



COLORADO

Colorado Water Conservation Board

Department of Natural Resources

1313 Sherman Street
Denver, CO 80203

P (303) 866-3441
F (303) 866-4474

John Hickenlooper, Governor

Robert W. Randall, DNR Executive Director

James Eklund, CWCB Director

TO: Colorado Water Conservation Board Members

FROM: Erik Skeie, Program Assistant
Interstate, Federal and Water Information Section

DATE: September 22, 2016 Board Meeting

AGENDA ITEM: 21. HB15-1178 Dewatering Grant Application from Pawnee Ridge HOA, Sterling

Introduction

There have been increased occurrences of high groundwater issues since about 2008 in several areas in the lower South Platte Basin. HB12-1278 authorized a study of the South Platte alluvial aquifer focusing on these groundwater issues. The South Platte Basin Roundtable formed a Groundwater Technical Committee (Technical Committee) in 2014 to review recommendations from the HB12-1278 report, the first of which concerns mitigation of localized high groundwater conditions.

HB15-1178 (Saine & Humphrey—Marble) established an emergency dewatering grant program, to be administered by CWCB, for the purpose of lowering the water table in the Gilcrest and Sterling areas. The Pawnee Ridge subdivision on the northwest side of Sterling is one of the areas that has been experiencing damaging high groundwater.

This agenda item concerns an application submitted by the Pawnee Ridge Homeowners Association (HOA) near Sterling for \$128,407 from the emergency dewatering grant program. The funds will be used to construct a permanent dewatering system for the Pawnee Ridge subdivision.

Background

Damaging high groundwater conditions have existed in the Pawnee Ridge subdivision since April of 2010, primarily along Dakota Road on the northwest side of the subdivision. Pawnee Ridge residents Gene Thim and Sandy and Bonnie St. John permitted and installed dewatering wells on their property in early 2011 to lower the water table in their area. These wells were initially connected to a borrowed aboveground 4" aluminum pipeline that delivered the pumped water north through private property, where it was discharged into the same property proposed in this application. Pumping continued until late fall of 2011, when it was discontinued for a couple of factors, including the owner of the pipeline requesting the pipe back, and one property owner no longer wanting an aboveground pipeline running through their property.

Although damaging high groundwater conditions have persisted in the area, private property, construction costs, and roadway crossing issues have kept the dewatering wells idle. The emergency dewatering grant program offers an opportunity for the Pawnee Ridge HOA to implement a permanent dewatering system as proposed in this application.

Application Summary

This application is for a permanent dewatering system for the Pawnee Ridge subdivision. Gene Thim, as representative of the Pawnee Ridge HOA, has worked with Division 1 staff Brent Schantz in designing this system so the pumped water can be properly measured and delivered to the South Platte River. He has also coordinated with Logan County and the affected private property owners for the necessary permits and permissions.



The dewatering system will utilize the existing dewatering wells permitted in 2010, and install 250 feet of 4-in and 1670 feet of 6-in HDPE pipeline to convey the water north to the Gentz property. This new system will utilize pre-existing infrastructure from where it daylights on Alan Gentz's property to the Pioneer Drain, which flows roughly 3.6 miles to the South Platte River.

Most of the cost of this application comes from the installation of the pipeline, including the necessary boring and trenching. It should be noted that pumping costs are not included in this application, and the HOA has committed to funding the long-term operation of this system.

Attachments

- 1) Pawnee Ridge HOA 1178 Application

Staff Recommendation

CWCB staff have reviewed the application and it meets the grant program criteria and guidelines as approved by the Board in July 2015. CWCB staff recommends that the Board approve, with conditions if necessary, this HB 15-1178 emergency dewatering grant request from the Pawnee Ridge HOA for up to \$128,407.

HB15-1178

Project: Pawnee Ridge Dewatering System

Applicant: Pawnee Ridge Homeowners Association

Total Grant Request: \$128,407.00

Contact Information:

Gene Thim, Pawnee Ridge HOA representative

14327 Dakota Road

Sterling, Colorado 80751

Phone: 970-520-1877

Email: gene.thim@tallgrassenergyllp.com

1. Introduction:

This application is being submitted by the Pawnee Ridge Homeowners Association of Sterling, Colorado. Funding from this grant will be used to construct an emergency dewatering system that utilizes two existing dewatering wells in the Pawnee Ridge subdivision.

In April 2010, high groundwater caused basement sump pumps in numerous Pawnee Ridge residences, primarily along Dakota Road on the northwest side of the subdivision, to start operating. In June 2010 the water table continued to rise and several residents that did not have sump pumps had to install them. There were approximately 14 homes that were impacted and approximately 6 homes had to remove the carpet pad and carpet. Throughout the summer of 2010 the water table remained high and in September 2010 continued to increase.

Local meetings were held in September and October, and in November 2010 State Engineer Dick Wolfe was present and he made a site visit to several impacted homes. He also attended the meeting and after hearing from those in attendance he had a better understanding how impacted homes were having to deal with the rising water. After the meeting he told residents that they could convert Kevin Milyard's residential well into an emergency dewatering well. Local residents acquired discharge pipe and had Milyard's well pump increased in size and pumped from late November 2010 to spring of 2011.

In February 2011 Gene Thim drilled a dewatering well (permit #74678-F). In May 2011 Sandy and Bonnie St. John drilled a dewatering well (permit #74832-F). After the wells were commissioned, both wells were connected to borrowed 4" aluminum discharge pipe and well pumping started. The aluminum pipe was laid aboveground and discharged to the north in the same location proposed in this application. Wells were utilized until late fall of 2011, when the borrowed pipe had to be returned. Additionally, the owner of one of the properties that the pipeline crossed did not want any more aboveground pipe on their property. Consequently, the dewatering wells have been inactive since 2011.

Groundwater levels have continued to be high, with at least 12 known homes having their sump pumps running intermittently. In November 2015, the frequency of the sump pumps operating increased as the water table rose to its highest level.

2. Figures

Please see the attached maps (Appendix A, Figure 1 and Figure 2). Figure 1 shows the layout of the dewatering system, and the monitoring wells in the area, including those installed by the Division of Water Resources (DWR) -- see 6.C below for more information. Figure 2 shows the route that the Pioneer Drain takes to the South Platte River.

3. Proposed and/or Existing Infrastructure

The groundwater will be pumped from two existing permitted dewatering wells (permits #74678-F Gene Thim and #74832-F Bonnie St. John) at a rate of 100 gpm per each well. 250 feet of directional boring for 4" HDPE pipe will connect the two wells (175' for the St. John well, and 75' for the Thim well) to the main 6" line to the west. The main 6" line will require 1170' of directional boring and 500' of open trenching (for a total of 1670' of 6" HDPE pipe) to reach the daylight point to the north.

The water will daylight upstream of the Alan Gentz lagoon and be measured and then traverse through his property to the Sterling #1 ditch. From the Sterling #1 ditch a headgate with measurement equipment will be installed and used to measure the discharge from the Sterling #1 ditch to the Pioneer Drain, which flows to the South Platte River.

4. Permissions - (See Appendix D for consent letters)

- The dewatering system ownership will be by Pawnee Ridge Homeowners Association.
- The proposed route from each well will traverse onto Logan County right-of-way (county approval conditional use permit will be reviewed September 20th) on property belonging to Sterling Cottonwoods Inc., owned by David Hammer (consent letter attached).
- Then onto property owned by David and Erin Ball (consent letter attached).
- Then onto property owned by Dennis and Cynthia Boren (consent letter attached).
- Then onto property owned by Alan Gentz (consent letter attached).

5. Permitting

Please see attached dewatering well permits in Appendix B for permits #74678-F and #74832-F.

A conditional use permit from Logan County will also be required for use of the right-of-way described above in Section 4. Though the application has yet to be reviewed, the Pawnee Ridge HOA is confident the permit will be acquired.

6. Real-Time Monitoring for Data Collection

Gene Thim consulted with Brent Schantz of the Division 1 DWR office to develop the flow measurement and monitoring plan for this project (items A and B below), in order to ensure the pumped water makes it to the South Platte River.

- A. Seametrics AG2000 Flowmeter with built in Data Logger for ASCII input will be installed where water daylights on the Gentz property.
- B. Sutron Stage Discharge Recorder 00001-1 and Stilling Well with Sutron CDMAlink data logger with modem will be installed at the Sterling #1 ditch
- C. As part of a pilot project that DWR initiated in the area in 2012 (and funded by CWCB), monitoring wells were installed in the Pawnee Ridge area and equipped with continuous dataloggers. These data are downloaded by DWR and available on the DWR website on the Sterling web page below:

<http://water.state.co.us/DivisionsOffices/Div1SPlatteRiverBasin/Pages/GroundwaterSterling.aspx>

7. Measurable Outcome and Duration of Pumping

The anticipated measurable outcome of the constructed dewatering system is to reliably lower the water table in the adversely affected area. Pumping will continue for as long as damaging high groundwater exists. The project will be deemed successful when the resident's sump pumps do not pump any longer.

Pumping will begin after construction of the pipeline and installation of the measuring equipment. Pumping will be ongoing with the goal of no sump pumps running. No pumping costs are included this grant request; the Pawnee Ridge HOA is committed to funding the operation and maintenance of the system.

8. Itemized Grant Request

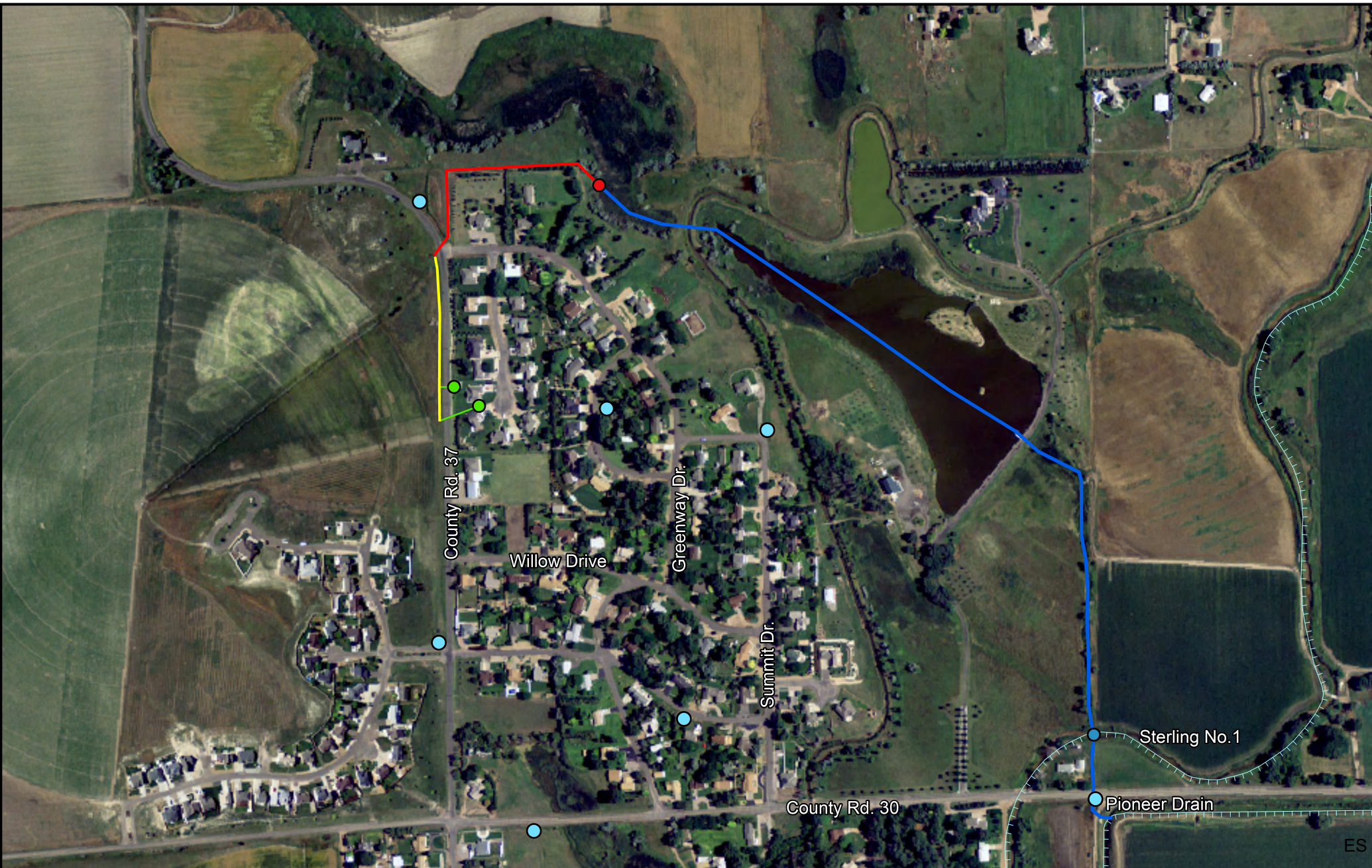
Please see the attached itemized Cost Estimate (Appendix C) for \$128,407.

Note that Pawnee Ridge residents in the affected area have spent approximately \$20,600 in the past several years on well permits, dewatering well conversion and installation, and an emergency generator. Additionally, the HOA is committed to paying for long-term operating costs. This includes pumping costs of up to \$3,500 per year in matching funds to this grant request.

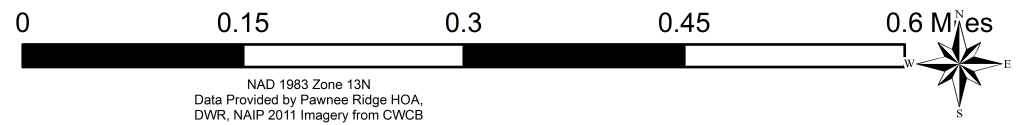
APPENDIX A

Project Maps

Pawnee Ridge Dewatering System: Figure 1



- DWR Monitoring Wells
- Dewatering Well
- Flowmeter
- New Headgate
- Ditch
- 4" Bore
- 6" Bore
- Free Flow
- Open Trench, 6" Pipe



Pawnee Ridge Dewatering System: Figure 2



● New Headgate

----- Ditch

— Free Flow

0 0.5 1 1.5 2 Miles

NAD 1983 Zone 13N
Data Provided by Pawnee Ridge HOA,
DWR, NAIP 2011 Imagery from CWCB



APPENDIX B

Well Permits #74678-F and #74832-F

Form No.
GWS-25

OFFICE OF THE STATE ENGINEER
COLORADO DIVISION OF WATER RESOURCES
818 Centennial Bldg., 1313 Sherman St., Denver, Colorado 80203
(303) 868-3581

LIC

WELL PERMIT NUMBER 74678 -F-
DIV. 1 WD 64 DES. BASIN MD

APPLICANT

GENE THIM
14327 DAKOTA ROAD
STERLING, CO 80751-9087

(970) 526-6530

APPROVED WELL LOCATION

LOGAN COUNTY
NW 1/4 SW 1/4 Section 19
Township 8 N Range 52 W Sixth P.M.

DISTANCES FROM SECTION LINES

1811 Ft. from South Section Line
44 Ft. from West Section Line

UTM COORDINATES (Meters, Zone: 13, NAD83)

Easting: 648806 Northing: 4500760

PERMIT TO CONSTRUCT A WELL

ISSUANCE OF THIS PERMIT DOES NOT CONFER A WATER RIGHT

CONDITIONS OF APPROVAL

- 1) This well shall be used in such a way as to cause no material injury to existing water rights. The issuance of this permit does not ensure that no injury will occur to another vested water right or preclude another owner of a vested water right from seeking relief in a civil court action.
- 2) The construction of this well shall be in compliance with the Water Well Construction Rules 2 CCR 402-2, unless approval of a variance has been granted by the State Board of Examiners of Water Well Construction and Pump Installation Contractors in accordance with Rule 18.
- 3) Approved pursuant to CRS 37-90-137(2) for the construction of a dewatering well to withdraw ground water tributary to the South Platte River.
- 4) All ground water pumped must be discharged to the South Platte River without consumptive use or evaporative losses.
- 5) The owner shall mark the well in a conspicuous place with well permit number(s), name of the aquifer, and court case number(s) as appropriate. The owner shall take necessary means and precautions to preserve these markings.
- 6) A totalizing flow meter must be installed on this well and maintained in good working order. Permanent records of all diversions must be maintained by the well owner (recorded at least annually) and submitted to the Division Engineer upon request.
- 7) If the use of this well for dewatering purposes becomes unnecessary, the applicant shall plug this well in accordance with Rule 16 of the Water Well Construction Rules. A Well Abandonment report form must be completed and submitted to the Division of Water Resources within 60 days of plugging.
- 8) This well shall be located at least 600 feet from any existing well, completed in the same aquifer, that is not owned by the applicant, excluding well permit no(s). 79519 and 3712-F (spacing waivers submitted by the well owners).
- 9) This well shall be constructed not more than 200 feet from the location specified on this permit.

NOTICE: This permit has been approved subject to the following changes: The distances from section lines were calculated from UTM coordinate values provided with the permit application. You are hereby notified that you have the right to appeal the issuance of this permit, by filing a written request with this office within sixty (60) days of the date of issuance, pursuant to the State Administrative Procedures Act. (See Section 24-4-104 through 106, C.R.S.)

NOTE: This permit will expire on the expiration date unless the well is constructed and a pump is installed by that date. A Well Construction and Test Report (GWS-31) and Pump Installation and Test Report (GWS-32) must be submitted to the Division of Water Resources to verify the well has been constructed and the pump has been installed. A one-time extension of the expiration date may be available. Contact the DWR for additional information or refer to the extension request form (GWS-64) available at: <http://www.water.state.co.us/pubs/forms.asp>

APPROVED
SKR

State Engineer

DATE ISSUED 12-08-2010

By

EXPIRATION DATE 12-08-2011

Receipt No. 3648196

Form No.
GWS-25

OFFICE OF THE STATE ENGINEER
COLORADO DIVISION OF WATER RESOURCES
818 Centennial Bldg., 1313 Sherman St., Denver, Colorado 80203
(303) 866-3581

LIC

WELL PERMIT NUMBER 74832 -F-
DIV. 1 WD 64 DES. BASIN MD

APPLICANT

Lot: 7 Block: 1 Filing: 7 Subdiv: PAWNEE RIDGE

BONNIE ST JOHN
14319 DAKOTA ROAD
STERLING, CO 80751-

APPROVED WELL LOCATION

LOGAN COUNTY
NW 1/4 SW 1/4 Section 19
Township 8 N Range 52 W Sixth P.M.

DISTANCES FROM SECTION LINES

1660 Ft. from South Section Line
46 Ft. from West Section Line

UTM COORDINATES (Meters, Zone: 13, NAD83)

Easting: Northing:

(970) 521-7823

PERMIT TO CONSTRUCT A WELL

ISSUANCE OF THIS PERMIT DOES NOT CONFER A WATER RIGHT

CONDITIONS OF APPROVAL

- 1) This well shall be used in such a way as to cause no material injury to existing water rights. The issuance of this permit does not ensure that no injury will occur to another vested water right or preclude another owner of a vested water right from seeking relief in a civil court action.
- 2) The construction of this well shall be in compliance with the Water Well Construction Rules 2 CCR 402-2, unless approval of a variance has been granted by the State Board of Examiners of Water Well Construction and Pump Installation Contractors in accordance with Rule 18.
- 3) Approved pursuant to CRS 37-90-137(2) for the construction of a dewatering well to withdraw ground water tributary to the South Platte River.
- 4) All ground water pumped must be discharged to the South Platte River without consumptive use or evaporative losses.
- 5) The owner shall mark the well in a conspicuous place with well permit number(s), name of the aquifer, and court case number(s) as appropriate. The owner shall take necessary means and precautions to preserve these markings.
- 6) A totalizing flow meter must be installed on this well and maintained in good working order. Permanent records of all diversions must be maintained by the well owner (recorded at least annually) and submitted to the Division Engineer upon request.
- 7) If the use of this dewatering well becomes unnecessary, the applicant shall plug this well in accordance with Rule 18 of the Water Well Construction Rules. A Well Abandonment report form must be completed and submitted to the Division of Water Resources within 60 days of plugging.
- 8) This well shall be constructed at least 600 feet from any existing well, completed in the same aquifer, that is not owned by the applicant, excluding well permit no(s). 3712-F (74663-F), 74678-F, and 79519-F (spacing waivers submitted by the well owners).
- 9) This well shall be constructed not more than 200 feet from the location specified on this permit.

NOTE: This permit will expire on the expiration date unless the well is constructed and a pump is installed by that date. A Well Construction and Test Report (GWS-31) and Pump Installation and Test Report (GWS-32) must be submitted to the Division of Water Resources to verify the well has been constructed and the pump has been installed. A one-time extension of the expiration date may be available. Contact the DWR for additional information or refer to the extension request form (GWS-84) available at: <http://www.water.state.co.us/pubs/forms.asp>

APPROVED
SKR

State Engineer

DATE ISSUED 02-28-2011

By

EXPIRATION DATE 02-28-2012

Receipt No. 3649202

APPENDIX C

COST ESTIMATE

Sterling Pawnee Ridge Dewatering Project

Description	Quantity	Cost of each	Cost
Construction of dewatering system - includes boring, trenching, and installation of 1670' of 6" pipe and 250' of 4" pipe (see attached contractor estimate)	Lump Sum	\$93,799.00	\$93,799.00
Daylight Flow Meter Installation			
Seametrics AG2000 Flowmeter with built in Data logger for ASCII input	1	\$2,013.00	\$2,013.00
NEMA 4 20" x 16" 6" enclosure with back panel	1	\$265.00	\$265.00
10 Watt solar panel and bracket	1	\$450.00	\$450.00
Sutron CDMAlink Data Logger with Modem	1	\$2,375.00	\$2,375.00
Contract with Sutron activation Fee	1	\$65.00	\$65.00
Cellular Antenna	1	\$100.00	\$100.00
Miscellaneous - conduit, flanges, ground rod, wire and battery	1	\$450.00	\$450.00
Installation of meter and equipment	1	\$2,000.00	\$2,000.00
Flume Installation at the Sterling #1 Ditch Outlet to Pioneer Ditch			
18" Parshall Galvanized Flume	1	\$1,850.00	\$1,850.00
Stilling Well for instrument measuring	1	\$500.00	\$500.00
Sutron Stage Discharge Recorder (SDR) 00001-1	1	\$1,750.00	\$1,750.00
Sutron CDMAlink Data Logger with Modem	1	\$2,375.00	\$2,375.00
Miscellaneous - conduit, flanges, ground rod, wire and battery	1	\$450.00	\$450.00
24" head gate - flat back - bolts on to cement	1	\$1,100.00	\$1,100.00
Installation of head gate flume and measuring equipment	1	\$5,000.00	\$5,000.00
Miscellaneous Costs			
Survey of right of way	1	\$3,000.00	\$3,000.00
Hook up to 2 permitted dewatering wells	2	\$750.00	\$1,500.00
Project Mgmt (100 hrs @ \$65/hr);Admin (50 hrs @ \$30/hr)	1	\$8,000.00	\$8,000.00
Verizon Data Link	1	\$150.00	\$150.00
Logan County Right of Way Bore Fee	3	\$100.00	\$300.00
Logan County Application Fee	1	\$50.00	\$50.00
Logan County Conditional Use Permit Fee	1	\$100.00	\$100.00
Logan County Conditional Use Newspaper Add	1	\$100.00	\$100.00
Logan County Conditional Use Notice Billboard 3' X 4'	1	\$65.00	\$65.00
Pipeline Markers	8	\$75.00	\$600.00
Grand Total			\$128,407.00



1375 OVERLOOK DR
CASPER, WY 82601

PROPOSAL

DATE	BID NUMBER
6/24/2016	6866

PREPARED FOR:
Gene Thim 970-520-1877 Sterling, Colorado

Ship To

DESCRIPTION	WORK ORDER		PROJECT
	COST	QTY	TOTAL
Mobilization charge for bore crew	5,000.00		5,000.00
Directional Boring 10" hole - 1-6" HDPE Water Line @ 1170'	50.00	1,170	58,500.00
Open trenching up to 48" Cover - 1-6" HDPE Water Line @ 500'	12.00	500	6,000.00
Directional Boring 6" Hole - 1-4" HDPE Water Line @ 250'	26.00	250	6,500.00
Well Tie ins	1,200.00	2	2,400.00
Installation of Check Valves	400.00	2	800.00
Installation of Flow Meter	600.00	1	600.00
Materials			
Check Valves	1,800.00	2	3,600.00
Flow Meter *	1,140.00	1	1,140.00
6" HDPE Water Line	5.20	1,670	8,684.00
4" HDPE Water Line	2.30	250	575.00
TOTAL			\$93,799.00

SIGNATURE: _____

APPENDIX D

PERMISSIONS

PAWNEE RIDGE HOMEOWNERS ASSOCIATION

The board members of the Pawnee Ridge Homeowners Association here by approve Gene Thim to be the representative/project manager for the Emergency De-Watering HB15-1178 for the Sterling Pawnee Ridge project.

The Pawnee Ridge Homeowners Association will fund the O&M expenses after the completion of a functional De-watering system.

A handwritten signature in blue ink, appearing to read 'C. Conner', is written over a horizontal line.

Date: 8-30-16

Chris Conner

President of the Pawnee Ridge Homeowners Association

EXCESS GROUNDWATER DISCHARGE AGREEMENT

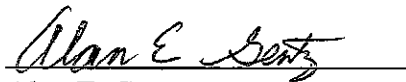
I, Alan Gentz agree to allow only groundwater removed by the Pawnee Ridge Homeowner's dewatering system to be discharged on my property located in Logan County Colorado, described as 08-52 SEC19; the property is also known as 18399 County Road 30, Sterling, Colorado.

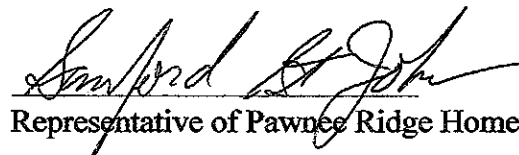
This agreement is immediately terminated if any other water, run-off, waste-water, or any other type of discharge is knowingly or accidentally discharged on my property.

Pawnee Ridge Homeowner's Association is solely responsible for the purchase and maintenance of the dewatering system and the necessary conduits to route excess groundwater to my property for discharge.

The term of this agreement is one (1) year from the date of signing, or any longer term as mutually agreed upon by Alan Gentz and the Pawnee Ridge Homeowner's Association. The agreement may be amended at any time if mutually agreed upon by Alan Gentz and the Pawnee Ridge Homeowner's Association.

Agreed to this 4 day of Aug, 2016.


Alan E. Gentz


Representative of Pawnee Ridge Homeowner's Association

We hereby give our consent to the Pawnee Ridge Homeowner's Association (PRHOA) to put the dewatering pipe underground on our property at 14402 Greenway Drive, Sterling, Colorado.

The pipe will be 6" PVC, buried at approximately 4' deep. The contractor will consult with us to determine where we want the pipe to run across our property.

Property owners will not be responsible for any future repairs that may be needed to the pipeline or for damages to their property as a result of any problems with the line.

Signed:

David Ball

David Ball

Date 7/26/2016

Erin Ball

Erin Ball

Date 7/26/2016

I, Dave Hammer, as President of Sterling Cottonwoods, Inc., hereby consent to allow Pawnee Ridge Homeowners Association to bury their de-watering pipe on my property, which is subject to a Logan County 60' right-of-way for County Road 37. The pipe will be buried a minimum of 48" deep on the west of County Rd 37, within the 60' aforementioned right-of-way and placed so as not to interfere with any utilities within the right-of-way, and as far from the west edge of the right-of-way as practical.

By


David W. Hammer

President

Sterling Cottonwoods, Inc

Date



We hereby give our consent to the Pawnee Ridge Homeowner's Association (PRHOA) to put the dewatering pipe underground on our property at 14408 Greenway Drive, Sterling, Colorado.

The pipe will be 6" PVC, buried at approximately 4' deep. The contractor will consult with us to determine where we want the pipe to run across our property.

Property owner will not be responsible for any future repairs that may be needed to the pipeline.

Signed:

Dennis Boren Dennis Boren

Date 7/27/16

Cynthia L Boren Cynthia Boren

Date 7/27/16

Sterling Irrigation Ditch Company

We the board of directors of the Sterling Irrigation Ditch Company agree to allow the Pawnee Ridge Homeowners Association to daylight de-watering water into and out of the Sterling Irrigation Ditch located in the SE SW ¼ Section 19 T8N R52W for as long as the de-watering system remains in operation.

The water outflow monitoring equipment will be installed by the Pawnee Ridge Homeowners Association and approved and monitored by the State of Colorado Division Resources Division One. The Pawnee Ridge Homeowners Association will maintain maintenance of the water monitoring system and will not restrict the Sterling Irrigation Ditch Company rights to discharge water at any time and the Sterling Irrigation Ditch Company will be able use the watering monitoring system.



Gene Manuello

President Sterling Irrigation Ditch Company
Board of Directors

Date 8/16/16



President Pawnee Ridge Homeowners Association

Date 8-16-16