal feet of new water lines; and (4) replacement of the existing 60,000 gallon water storage tank with a new 150,000 gallon tank. Constructing the minimum recommended improvements will require approximately $1,100,000.

Operations and maintenance costs associated with wholesale operation as proposed by System Alternative Number One, are projected to be approximately $39,000 per year. Adding $15,000 for purchasing wholesale water from BHP&L will increase annual operating expenses to approximately $54,000 per year. The wholesale purchase of water for $15,000 would be accomplished under a long-term service contract with BHP&L. BHP&L has indicated a willingness to "turn-over" ownership of Well Number 2 and possibly Wells 3 and 4 at some future date. Details related to "turning these wells over at some future date" have not been worked out. Under the wholesale option BHP&L would retain responsibility for meeting EPA Safe Drinking Water Quality requirements at the master meter. The Community would be responsible for maintaining water quality within the distribution system downstream from the Master Meter.

This study recommends that the $15,000 wholesale purchase price for water include a specific asset value for the Community in Wells No. 2 and 3, along with an option to purchase Well No. 4 at some future date. In other words, before the Community can agree to terms for purchase of a distribution system, it must simultaneously agree to specific terms for purchase of a firm long-range water supply. The recommended long-term water supply for the Community of Osage includes Wells 2, 3, and 4. The Community should negotiate some form of long-term ownership in Wells 2, 3, and 4 simultaneously with purchase of the distribution system.

System development options related to drilling an independent well for the Community of Osage
are contained within Section 5 of this report. These options feature significantly higher capital costs for developing a long-term water supply. Drilling of a new well (or wells) for the Community of Osage would feature increased risk to the funding agencies because of the possibility for "hitting a dry hole". Operational costs for an independently owned and operated well system would not be appreciably higher than the wholesale purchase alternative.

We would like to express our thanks to the WWDC staff, particularly to Evan Green for his assistance throughout this study effort. In addition, we would like to express our appreciation to the Project Sponsors, particularly to Bill Price, Chairman of the Osage Water Supply Project Sponsor Committee for his valued assistance. We would like to further express our appreciation to Tom Fuller, Chris Dressen, and Kyle White of Black Hills Power and Light Company for their assistance in carrying out this project.

Very Truly Yours,

Banner Associates, Inc.

Darryl D. Alleman P.E.  
Project Manager
WYOMING WATER DEVELOPMENT COMMISSION
OSAGE WATER SUPPLY PROJECT - LEVEL II
FINAL REPORT
EXECUTIVE SUMMARY

JANUARY 1994

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EXECUTIVE SUMMARY

This Executive Summary provides an overview of the results of the Osage Water Supply Study. The report focuses on the capital requirements and operational costs associated with development of an independently owned and operated water supply system for the Community of Osage, Wyoming.

SECTION 1 - INTRODUCTION

In recent years, Black Hills Power and Light Company (BHP&L) has found it increasingly difficult to operate the Osage water system at a profit. The future promises to bring higher operating costs and increased need for capital facilities to meet the ever-expanding regulatory requirements. BHP&L has completed several analyses which indicate that the citizens of Osage might achieve more reasonably priced water service if they were to collectively acquire the system and finance future improvements through use of available state and federal grants. The purpose of this report is to present additional information related to possible acquisition of the Osage Water System by the citizens of Osage. The remainder of this section presents (1) a brief project description; and (2) a summary of the details related to the project's authorization by the Wyoming Water Development Commission.

**Project Description**

This description of the project presents; (1) Project Location; (2) Project History; and (3) Project Purpose.

**Project Location**

Figure E-1, on the following page, presents an overview of the project vicinity, including the Community of Osage. The Community of Osage is located in Northeastern Wyoming, on U.S. Highway 16, approximately 15 miles northwest of the Town of Newcastle.

**Project History**

Black Hills Power and Light Company is primarily an electric utility and is the current owner of the Osage Water System. The Company has explored for several years, the possibility of divesting itself of its obligation to own, operate, and maintain the Osage Community Water System. Company officials have discussed the situation with potential buyers and individuals interested in forming a water district. To date the Company has not been successful in attracting a new owner. As a result the Company recently requested and was granted a water rate increase to provide full revenue requirements necessary for private ownership by Black Hills Power and Light Company. The Company expects that additional rate increases will be required in the future as system improvements are added.

**Project Purpose**

The goal of the Osage Water Supply Project is to evaluate the potential for the Community of Osage to acquire all or a portion of the potable system presently owned and operated by Black Hills Power and Light Company. The project will feature a further evaluation of the potential for the Community to develop its own independent well supply.

**Project Authorization**

This project has been authorized by the Wyoming Water Development Commission. This report is
LEGEND

- Existing Active Well
- Existing Water Line (Location Approximate)
- Water Storage Tank
- Inactive Well

BANNER
CONSULTING ENGINEERS AND ARCHITECTS

FIGURE E-1
PROJECT VICINITY MAP
intended to fulfill the requirement for a draft final report on October 1, 1993. A final report is scheduled to be delivered by November 1, 1993.

SECTION 2 - EVALUATION OF WATER SUPPLY

This Section presents; (1) a discussion of the status and condition of existing wells and; (2) a discussion of the water quality of the existing well field.

Status and Condition of Wells

Figure E-1, presented in Section 1 of this report, presents the location of six wells evaluated during this portion of the study. Wells Numbered 2, 3, and 4 have been found to have the most "asset value" relative to a future water supply for the Community of Osage. Wells 2 and 3 are connected to the existing distribution system. Well Number 4 discharges into Osage Lake and is not connected directly to the distribution system.

Table E-1, on the following page presents; (1) a summary of the estimated future "life" in years for each well; (2) a summary of major potential problems in maintenance/operation which may be anticipated; and (3) the potential risks regarding ultimate plugging and possible workover well stimulation estimated in 1993 dollars. Table E-2, within this Section, presents additional information regarding the wells evaluated during this study.

Well No. 1 could flow a number of additional years but the casing integrity is questionable and control of the well flow could present a problem if it were sole source of a community water supply. Use of Well No. 2 as a water supply well presents no problem other than the occasional reported caving of shale material and a possible mechanical failure which could render the well inoperative. Osage Wells No. 3 and 4 have the best casing integrity in the well field.

Water Quality of the Well Field

The water quality of the Osage Well Field has been shown by previous tests to be excellent. Test results of samples taken from the Osage Distribution System on July 22, 1993 confirm the water quality is excellent. The test results are contained in Appendix B.

SECTION 3 - EXISTING DISTRIBUTION SYSTEM

The purpose of this Section is to present a summary of the evaluations completed on the Osage Water Distribution System during this study. Figure E-2, presents a diagram of the existing water distribution system.

Review of 1990 Water System Master Plan

According to a 1990 Water System Master Plan Report prepared for Black Hills Power and Light Company, the distribution system is made up of approximately 17,610 lineal feet of water lines which vary in diameter between 4-inch and 8-inch. The majority of distribution mains within the system are 4-inch diameter. There are numerous instances where lines smaller than 4-inches in diameter serve several taps. These small-diameter lines frequently cross block boundary lines. Wyoming DEQ design criteria requires that all mains supplying fire flow to hydrants be a minimum of 6-inches in diameter. Four-inch water mains, particularly when dead-ended, generally do not provide sufficient water carrying capacity to deliver satisfactory fire flows, even if there are typically adequate static pressures within the system. The 1990 Water System Master Plan
## Well #1

- **Estimated Future Life (Yrs):** Unknown - will continue to produce (flowing) thru surface casing/annulus and possible associated fracture system outside well bore.
- **Potential O&M Problems:** Condition of casing, casing integrity and annulus unknown. May be difficult to impossible to completely control or close off surface flow. Previous earlier attempts resulted in fracture flows at surface.
- **Potential Risks:** Ultimate plugging and abandonment procedure costs are unpredictable and cannot be estimated.

## Well #2

- **Estimated Future Life (Yrs):** Variable - Due to integrity of casing strings, cementing, and hung slotted liner. Could produce another 15-20 years or develop short-term mechanical failure with caving shale and liner which would be difficult to repair or correct.
- **Potential O&M Problems:** Continuing shale cave and integrity of hanger and slotted liner. Another pressure acid frac not recommended.
- **Potential Risks:** Plugging and abandonment should not be hard to accomplish by pumping cement plugs across Madison below 2600' with liner and open hole, several cement plugs, in 7" casing at intervals acceptable to State with heavy mud and cement surface plugs in both 7" and 9 5/8" conductor surface casing.

**Est. Cost** 1993 Dollars is $15,000 - $20,000.

## Well #3

- **Estimated Future Life (Yrs):** 50- years (plus)
- **Potential O&M Problems:** None obvious - Continued declining production could be stimulated with additional acid fracture job.
- **Potential Risks:** Low.

**Est. Cost** 1993 Dollars $15,000 - $20,000.

## Well #4

- **Estimated Future Life (Yrs):** 50- years (plus)
- **Potential O&M Problems:** None obvious - Additional Potential could be developed in this well with acid frac.
- **Potential Risks:** Low.

**Est. Cost** 1993 Dollars $17,500 to include planning, supervision, et cetera for 15,000 gallon frac.

## Well #5

- **Estimated Future Life (Yrs):** Abandoned
- **Potential O&M Problems:** None
- **Potential Risks:** Low.

**Est. Cost** 1993 Dollars $3,000

**Osage (Town):** None

BHP&L has requested permission to plug this well from State Engineer's Office. Letter dated 8-18-92.

**Est. Cost** $3,000

**Recommend third party sign-off as with No. 5 above.**

**Plugging pending.**
<table>
<thead>
<tr>
<th>Well No.</th>
<th>Permit Type</th>
<th>Output Capacity (gpm)</th>
<th>Permit Capacity (gpm)</th>
<th>Depth (ft)</th>
<th>Connected to Town</th>
<th>Chlorination</th>
<th>Completed Year</th>
<th>Formation Penetrated</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Industrial</td>
<td>400</td>
<td>500</td>
<td>2,592</td>
<td>No</td>
<td>No</td>
<td>1941</td>
<td>Madison</td>
</tr>
<tr>
<td>2</td>
<td>Industrial</td>
<td>250</td>
<td>3,070</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>1951</td>
<td>Madison</td>
</tr>
<tr>
<td>3</td>
<td>Municipal/Industrial</td>
<td>890</td>
<td>2,500*</td>
<td>3,135</td>
<td>Yes*</td>
<td>Yes*</td>
<td>1979</td>
<td>Madison</td>
</tr>
<tr>
<td>4</td>
<td>Municipal/Industrial</td>
<td>25</td>
<td>2,500</td>
<td>3,101</td>
<td>No</td>
<td>No</td>
<td>1980</td>
<td>Madison</td>
</tr>
<tr>
<td>5</td>
<td>Abandoned</td>
<td>-</td>
<td>-</td>
<td>1,030</td>
<td>-</td>
<td>-</td>
<td>1980</td>
<td>Spearfish</td>
</tr>
<tr>
<td>(Osage)</td>
<td>Municipal</td>
<td>0</td>
<td>30</td>
<td>670</td>
<td>No</td>
<td>No</td>
<td>1948</td>
<td>Lakota</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td>800</td>
<td>5,530</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Well is connected but valved off from the Town. Chlorination facilities exist at the well site but are not in use.
Problem Issue
Low Elevated Tank Height and Volume

Problem Issue
Dead-End Lines, (Typical)

Problem Issue
Long Runs of Small-Diameter (2-inch and less) Mains Serving Multiple Taps (Typical)

Problem Issue
Single 4-Inch Supply Main in Poor Condition with No Access during Wet Weather.

FIGURE E-2
EXISTING DISTRIBUTION
SYSTEM WATER LINES
identified approximately $494,000 worth of water lines for possible replacement or addition within the system. These lines were intended to replace aging lines and provide needed looping where dead ends were evident.

**Computer Evaluation of the Existing System**

In carrying out this study, a computer model has been developed for evaluating the hydraulic capacity of the system. The model is known as WADISO. Results of various model runs indicate that fire flow capacity within the system is well below what is often found in many Wyoming communities. Fire flow capability is greatest near the elevated tank. Fire flow capacity is least at the extremes within the system, particularly to the east of the Burlington Northern Railroad tracks.

**Sonic Leak Detection Survey**

On June 7th and 8th, 1993, a sonic leak detection survey was conducted by Utility Technical Services, Inc. of Englewood, Colorado. Established in 1985, the firm has surveyed hundreds of miles of pipeline in the western United States.

The leak detection survey indicated that there were no leaks in the cast iron lines surveyed. The PVC lines within the system were not surveyed using sonic techniques because available points of connection onto the PVC lines were found to be spaced too far apart within the Osage system to allow for use of the sonic equipment.

**Pressure Testing for Leaks**

On July 22, 1993 a pressure test was conducted on the 4-inch PVC line located east of the Burlington Northern Railroad tracks in Quincy Avenue. The test was conducted to determine whether the 4-inch line would sustain normal system pressures under "closed conditions". The test indicated that the PVC line segment evaluated is not completely water tight, and that small leaks are probably occurring at unknown locations.

**Test Pit Excavations**

Figure 11 presents locations where existing lines were excavated and examined externally. This report reflects the result of this test-pit analysis. The test pit excavations revealed that the majority of lines evaluated were found to be in excellent condition with exception of pits numbered 1 and 9. In general, cast iron lines located in groundwater were found to be deteriorated and in need of replacement. The 4-inch line in Castle Avenue is especially in need of replacement because it is the main feeder for the Community system situated west of the railroad tracks.

**SECTION 4 - EXISTING AND FUTURE WATER DEMAND**

The purpose of this Section is to present an analysis of existing and future water demand within the Community of Osage Water System. The evaluation of water demand reflects a review of; (1) the 1990 Master Plan Report; (2) and an analysis of BHP&L billing records.

**1990 Water Distribution System Master Plan Estimates**

The demand within the Osage Water System was noted to be "well documented" in an audit produced by BHP&L in 1989.

The 1990 Osage Water System Master Plan estimated the existing population of Osage to be 342 people. The estimated number of people per household was 3.26. The approximate number of users on the system was estimated at 104. The estimated daily per capita demand was 136 gallons.
per capita per day (gpcd). This per capita demand was noted in Banner's original WWDC proposal to be slightly less than other Wyoming communities of similar size. Total average daily demand for the Community of Osage was estimated to be 46,000 gallons per day (32 gpm). The average-day water demand of the community is significantly less than that required for operation of the power plant. Given an average daily demand of 46,000 gallons per day, and using ratios common to Wyoming Communities of similar size to Osage to estimate maximum-day and peak-hour flow rates, the existing maximum-day demand is estimated to be approximately 120,000 gallons per day. The peak hour demand will be approximately 220,000 gallons per day.

Review of Existing BHP&L Records

Records provided by BHP&L indicate that there are approximately 122 separate accounts connected to the water system. These accounts include the following accounts as reflected in BHP&L's May 17, 1993 billing summary computer print-out:

<table>
<thead>
<tr>
<th>Customer Class</th>
<th>Number of Meters</th>
<th>May Water Use (gallons)</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black Hills Power and Light Meters</td>
<td>5</td>
<td>3,344,000</td>
<td>82</td>
</tr>
<tr>
<td>Commercial Connections</td>
<td>12</td>
<td>219,000</td>
<td>5</td>
</tr>
<tr>
<td>School District No. 1</td>
<td>3</td>
<td>21,000</td>
<td>1</td>
</tr>
<tr>
<td>Residential Connections</td>
<td>102</td>
<td>494,000</td>
<td>12</td>
</tr>
<tr>
<td><strong>TOTALS</strong></td>
<td><strong>122</strong></td>
<td><strong>4,078,000</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

The table indicates that Black Hills Power and Light uses approximately 82 percent of all water that is metered within the system. Commercial users make up approximately 5 percent of total metered use. Within the commercial use classification, two users (Butte Pipeline and Eighty Eight Oil Company make up approximately 78 percent of the total commercial customer demand). Residential users make up approximately 12 percent of total metered flow. May records indicate that typical residential use averaged approximately 4,850 gallons per month. This rate of residential usage appears to be well below the typical average residential use rate for other similarly-sized Wyoming communities (typically 15,000 gallons per month).

Unaccounted-For Water

The 1990 Master Plan indicated that approximately 21% to 29% of water had not been accounted for over the past 8 years. The Master Plan Report pointed to a high percentage of unaccounted water consumption coupled with high per-capita consumption. This study acknowledges the relatively high percentage of unaccounted water consumption, but notes a relatively low per capita consumption value for the residential and commercial water users within the Community of Osage.

A previous water audit performed by BHP&L indicated that the loss of water to leakage can be accounted from; (1) continuous and unmetered discharge points; (2) old cast iron lines; (3) various faulty meter pits; (4) and inaccurate meters. Our work to date indicates that unaccounted-for water may indeed be caused collectively by a combination of all of the above factors with no individual factor standing out as the obvious or primary reason for unaccounted water consumption. Leakage within the system seems to be originating from a number of widely scattered smaller sources rather than from a relatively few major sources.

Finally, because of the nature of the artesian water supply and the relatively low amount of treatment required, the consequences of leakage upon the overall operating budget for the system appears to be minimal. At the present time, it appears more cost effective to "live with" a certain amount of leakage rather than spend what could be a considerable sum of money in a more
aggressive effort to search out and eliminate existing small leaks within the system. A long-term program to; (1) replace older lines; (2) gradually add more monitoring points for access with leak monitoring equipment; (3) elimination of non-metered water usages; (4) calibration of existing meters; and (5) continued development of a detailed water auditing program appears to be the recommended plan for minimizing the percentage of unaccounted-for water consumption.

**Future Water Demand**

Future per capita water consumption will be a function of several factors including primarily; (1) water pricing; (2) conservation measures; and (3) population growth. All of these factors can be used to estimate a future demand for system design purposes. For purposes of this study, we have assumed that the community of Osage will make judicious use of water rates and conservation measures to reasonably influence per capita consumption. For estimating purposes, we have assumed that water pricing and conservation measures will have a neutral effect on future per capita water consumption. Population growth is a variable that must be used realistically when planning for system expansions. We have often recommended that our clients not rely too heavily on income from uncertain future population growth to help finance needed capital facilities. Our conversations with the Project Sponsors indicates that population growth or decline is expected to be minimal over the next two decades, even if the Power Plant closes. This is because most of the citizens of Osage are not dependent upon the Power Plant for employment. As a consequence, we expect that the system demands will change little over the next 20 years from where they are today.

**SECTION 5 - ANALYSIS OF WATER SUPPLY ALTERNATIVES**

Three system development concepts that have been identified for development in the Final Report following completion of the Interim Report. These system development concepts are referred-to within this report as Alternatives One, Two, and Three. A brief description of each service alternative follows. Common to all alternatives is the assumption that the Community of Osage would purchase the existing distribution system from Black Hills Power and Light Company for a lump-sum amount of $100,000. The differences in each alternative arise through the proposed method of water supply and transmission of well water to the distribution system. A brief discussion of each system alternative follows:

**No-Action Alternative**

The "No-Action" Alternative would feature maintaining the existing distribution system essentially as it exists. Operation of the existing distribution system as it is would mean; (1) continued exposure to low pressure complaints from customers served by small-diameter lines; (2) continued lack of significant system-wide fire flow capacity; (3) vulnerability of customers west of the railroad tracks to complete and possibly lengthy service outages during adverse weather conditions; (4) continued operational inconvenience and expense due to a general insufficiency in number of isolation valves and continued reliance on small service mains which are not located in traditional (public) rights-of-way.

**System Development Alternative Number One**

This alternative features; (1) purchasing of the Osage Community Water Distribution System for $100,000; (2) purchasing treated water from Black Hills Power and Light Company (BHP&L) for approximately $15,000 per year, and; (3) constructing recommended system improvements. This recommended development alternative will feature; (1) primary use of existing Wells No. 2 and 3; (2) use of Well No. 4 as a reserve well; (3) addition of approximately 14,800 lineal feet of new water lines; and (4) replacement of the existing 60,000 gallon water storage tank with a new 150,000 gallon tank. Constructing the minimum recommended improvements will require approximately $1,100,000.
System Development Alternative Number Two

This alternative features; (1) purchasing of the Osage Community Water Distribution System for $100,000 and; (2) constructing recommended system improvements. This development alternative features; (1) Drilling one new well located approximately 1.5 miles north of Osage; (2) constructing a 1.5 mile-long transmission line; (3) addition of approximately 20,250 lineal feet of new water lines; and (4) replacement of the existing 60,000 gallon water storage tank with a new 300,000 gallon tank. Constructing the minimum recommended improvements will require approximately $1,801,000.

System Development Alternative Number Three

This alternative features; (1) purchasing of the Osage Community Water Distribution System for $100,000 and; (2) constructing recommended system improvements. This development alternative features; (1) Drilling two new wells located approximately 1.5 miles north of Osage; (2) connecting the wells and constructing a 1.5 mile-long transmission line; (3) and addition of approximately 22,750 lineal feet of new water lines. A new water tank would not be constructed under this alternative. Constructing the minimum recommended improvements will require approximately $2,175,000.

Table E-3 presents a financial comparison of capital, operational, and estimated monthly single-family residential service charges associated with each of the system development alternatives presented within this report. Capital costs presented in Table E-3 include $100,000 for purchase of the existing distribution system from Black Hills Power and Light Company.

TABLE E-3

FINANCIAL COMPARISON OF WATER SUPPLY ALTERNATIVES

<table>
<thead>
<tr>
<th>Alternative</th>
<th>Estimated Capital Cost ($) *</th>
<th>Estimated O&amp;M Cost ($)</th>
<th>Monthly Equivalent Residential Charge ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>$1,200,000</td>
<td>$54,040**</td>
<td>$45</td>
</tr>
<tr>
<td>2</td>
<td>$1,887,000</td>
<td>$49,660</td>
<td>$50</td>
</tr>
<tr>
<td>3</td>
<td>$2,275,000</td>
<td>$52,660</td>
<td>$55</td>
</tr>
</tbody>
</table>

* Includes $100,000 purchase price for the Distribution system which has been added to the capital cost of all three system alternatives.

** Includes $15,000 for annual wholesale purchase of water through a master meter from BHP&L.

Table E-3 indicates that System Development Alternative Number One requires significantly less capital expenditures to implement, and slightly less monthly operating expense.

SECTION 6 - CONCLUSIONS AND RECOMMENDATIONS

Based upon our work to date, we have developed a list of conclusions and recommendations for
the Wyoming Water Development Commission.

Conclusions

1.) Assuming the "No-Action" Alternative is unacceptable, wholesale purchase of water from Black Hills Power and Light (System Development Alternative Number One) presents the least capital-intensive alternative.

2.) Regarding acquisition of wells:
   a. The preferred acquisition would be Osage Well No. 3.
   b. The Community should obtain a preferred call or option to purchase Osage Well No. 4. The asset value of this well including acid stimulation justifies liability and plugging obligation.
   c. The Community should not acquire or assume any liability of Osage No. 1 for reasons contained herein.
   d. Any acquisition of Osage Well No. 2 should be made with full understanding of potential mechanical problems in the well bore and unpredictable risk and associated operation cost. The cost of plugging this well would not be an adverse liability.
   e. The Community should not acquire or assume liability of the Osage Town Well.

3.) Because of the population involved, and the costs associated with upgrading and operating the system, the Community will need to seek maximum funding from State and/or Federal Agencies and pay a minimal price to acquire the existing system facilities.

Recommendations

The following recommendations are made as a result of this Level II Study:

1.) The project sponsor should attempt to form a legal water service entity such as a water district under the statutes of the State of Wyoming.

2.) The project sponsor should seek to develop a long-term water supply contract with Black Hills Power and Light Company. The contract should specify the terms of purchase of the existing distribution system, partial ownership of wells 2, 3, and 4, and terms for eventual transfer of total or appropriate share of ownership of these wells to the Community.

3.) The project sponsor should seek funding assistance to construct the recommended facilities identified in System Development Alternative One within this report. Funding assistance should be requested initially from the Wyoming Water Development Commission.

4.) If appropriate in the future, the project sponsor may also request funding assistance from; (1) the Wyoming Farm Loan Board; and (2) the Federal Rural Development Association /Farmers Home Administration (RDA/FmHA).