



Control Number: 49178



Item Number: 11

Addendum StartPage: 0

Bryan W. Shaw, Ph.D., P.E., *Chairman*
Toby Baker, *Commissioner*
Jon Niermann, *Commissioner*
Stephanie Bergeron Perdue, *Interim Executive Director*



RECEIVED
PWS_0860144_CO_20180406_Plan Ltr
2019 MAY -9 AM 9:31

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
Protecting Texas by Reducing and Preventing Pollution

COMMISSION
FILING CLERK

April 6, 2018

Mr. Clarence L. Littlefield, P.E.
Southwest Engineers
307 Saint Lawrence
Gonzales, Texas 78629

Re: Vineyard Ridge Water Supply - Public Water System ID No. 0860144
Proposed Well No.1 and 2 Completion
Engineer Contact Telephone: (830) 672-7546
Plan Review Log No. P-02062018-034
Gillespie County, Texas

CN 605360155; RN 109798421

Dear Mr. Littlefield:

On February 6, 2018, the Texas Commission on Environmental Quality (TCEQ) received well completion material with your letter dated February 1, 2018 for Well No.1 and 2 completion. Based on our review of the information submitted, the project generally meets the minimum requirements of Title 30 Texas Administrative Code (TAC) Chapter 290 - Rules and Regulations for Public Water Systems and the constructed well is **approved for use** based on the conditions noted below and may now be **temporarily** placed into service. The well's continued use is contingent upon the following conditions:

1. The chemical analysis report submitted shows that the concentration(s) of **Nitrate** in Well No. 1 exceeds the maximum contaminant level (MCL) for Nitrate (see enclosed chemical results table). Documentation was provided that showed that the water from Well No. 1 when blended with well No. 2 will meet primary drinking water standards (ratio of 35% Well No. 1 & 65% Well No. 2). Use of well No. 1 is conditioned on blending the water with well No. 2 to achieve a water quality compliant with the MCL of 10 mg/l.
2. A representative of TCEQ's Drinking Water Quality Team will contact the public water system to arrange for the collection of the official chemical samples. It is the water systems responsibility to contact the **Drinking Water Quality Team** at (512) 239-4691 if they have not had the official sample collection within **180 days** of the date of this letter.
3. If official chemical analysis testing confirms that a regulated constituent does not meet primary or secondary standards, additional treatment, blending, or public notice may be required. The Drinking Water Quality Team will notify the water system of any additional special requirements for this public water supply source. Plans for any proposed water treatment and blending must be reviewed and approved by the Plan Review Team.

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4. The PWS has applied to the Public Utility Commission (PUC) for a Certificate of Convenience and Necessity (CCN) for the system. The system should obtain a CCN prior to providing water service to customers.

The Well No. 1 completion data consisted of the following:

- State of Texas Well Report (Tracking No. 464576);
- Well Latitude and Longitude: Lat. 30°19'04" N; Long. 98°37'48" W
- Driller's log (geologic log and material setting report);
- Cementing certificate;
- 36-hour pumping test results;
- Executed and recorded sanitary control easement;
- U. S. Geological Survey 7.5 minute map showing the well location;
- Three bacteriological sampling results showing no coliform contamination from Aquatech Laboratories, Inc. on November 14, 15, & 16, 2017; and,
- Chemical analysis results from LCRA Environmental Laboratory Services dated November 14, 2017 (sample results enclosed):

Primary Contaminants		
Contaminant	MCL (mg/L)	Results
Arsenic	0.01	<0.001
Fluoride	4.0	0.737
Nitrate	10 (as N)	24.6
Nitrite	1 (as N)	<0.01

Secondary Contaminants		
Contaminant	SCL (mg/L)	Results
Aluminum	0.2	0.00534
Chloride	300	62.3
Copper	1.0	<0.001
Fluoride	2.0	0.737
Iron	0.3	<0.05
Manganese	0.05	<0.001
pH	≥7 (Standard Unit)	7.56
Sulfate	300	45.5
Total Dissolved Solids	1,000	611
Zinc	5.0	<0.005

Radionuclide Contaminants		
Contaminant	MCL	Results
Gross alpha	15 pCi/L	ND
Beta Particle	50 pCi/L	8.61
Radium-226/228	5 pCi/L	1.22
Uranium	30 µg/L	2.07

Corrosive Water Parameters	
Parameter	Result (mg/L)
Alkalinity as CaCO ₃	365
Calcium as CaCO ₃	88.7
Sodium	30.4
Lead	<0.001

The Well No. 1 completion data describes construction of the following:

- One (1) public water supply well drilled to 560 feet with 180 linear feet (lf) of 6.625-inch outside diameter (od) Schedule 40 Steel casing and pressure-cemented 180 lf;
- 380 lf of 6.25-inch open hole with no gravel pack or screen;
- The well is rated for 41 gallons per minute (gpm) yield with a 5 horsepower, submersible pump set at 399 feet deep. The design capacity of the pump is 41 gpm at 350 feet total dynamic head;

The Well No. 2 completion data consisted of the following:

- State of Texas Well Report (Tracking No. 464578);
- Well Latitude and Longitude: Lat. 30°19'17" N; Long. 98°37'41" W
- Driller's log (geologic log and material setting report);
- Cementing certificate;
- 36-hour pumping test results;
- Executed and recorded sanitary control easement;
- U. S. Geological Survey 7.5 minute map showing the well location;
- Three bacteriological sampling results showing no coliform contamination from Aquatech Laboratories, Inc. on October 24, 25, & 26, 2017; and,
- Chemical analysis results from LCRA Environmental Laboratory Services dated October 26, 2017 (sample results enclosed):

Primary Contaminants		
Contaminant	MCL (mg/L)	Results
Arsenic	0.01	<0.001
Fluoride	4.0	0.697
Nitrate	10 (as N)	0.452
Nitrite	1 (as N)	<0.01

Secondary Contaminants		
Contaminant	SCL (mg/L)	Results
Aluminum	0.2	<0.005
Chloride	300	37.2
Copper	1.0	0.00104
Fluoride	2.0	0.697
Iron	0.3	<0.05
Manganese	0.05	0.0114
pH	≥7 (Standard Unit)	7.67
Sulfate	300	36.6
Total Dissolved Solids	1,000	508
Zinc	5.0	<0.005

Radionuclide Contaminants		
Contaminant	MCL	Results
Gross alpha	15 pCi/L	3.44
Beta Particle	50 pCi/L	ND
Radium-226/228	5 pCi/L	ND
Uranium	30 µg/L	2.47

Corrosive Water Parameters	
Parameter	Result (mg/L)
Alkalinity as CaCO ₃	409
Calcium as CaCO ₃	232
Sodium	24.4
Lead	<0.001

The Well No. 2 completion data describes construction of the following:

- One (1) public water supply well drilled to 535 feet with 180 linear feet (lf) of 6.625-inch outside diameter (od) Schedule 40 Steel casing and pressure-cemented 180 lf;
- 355 lf of 6.25-inch open hole with no screen or gravel pack;
- The well is rated for 58 gallons per minute (gpm) yield with a 7.5 horsepower submersible pump set at 441 feet deep. The design capacity of the pump is 58 gpm at 420 feet total dynamic head;

Mr. Clarence L. Littlefield, P.E.
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This approval is for the above listed items only. Any wastewater components contained in this design were not considered.

The Vineyard Ridge Water Supply public water system provides water treatment.

The project is located approximately 6 miles north of Stonewall, Texas and 0.40 miles west of the intersection of North Grape Creek Road and Elm Ridge Road in Gillespie County, Texas.

Texas Water Code Section 36.0015 allows for the creation of groundwater conservation districts (GCDs) as the preferred method of groundwater management. GCDs manage groundwater in many counties and are authorized to regulate production and spacing of water wells. **Public water systems drilling wells within an existing GCD are responsible for meeting the GCD's requirements.** The authorization provided in this letter does not affect GCD authority to manage groundwater or issue permits.

The well was approved for construction in our May 30, 2017 letter (Plan Review Log No. P-03312017-204).

Please refer to the Plan Review Team's Log No. **P-02062018-034** in all correspondence for this project.

Please complete a copy of the most current Public Water System Plan Review Submittal form for any future submittals to TCEQ. Every blank on the form must be completed to minimize any delays in the review of your project. The document is available on TCEQ's website at the address shown below. You can also download the most current plan submittal checklists and forms from the same address.

<https://www.tceq.texas.gov/drinkingwater/udpubs.html>

For future reference, you can review part of the Plan Review Team's database to see if we have received your project. This is available on TCEQ's website at the following address:

<https://www.tceq.texas.gov/drinkingwater/planrev.html/#status>

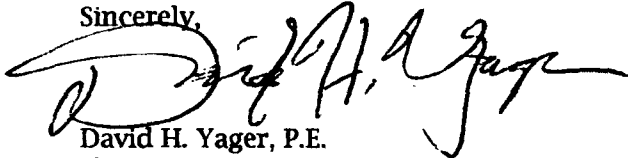
You can download the latest revision of 30 TAC Chapter 290 - [Rules and Regulations for Public Water Systems](#) from this site.

Mr. Clarence L. Littlefield, P.E.
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If you have any questions concerning this letter or need further assistance, please contact David Yager at 512-239-0605 or by email at David.Yager@Tceq.Texas.Gov or by correspondence at the following address:

Plan Review Team, MC-159
Texas Commission on Environmental Quality
P.O. Box 13087
Austin, Texas 78711-3087

Sincerely,



David H. Yager, P.E.
Plan Review Team
Plan and Technical Review Section
Water Supply Division
Texas Commission on Environmental Quality



Vera Poe, P.E., Team Leader
Plan Review Team
Plan and Technical Review Section
Water Supply Division
Texas Commission on Environmental Quality

VP/DY/db

Enclosure: Sample Results

cc: Vineyard Ridge Water Supply, Attn: Brent Taylor, PO Box 631, Spicewood, Texas 78669-0631

Mr. Clarence L. Littlefield, P.E.

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April 6, 2018

bcc: TCEQ Central Records PWS File 0860144 P-02062018-034
TCEQ Region No. 13 Office - San Antonio
TCEQ Drinking Water Standards Section - Attn: Kasy Stinson, MC-155
TCEQ Drinking Water Special Functions Section - Attn: Patrick Kading, MC-155
TCEQ Drinking Water Standards Section - Attn: Laurie Gehlsen, MC-155
TCEQ Drinking Water Standards Section - Attn: Jessica Hoch, MC-155
TCEQ PWSCHEM, MC-155
TCEQ PWSINV, MC-155

CORPORATE OFFICE
 835 Phil Gramm Boulevard
 Bryan, TX 77807
 Phone: (979) 778-3707
 Fax: (979) 778-3193



AUSTIN OFFICE
 7500 Hwy 71 W, Suite 105
 Austin, TX 78735
 Phone: (512) 301-9559
 Fax: (512) 301-9552

Analytical Report

Apex Drilling

Report Printed: 11/17/17 8:01
 A025435

VINYARD RIDGE NO1

Collected: 11/14/17 17:00 by CLIENT
 Received: 11/15/17 15:00 by Kelly Kukowski

Type
 Grab

Matrix
 Drinking Water

C-O-C #
 283501

Lab ID# A025435-01

Result	Units	Notes	MDL	Adj MDL	SQL	Lab	Analyzed	Method	Batch
Microbiological Analyses									
Total Coliforms	Absent	N/A	N/A	N/A	N/A	Austin	11/15/17 16:52 MSA	SM9223 B 2004	M082245 NEL
Escherichia coli (E.coli)	Absent	N/A	N/A	N/A	N/A	Austin	11/15/17 16:52 MSA	SM9223 B 2004	M082245 NEL

VINYARD RIDGE NO1

Collected: 11/15/17 08:00 by CLIENT
 Received: 11/15/17 15:00 by Kelly Kukowski

Type
 Grab

Matrix
 Drinking Water

C-O-C #
 283501

Lab ID# A025435-02

Result	Units	Notes	MDL	Adj MDL	SQL	Lab	Analyzed	Method	Batch
Microbiological Analyses									
Total Coliforms	Absent	N/A	N/A	N/A	N/A	Austin	11/15/17 16:52 MSA	SM9223 B 2004	M082245 NEL
Escherichia coli (E.coli)	Absent	N/A	N/A	N/A	N/A	Austin	11/15/17 16:52 MSA	SM9223 B 2004	M082245 NEL

Microbiological Analyses - Quality Control

Result	Units	Notes	SQL	Analyzed	Spike Amount	Source Result	%R	%R Limits	RPD	RPD Limit	Batch
Escherichia coli (E.coli) - SM9223 B 2004											Austin
Blank	Absent	N/A	N/A	11/15/17 16:52 MSA							M082245
Total Coliforms - SM9223 B 2004											Austin
Blank	Absent	N/A	N/A	11/15/17 16:52 MSA							M082245

Sample Preparation Summary

Sample	Method	Prepared	Lab	Bottle	Initial	Units	Final	Units	External Dilution Factor	Batch
A025435-01										
Escherichia coli (E.coli)	SM9223 B 2004	11/15/17 18:47 MSA	Austin	A	100	mL	100	mL	1	M082245
Total Coliforms	SM9223 B 2004	11/15/17 18:47 MSA	Austin	A	100	mL	100	mL	1	M082245
A025435-02										
Escherichia coli (E.coli)	SM9223 B 2004	11/15/17 16:47 MSA	Austin	A	100	mL	100	mL	1	M082245
Total Coliforms	SM9223 B 2004	11/15/17 16:47 MSA	Austin	A	100	mL	100	mL	1	M082245

CORPORATE OFFICE
 635 Phil Gramm Boulevard
 Bryan, TX 77807
 Phone: (979) 778-3707
 Fax: (979) 778-3193



AUSTIN OFFICE
 7500 Hwy 71 W, Suite 105
 Austin, TX 78735
 Phone: (512) 301-9559
 Fax: (512) 301-9552

Analytical Report

Apex Drilling

Report Printed: 11/17/17 15:14

A025459

VINYARD RIDGE

Collected: 11/16/17 09:00 by CLIENT
 Received: 11/16/17 14:34 by Kelly Kukowak

Type
 Grab

Matrix
 Drinking Water

C-O-C #
 283517

Lab ID# A025459-01

Microbiological Analyses

Result	Units	Notes	MDL	Adj MDL	SQL	Lab	Analyzed	Method	Batch
Absent	N/A		N/A	N/A	N/A	Austin	11/16/17 17:55 MSA	SM9223 B 2004	M082281 MEL
Absent	N/A		N/A	N/A	N/A	Austin	11/16/17 17:55 MSA	SM9223 B 2004	M082281 MEL

Microbiological Analyses - Quality Control

Result	Units	Notes	SQL	Analyzed	Spike Amount	Source Result	%R	%R Limits	RPD	RPD Limit	Batch
											Austin
Escherichia coli (E.coli) - SM9223 B 2004											
Blank	Absent	N/A	N/A	11/16/17 17:55 MSA							M082281
Total Coliforms - SM9223 B 2004											Austin
Blank	Absent	N/A	N/A	11/16/17 17:55 MSA							M082281

Sample Preparation Summary

Sample	Method	Prepared	Lab	Bottle	Initial	Units	Final	Units	External Dilution Factor	Batch
A025459-01										
Escherichia coli (E.coli)	SM9223 B 2004	11/16/17 17:51 TPH	Austin	A	100	mL	100	mL	1	M082281
Total Coliforms	SM9223 B 2004	11/16/17 17:51 TPH	Austin	A	100	mL	100	mL	1	M082281



LCRA Environmental Laboratory Services
 3505 Montopolis Drive
 Austin, TX 78744
 Phone: (512)356-6022
 Fax: (512)356-0021

ANALYTICAL RESULTS

Workorder: Q1758530

Lab ID: Q1758530001 Date Received: 11/15/2017 14:00 Matrix: Drinking Water
 Sample ID: VINYARD RIDGE 1 Date Collected: 11/14/2017 17:00 Sample Type: SAMPLE
 Project ID: APEX SAMPLES

Parameters	Results	Units	LOQ	LOD	ML	DF	Prepared	By	Analyzed	By	Qual
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INORGANICS

Analysis Desc: E2340B, Hardness Preparation Method: E2340B, Hardness
 Analytical Method: E2340B, Hardness

Hardness, Calcium	221	mg/L				1	11/27/17 22:31	CW	11/27/17 22:31	CW	
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Analysis Desc: E200.7 Metals, Trace Elements Preparation Method: E200.7 Prep
 Analytical Method: E200.7 Metals, Trace Elements

Calcium Total	88.7	mg/L	0.200	0.0700		1	11/22/17 12:58	BS	11/27/17 20:11	FO	N
Iron Total	<0.0500	mg/L	0.0500	0.0200		1	11/22/17 12:58	BS	11/27/17 20:11	FO	
Sodium Total	30.4	mg/L	0.200	0.0700		1	11/22/17 12:58	BS	11/27/17 20:11	FO	

Analysis Desc: E200.8, ICP-MS Preparation Method: E200.8, ICP-MS Prep
 Analytical Method: E200.8, ICP-MS

Aluminum Total	0.00534	mg/L	0.00500	0.00200		1	11/22/17 13:50	BS	11/28/17 13:12	SLW	
Arsenic Total	<0.00100	mg/L	0.00100	0.000400	0.01	1	11/22/17 13:50	BS	11/28/17 13:12	SLW	
Copper Total	<0.00100	mg/L	0.00100	0.000400	1	1	11/22/17 13:50	BS	11/28/17 13:12	SLW	
Lead Total	<0.00100	mg/L	0.00100	0.000400	0.015	1	11/22/17 13:50	BS	11/28/17 13:12	SLW	
Manganese Total	<0.00100	mg/L	0.00100	0.000400		1	11/22/17 13:50	BS	11/28/17 13:12	SLW	
Zinc Total	<0.00500	mg/L	0.00500	0.00200		1	11/22/17 13:50	BS	11/28/17 13:12	SLW	

Analysis Desc: E300.0, Anions Preparation Method: E300.0, Anions
 Analytical Method: E300.0, Anions

Chloride	62.3	mg/L	1.00	0.500		1	11/15/17 18:21	ML	11/15/17 18:21	ML	
Fluoride	0.737	mg/L	0.0100	0.00500	4	1	11/15/17 18:21	ML	11/15/17 18:21	ML	
Nitrite (as N)	<0.0100	mg/L	0.0100	0.00500	1	1	11/15/17 18:21	ML	11/15/17 18:21	ML	
Nitrate (as N)	24.6	mg/L	0.100	0.0500	10	10	11/15/17 23:43	ML	11/15/17 23:43	ML	M
Sulfate	45.5	mg/L	1.00	0.500		1	11/15/17 18:21	ML	11/15/17 18:21	ML	

TOTAL DISSOLVED SOLIDS
 Analysis Desc: SM2540C, TDS Preparation Method: SM2540C, TDS
 Analytical Method: SM2540C, TDS

Total Dissolved Solids(TDS)	611	mg/L	25.0	10.0		10	11/20/17 08:15	JMC	11/20/17 08:15	JMC	
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ALKALINITY



LCRA Environmental Laboratory Services
 3505 Montopolis Drive
 Austin, TX 78744
 Phone: (512)356-6022
 Fax: (512)356-6021

ANALYTICAL RESULTS

Workorder: Q1758530

Lab ID: Q1758530001 Date Received: 11/15/2017 14:00 Matrix: Drinking Water
 Sample ID: VINYARD RIDGE 1 Date Collected: 11/14/2017 17:00 Sample Type: SAMPLE
 Project ID: APEX SAMPLES

Parameters	Results Units	LOQ	LOD	ML	DF	Prepared	By	Analyzed	By	Qual
Analysis Desc: SM2320B, Alkalinity		Preparation Method: SM2320B, Alkalinity								
		Analytical Method: SM2320B, Alkalinity								
Total Alkalinity (CaCO3)	365 mg/L	20.0	20.0		1	11/16/17	ADG	11/16/17	ADG	N
pH		Preparation Method: SM4500-H+B, pH @ 25°C								
Analysis Desc: SM4500-H+B, pH @ 25°C		Analytical Method: SM4500-H+B, pH @ 25°C								
pH	7.56 pH	0.00	0.00		1	11/21/17 09:59	ADG	11/21/17 09:59	ADG	N
Temperature	21.4 c				1	11/21/17 09:59	ADG	11/21/17 09:59	ADG	N



SUMMIT
ENVIRONMENTAL TECHNOLOGIES, INC
Analytical Laboratories

Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4485
Website: <http://www.settek.com>

Analytical Report

(consolidated)

WO#: 17101638

Date Reported: 11/17/2017

CLIENT: LCRA Environmental Laboratory Services Collection Date: 10/18/2017 1:00:00 PM
Project: Q1753664
Lab ID: 17101638-001 Matrix: DRINKING WATER
Client Sample ID Q1753664001

Analyses	Result	PQL	Qual	Units	Uncertainty	DF	Date Analyzed
GROSS ALPHA / GROSS BETA RADIOACTIVITY (EPA 900.0)					E900.0	E900	Analyst: BRD
ALPHA, Gross	ND	3.00		pCi/L	± 3.87	1	11/17/2017 8:07:00 AM
BETA, Gross	8.61	4.00		pCi/L	± 2.95	1	11/17/2017 8:07:00 AM
RADIUM-226 (903.0)					E903.0	E903-904	Analyst: BRD
Radium-226	ND	1.00		pCi/L	± 0.16	1	11/17/2017 8:52:00 AM
Yield	1.00					1	11/17/2017 8:52:00 AM
RADIUM-228 (904.0)					E904.0	E903-904	Analyst: BRD
Radium-228	1.22	1.00		pCi/L	± 0.64	1	11/16/2017 2:43:00 PM
Yield	1.00					1	11/16/2017 2:43:00 PM

Qualifiers:

- * Value exceeds Maximum Contaminant Level
- H Holding times for preparation or analysis exceeded
- MC Value is below Minimum Compound Limit
- ND Not Detected
- P Second column confirmation exceeds
- E Value above quantitation range
- M Manual Integration used to determine area response
- N Tentatively identified compounds
- O RSD is greater than RSDlimit
- PL Permit Limit



Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: <http://www.settek.com>

WO#: 17101638

Date Reported: 11/17/2017

Company: LCRA Environmental Laboratory Service

Address: P.O. Box 220 78767-02203505 Montopol
Austin TX 78744

Received: 10/26/2017

Project#: Q1753664

Client ID#	Lab#	Collected	Analyte	Result	Units	Qual	Matrix	Method	DF	LOD	LOQ	Run	Analyst
Q1753664001	001	10/18/2017	Uranium(U)	0.00207	mg/L		Drinking Water	EPA 200.8	1	0.000220	0.00100	11/17/2017	JEB

CORPORATE OFFICE
 635 Phil Gramm Boulevard
 Bryan, TX 77807
 Phone: (979) 778-3707
 Fax: (979) 778-3193



AUSTIN OFFICE
 7500 Hwy 71 W, Suite 105
 Austin, TX 78735
 Phone: (512) 301-8559
 Fax: (512) 301-9552

Analytical Report

Apex Drilling

Report Printed: 10/31/17 5:44
 A023656

VINYARD RIDGE NO2

Collected: 10/24/17 17:00 by CLIENT
 Received: 10/25/17 14:00 by Kelly Kukowski
 Type Grab

Matrix Drinking Water
 C-O-C # 283150

Lab ID# A023656-01

Result	Units	Notes	MDL	Adj MDL	SQL	Lab	Analyzed	Method	Batch	
<i>Microbiological Analyses</i>										
Total Coliforms	Absent	N/A	N/A	N/A	N/A	Austin	10/25/17 18:33 MSA	SM9223 B 2004	M081742	NEL
Escherichia coli (E.coli)	Absent	N/A	N/A	N/A	N/A	Austin	10/25/17 18:33 MSA	SM9223 B 2004	M081742	NEL

VINYARD RIDGE NO2

Collected: 10/25/17 08:00 by CLIENT
 Received: 10/25/17 14:00 by Kelly Kukowski
 Type Grab

Matrix Drinking Water
 C-O-C # 283150

Lab ID# A023656-02

Result	Units	Notes	MDL	Adj MDL	SQL	Lab	Analyzed	Method	Batch	
<i>Microbiological Analyses</i>										
Total Coliforms	Absent	N/A	N/A	N/A	N/A	Austin	10/25/17 16:33 MSA	SM9223 B 2004	M081742	NEL
Escherichia coli (E.coli)	Absent	N/A	N/A	N/A	N/A	Austin	10/25/17 16:33 MSA	SM9223 B 2004	M081742	NEL

Microbiological Analyses - Quality Control

Result	Units	Notes	SQL	Analyzed	Spike Amount	Source Result	%R	%R Limits	RPD	RPD Limit	Batch
Escherichia coli (E.coli) - SM9223 B 2004											
Blank	Absent	N/A	N/A	10/25/17 16:33 MSA							Austin
Duplicate	Absent	N/A	N/A	10/25/17 16:33 MSA		Absent			200		M081742
Total Coliforms - SM9223 B 2004											
Blank	Absent	N/A	N/A	10/25/17 16:33 MSA							Austin
Duplicate	Absent	N/A	N/A	10/25/17 16:33 MSA		Absent			200		M081742

Sample Preparation Summary

Sample	Method	Prepared	Lab	Bottle	Initial	Units	Final	Units	External Dilution Factor	Batch
A023656-01										
Escherichia coli (E.coli)	SM9223 B 2004	10/25/17 16:30 MSA	Austin	A	100	mL	100	mL	1	M081742
Total Coliforms	SM9223 B 2004	10/25/17 16:30 MSA	Austin	A	100	mL	100	mL	1	M081742
A023656-02										
Escherichia coli (E.coli)	SM9223 B 2004	10/25/17 16:30 MSA	Austin	A	100	mL	100	mL	1	M081742
Total Coliforms	SM9223 B 2004	10/25/17 16:30 MSA	Austin	A	100	mL	100	mL	1	M081742

CORPORATE OFFICE
 635 Phil Gramm Boulevard
 Bryan, TX 77807
 Phone: (979) 778-3707
 Fax: (979) 778-3183



AUSTIN OFFICE
 7500 Hwy 71 W, Suite 105
 Austin, TX 78735
 Phone: (512) 301-9559
 Fax: (512) 301-9552

Analytical Report

Apex Drilling

Report Printed: 10/30/17 16:14

A023814

VINYARD RIDGE NO2

Collected: 10/26/17 09:00 by CLIENT
 Received: 10/26/17 16:00 by Kelly Kukowski

Type
 Grab

Matrix
 Drinking Water

C-O-C #
 283192

Lab ID#	Result	Units	Notes	MDL	Adj MDL	SOL	Lab	Analyzed	Method	Batch
A023814-01										
Microbiological Analyses										
Total Coliforms	Absent	N/A		N/A	N/A	N/A	Austin	10/26/17 16:29 CSC	SM9223 B 2004	M081762
Escherichia coli (E.coli)	Absent	N/A		N/A	N/A	N/A	Austin	10/26/17 16:29 CSC	SM9223 B 2004	M081762

Microbiological Analyses - Quality Control

Result	Units	Notes	SQL	Analyzed	Spike Amount	Source Result	%R	%R Limits	RPD	RPD Limit	Batch
Escherichia coli (E.coli) - SM9223 B 2004											
Blank	Absent	N/A	N/A	10/26/17 16:29 CSC							M081762
Total Coliforms - SM9223 B 2004											
Blank	Absent	N/A	N/A	10/26/17 16:29 CSC							M081762

Sample Preparation Summary

Sample	Method	Prepared	Lab	Bottle	Initial	Units	Final	Units	External Dilution Factor	Batch
A023814-01										
Escherichia coli (E.coli)	SM9223 B 2004	10/26/17 16:14 CSC	Austin	A	100	mL	100	mL	1	M081762
Total Coliforms	SM9223 B 2004	10/26/17 16:14 CSC	Austin	A	100	mL	100	mL	1	M081762



LCRA Environmental Laboratory Services
 3505 Montopolis Drive
 Austin, TX 78744
 Phone: (512)356-8022
 Fax: (512)356-6021

ANALYTICAL RESULTS

Workorder: Q1754963

Lab ID: Q1754963001 Date Received: 10/26/2017 15:31 Matrix: Drinking Water
 Sample ID: VINYARD RIDGE 2 Date Collected: 10/26/2017 08:00 Sample Type: SAMPLE
 Project ID: APEX SAMPLES

Parameters	Results	Units	LOQ	LOD	ML	DF	Prepared	By	Analyzed	By	Qual
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INORGANICS

Analysis Desc: E2340B, Hardness Preparation Method: E2340B, Hardness
 Analytical Method: E2340B, Hardness

Hardness, Calcium	232	mg/L					1 11/07/17 21:29	CW	11/07/17 21:29	CW	
-------------------	-----	------	--	--	--	--	------------------	----	----------------	----	--

Analysis Desc: E200.7 Metals, Trace Elements Preparation Method: E200.7 Prep
 Analytical Method: E200.7 Metals, Trace Elements

Calcium Total	92.7	mg/L	0.200	0.0700			1 11/02/17 15:48	BS	11/07/17 00:36	FO	N
Iron Total	<0.0500	mg/L	0.0500	0.0200			1 11/02/17 15:48	BS	11/07/17 00:36	FO	
Sodium Total	24.4	mg/L	0.200	0.0700			1 11/02/17 15:48	BS	11/07/17 00:36	FO	

Analysis Desc: E200.8, ICP-MS Preparation Method: E200.8, ICP-MS Prep
 Analytical Method: E200.8, ICP-MS

Aluminum Total	<0.00500	mg/L	0.00500	0.00200			1 11/03/17 13:53	BS	11/06/17 10:04	SLW	
Arsenic Total	<0.00100	mg/L	0.00100	0.000400	0.01		1 11/03/17 13:53	BS	11/06/17 10:04	SLW	
Copper Total	0.00104	mg/L	0.00100	0.000400		1	1 11/03/17 13:53	BS	11/06/17 10:04	SLW	
Lead Total	<0.00100	mg/L	0.00100	0.000400	0.015		1 11/03/17 13:53	BS	11/06/17 10:04	SLW	
Manganese Total	0.0114	mg/L	0.00100	0.000400			1 11/03/17 13:53	BS	11/06/17 10:04	SLW	
Zinc Total	<0.00500	mg/L	0.00500	0.00200			1 11/03/17 13:53	BS	11/06/17 10:04	SLW	

Analysis Desc: E300.0, Anions Preparation Method: E300.0, Anions
 Analytical Method: E300.0, Anions

Chloride	37.2	mg/L	1.00	0.500			1 10/26/17 17:26	BC	10/26/17 17:26	BC	
Fluoride	0.697	mg/L	0.0100	0.00500	4		1 10/26/17 17:26	BC	10/26/17 17:26	BC	
Nitrite (as N)	<0.0100	mg/L	0.0100	0.00500		1	1 10/26/17 17:26	BC	10/26/17 17:26	BC	
Nitrate (as N)	0.452	mg/L	0.0100	0.00500	10		1 10/26/17 17:26	BC	10/26/17 17:26	BC	
Sulfate	36.6	mg/L	1.00	0.500			1 10/26/17 17:26	BC	10/26/17 17:26	BC	

TOTAL DISSOLVED SOLIDS

Analysis Desc: SM2540C, TDS Preparation Method: SM2540C, TDS
 Analytical Method: SM2540C, TDS

Total Dissolved Solids(TDS)	508	mg/L	25.0	10.0			10 10/31/17 12:40	ML	10/31/17 12:40	ML	
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ALKALINITY



LCRA Environmental Laboratory Services
 3505 Montopolis Drive
 Austin, TX 78744
 Phone: (512)358-6022
 Fax: (512)358-8021

ANALYTICAL RESULTS

Workorder: Q1754963

Lab ID: Q1754963001 Date Received: 10/26/2017 15:31 Matrix: Drinking Water
 Sample ID: VINYARD RIDGE 2 Date Collected: 10/26/2017 08:00 Sample Type: SAMPLE
 Project ID: APEX SAMPLES

Parameters	Results Units	LOQ	LOD	ML	DF	Prepared	By	Analyzed	By	Qual
Analysis Desc: SM2320B, Alkalinity		Preparation Method: SM2320B, Alkalinity								
		Analytical Method: SM2320B, Alkalinity								
Total Alkalinity (CaCO3)	409 mg/L	20.0	20.0	1		10/30/17	ADG	10/30/17	ADG	N
pH										
Analysis Desc: SM4500-H+B, pH @ 25°C		Preparation Method: SM4500-H+B, pH @ 25°C								
		Analytical Method: SM4500-H+B, pH @ 25°C								
pH	7.67 pH	0.00	0.00	1		11/02/17 12:39	ADG	11/02/17 12:39	ADG	N
Temperature	21.6 C					11/02/17 12:39	ADG	11/02/17 12:39	ADG	N



Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: <http://www.settek.com>

Analytical Report

(consolidated)

WO#: 17110120

Date Reported: 11/27/2017

CLIENT: LCRA Environmental Laboratory Services **Collection Date:** 10/26/2017 8:00:00 AM
Project: Q1754964
Lab ID: 17110120-001 **Matrix:** DRINKING WATER
Client Sample ID: Q1754964001

Analyses	Result	PQL	Qual	Units	Uncertainty	DF	Date Analyzed
GROSS ALPHA / GROSS BETA RADIOACTIVITY (EPA 900.0)							Analyst: BRD
		E900.0		E900			
ALPHA, Gross	3.44	3.00		pCi/L	± 3.76	1	11/21/2017 3:27:00 PM
BETA, Gross	ND	4.00		pCi/L	± 2.65	1	11/21/2017 3:27:00 PM
RADIUM-226 (903.0)							Analyst: BRD
		E903.0		E903-904			
Radium-226	ND	1.00		pCi/L	± 0.09	1	11/24/2017 1:06:00 PM
Yield	1.00					1	11/24/2017 1:06:00 PM
RADIUM-228 (904.0)							Analyst: BRD
		E904.0		E903-904			
Radium-228	ND	1.00		pCi/L	± 0.66	1	11/22/2017 6:20:00 PM
Yield	0.980					1	11/22/2017 6:20:00 PM

Qualifiers:

- * Value exceeds Maximum Contaminant Level
- H Holding times for preparation or analysis exceeded
- MC Value is below Minimum Compound Limit
- ND Not Detected
- P Second column confirmation exceeds
- E Value above quantitation range
- M Manual Integration used to determine area response
- N Tentatively identified compounds
- O RSD is greater than RSDlimit
- PL Permit Limit



Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: <http://www.settek.com>

WO#: 17110120

Date Reported: 11/27/2017

Company: LCRA Environmental Laboratory Service

Address: P.O. Box 220 78767-02203505 Montopol
Austin TX 78744

Received: 11/2/2017

Project#: Q1754964

Client ID#	Lab#	Collected	Analyte	Result	Units	Qual	Matrix	Method	DF	LOD	LOQ	Run	Analyst
Q1754964001	001	10/28/2017	Uranium(U)	0.00247	mg/L		Drinking Water	EPA 200.8	1	0.000220	0.00100	11/20/2017	JEB

Bryan W. Shaw, Ph.D., P.E., *Chairman*
Toby Baker, *Commissioner*
Jon Niermann, *Commissioner*
Richard A. Hyde, P.E., *Executive Director*

PWS_0860144_CO_20170727_Plan Ltr

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

July 27, 2017

Mr. Clarence L. Littlefield, P.E.
Southwest Engineers, Inc.
307 Saint Lawrence
Gonzales, Texas 78629



Re: Vineyard Ridge Water Supply - Public Water System ID No. 0860144
Proposed Water Wells No. 1 and 2
Engineer Contact Telephone: (830) 672-7546
Plan Review Log No. P-06142017-099
Gillespie County, Texas

CN605360155; RN109798421

Dear Mr. Littlefield:

On June 14, 2017, the Texas Commission of Environmental Quality (TCEQ) received an e-mail request to provide a separate approval letter for the above referenced Water Wells No. 1 and 2. The TCEQ issued an approval letter on May 30, 2017 (enclosed) for the above wells and the distribution system for the proposed Vineyard Ridge Water Supply system. The planning materials received on March 31, 2017 and April 7, 2017 were provided by Southwest Engineers, Inc. for the wells and Matkin-Hoover Engineering, Inc. for the remainder of the system. The May 30, 2017 letter was intended to approve all of the work. We understand your preference that a separate approval letter be issued to your office for Water Wells No. 1 and 2. Based on our review of the information submitted, the project generally meets the minimum requirements of Title 30 Texas Administrative Code (TAC) Chapter 290 - Rules and Regulations for Public Water Systems and is **conditionally approved for construction** if the project plans and specifications meet the following requirement(s):

1. Three corrosive indices (Langelier Saturation Index, Ryznar Stability Index and the Aggressive Index) will be used to calculate corrosivity of the water from new source(s). Corrosive or aggressive water could result in aesthetic problems, increased levels of toxic metals, and deterioration of household plumbing and fixtures. **If the water appears to be corrosive**, the system will be required to conduct a study and submit an engineering report that addresses corrosivity issues or may choose to install corrosion control treatment **before use may be granted**. All changes in treatment require submittal of plans and specifications for approval by TCEQ.

2. The copy of the recorded deed and map demonstrates that the public water system owns the well property and all surrounding acreage at this time and intends to provide sanitary control and access to the wells via easements once the property is developed. Draft easements were provided as part of the submittal (see 30 TAC §290.41(c)(1)(F)(iv)(I)-(II)). For any real property within 150 feet of the well not owned by the public water system, a sanitary control easement or sanitary control easements as filed at the county courthouse (bearing the county clerk's stamp) shall be obtained, as described in 30 TAC §290.41(c)(1)(F). Please provide a copy of the recorded deed and a map showing all land owned by the public water system within 150 feet of the well and for any land within 150 feet of the well not owned by the public water system (or to be sold as property is developed) provide copies of all recorded sanitary control easements with the well completion materials. Should there be property within 150 feet of the well for which a sanitary control easement cannot be obtained an exception may be required as described below.
3. The PWS has applied to the Public Utility Commission (PUC) for a Certificate of Convenience and Necessity (CCN) for the system. The system should obtain a CCN prior to providing water service to customers.

Exceptions to the above rules must be requested in writing and must be substantiated by carefully documented data. The request for an exception shall precede the submission of engineering plans and specifications for a proposed project for which an exception is being requested as required in 30 TAC Section 290.39 (I)(1). Written exception request must be submitted to the TCEQ's Technical Review and Oversight Team (TROT) at the following address:

Technical Review and Oversight Team, MC-159
Texas Commission on Environmental Quality
P.O. Box 13087
Austin, Texas 78711-3087

For information about the exception process, please go to the URL below:

<http://www.tceq.texas.gov/drinkingwater/trot/exception>

Please note that an "Exception Request Form" must be completed for all exception submittals.

If after you have reviewed the information available at the webpage above you have a question regarding the exception process, please call (512) 239-4691 and ask to speak to a member of the TROT about exceptions.

Texas Water Code Section 36.0015 allows for the creation of groundwater conservation districts (GCDs) as the preferred method of groundwater management. GCDs manage groundwater in many counties and are authorized to regulate production and spacing of water wells. **Public water systems drilling wells within an existing GCD are responsible for meeting the GCD's requirements.** The authorization provided in this letter does not affect GCD authority to manage groundwater or issue permits.

The design engineer or water system representative is required to notify the Plan Review Team in writing by fax at (512) 239-6972 or by emailing David.Yager@Tceq.Texas.Gov and cc: vera.poe@tceq.texas.gov at least 48 hours before the well casing pressure cementing begins. If pressure cementing is to begin on Monday, then they must give notification on the preceding Thursday. If pressure cementing is to begin on Tuesday, then they must give notification on the preceding Friday.

Mr. Clarence L. Littlefield, P.E.
Page 3
July 27, 2017

The TCEQ does not approve this well for use as a public water supply at this time. We have enclosed a copy of the "Public Well Completion Data Checklist for Interim Approval (Step 2)". We provide this checklist to help you in obtaining approval to use this well.

The submittal consisted of 5 sheets of engineering drawings, technical specifications and an engineering summary. The proposed project consists of:

- Two (2) public water supply well drilled to 400 feet with 180 linear feet (lf) of 6.625-inch outside diameter (od) steel casing and pressure-cemented 180 lf;
- 220 linear feet of 6.25-inch underream bare hole with no gravel pack;
- The wells are rated for 50 gallons per minute (gpm) yield with a 7.5 horsepower, submersible pump set at 334 feet deep. Well No. 1 has a design capacity of 50 gpm at 384 feet total dynamic head (TDH) and Well No. 2 has a design capacity of 50 gpm at 392 TDH.
- Various valves, fittings, and related appurtenances.

This approval is for the construction of the above listed items only. Any wastewater components contained in this design were not considered. The ground storage tank, pressure tank, service pumps, disinfection system, and distribution system were approved in the previously mentioned May 30, 2017 letter.

The Vineyard Ridge Water Supply public water system provides water treatment.

The project is located approximately 6 miles north of Stonewall, Texas and 0.40 miles west of the intersection of North Grape Creek Road and Elm Ridge Road in Gillespie County, Texas.

An appointed engineer must notify the TCEQ's Region 13 Office in San Antonio at (210) 490-3096 when construction will start. Please keep in mind that upon completion of the water works project, the engineer or owner will notify the commission's Water Supply Division, in writing, as to its completion and attest to the fact that the completed work is substantially in accordance with the plans and change orders on file with the commission as required in 30 TAC §290.39(h)(3).

Please refer to the Plan Review Team's Log No. **P-06142017-099** in all correspondence for this project.

Please Note for Future Submittals: In order to determine if a new source of water or a new treatment process results in corrosive or aggressive finished water that may endanger human health, we are requesting additional sampling and analysis of lead, alkalinity (as calcium carbonate), calcium (as calcium carbonate) and sodium in addition to the required chemical test results for public water system new sources. We are requiring these additional sampling results as listed in our currently revised checklists (Public Well Completion Data Checklist for Interim Use - Step 2 and Membrane Use Checklist - Step 2) which can be found on TCEQ's website at the following address:

<https://www.tceq.texas.gov/drinkingwater/udpubs.html>

Please include these additional sampling results in well completion submittals, membrane use submittals, and other treatment process submittals.

Mr. Clarence L. Littlefield, P.E.
Page 4
July 27, 2017

New surface water sources will need to also include lead, total dissolved solids, pH, alkalinity (as calcium carbonate), chloride, sulfate, calcium (as calcium carbonate) and sodium with the analysis required in 30 TAC Section 290.41(e)(1)(F).

Please complete a copy of the most current Public Water System Plan Review Submittal form for any future submittals to TCEQ. Every blank on the form must be completed to minimize any delays in the review of your project. The document is available on TCEQ's website at the address shown below. You can also download the most current plan submittal checklists and forms from the same address.

<https://www.tceq.texas.gov/drinkingwater/udpubs.html>

For future reference, you can review part of the Plan Review Team's database to see if we have received your project. This is available on TCEQ's website at the following address:

<https://www.tceq.texas.gov/drinkingwater/planrev.html/#status>


You can download the latest revision of 30 TAC Chapter 290 - Rules and Regulations for Public Water Systems from this site.

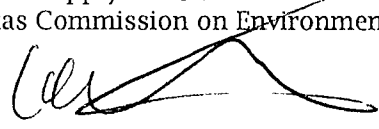
Mr. Clarence L. Littlefield, P.E.
Page 5
July 27, 2017

If you have any questions concerning this letter or need further assistance, please contact David Yager at 512-239-0605 or by email at David.Yager@Tceq.Texas.Gov or by correspondence at the following address:

Plan Review Team, MC-159
Texas Commission on Environmental Quality
P.O. Box 13087
Austin, Texas 78711-3087

Sincerely,


David H. Yager, P.E.
Plan Review Team
Plan and Technical Review Section
Water Supply Division
Texas Commission on Environmental Quality


Vera Poe, P.E., Team Leader
Plan Review Team
Plan and Technical Review Section
Water Supply Division
Texas Commission on Environmental Quality

VP/DY/db

Enclosure: "Public Well Completion Data Checklist for Interim Approval (Step 2)"
TCEQ Approval Letter of May 30, 2017

cc: Vineyard Ridge Water Supply, Attn: Brent Taylor, P.O. Box 631, Spicewood, Texas 78669-0631

Bryan W. Shaw, Ph.D., P.E., *Chairman*
Toby Baker, *Commissioner*
Jon Niermann, *Commissioner*
Richard A. Hyde, P.E., *Executive Director*



PWS_0860144_CO_20170530_Plan Ltr

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

May 30, 2017

Mr. Garrett D. Keller, P.E.
Matkin-Hoover Engineering, Inc.
8 Spencer Road
Boerne, Texas 78006

Re: Vineyard Ridge Water Supply - Public Water System ID No. 0860144
Proposed New Water System
Engineer Contact Telephone: (830) 249-0600
Plan Review Log No. P-03312017-204
Gillespie County, Texas

CN605360155; RN109798421

Dear Mr. Keller:

On March 31, 2017, the Texas Commission of Environmental Quality (TCEQ) received planning material with your letter dated March 30, 2017 along with revisions dated May 23, 2017 for the proposed New Water System. Based on our review of the information submitted, the project generally meets the minimum requirements of Title 30 Texas Administrative Code (TAC) Chapter 290 - Rules and Regulations for Public Water Systems and is **conditionally approved for construction** if the project plans and specifications meet the following requirement(s):

1. Four corrosive indices (Modified Larson's Ratio Langelier Saturation Index, Ryznar Stability Index and the Aggressive Index) will be used to calculate corrosivity of the water from new source(s). Corrosive or aggressive water could result in aesthetic problems, increased levels of toxic metals, and deterioration of household plumbing and fixtures. **If the water appears to be corrosive**, the system will be required to conduct a study and submit an engineering report that addresses corrosivity issues or may choose to install corrosion control treatment **before use may be granted**. All changes in treatment require submittal of plans and specifications for approval by TCEQ.
2. The copy of the recorded deed and map demonstrates that the public water system owns the well property and all surrounding acreage at this time and intends to provide sanitary control and access to the wells via easements once the property is developed. Draft easements were provided as part of the submittal (see 30 TAC §290.41(c)(1)(F)(iv)(I)-(II)). For any real property within 150 feet of the well not owned by the public water system, a sanitary control easement or sanitary control easements as filed at the county courthouse (bearing the county clerk's stamp) shall be obtained, as described in 30 TAC §290.41(c)(1)(F). Please provide a copy of the recorded deed and a map showing all land owned by the public water system within 150 feet of the well and for any land within 150 feet of the well not owned by the public water system (or to be sold as property is developed) provide copies of all recorded sanitary control easements with the well completion materials. Should there be property within 150 feet of the well for which a sanitary control easement cannot be obtained an exception may be required as described below.

Mr. Garrett D. Keller, P.E.
Page 2
May 30, 2017

3. The PWS has applied to the Public Utility Commission (PUC) for a Certificate of Convenience and Necessity (CCN) for the system. The system should obtain a CCN prior to providing water service to customers.

Exceptions to the above rules must be requested in writing and must be substantiated by carefully documented data. The request for an exception shall precede the submission of engineering plans and specifications for a proposed project for which an exception is being requested as required in 30 TAC Section 290.39 (l)(1). Written exception request must be submitted to the TCEQ's Technical Review and Oversight Team (TROT) at the following address:

Technical Review and Oversight Team, MC-159
Texas Commission on Environmental Quality
P.O. Box 13087
Austin, Texas 78711-3087

For information about the exception process, please go to the URL below:

<http://www.tceq.texas.gov/drinkingwater/trot/exception>

Please note that an "Exception Request Form" must be completed for all exception submittals.

If after you have reviewed the information available at the webpage above you have a question regarding the exception process, please call (512) 239-4691 and ask to speak to a member of the TROT about exceptions.

Texas Water Code Section 36.0015 allows for the creation of groundwater conservation districts (GCDs) as the preferred method of groundwater management. GCDs manage groundwater in many counties and are authorized to regulate production and spacing of water wells. **Public water systems drilling wells within an existing GCD are responsible for meeting the GCD's requirements.** The authorization provided in this letter does not affect GCD authority to manage groundwater or issue permits.

The design engineer or water system representative is required to notify the Plan Review Team in writing by fax at (512) 239-6972 or by emailing David.Yager@Tceq.Texas.Gov and cc: vera.poe@tceq.texas.gov at least 48 hours before the well casing pressure cementing begins. If pressure cementing is to begin on Monday, then they must give notification on the preceding Thursday. If pressure cementing is to begin on Tuesday, then they must give notification on the preceding Friday.

The TCEQ does not approve this well for use as a public water supply at this time. We have enclosed a copy of the "Public Well Completion Data Checklist for Interim Approval (Step 2)". We provide this checklist to help you in obtaining approval to use this well.

The submittal consisted of 10 sheets of engineering drawings, technical specifications and an engineering summary. The proposed project consists of:

- Two (2) public water supply well drilled to 400 feet with 180 linear feet (lf) of 6.625-inch outside diameter (od) steel casing and pressure-cemented 180 lf;
- 220 linear feet of 6.25-inch underream bare hole with no gravel pack;

Mr. Garrett D. Keller, P.E.
Page 3
May 30, 2017

- The wells are rated for 50 gallons per minute (gpm) yield with a 7.5 horsepower, submersible pump set at 334 feet deep. Well No. 1 has a design capacity of 50 gpm at 384 feet total dynamic head (TDH) and Well No. 2 has a design capacity of 50 gpm at 392 TDH.
- One (1) 43,000 gallon American Water Works Association (AWWA) D-103 Factory-Coated Bolted Carbon Steel Ground Storage Tank;
- One (1) 4,000 gallon American Society of Mechanical Engineers (ASME) Section VIII, Division I, Hydropneumatic Pressure Tank;
- Two (2) 160 gallon per minute (gpm) service pumps;
- One (1) Disinfection system consisting of two (2) 10 pound per day gas chlorinators and two (2) 150 lb. bottles of chlorine gas;
- 4,188 lf of 6-inch AWWA C900 Polyvinyl Chloride (PVC) DR 18 raw water transmission main;
- 730 lf of 4-inch AWWA C900 PVC DR 18 raw water transmission main;
- 10,678 lf of 6-inch AWWA C900 PVC DR 18 Distribution Main;
- 7,565 lf of 4-inch AWWA C900 PVC DR 18 Distribution Main;
- 5,144 lf of 2-inch Schedule 40 ASTM D1785 PVC Distribution Line;
- Various valves, fittings, and related appurtenances.

This approval is for the construction of the above listed items only. Any wastewater components contained in this design were not considered.

The Vineyard Ridge Water System public water system provides water treatment.

The project is located approximately 6 miles north of Stonewall, Texas and 0.40 miles west of the intersection of North Grape Creek Road and Elm Ridge Road in Gillespie County, Texas.

An appointed engineer must notify the TCEQ's Region 11 Office in Austin at (512) 339-2929 when construction will start. Please keep in mind that upon completion of the water works project, the engineer or owner will notify the commission's Water Supply Division, in writing, as to its completion and attest to the fact that the completed work is substantially in accordance with the plans and change orders on file with the commission as required in 30 TAC §290.39(h)(3).

Please refer to the Plan Review Team's Log No. P-03312017-204 in all correspondence for this project.

Mr. Garrett D. Keller, P.E.
Page 4
May 30, 2017

Please Note for Future Submittals: In order to determine if a new source of water or a new treatment process results in corrosive or aggressive finished water that may endanger human health, we are requesting additional sampling and analysis of lead, alkalinity (as calcium carbonate), calcium (as calcium carbonate) and sodium in addition to the required chemical test results for public water system new sources. We are requiring these additional sampling results as listed in our currently revised checklists (Public Well Completion Data Checklist for Interim Use - Step 2 and Membrane Use Checklist - Step 2) which can be found on TCEQ's website at the following address:

<https://www.tceq.texas.gov/drinkingwater/udpubs.html>

Please include these additional sampling results in well completion submittals, membrane use submittals, and other treatment process submittals.

New surface water sources will need to also include lead, total dissolved solids, pH, alkalinity (as calcium carbonate), chloride, sulfate, calcium (as calcium carbonate) and sodium with the analysis required in 30 TAC Section 290.41(e)(1)(F).

Please complete a copy of the most current Public Water System Plan Review Submittal form for any future submittals to TCEQ. Every blank on the form must be completed to minimize any delays in the review of your project. The document is available on TCEQ's website at the address shown below. You can also download the most current plan submittal checklists and forms from the same address.

<https://www.tceq.texas.gov/drinkingwater/udpubs.html>

For future reference, you can review part of the Plan Review Team's database to see if we have received your project. This is available on TCEQ's website at the following address:

<https://www.tceq.texas.gov/drinkingwater/planrev.html/#status>

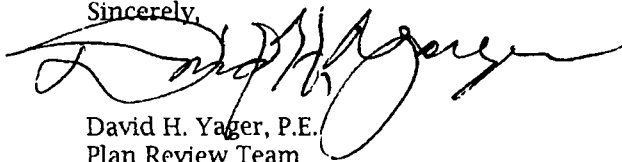
You can download the latest revision of 30 TAC Chapter 290 - Rules and Regulations for Public Water Systems from this site.

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If you have any questions concerning this letter or need further assistance, please contact David Ygaer at 512-239-0605 or by email at David.Yager@Tceq.Texas.Gov or by correspondence at the following address:

Plan Review Team, MC-159
Texas Commission on Environmental Quality
P.O. Box 13087
Austin, Texas 78711-3087

Sincerely,



David H. Yager, P.E.
Plan Review Team
Plan and Technical Review Section
Water Supply Division
Texas Commission on Environmental Quality



Vera Poe, P.E., Team Leader
Plan Review Team
Plan and Technical Review Section
Water Supply Division
Texas Commission on Environmental Quality

VP/DY/db

Enclosure: "Public Well Completion Data Checklist for Interim Approval (Step 2)"

cc: Vineyard Ridge Water System, Attn. Brent Taylor, P. O. Box 631 Spicewood, Texas 78669

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bcc: TCEQ Central Records PWS File 0860144
TCEQ Region No. 13 Office - San Antonio
TCEQ PWSINV, MC-155
Public Utility Commission; Attn: Tammy Benter

Public Well Completion Data Checklist For Interim Approval (Step 2)

Texas Commission on Environmental Quality
Water Supply Division
Plan Review Team MC-159
P.O. Box 13087, Austin, Texas 78711-3087

Public Water System I.D. No. _____
TCEQ Log No. P- _____

The following list is a brief outline of the "Rules for Public Water Systems", 30 TAC Chapter 290 regarding proposed Water Supply Well Completion. Failure to submit the following items may delay project approval. Copies of the rules may be obtained from **Texas Register, 1019 Brazos St, Austin, TX, 78701-2413, Phone: (512) 463-5561** or downloaded from the website:

<http://www.tceq.texas.gov/rules/indxpathdf.html>

Any well proposed as a source of water for a public water supply **must have plans approved for construction** by TCEQ. Please include the well construction approval letter with your submittal of well completion data listed below must be submitted for TCEQ evaluation. Based on this submitted data, interim approval may be given for use of the well.

1. Site map(s) at appropriate scales showing the following: [§290.41(c)(3)(A)]
 - (i) Final location of the well with coordinates;
 - (ii) Named roadways;
 - (iii) All property boundaries within 150 feet of the final well location and the property owners' names;
 - (iv) Concentric circles with the final well location as the center point with radii of 10 foot, 50 foot, 150 foot, and ¼ mile;
 - (v) Any site improvements and existing buildings;
 - (vi) Any existing or potential pollution hazards; and
 - (vii) Map must be scalable with a north arrow.
2. A copy of the recorded deed of the property on which the well is located showing the Public Water System (PWS) as the landowner, and/or any of the following: [§290.41(c)(1)(F)(iv)]
 - (i) Sanitary control easements (filed at the county courthouse and bearing the county clerk's stamp) covering all land within 150 feet of the well not owned by the PWS (for a sample easement see TCEQ Form 20698);
 - (ii) For a political subdivision, a copy of an ordinance or land use restriction adopted and enforced by the political subdivision which provides an equivalent or higher level of sanitary protection to the well as a sanitary control easement; and/or
 - (iii) A copy of a letter granting an exception to the sanitary control easement rule issued by TCEQ's Technical Review and Oversight Team.
3. Construction data on the completed well: [§290.41(c)(3)(A)]
 - (i) Final installed pump data including capacity in gallons per minute (gpm), total dynamic head (tdh) in feet, motor horsepower, and setting depth;
 - (ii) Bore hole diameter(s) (must be 3" larger than casing OD) and total well depth;
 - (iii) Casing size, length, and material (e.g. 200 lf of 12" PVC ASTM F480 SDR-17);
 - (iv) Length and material of any screens, blanks, and/or gravel packs utilized;

- (v) Cementing depth and pressure method (one of the methods in latest revision of AWWA Standard A-100, Appendix C, excluding the dump bailer and tremie methods);
 - (vi) Driller's geologic log of strata penetrated during the drilling of the well;
 - (vii) Cementing certificate; and
 - (viii) Copy of the official State of Texas Well Report (some of the preceding data is included on the Well Report).
4. A U.S. Geological Survey 7.5-minute topographic quadrangle map (include quadrangle name and number) or a legible copy showing the location of the completed well; [§290.41(c)(3)(A)]
5. Record of a 36-hour continuous pump test on the well showing stable production at the well's rated capacity. Include the following: [§290.41(c)(3)(G)]
- (i) Test pump capacity in gpm, tdh in feet, and horsepower of the pump motor;
 - (ii) Test pump setting depth;
 - (iii) Static water level (in feet); and
 - (iv) Draw down (in feet).
6. Three bacteriological analysis reports for samples collected on three successive days showing raw well water to be free of coliform organisms. Reports must be for samples of raw (untreated) water from the disinfected well and submitted to a laboratory accredited by TCEQ, accredited to perform these test; and [§290.41(c)(3)(F)(i)]
7. Chemical analysis reports for well water samples showing the water to be of acceptable quality for the most problematic contaminants listed below. Reports must come from a laboratory accredited by TCEQ; accredited to perform these test. Maximum contaminant level (MCL) and secondary constituent level (SCL) units are in mg/l (except arsenic). [§290.41(c)(3)(G) and §290.104 and §290.105]

MCL	PRIMARY	SCL	SECONDARY	SCL	SECONDARY	SCL	SECONDARY
10 (as N)	Nitrate	0.2	Aluminum	5.0	Zinc	300	Sulfate
1 (as N)	Nitrite	1.0	Copper	1,000	Total Dissolved Solids	300	Chloride
10 µg/l	Arsenic	0.3	Iron	2.0	Fluoride	≥ 7.0	pH
4.0	Fluoride	0.05	Manganese	N/A	Lead		

Corrosive Water Parameters	
Parameter	Units
Alkalinity as CaCO ₃	mg/l
Calcium as CaCO ₃	mg/l
Sodium	mg/l

All systems located in a high-risk county (see page 3) shall submit radiological analysis reports for water samples showing the water to be of acceptable quality for the contaminants listed below. Reports must come from a TCEQ accredited laboratory for interim use of the well.

MCL	CONTAMINANT
15 pCi/L	Gross alpha
5 pCi/L	Radium-226/228
50 pCi/L	Beta particle
30 µg/L	Uranium

WHERE: pCi/L = pico curies per liter, µg/L = micrograms per liter

Please be aware when you review your radiological data that if the report has gross alpha over 15 pCi/L and individual uranium isotopes are not reported, you will have to resample or reanalyze and resubmit radionuclide results. If you see gross alpha plus radium-228 over 5 pCi/L, and don't have radium-226, you will have to resample or reanalyze and resubmit complete results.

LIST OF COUNTIES WHERE RADIONUCLIDE TESTING IS REQUIRED

Please be aware that we have added the requirement for analysis for **radionuclides** for high-risk counties. For elevated levels of any contaminants found in a test well, treatment or blending may be required.

COUNTY	STATE CODE #
Atascosa	007
Bandera	010
Bexar	015
Bosque	018
Brazoria	020
Brewster	022
Burnet	027
Concho	048
Culberson	055
Dallam	056
Dawson	058
Erath	072
Fort Bend	079
Frio	082
Garza	085
Gillespie	086
Gray	090
Grayson	091
Harris	101

COUNTY	STATE CODE #
Hudspeth	115
Irion	118
Jeff Davis	122
Jim Wells	125
Kendall	130
Kent	132
Kerr	133
Kleberg	137
Liberty	146
Llano	150
Lubbock	152
McCulloch	154
Mason	160
Matagorda	161
Medina	163
Midland	165
Montgomery	170
Moore	171

COUNTY	STATE CODE #
Parker	184
Pecos	186
Polk	187
Presidio	189
Refugio	196
San Jacinto	204
San Saba	206
Tarrant	220
Travis	227
Tyler	229
Upton	231
Val Verde	233
Victoria	235
Walker	236
Washington	239
Wichita	243
Williamson	246
Zavala	254