

**APPENDIX B -- APPLICATION FOR SERVICE  
(Utility Must Attach Blank Copy)**

# PARK WATER COMPANY APPLICATION FOR WATER UTILITY SERVICE SERVICE AGREEMENT

## APPLICANT INFORMATION

Applicant's Name	Spouse's Name
Service Address	
Mailing/Billing Address (if different)	
Telephone Number (Primary)	Telephone Number (Secondary)
Applicant's E-mail Address	Applicant's E-mail Address (Secondary)
Applicant's Driver's License Number	Applicant's Date of Birth
<input type="checkbox"/> Owner <input type="checkbox"/> Tenant Date of Purchase or Lease _____	Type of Service <input type="checkbox"/> Residential <input type="checkbox"/> Commercial
Date to Begin Service _____	

## SERVICE AGREEMENT

This Service Agreement is by and between Park Water Company ("Utility") and the customer whose name and signature are shown below ("Customer"). All utility services to be provided hereunder shall be subject to all terms and conditions of Utility's state-approved tariffs, the rules of the Public Utility Commission of Texas ("PUCT"), and the rules of the Texas Commission on Environmental Quality ("TCEQ").

The Utility is responsible for protecting the drinking water supply from contamination or pollution which could result from improper system construction or configuration on the retail connection owner's side of the meter. The purpose of this service agreement is to notify each customer of the restrictions which are in place to provide this protection. The public water system enforces these restrictions to ensure the public health and welfare. Each retail customer must sign this agreement before the Utility will begin service. In addition, when service to an existing retail connection has been suspended or terminated, the water system will not re-establish service unless it has a signed copy of this agreement.

**PLUMBING RESTRICTIONS.** The following unacceptable practices are prohibited by State regulations:

No direct connection between the public drinking water supply and a potential source of contamination is permitted. Potential sources of contamination shall be isolated from the public water system by an air-gap or an appropriate backflow prevention device.

No cross-connection between the public drinking water supply and a private water system is permitted. These potential threats to the public drinking water supply shall be eliminated at the service connection by the installation of an air-gap or a reduced pressure-zone backflow prevention device.

No connection which allows water to be returned to the public drinking water supply is permitted.

No pipe or pipe fitting which contains more than 0.25% lead may be used for the installation or repair of plumbing at any connection which provides water for human use.

No solder or flux which contains more than 0.2% lead can be used for the installation or repair of plumbing at any connection which provides water for human use.

Applicants for service at new consuming facilities or facilities which have undergone extensive plumbing modifications, including remodeling, are required to deliver to the Utility a certificate that their facilities have been inspected by a state-licensed inspector and that they are in compliance with all applicable plumbing codes and are free of potential hazards to public health and safety. Service may be denied until the certificate is received or any identified violations or hazards are remedied. The Customer shall allow his property to be inspected for possible cross-connections and other potential contamination hazards. These inspections shall be conducted by the Utility or its designated agent prior to initiating new water service; when there is reason to believe that cross-connections or other potential contamination hazards exist; or after any major changes to the private water distribution facilities. The inspections shall be conducted during the Utility's normal business hours.

The Utility shall notify the Customer in writing of any cross-connection or other potential contamination hazard which has been identified during the initial inspection or the periodic reinspection.

The Customer shall immediately remove or adequately isolate any potential cross-connections or other potential contamination hazards on his premises.

The Customer shall, at his expense, properly install, test, and maintain any backflow prevention device required by the Utility. Copies of all testing and maintenance records shall be provided to the Utility.

If the Customer fails to comply with the terms of the Service Agreement, the Utility shall, at its option, either terminate service or properly install, test, and maintain an appropriate backflow prevention device at the service connection. Any expenses associated with the enforcement of this agreement shall be billed to the Customer.

**Limitation on Liability:** The Utility will not accept liability for any injury or damage occurring on the customer's side of the meter. The Utility will not accept liability for injuries or damages to persons or property due to disruption of water service caused by: (1) acts of God, (2) acts of third parties not subject to the control of Utility, (3) electrical power failures, or (4) termination of water service pursuant to Utility's tariff or TCEQ and PUCT rules.

**Fire Flow Not Provided:** The Utility does not provide fire prevention or firefighting services. The Utility therefore does not accept liability for fire-related injuries or damages to persons or property caused or aggravated by the availability (or lack thereof) of water or water pressure (or lack thereof) during fire emergencies.

By signing this application and Service Agreement, Customer agrees to comply with Utility's rules and tariff and all rules and regulations of applicable regulatory agencies. Customer guarantees prompt payment of all utility bills for the service address printed above. The Utility will maintain a copy of this agreement as long as the Customer and/or the premises is connected to the Utility.

CUSTOMER'S SIGNATURE: \_\_\_\_\_

PRINTED NAME: \_\_\_\_\_

DATE: \_\_\_\_\_

**B & D ENVIRONMENTAL, INC.**

200 HARBOR CIRCLE  
GEORGETOWN, TEXAS 78633  
PHONE NO: (512) 264-9124  
FAX NO: (512) 692-1967

EMAIL: [bretfenner@yahoo.com](mailto:bretfenner@yahoo.com)

August 30, 2017

Mr. Charlie Lindgren  
Park Water Company  
7144 East Stetson Drive, Suite C-200  
Scottsdale, AZ 85251

RE: A Rate Study to Determine the Proposed Water Rates in the Application of the Park Water Company  
for the Meadows Subdivisions in Midland County

Dear Mr. Lindgren:

B & D Environmental, Inc. was retained to perform a study to determine a rate structure that will support the revenue requirement for a proposed public water system for the Meadows Subdivision. This rate study was conducted using mainly financial and utility cost data provided from the utility's construction and operating estimates which can be found attached. Since this utility will be requesting a new CCN and has no previous operational history, a number of assumptions were required to determine a revenue requirement necessary to support the cost of water service to this subdivision. A list of these assumptions can be found in **Attachment 1**.

Based on the available information, a revenue requirement was determined for providing water service to the utility's customer based on three projections. The first projection is for the end of Phase 1 of operation. Projection two is for the end of Phase 2 of operation. The final projection is for Phase 3 at full build out of the subdivisions. For each scenario a revenue requirement was calculated. For each revenue requirement, monthly water rates per customer were calculated to generate enough income to cover the required cost of service. The calculation of customer monthly rates for each projected scenario can be found in **Attachment 2** of this study. The rates determined for each phase will recover the revenue requirement necessary for providing water service to the customers of this utility at the projected cost for that phase. Projected operation and maintenance cost can be found in **Attachment 3**. In the future, the utility may want to submit a rate/tariff change application to request rates that cover its necessary revenue requirement once an actual cost of service is determined after actual build out of the subdivision occurs.

In conclusion, the water rate structure as proposed for Phase 2 should be used as the water rates for the proposed Meadows Subdivision. Given that full built out is not projected to be completed for eight years, the time span is too long for the Phase 3 rate structure to be considered accurate with any certainty. After each phase is achieved, the utility should review its rate structure to determine if it will generate the required revenues given the actual cost of service of the utility at that time.

Table 1 is a comparison of the proposed rate structure for each projected scenario.

**Table 1: Comparison of Water Rates**

Projection	Monthly Base Rates	Gallage Charge
Phase 1	\$ 136.04	\$ 9.57 per 1,000 gallons
Phase 2	\$ 85.22	\$ 6.00 per 1,000 gallons
Phase 3	\$ 60.44	\$ 4.25 per 1,000 gallons
Recommended Water Rates	<b>\$ 85.22</b>	<b>\$ 6.00 per 1,000 gallons</b>

Rate designed with zero gallons included in the base rate

Should you have any questions regarding this rate study, please contact me at (512) 264-9124.

Sincerely,



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Bret W. Fenner, P.E.  
B & D Environmental, Inc.

# **ATTACHMENT 1**

**Assumptions:**

1. Each meter will use an average of 7,000 gallons per month.
2. All water utility plant and distribution system considered investor contributed capital with a weighted average return on investment of 8.00 percent.
3. The estimated total cost of the water system plant and equipment will be \$ 1,387,588. Cost for Phase 1 will be \$1,135,723 with Phase 2 at \$251,865 and no additional plant and equipment cost for Phase 3.
4. Rate structure allocated at 67% fixed cost and 33% variable cost with no gallons included in base rate.
5. Full build out of 200 connections will be completed by the end of year eight. Estimated number of connections added each year is 25 until full build out.
6. Phase 1 number of connections: 70 total connections. Phase 2 number of connections: 140 total connections. Phase 3 will be full build out of 200 connections.
7. Phase 1 projected per connection operating cost \$686.17 per connection, Phase 2 per projected connection operating cost \$486.68 per connection and Phase 3 projected per connection operating cost \$389.93 per connection

## **ATTACHMENT 2**



# Meadows Subdivision

## Phase 1 Projections

### Meter Equivalents:

<u>Meter Size</u>	<u>Total Meters</u>	<u>Equivalent Factor</u>	<u>Meter Equivalents</u>
5/8" - 3/4"	70	1	70
1"	0	2.5	0
1 1/2"	0	5	0
2"	0	8	0
3"	0	15	0
4"	0	20	0
<b>Total Meter Equivalents:</b>	<b>70</b>		<b>70</b>

**Estimated Annual Total Gallons Sold:** 5,880,000

### Estimated Water Revenue Requirement:

#### Water Cost of Service:

O & M Expenses: (\$686.17 x 70 connections)	\$	48,032	
	\$	0	
Subtotal:	\$		48,032

#### Know & Measurable Changes:

	\$	0	
Subtotal:	\$		0
Annual Depreciation	\$	34,416	
Return On Investment (8.00%)	\$	88,105	
	\$	0	
Subtotal:	\$		122,521

**Total Water Revenue Requirement:** \$ 170,553

### Water Rate Structure:

Gallage Rate: Variable cost (33% of total revenue requirement) = \$56,282

Variable Cost Calculation: [\$56,282 ÷ (5,880,000 Gals. ÷ 1000 = 5,880)] = \$ 9.57

Gallage Rate: **\$ 9.57 per 1000 gallons**

#### Monthly Base Rate:

Fixed Cost Calculation: \$170,553 - 56,282 = \$114,271

Base Rate Calculation: \$114,271 ÷ 70 meter equivalents ÷ 12 months = \$ 136.04

<u>Meter Size</u>	<u>Equivalent Factor</u>	<u>Base Rate/Meter Size</u>
5/8" - 3/4"	1	\$ 136.04

## Meadows Subdivision

Meadows Subdivision						
<b>Test Period Ends:</b>		<b>31-Dec-18</b>				
Utility Plant	Initial Date	Initial Cost	Life (Years)	Annual Depreciation Expense	Total Accumulated Depreciation	Net Book Value
Water Utility Plant	31-Jul-18	\$1,135,723	33	\$34,416	\$34,416	\$1,101,307
<b>Utility Plant Totals:</b>		<b>\$1,135,723</b>		<b>\$34,416</b>	<b>\$34,416</b>	<b>\$1,101,307</b>

<b><u>Water Rate of Return:</u></b> Net Plant Value: \$ 1,101,307 ROR Calculation: $1,101,307 \times 0.08 = \$88,105$	
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### **Notes:**

Note 1. Per projected engineering construction cost - Phase 1 cost of water system: \$1,135,723

Note 2 Rate of retrun (8 00%)

Note 3. Rate structure allocated at 67% fixed cost and 33% variable cost with no gallons included in base rate.

Note 4. Estimated Annual Gallonage Sold: 7,000 gallons x 70 meters x 12 = 5,880,000

# Meadows Subdivision

## Phase 2 Projections

### Meter Equivalents:

<u>Meter Size</u>	<u>Total Meters</u>	<u>Equivalent Factor</u>	<u>Meter Equivalents</u>
5/8" - 3/4"	140	1	140
1"	0	2.5	0
1 1/2"	0	5	0
2"	0	8	0
3"	0	15	0
4"	0	20	0
<b>Total Meter Equivalents:</b>	<b>140</b>		<b>140</b>

**Estimated Annual Total Gallons Sold:** 11,760,000

### Estimated Water Revenue Requirement:

#### Water Cost of Service:

O & M Expenses: (\$486.68 x 140 connections)	\$	68,135	
	\$	0	
Subtotal:		\$	68,135

#### Know & Measurable Changes:

	\$	0	
Subtotal:		\$	0
Annual Depreciation	\$	42,048	
Return On Investment (8.00%)	\$	103,513	
	\$	0	
Subtotal:		\$	145,561

**Total Water Revenue Requirement:** \$ **213,696**

### Water Rate Structure:

Gallage Rate: Variable cost (33% of total revenue requirement) = \$70,520

Variable Cost Calculation:  $[\$70,520 \div (11,760,000 \text{ Gals.} \div 1000 = 11,760)] = \$ 6.00$

Gallage Rate: **\$ 6.00 per 1000 gallons**

#### Monthly Base Rate:

Fixed Cost Calculation:  $\$213,696 - 70,520 = \$143,176$

Base Rate Calculation:  $\$143,176 \div 140 \text{ meter equivalents} \div 12 \text{ months} = \$ 85.22$

<u>Meter Size</u>	<u>Equivalent Factor</u>	<u>Base Rate/Meter Size</u>
5/8" - 3/4"	1	\$ <b>85.22</b>

# Meadows Subdivision

Test Period Ends: 31-Dec-20						
Plant Cost	Test Period	Plant Cost	Service Life	Annual Depreciation Expense	Annual Depreciation Expense	Book Value
Water Utility Plant (Phase 1)	31-Jul-18	\$1,135,723	33	\$34,416	\$86,040	\$1,049,683
Water Utility Plant (Phase 2)	31-Jul-19	\$251,865	33	\$7,632	\$7,632	\$244,233
<b>Utility Plant Totals:</b>		<b>\$1,387,588</b>		<b>\$42,048</b>	<b>\$93,672</b>	<b>\$1,293,916</b>

Rate of Return Calculation	
<b>Water Rate of Return:</b>	
Net Plant Value: \$ 1,293,916	
ROR Calculation: $1,293,916 \times 0.08 = \$ 103,513$	

## Notes:

Note 1. Per projected engineering construction cost - Phase 2 cost of water system: \$251,865.

Note 2. Rate of retrun (8.00%)

Note 3 Rate structure allocated at 67% fixed cost and 33% variable cost with no gallons included in base rate

Note 4. Estimated Annual Gallonage Sold: 7,000 gallons x 140 meters x 12 = 11,760,000

# Meadows Subdivision

## Phase 3 Full Buildout

### Meter Equivalents:

<u>Meter Size</u>	<u>Total Meters</u>	<u>Equivalent Factor</u>	<u>Meter Equivalents</u>
5/8" - 3/4"	200	1	200
1"	0	2.5	0
1 1/2"	0	5	0
2"	0	8	0
3"	0	15	0
4"	0	20	0
<b>Total Meter Equivalents:</b>	<b>200</b>		<b>200</b>

**Estimated Annual Total Gallons Sold:** 16,800,000

### Estimated Water Revenue Requirement:

#### Water Cost of Service:

O & M Expenses: (\$389.93 x 200 connections)	\$	77,986	
	\$	0	
Subtotal:		\$	77,986

#### Know & Measurable Changes:

	\$	0	
Subtotal:		\$	0
Annual Depreciation	\$	42,048	
Return On Investment (8.00%)	\$	96,480	
	\$	0	
Subtotal:		\$	138,528

**Total Water Revenue Requirement:** \$ **216,514**

### Water Rate Structure:

Gallage Rate: Variable cost (33% of total revenue requirement) = \$71,450

Variable Cost Calculation:  $[\$71,450 + (16,800,000 \text{ Gals.} \div 1000 = 16,800)] = \$ 4.25$

Gallage Rate: **\$ 4.25 per 1000 gallons**

#### Monthly Base Rate:

Fixed Cost Calculation:  $\$216,514 - 71,450 = \$145,064$

Base Rate Calculation:  $\$145,064 \div 200 \text{ meter equivalents} \div 12 \text{ months} = \$ 60.44$

<u>Meter Size</u>	<u>Equivalent Factor</u>	<u>Base Rate/Meter Size</u>
5/8" - 3/4"	1	\$ <b>60.44</b>

# Meadows Subdivision

Depreciation Schedule						
Test Period Ends:		31-Dec-22				
Asset Description	Installation Date	Initial Cost	Life (Years)	Annual Expense	Total Accum. Deprec.	Net Book Value
Water Utility Plant (Phase 1)	31-Jul-18	\$1,135,723	33	\$34,416	\$154,872	\$980,851
Water Utility Plant (Phase 2)	31-Jul-19	\$251,865	33	\$7,632	\$26,712	\$225,153
Utility Plant Totals:		\$1,387,588		\$42,048	\$181,584	\$1,206,004

Water Rate of Return:	
Net Plant Value: \$ 1,206,004	
ROR Calculation: $1,206,004 \times 0.08 = \$ 96,480$	

## Notes:

Note 1. Per additional engineering construction cost in Phase 3.

Note 2. Rate of retrun (8.00%)

Note 3. Rate structure allocated at 67% fixed cost and 33% variable cost with no gallons included in base rate.

Note 4. Estimated Annual Gallonage Sold: 7,000 gallons x 200 meters x 12 = 16,800,000

## **ATTACHMENT 3**

## Meadows Subdivision

Projection of O&M Costs 2018 - 2022						
Projected Operating Expenses:	Projected Years, \$					
Year	1	2	3	4	5	
Electrical	\$ 25,000	\$ 32,000	\$ 40,000	\$ 45,000	\$ 52,000	
Fuel	\$ 25,000	\$ 30,000	\$ 32,000	\$ 34,000	\$ 36,000	
Vehicles	\$ 35,000	\$ -	\$ 30,000	\$ -	\$ 30,000	
Chemicals	\$ 18,000	\$ 18,000	\$ 20,000	\$ 22,000	\$ 24,000	
Treatment Filters	\$ 25,000	\$ 40,000	\$ 42,000	\$ 42,000	\$ 42,000	
Parts, Tools, repair clamps, etc.	\$ 5,000	\$ 10,000	\$ 10,000	\$ 12,000	\$ 12,000	
Water Meters	\$ 7,500	\$ 3,500	\$ 7,000	\$ 5,000	\$ 5,000	
Meter Cans	\$ 5,000	\$ 2,500	\$ 4,000	\$ 3,000	\$ 3,000	
Pipe & Fittings	\$ 5,000	\$ 2,500	\$ 2,500	\$ 2,500	\$ 3,000	
Equipment Rental	\$ 12,000	\$ 12,000	\$ 12,000	\$ 14,000	\$ 15,000	
Water Quality Analysis	\$ 12,000	\$ 12,000	\$ 14,000	\$ 14,000	\$ 16,000	
Salaries	\$ 150,000	\$ 150,000	\$ 160,000	\$ 160,000	\$ 170,000	
Misc.	\$ 10,000	\$ 10,000	\$ 10,000	\$ 10,000	\$ 10,000	
Total Estimated O&M Costs	\$ 334,501	\$ 322,502	\$ 383,503	\$ 363,504	\$ 418,005	

Phase	System	Connections	O & M Cost	Cost / Connection
Phase 1:	King Ranch / Chaney Meadows	400		
		<u>70</u>		
		470	\$ 322,502	\$ 686.17 per Connection
Phase 2:	King Ranch / Chaney Meadows	648		
		<u>140</u>		
		788	\$ 383,503	\$ 486.68 per Connection
Phase 3:	King Ranch / Chaney Meadows	872		
		<u>200</u>		
		1072	\$ 418,005	\$ 389.93 per Connection



# **FINANCIAL AND UTILITY COST SUPPORT DATA**

## Meadows Water Usage

- At 100 gallons/connection and 2.5 people per household
- To reach 2-hour peak flow multiply by 1.25 x 2 as per TCEQ §290.38(58)

### Phase 1 – 68 lots

- 250 gallons/connection x 70 lots = .0175 MGD
- Peak 2-hour flow
  - $.0175 \times 1.25 \times 2 =$ .04375 MGD

### Phase 2 – 69 lots

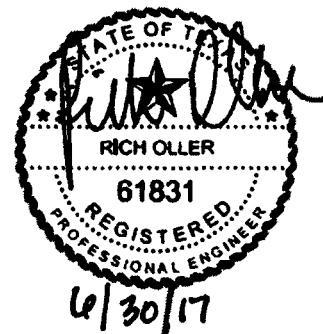
- 250 gallons/connection x 70 lots = .0175 MGD
- Peak 2-hour flow
  - $.0175 \times 1.25 \times 2 =$ .04375 MGD

### Phase 3 – 62 lots

- 250 gallons/connection x 65 lots = .01625 MGD
- Peak 2-hour flow
  - $.01625 \times 4 =$ .0413 MGD

### Total flow for all phases – 199 lots

- 250 gallons/connection x 200 lots = .05 MGD
- Peak 2-hour flow
  - $.05 \times 1.25 \times 2 =$ .125 MGD



**Meadows Well & Water Treatment Phase I**  
Permian Basin Residential Property  
Engineer's Opinion of Probable Construction Cost  
August 16, 2017

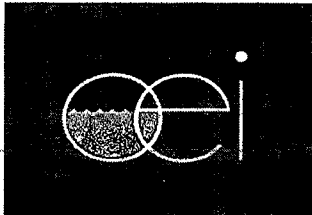
Item	Description	Quantity	Unit	Unit Price	Probable Constr. Cost	Total
<b>Well development</b>						
	Well drilling (Bore, 16-inch maleable steel casing [approx. 32/ft], and screen)	1	E A	\$80,000.00	\$80,000.00	\$80,000.00
	Well Pumps (submersible)	1	E.A.	\$17,500.00	\$17,500.00	\$17,500.00
	Discharge piping to header line	1	E A	\$6,000.00	\$6,000.00	\$6,000.00
	Well fencing - barbwire	1,740	L.F.	\$15.00	\$26,100.00	\$26,100.00
	Farm gate	1	L.S.	\$80.00	\$80.00	\$80.00
	Caliche road	483	S Y.	\$75.00	\$36,225.00	\$36,225.00
	Electrical - Well Panels	1	E.A.	\$16,000.00	\$16,000.00	\$16,000.00
	Chlorinated Gravel Pack Brady 8/12	4	C Y.	\$547.00	\$2,188.00	\$2,188.00
	Elec Primary Extension	1	E.A.	\$50,000.00	\$50,000.00	\$50,000.00
	Access Road	3.7	C Y.	\$325.00	\$1,202.50	\$1,202.50
	Concrete Foundation Pad (40'x25' 6" thick)	1,000	S F.	\$6.50	\$6,500.00	\$6,500.00
<b>GST &amp; Water Treatment Facility</b>						
	50k GST	50,000	Gal.	\$1.75	\$87,500.00	\$87,500.00
	Booster Pumps	1	E.A.	\$35,000.00	\$35,000.00	\$35,000.00
	Flow Meters	1	E.A.	\$11,500.00	\$11,500.00	\$11,500.00
	Electrical	1	L.S.	\$10,000.00	\$10,000.00	\$10,000.00
	Pump Control Valves	1	E A	\$24,500.00	\$24,500.00	\$24,500.00
	Booster pump piping	1	E.A.	\$35,000.00	\$35,000.00	\$35,000.00
	Building for Booster Station (Metal)	900	S.F.	\$100.00	\$90,000.00	\$90,000.00
	Master Level Controls	1	E.A.	\$10,000.00	\$10,000.00	\$10,000.00
	Standby Generator Auto Switch	1	E A	\$28,000.00	\$28,000.00	\$28,000.00
	Chemical Tank	1	E.A.	\$250.00	\$250.00	\$250.00
	JM Eagle Containment Pallet	1	E.A.	\$70.00	\$70.00	\$70.00
	LML Chemical Pump	1	E.A.	\$470.00	\$470.00	\$470.00
<b>Water Treatment Unit</b>						
	Water Treatment Unit	1	E.A.	\$230,000.00	\$230,000.00	\$230,000.00
	Piping & Controls	1	E A	\$15,000.00	\$15,000.00	\$15,000.00
	Electrical	1	E.A.	\$10,000.00	\$10,000.00	\$10,000.00
	5k GST Dosing Tank	5,000	Gal.	\$1.30	\$6,500.00	\$6,500.00
	Standpipe 80k	80,000	Gal.	\$1.90	\$152,000.00	\$152,000.00
<b>SubTotal</b>						<b>\$987,585.50</b>
<b>Construction Contingency (15%)</b>						<b>\$148,137.83</b>
<b>Total Opinion w/ Contingency</b>						<b>\$1,135,723.33</b>



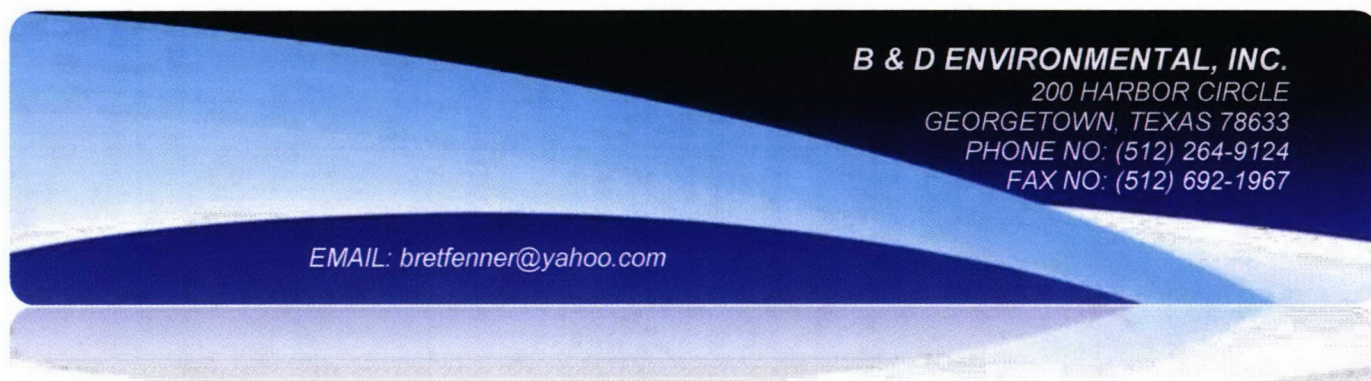
1212 13th Street, Suite 202  
Lubbock, TX 79401 • (806) 993-6226  
Texas Registered Engineering Firm F-2145

**Meadows Well & Water Treatment Phase II**  
**Permian Basin Residential Property**  
**Engineer's Opinion of Probable Construction Cost**  
**August 16, 2017**

Item	Description	Quantity	Unit	Unit Price	Probable Constr. Cost	Total
<b>Well development</b>						
	Well drilling (Bore, 16-inch maleable steel casing [approx. 32/ft], and screen)	1	E.A.	\$80,000.00	\$80,000.00	\$80,000.00
	Well Pumps (submersible)	1	E.A.	\$17,500.00	\$17,500.00	\$17,500.00
	Discharge piping to header line	1	E.A.	\$6,000.00	\$6,000.00	\$6,000.00
	Welll fencing - barbwire	1,740	L.F.	\$15.00	\$26,100.00	\$26,100.00
	Caliche road	483	S.Y.	\$75.00	\$36,225.00	\$36,225.00
	Electrical - Well Panels	1	E.A.	\$16,000.00	\$16,000.00	\$16,000.00
	Chlroinated Gravel Pack Brady 8/12	4	C.Y.	\$547.00	\$2,188.00	\$2,188.00
	Elec. Primary Extension	1	E.A.	\$20,000.00	\$20,000.00	\$20,000.00
<b>Water Treatment Unit</b>						
	Piping & Controls	1	E.A.	\$15,000.00	\$15,000.00	\$15,000.00
					<b>SubTotal</b>	<b>\$219,013.00</b>
					<b>Construction Contingency (15%)</b>	<b>\$32,851.95</b>
<b>Total Opinion w/ Contingency</b>						<b>\$251,864.95</b>



1212 13th Street, Suite 202  
Lubbock, TX 79401 • (806) 993-6226  
Texas Registered Engineering Firm F-2145



August 30, 2017

Mr. Charlie Lindgren  
Park Water Company  
7144 East Stetson Drive, Suite C-200  
Scottsdale, AZ 85251

RE: A Rate Study to Determine the Proposed Water Rates in the Application of the Park Water Company  
for the King Ranch/Chaney Subdivisions in Midland County

Dear Mr. Lindgren:

B & D Environmental, Inc. was retained to perform a study to determine a rate structure that will support the revenue requirement for a proposed public water system for the King Ranch/Chaney Subdivisions. This rate study was conducted using mainly financial and utility cost data provided from the utility's construction and operating estimates which can be found attached. Since this utility will be requesting a new CCN and has no previous operational history, a number of assumptions were required to determine a revenue requirement necessary to support the cost of water service to these subdivisions. A list of these assumptions can be found in **Attachment 1**.

Based on the available information, a revenue requirement was determined for providing water service to the utility's customer based on three projections. The first projection is for the end of Phase 1 of operation. Projection two is for the end of Phase 2 of operation. The final projection is for Phase 3 at full build out of the subdivisions. For each scenario a revenue requirement was calculated. For each revenue requirement, monthly water rates per customer were calculated to generate enough income to cover the required cost of service. The calculation of customer monthly rates for each projected scenario can be found in **Attachment 2** of this study. The rates determined for each phase will recover the revenue requirement necessary for providing water service to the customers of this utility at the projected cost for that phase. Projected operation and maintenance cost can be found in **Attachment 3**. In the future, the utility may want to submit a rate/tariff change application to request rates that cover its necessary revenue requirement once an actual cost of service is determined after actual build out of the subdivision occurs.

In conclusion, the water rate structure as proposed for Phase 2 should be used as the water rates for the proposed King Ranch and Chaney Subdivisions. Given that full built out is not projected to be completed for eight years, the time span is too long for the Phase 3 rate structure to be considered accurate with any certainty. After each phase is achieved, the utility should review its rate structure to determine if it will generate the required revenues given the actual cost of service of the utility at that time.

Table 1 is a comparison of the proposed rate structure for each projected scenario.

**Table 1: Comparison of Water Rates**

Projection	Monthly Base Rates	Gallage Charge
Phase 1	\$ 80.94	\$ 5.70 per 1,000 gallons
Phase 2	\$ 55.25	\$ 3.89 per 1,000 gallons
Phase 3	\$ 47.36	\$ 3.33 per 1,000 gallons
Recommended Water Rates	\$ 55.25	\$ 3.89 per 1,000 gallons

Rate designed with zero gallons included in the base rate

Should you have any questions regarding this rate study, please contact me at (512) 264-9124.

Sincerely,



---

Bret W. Fenner, P.E.  
B & D Environmental, Inc.

# **ATTACHMENT 1**

**Assumptions:**

1. Each meter will use an average of 7,000 gallons per month.
2. All water utility plant and distribution system considered investor contributed capital with a weighted average return on investment of 8.00 percent.
3. The estimated total cost of the water system plant and equipment will be \$ 3,943,470. Cost for Phase 1 will be \$2,830,663, with Phase 2 at \$289,028 and Phase 3 at \$823,778.
4. Rate structure allocated at 67% fixed cost and 33% variable cost with no gallons included in base rate.
5. Full build out of 872 connections will be completed by the end of year eight. Estimated number of connections added each year is 95 until full build out.
6. Phase 1 number of connections: King Ranch (291 connections) + Chaney (109 connections) = 400 total connections. Phase 2 number of connections: Phase 1 total (400 connections) + King Ranch (248 connections) = 648 total connections. Phase 3 will be full build out of 872 connections.
7. Phase 1 projected per connection operating cost \$686.17 per connection, Phase 2 per projected connection operating cost \$486.68 per connection and Phase 3 projected per connection operating cost \$389.93 per connection



## **ATTACHMENT 2**

# King Ranch / Chaney Subdivisions

## Phase 1 Projections

### Meter Equivalents:

<u>Meter Size</u>	<u>Total Meters</u>	<u>Equivalent Factor</u>	<u>Meter Equivalents</u>
5/8" - 3/4"	400	1	400
1"	0	2.5	0
1 1/2"	0	5	0
2"	0	8	0
3"	0	15	0
4"	0	20	0
<b>Total Meter Equivalents:</b>	<b>400</b>		<b>400</b>

**Estimated Annual Total Gallons Sold:** 33,600,000

### Estimated Water Revenue Requirement:

#### Water Cost of Service:

O & M Expenses: (\$686.17 x 400 connections)	\$	274,468	
	\$	0	
Subtotal:	\$		274,468

#### Know & Measurable Changes:

	\$	0	
Subtotal:	\$		0
Annual Depreciation	\$	85,788	
Return On Investment (8.00%)	\$	219,590	
	\$	0	
Subtotal:	\$		305,378

**Total Water Revenue Requirement:** \$ **579,846**

### Water Rate Structure:

Gallage Rate: Variable cost (33% of total revenue requirement) = \$191,349

Variable Cost Calculation: [\$191,349 ÷ (33,600,000 Gals. ÷ 1000 = 33,600)] = \$ 5.70

Gallage Rate: **\$ 5.70 per 1000 gallons**

#### Monthly Base Rate:

Fixed Cost Calculation: \$579,846 - 191,349 = \$388,497

Base Rate Calculation: \$388,497 ÷ 400 meter equivalents ÷ 12 months = \$ 80.94

<u>Meter Size</u>	<u>Equivalent Factor</u>	<u>Base Rate/Meter Size</u>
5/8" - 3/4"	1	\$ <b>80.94</b>

# King Ranch / Chaney Subdivisions

Test Period Ends:		31-Dec-18				
Water Utility Plant	31-Jul-18	\$2,830,663	33	\$85,778	\$85,788	\$2,744,875
Utility Plant Totals:		\$2,830,663		\$85,778	\$85,788	\$2,744,875

## Water Rate of Return:

Net Plant Value: \$ 2,744,875

ROR Calculation:  $2,744,875 \times 0.08 = \$219,590$

## Notes:

Note 1. Per projected engineering construction cost - Phase 1 cost of water system: \$2,830,663.

Note 2 Rate of retrun (8.00%)

Note 3. Rate structure allocated at 67% fixed cost and 33% variable cost with no gallons included in base rate.

Note 4. Estimated Annual Gallonage Sold: 7,000 gallons x 400 meters x 12 = 33,600,000

## King Ranch / Chaney Subdivisions

### Phase 2 Projections

#### Meter Equivalents:

<u>Meter Size</u>	<u>Total Meters</u>	<u>Equivalent Factor</u>	<u>Meter Equivalents</u>
5/8" - 3/4"	648	1	648
1"	0	2.5	0
1 1/2"	0	5	0
2"	0	8	0
3"	0	15	0
4"	0	20	0
<b>Total Meter Equivalents:</b>	<b>648</b>		<b>648</b>

<b>Estimated Annual Total Gallons Sold:</b>	54,432,000
---	------------

#### Estimated Water Revenue Requirement:

##### Water Cost of Service:

O & M Expenses: (\$486.68 x 648 connections)	\$ 315,365	
	\$ 0	
Subtotal:		\$ 315,365

##### Know & Measurable Changes:

	\$ 0	
Subtotal:		\$ 0
Annual Depreciation	\$ 94,536	
Return On Investment (8.00%)	\$ 231,367	
	\$ 0	
Subtotal:		\$ 325,903

<b><u>Total Water Revenue Requirement:</u></b>	<b>\$ 641,268</b>
--	-------------------

#### Water Rate Structure:

Gallonge Rate: Variable cost (33% of total revenue requirement) = \$211,618

Variable Cost Calculation: [\$211,618 ÷ (54,432,000 Gals. ÷ 1000 = 54,432)] = \$ 3.89

Gallonge Rate: **\$ 3.89 per 1000 gallons**

##### Monthly Base Rate:

Fixed Cost Calculation: \$641,268 - 211,618 = \$429,650

Base Rate Calculation: \$429,650 ÷ 648 meter equivalents ÷ 12 months = \$ 55.25

<u>Meter Size</u>	<u>Equivalent Factor</u>	<u>Base Rate/Meter Size</u>
5/8" - 3/4"	1	\$ 55.25

## King Ranch / Chaney Subdivisions

Test Period Ends: 31-Dec-20						
Water Utility Plant (Phase 1)	31-Jul-18	\$2,830,663	33	\$85,778	\$214,470	\$2,616,193
Water Utility Plant (Phase 2)	31-Jul-19	\$289,028	33	\$8,758	\$13,137	\$275,891
Utility Plant Totals:		\$3,119,691		\$94,536	\$227,607	\$2,892,084

<b>Water Rate of Return:</b>	
Net Plant Value: \$ 2,892,084	
ROR Calculation: $2,892,084 \times 0.08 = \$ 231,367$	

### **Notes:**

Note 1. Per projected engineering construction cost - Phase 2 cost of water system: \$289,028.

Note 2. Rate of retrun (8.00%)

Note 3. Rate structure allocated at 67% fixed cost and 33% variable cost with no gallons included in base rate.

Note 4. Estimated Annual Gallonage Sold. 7,000 gallons x 648 meters x 12 = 54,432,000

# King Ranch / Chaney Subdivisions

## Water Design Study

### Phase 3 Full Buildout

#### Meter Equivalents:

<u>Meter Size</u>	<u>Total Meters</u>	<u>Equivalent Factor</u>	<u>Meter Equivalents</u>
5/8" - 3/4"	872	1	872
1"	0	2.5	0
1 1/2"	0	5	0
2"	0	8	0
3"	0	15	0
4"	0	20	0
<b>Total Meter Equivalents:</b>	<b>872</b>		<b>872</b>

**Estimated Annual Total Gallons Sold:** 73,248,000

#### Estimated Water Revenue Requirement:

##### Water Cost of Service:

O & M Expenses: (\$389.93 x 872 connections)	\$	340,019	
	\$	0	
Subtotal:	\$		340,019

##### Know & Measurable Changes:

	\$	0	
Subtotal:	\$		0
Annual Depreciation	\$	119,499	
Return On Investment (8.00%)	\$	280,148	
	\$	0	
Subtotal:	\$		399,647

**Total Water Revenue Requirement:** \$ 739,666

#### Water Rate Structure:

Gallonge Rate: Variable cost (33% of total revenue requirement) = \$244,090

Variable Cost Calculation:  $[\$244,090 \div (73,248,000 \text{ Gals.} \div 1000 = 73,248)] = \$ 3.33$

Gallonge Rate: **\$ 3.33 per 1000 gallons**

##### Monthly Base Rate:

Fixed Cost Calculation:  $\$739,666 - 244,090 = \$495,576$

Base Rate Calculation:  $\$495,576 \div 872 \text{ meter equivalents} \div 12 \text{ months} = \$ 47.36$

<u>Meter Size</u>	<u>Equivalent Factor</u>	<u>Base Rate/Meter Size</u>
5/8" - 3/4"	1	\$ 47.36

## King Ranch / Chaney Subdivisions

Test Period Ends:		31-Dec-22				
Water Utility Plant (Phase 1)	31-Jul-18	\$2,830,663	33	\$85,778	\$386,001	\$2,444,662
Water Utility Plant (Phase 2)	31-Jul-19	\$289,028	33	\$8,758	\$30,653	\$258,375
Water Utility Plant (Phase 3)	31-Jul-22	\$823,778	33	\$24,963	\$24,963	\$798,815
Utility Plant Totals:		\$3,943,469		\$119,499	\$441,617	\$3,501,852

### **Water Rate of Return:**

Net Plant Value: \$ 3,501,852

ROR Calculation:  $3,501,852 \times 0.08 = \$ 280,148$

### **Notes:**

Note 1. Per projected engineering construction cost - Phase 3 cost of water system: \$823,778.

Note 2. Rate of retrun (8.00%)

Note 3. Rate structure allocated at 67% fixed cost and 33% variable cost with no gallons included in base rate.

Note 4. Estimated Annual Gallonage Sold: 7,000 gallons x 872 meters x 12 = 54,432,000

## **ATTACHMENT 3**



## King Ranch / Chaney Subdivisions

Projection of O&M Costs 2018 - 2022									
Projected Operating Expenses:		Projected Years, \$							
Year		1		2		3		4	5
Electrical	\$	25,000	\$	32,000	\$	40,000	\$	45,000	\$ 52,000
Fuel	\$	25,000	\$	30,000	\$	32,000	\$	34,000	\$ 36,000
Vehicles	\$	35,000	\$	-	\$	30,000	\$	-	\$ 30,000
Chemicals	\$	18,000	\$	18,000	\$	20,000	\$	22,000	\$ 24,000
Treatment Filters	\$	25,000	\$	40,000	\$	42,000	\$	42,000	\$ 42,000
Parts, Tools, repair clamps, etc.	\$	5,000	\$	10,000	\$	10,000	\$	12,000	\$ 12,000
Water Meters	\$	7,500	\$	3,500	\$	7,000	\$	5,000	\$ 5,000
Meter Cans	\$	5,000	\$	2,500	\$	4,000	\$	3,000	\$ 3,000
Pipe & Fittings	\$	5,000	\$	2,500	\$	2,500	\$	2,500	\$ 3,000
Equipment Rental	\$	12,000	\$	12,000	\$	12,000	\$	14,000	\$ 15,000
Water Quality Analysis	\$	12,000	\$	12,000	\$	14,000	\$	14,000	\$ 16,000
Salaries	\$	150,000	\$	150,000	\$	160,000	\$	160,000	\$ 170,000
Misc.	\$	10,000	\$	10,000	\$	10,000	\$	10,000	\$ 10,000
<b>Total Estimated O&amp;M Costs</b>	<b>\$</b>	<b>334,501</b>	<b>\$</b>	<b>322,502</b>	<b>\$</b>	<b>383,503</b>	<b>\$</b>	<b>363,504</b>	<b>\$ 418,005</b>

Phase	System	Connections	O & M Cost	Cost / Connection
Phase 1:	King Ranch / Chaney	400		
	Meadows	<u>70</u>		
		470	\$ 322,470	\$ 686.17 per Connection
Phase 2:	King Ranch / Chaney	648		
	Meadows	<u>140</u>		
		788	\$ 383,503	\$ 486.68 per Connection
Phase 3:	King Ranch / Chaney	872		
	Meadows	<u>200</u>		
		1072	\$ 418,005	\$ 389.93 per Connection

# **FINANCIAL AND UTILITY COST SUPPORT DATA**

## King Ranch Water Usage

- At 100 gallons/connection and 2.5 people per household
- To reach 2-hour peak flow multiply by 1.25 x 2 as per TCEQ §290.38(58)

### Phase 1 – Approximately 291 lots

- 250 gallons/connection x 291 lots = 0.073575 MGD
- Peak 2-hour flow
  - $0.073575 \times 1.25 \times 2 = \underline{0.1839 \text{ MGD}}$

### Phase 2 – Approximately 248 lots

- 250 gallons/connection x 250 lots = 0.0625 MGD
- Peak 2-hour flow
  - $0.0625 \times 1.25 \times 2 = \underline{0.15625 \text{ MGD}}$

### Phase 3 – Approximately 224 lots

- 250 gallons/connection x 225 lots = 0.05625MGD
- Peak 2-hour flow
  - $0.05625 \times 1.25 \times 2 = \underline{0.140625 \text{ MGD}}$

### Total flow for all phases – Approximately 763 lots

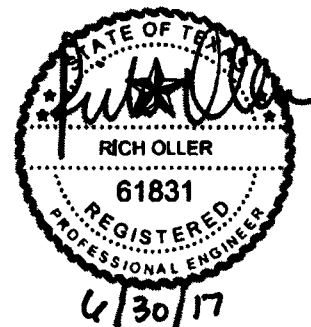
- 250 gallons/connection x 765 lots = 0.19125 MGD
- Peak 2-hour flow
  - $0.19125 \times 1.25 \times 2 = \underline{0.478125 \text{ MGD}}$

## Chaney Water Usage

### Total flow for all phases – Approximately 109 lots

- 250 gallons/connection x 110 lots = 0.0275 MGD
- Peak 2-hour flow
  - $0.0275 \times 1.25 \times 2 = \underline{0.06875 \text{ MGD}}$

### Total Combined Peak 2-Hour Flow = 0.546875 MGD



**King Ranch/Chaney Well & Water Treatment Phase I**

Permian Basin Residential Property  
Engineer's Opinion of Probable Construction Cost  
August 16, 2017

Item	Description	Quantity	Unit	Unit Price	Probable Constr. Cost	Total
<b>Well development</b>						
	Well drilling (Bore, 16-inch maleable steel casing [approx. 32/ft], and screen)	2	E.A.	\$80,000.00	\$160,000.00	\$160,000.00
	Well Pumps (submersible)	2	E.A.	\$17,500.00	\$35,000.00	\$35,000.00
	Discharge piping to header line	1	E.A.	\$14,000.00	\$14,000.00	\$14,000.00
	Well fencing - barbwire	3,000	L.F.	\$15.00	\$45,000.00	\$45,000.00
	Farm gate	2	L.S.	\$80.00	\$160.00	\$160.00
	Caliche road	1,000	S.Y.	\$75.00	\$75,000.00	\$75,000.00
	Electrical - Well Panels	1	E.A.	\$16,000.00	\$16,000.00	\$16,000.00
	Chlorinated Gravel Pack Brady 8/12	7	C.Y.	\$547.00	\$3,829.00	\$3,829.00
	Access Road	3.7	C.Y.	\$325.00	\$1,202.50	\$1,202.50
	Concrete Foundation Pad (40'x25' 6" thick)	1,000	S.F.	\$6.50	\$6,500.00	\$6,500.00
<b>GST &amp; Water Treatment Facility</b>						
	150k GST - Raw Water Dosing Tank	150,000	Gal.	\$1.30	\$195,000.00	\$195,000.00
	300k GST - Treated Water	300,000	Gal.	\$1.30	\$390,000.00	\$390,000.00
	300k Elevated Storage Tank	300,000	Gal.	\$3.00	\$900,000.00	\$900,000.00
	Booster Pump	1	E.A.	\$36,940.00	\$36,940.00	\$36,940.00
	Duplex Booster pumps	2	E.A.	\$35,000.00	\$70,000.00	\$70,000.00
	Flow Meters	2	E.A.	\$11,500.00	\$23,000.00	\$23,000.00
	Electrical	1	L.S.	\$20,000.00	\$20,000.00	\$20,000.00
	Pump Control Valves	2	E.A.	\$24,500.00	\$49,000.00	\$49,000.00
	Booster Pump Piping	1	E.A.	\$35,000.00	\$35,000.00	\$35,000.00
	Building for Booster Station (Metal)	1000	S.F.	\$100.00	\$100,000.00	\$100,000.00
	Standby Generator w/ Auto Switch	1	L.S.	\$35,000.00	\$35,000.00	\$35,000.00
	Chemical Tank	1	E.A.	\$275.00	\$275.00	\$275.00
	JM Eagle Containment Pallet	1	E.A.	\$70.00	\$70.00	\$70.00
	LML Chemical Pump	1	E.A.	\$470.00	\$470.00	\$470.00
<b>Water Treatment Unit</b>						
	Water Treatment Unit	1	E.A.	\$250,000.00	\$250,000.00	\$250,000.00

**SubTotal** \$2,461,446.50

Construction Contingency (15%) \$369,216.98

**Total Opinion w/ Contingency** **\$2,830,663.48**



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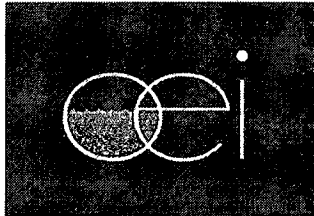
**King Ranch/Chaney Well & Water Treatment Phase II**

Permian Basin Residential Property

Engineer's Opinion of Probable Construction Cost

August 16, 2017

Item	Description	Quantity	Unit	Unit Price	Probable Constr. Cost	Total
	Well development					
	Well drilling (Bore, 16-inch maleable steel casing [approx. 32/ft], and screen)	1	E.A	\$80,000.00	\$80,000.00	\$80,000.00
	Well Pumps (submersible)	1	E.A.	\$17,500.00	\$17,500.00	\$17,500.00
	Discharge piping to header line	1	E.A	\$14,000.00	\$14,000.00	\$14,000.00
	Welll fencing - barbwire	3,000	L.F.	\$15.00	\$45,000.00	\$45,000.00
	Caliche road	1,000	S.Y.	\$75.00	\$75,000.00	\$75,000.00
	Electrical - Well Panels	1	E.A.	\$16,000.00	\$16,000.00	\$16,000.00
	Chlroinated Gravel Pack Brady 8/12	7	C.Y.	\$547.00	\$3,829.00	\$3,829.00
SubTotal						\$251,329.00
Construction Contingency (15%)						\$37,699.35



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<b>Total Opinion w/ Contingency</b>	<b>\$289,028.35</b>
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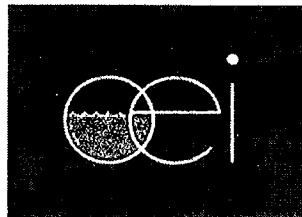
**King Ranch/Chaney Well & Water Treatment Phase III**

Permian Basin Residential Property

Engineer's Opinion of Probable Construction Cost

August 16, 2017

Item	Description	Quantity	Unit	Unit Price	Probable Constr. Cost	Total
<b>Well development</b>						
	Well drilling (Bore, 16-inch maleable steel casing [approx. 32/ft], and screen)	1	E.A.	\$80,000.00	\$80,000.00	\$80,000.00
	Well Pumps (submersible)	1	E.A.	\$17,500.00	\$17,500.00	\$17,500.00
	Discharge piping to header line	1	E.A.	\$14,000.00	\$14,000.00	\$14,000.00
	Welll fencing - barbwire	3,000	L.F.	\$15.00	\$45,000.00	\$45,000.00
	Caliche road	1,000	S.Y.	\$75.00	\$75,000.00	\$75,000.00
	Electrical- Well Panels	1	E.A.	\$16,000.00	\$16,000.00	\$16,000.00
	Chlroinated Gravel Pack Brady 8/12	7	C.Y.	\$547.00	\$3,829.00	\$3,829.00
<b>GST &amp; Water Treatment Facility</b>						
	150k GST - Raw Water Dosing Tank	150,000	Gal.	\$1.30	\$195,000.00	\$195,000.00
	Electrical	1	L.S.	\$20,000.00	\$20,000.00	\$20,000.00
<b>Water Treatment Unit</b>						
	Purifics Cuf Unit- M16 Platform	1	E.A.	\$250,000.00	\$250,000.00	\$250,000.00
					<b>SubTotal</b>	\$716,329.00
					Construction Contingency (15%)	\$107,449.35
					<b>Total Opinion w/ Contingency</b>	<b>\$823,778.35</b>



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