

NABULSI-ABUSHABAN Minor Subdivision

WATER QUALITY REPORT

**For
Nabulsi-Abushaban Minor
Subdivision**

August 25, 2023

Prepared By:



13511 Northgate Estates Dr., Ste. 250, Colorado Springs, Colorado 80921

Executive Summary:

Water Quality Report – Nabulsi-Abushaban Minor Subdivision

Chris D. Cummins of Monson, Cummins, Shohet & Farr, LLC, on behalf of the Applicant, the Nabulsi-Abushaban Family Trust (“Owners”), provides the following Water Quality Report in support of the Nabulsi-Abushaban Minor Subdivision. The undersigned has been practicing water law almost exclusively, for 20 years, and has substantial experience with Denver Basin groundwater resources, augmentation plans, designated basin replacement plans, subdivision proceedings, and rural water usage, and therefore should be considered a “qualified professional” as concerns water resources, as discussed at Section 8.4.7(B)(1)(c) of the El Paso County Land Development Code. This Report, prepared in conjunction with other professionals, is intended to demonstrate to the El Paso County Planning Commission and the BoCC, the sufficiency in terms of quality of the water rights and resources to be utilized in the proposed Nabulsi-Abushaban Minor Subdivision (the “Subdivision”), in Black Forest in El Paso County, Colorado.

The Property consists of approximately 25 acres located at the current street address of 10650 Black Forest Road, Colorado Springs, CO 80908 located in the SE¼ SE¼ of Section 19, Township 12 South, Range 65 West of the 6th P.M., County of El Paso, State of Colorado. The four residential lots in the Subdivision are to be provided water and sewer/septic services through on-site individual wells and Individual Septic Disposal Systems (“ISDS”). The proposed minor subdivision includes four residential lots. Lot 3 has an existing residence and will be approximately 9.287 acres, while Lots 1, 2, and 4, which are currently unimproved land, will be approximately 5 acres in size. The sufficiency and adequacy of water resources are described in a separate Water Resources Report.

The water resources to be utilized on the residential lots in the Subdivision is typical of rural residential development in the Black Forest in El Paso County, Colorado. Case No. 22CW3020 and associated Augmentation Plan decreed by the Water Court, Division 2, demonstrates a sufficient quantity and reliability of water to support compliance with El Paso County’s 300-year water supply rules for subdivisions of this nature, and the well-established water quality in the Dawson Aquifer in this part of the County, demonstrates a sufficient water quality consistent with Section 8.4.7(3)(d), and the water quality testing completed for one of the Dawson aquifer wells existing on the property further demonstrates sufficient water quality for the Subdivision.

I. INTRODUCTION

The purpose of this report is to provide a preliminary outline of the water quality necessary for approval of the Nabulsi-Abushaban Minor Subdivision, as proposed.

1.1 **New Development Description:** The Subdivision consists of approximately 25 acres located at 10650 Black Forest Road, Colorado Springs, CO 80908 located in

the SE¼ SE¼ of Section 19, Township 12 South, Range 65 West of the 6th P.M., County of El Paso, State of Colorado. The Property will be subdivided into four lots. **Exhibit A**, attached hereto, is a plat for the Subdivision as proposed, prepared by Land Development Consultants, including an area/vicinity map.

II. PROJECTION OF WATER NEEDS

2.1 Analysis of Water Demands: It is expected that the four residential lots in the Subdivision will utilize four individual wells drilled to the Dawson aquifer to be used for domestic-type uses, including in-house, landscape/irrigation of lawn and garden, and watering of domestic animals and stock. Existing wells with current Permit Nos. 85841-A, 137196, and 23585 (to be re-permitted as non-exempt wells in accordance with the Augmentation Plan) will provide water supply to three of the lots (one well per lot), while the fourth to-be constructed non-exempt well will serve the fourth lot. It is anticipated that each of the lots will utilize a maximum total of 0.57 acre-feet of water, with 0.26 acre-feet to be used in-house, consistent with Section 8.4.7(B)(7)(d)., and the remaining amount of 0.31 acre-feet per lot will be allocated for other approved uses under the augmentation plan.

All three existing wells, permitted under Permit Nos. 85841-A, 137196, and 23585 are constructed to and will produce from the not-nontributary Dawson aquifer at a flow rate of 10 to 15 gallons per minute, based upon past production. Based on past experience with the numerous Dawson aquifer wells serving rural residential properties throughout El Paso County, this rate of production should be more than sufficient to meet demand for in-house use.

III. PROPOSED WATER RIGHTS QUALITY

3.1 Water Rights: An Augmentation Plan for utilizing the underlying Dawson aquifer was decreed by the Water Court, Division 2, on April 20, 2023, and the sufficiency and dependability of such water supplies are described in a separate Water Resources Report.

3.2 Source of Supply: Rural residential water supply demand will be met using three existing not-nontributary Dawson aquifer formation wells and one to-be-constructed not-nontributary Dawson aquifer formation well. Consistent with El Paso County Land Development Code Section 8.4.7(B)(3)(c)(v), a minor subdivision utilizing individual wells need not make a further showing as to source of supply.

3.3 Water Quality and Treatment: The water quality in the Denver Basin aquifers in this area is well established as being suitable for potable use with only in-house filtration for mineral deposits, with an estimated 27,000 households in El Paso County currently utilizing Denver Basin wells. See June 15, 2015 Gazette article – “*Where there is a well, there is a way...*”, attached hereto as **Exhibit B**. The existing well with Permit No. 85841-A has been historically utilized for water service to a single-family home, with all legal requirements regarding bacterial/inorganics having

presumably been satisfactory. Applicant in 2023 obtained full spectrum new water quality testing for the existing well with Permit No. 85841-A including bacterial and inorganic testing, so as to ensure compliance with Land Development Code Section 8.4.7(B)(3)(d), and copies of those testing results are collectively attached hereto as **Exhibit C** (per the revised LDC, Section 8.4.7(B)(10)(a): “*for subdivisions served by groundwater wells drawing only from a confined aquifer, the chemical analysis does not need to include the Volatile Organic Chemical Contaminants and Synthetic Organic Chemical Contaminants*”). While such testing exhibited slightly elevated levels of manganese and silica, it is our understanding that both constituents are typically easily reduced through simple paper-filter media typically utilized in residences relying upon well water. Applicant has consulted with GeoWater Resources and been advised that economically feasible water treatment systems are available to address the constituents of concern. The to-be-constructed wells will meet all applicable regulatory requirements regarding quality testing before being utilized as a residential water source.

Respectfully submitted this 25th day of August, 2023.

MONSON, CUMMINS, SHOHET & FARR, LLC

/s/ Chris D. Cummins

Chris D. Cummins

Exhibits:

A – Location Map/Plat of the Property

B – Gazette article

C – Well Testing Results

NABULSI-ABUSHABAN SUBDIVISION

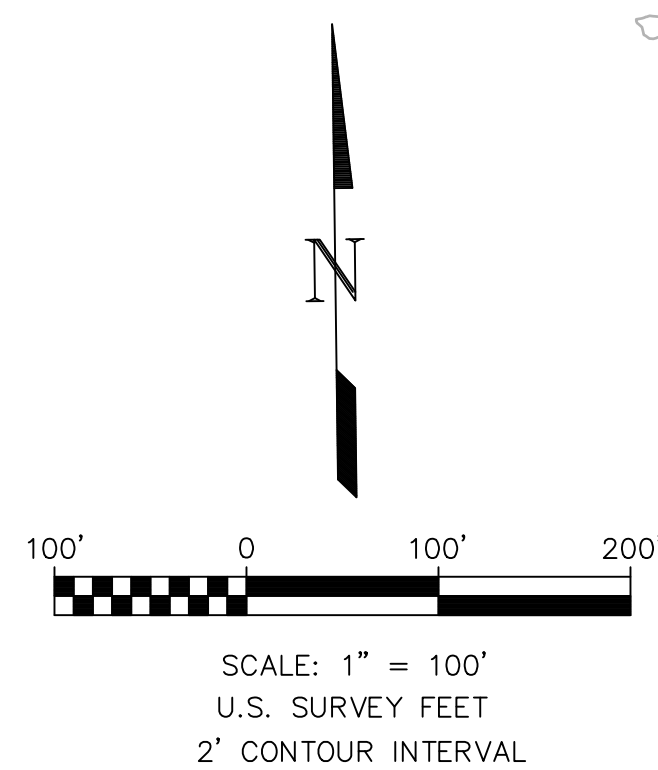
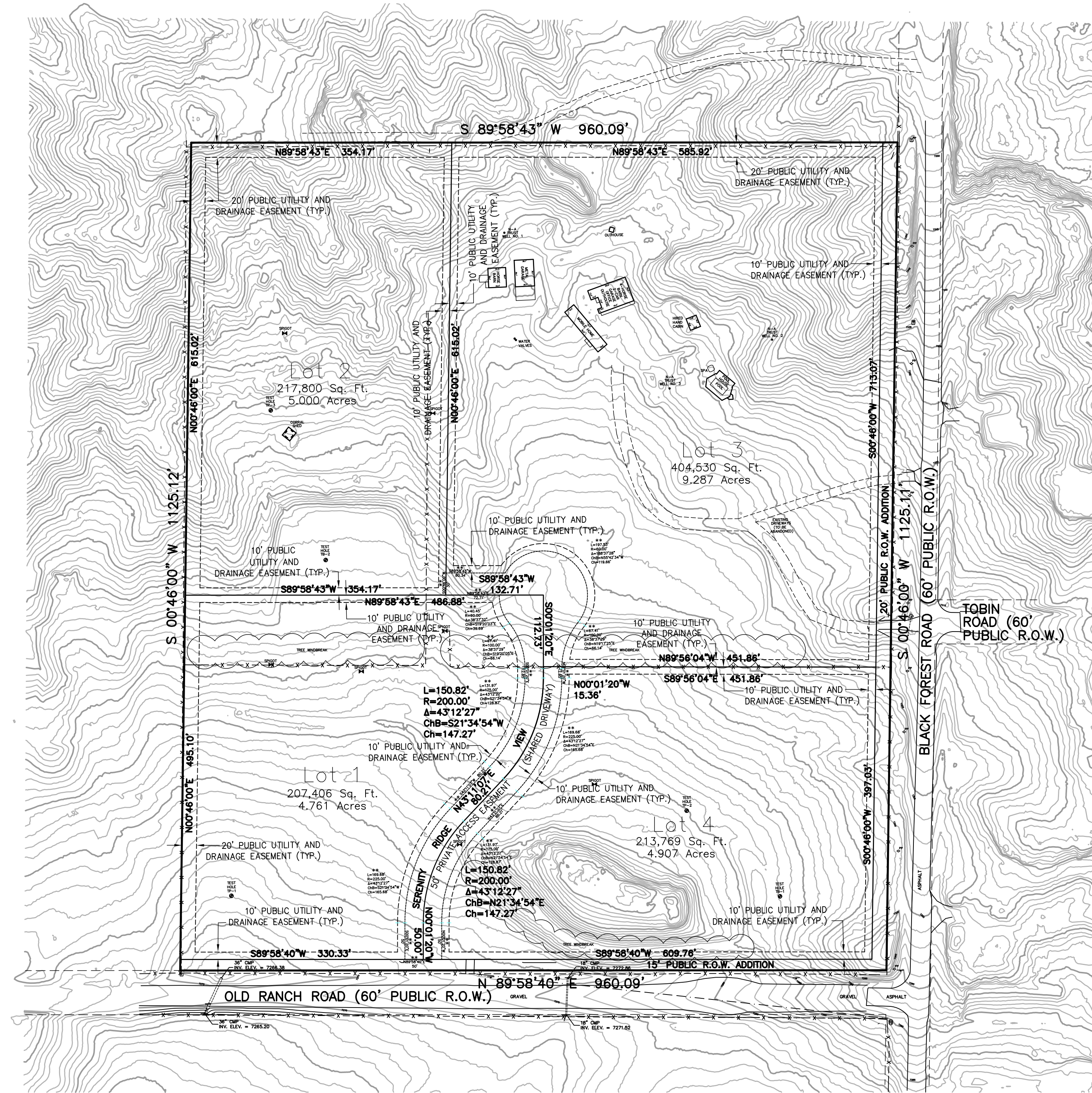
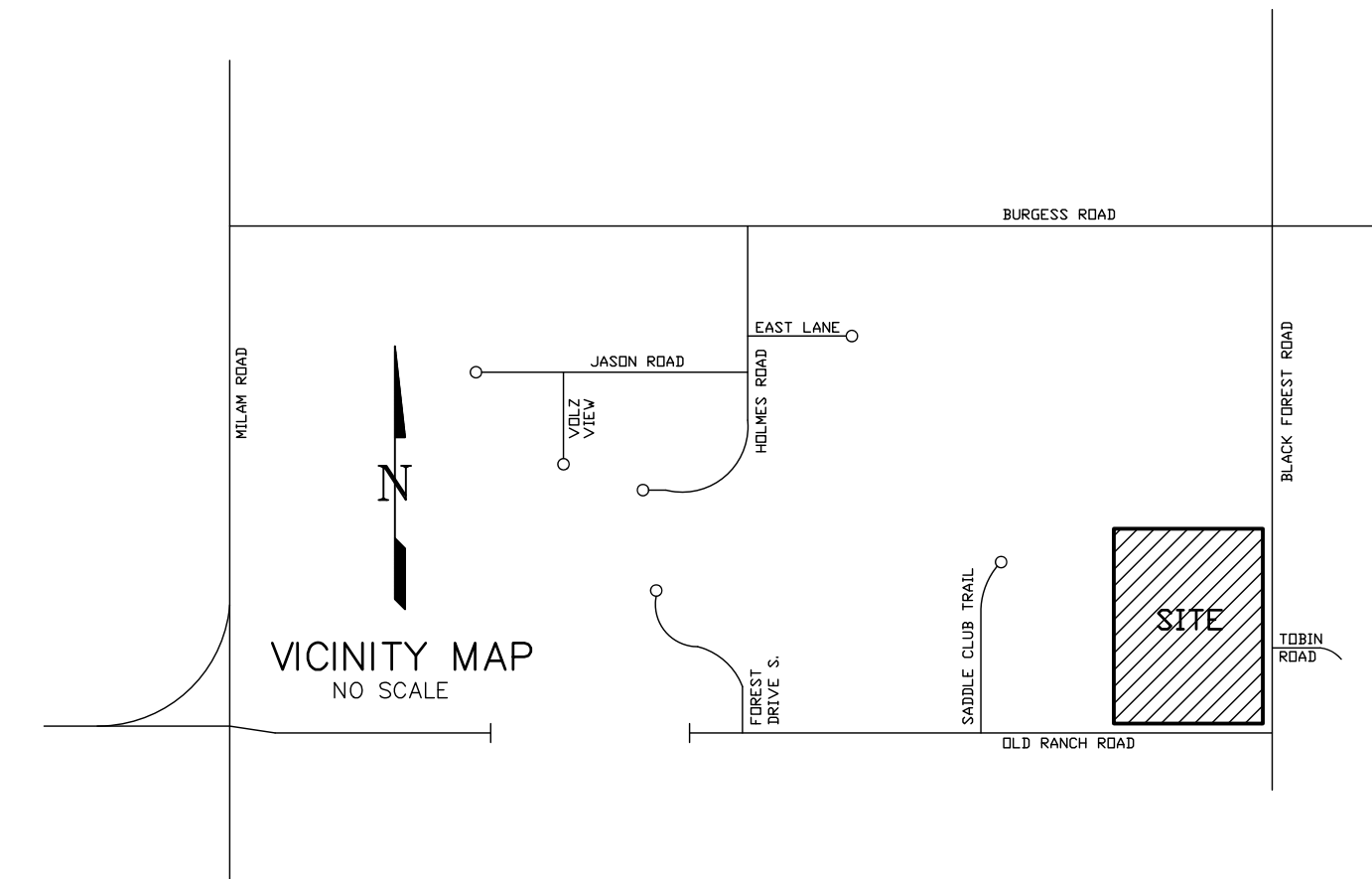
A PORTION OF THE SOUTHEAST QUARTER OF SECTION 19,
TOWNSHIP 12 SOUTH, RANGE 65 WEST OF THE 6TH P.M.,
EL PASO COUNTY, COLORADO
"PRELIMINARY PLAN"

PROPERTY DESCRIPTION:

That NABULSI-ABUSHABAN FAMILY TRUST, being the owner of the following described tract of land to wit:

The East 990 feet of the South 1155 feet of the Southeast Quarter of Section 19 in Township 12 South, Range 65 West of the 6th P.M., El Paso County, Colorado, EXCEPT the South 30 feet and the East 30 feet thereof;

Containing 24.796 "net" acres, more or less.



LEGEND:

- Indicates survey monument set with #4 rebar and red plastic cap, PLS No. 20681 flush w/ground, except where noted otherwise
- Indicates survey monument found as noted
- Property Line — Lot Line
- * — Indicates not a part of this subdivision
- ** — Indicates Private Access Easement (Shared Driveway) data

NOTES:

- 1.
2. All structural foundations shall be located and designed by a Professional Engineer, currently registered in the State of Colorado.
3. Individual lot purchasers are responsible for constructing driveways, including necessary drainage culverts from the Private Access Easement (Shared Driveway) per Land Development Code Section 6.3.3.C.2 and 6.3.3.C.3 where applicable. Due to their length, some of the driveways will need to be specifically approved by the Black Forest Fire Protection District.
4. No driveway shall be established unless an access permit has been granted by El Paso County. Driveway culverts within the indicated Private Access Easement must be installed prior to building permit authorization for all lots within the subdivision.
5. Each individual property owner is responsible for the construction and operation of a non-evaporative wastewater disposal system approved by the El Paso County Health Department. The Health Department may require a specially designed, or "engineered", system prior to permit approval. Engineered systems may cost more to design, install and maintain than systems which are not engineered.
6. Each individual property owner is responsible for the maintenance of existing and/or construction and operation of a well as permitted by the Colorado Division of Water Resources.
7. Fire protection to be provided by the BLACK FOREST FIRE PROTECTION DISTRICT.
8. Public and/or Private Utility Easements are as shown hereon. All exterior subdivision boundaries shall have a twenty foot Public Utility and Drainage Easement. The sole responsibility for maintenance of these easements is hereby vested with the individual property owners.
9. All property owners are responsible for maintaining proper storm water drainage in and through their property. Any public drainage easements as specifically noted on the plat shall be maintained by the individual lot owners unless otherwise indicated. Structures, fences, materials or landscaping that could impede the flow of runoff shall not be placed in drainage easements.
10. Developer shall comply with federal and state laws, regulations, ordinances, review and permit requirements, and other agency requirements, if any, of applicable agencies including, but not limited to, the Colorado Division of Wildlife, Colorado Department of Transportation, U.S. Army Corps of Engineers and/or the U.S. Fish and Wildlife Service regarding the Endangered Species Act, particularly as it relates to the listed species, if applicable.
11. Please be aware that any additional improvements may interfere with Abert's Squirrel, Black Bear, Elk, Mountain Lion, and Mule Deer habitat (species of concern to the State of Colorado) during and/or following construction. Information regarding wildlife protection measures should be provided to construction personnel and future residents, including fencing requirements, garbage containment, pets, enhancement/maintenance of natural vegetation, weed control and riparian/wetland protection/buffer zones as appropriate. Information can be obtained from the Colorado Division of Wildlife.
12. Mailboxes shall be installed in accordance with all El Paso County and United States Postal Service regulations.
13. All property within this subdivision is subject to Road Impact Fees in accordance with the El Paso County Road Impact Fee Program, at or prior to building permit issuance.
14. All property within this subdivision is subject to Reciprocal Access Agreement for the 50' Private Access Easement to be recorded in the records of the El Paso County, Colorado Clerk and Recorder's office by separate document.
15. Electric service is to be provided by MOUNTAIN VIEW ELECTRIC ASSOCIATION.
16. Gas service is to be provided by BLACK HILLS ENERGY and/or individual propane tanks.

OWNER INFORMATION:

NABULSI-ABUSHABAN FAMILY TRUST
14384 Whispering Ridge Road
San Diego, CA 92131-4268
Phone: (858) 245-4927

PRELIMINARY COPY
SUBJECT TO FINAL
COUNTY APPROVAL

According to Colorado law, you must commence any survey within three years after you are notified of any defect in no event, more than one year after the date of the certification shown hereon.

CALL BEFORE YOU DIG
811
DIAL 811
48 HOURS BEFORE YOU DIG. CALL UTILITY LOCATORS FOR LOCATING AND MARKING GAS, ELECTRIC, WATER AND WASTEWATER

No.	REVISIONS	Date
1	DATA CLARIFICATION	11/21/23

By	DVH
Checked By	DVH
Date	03/06/23

Land Development Consultants, Inc.
PLANNING · SURVEYING
www ldc inc com · TEL: (719) 528-6133 · FAX: (719) 528-8548
3888 MAZELAND ROAD · COLORADO SPRINGS, CO 80909

"PRELIMINARY PLAN"
NABULSI-ABUSHABAN
SUBDIVISION

Project No.: 22005
Sheet: 1 of 1

DSD FILE NO.: _____

The Country Life: Where there's a well, there's a way to get water - hopefully

By: **Bill Radford** (</author/Bill+Radford>) • June 15, 2015 • *Updated: June 15, 2015 at 4:10 am*

EXHIBIT D

About 27,000 households are served by individual water wells in El Paso County. BILL RADFORD, THE GAZETTE

[View Gallery !\[\]\(34b4f260a8587d2e97eeaee361cc357b_img.jpg\) \(/gallery/articleid/1553752/pictures?display=flexFullscreen&galleryTheme=lightTheme\)](/gallery/articleid/1553752/pictures?display=flexFullscreen&galleryTheme=lightTheme)

[Log in to comment \(/comments/1/1553752\)](/comments/1/1553752)

When a well was drilled for a neighbor's new home recently, it was another "straw" dipping into the water beneath our feet.

There's a lot of such straws in the area. An estimated 27,000 homes - about 67,500 residents - are served by private water wells in El Paso County. That's about 11 percent of residents; the rest are served by public drinking water systems, from the biggie - Colorado Springs Utilities - to smaller ones such as Donala Water and Sanitation District, Cherokee Metro and the city of Fountain. The public systems draw their water from surface water, groundwater or both.

In eastern El Paso County, where I live, most utilize groundwater - the water that lies beneath the Earth's surface. Our well reaches 870 feet into the Arapahoe Aquifer; it's one of four aquifers that make up the Denver Basin, which stretches from El Paso County to Weld County.

If you're looking for property in the country with plans to dig a well, do your homework first, cautions Mark Birkelo, general manager of Barnhart Pump Co. in Falcon.

"The first phone call you want to make is to a water well contractor," Birkelo said. A company such as Barnhart quickly can check on water quality and quantity in a given area.

"That phone call can save a lot of grief," Birkelo said.

Once a site is chosen, the homeowner must acquire a permit from the state Division of Water Resources. Residential permits include domestic and household use only; the latter means no outside water, so no water for lawns, livestock, etc.

Ready to drill a well? "The cost for drilling and pumping can be considerable," cautions El Paso County's "Code of the West." Expect to pay about \$22 to \$24 a foot for a well 600 feet or deeper, Birkelo said; the cost per foot will be less if under about 600 feet. Barnhart is not a drilling company, but does the oversight for 40 to 50 new wells a year, Birkelo said.

If moving to property with a well, test the water pump's production and the quality of the water, Birkelo advised; for information on water potability testing, visit El Paso County Public Health's website at elpasocountyhealth.org/service/water-quality.

Quality is one issue; quantity is another. One afternoon I turned on the tap and nothing came out. The immediate paranoid thought: Our well had run dry. But we had simply overtaxed the water pump; after a 10-minute break, water started to flow again. But long-term worry remains. As a water resources report on the county's website notes, "the aquifers found in the Denver Basin are not considered to be a long-range, renewable source of water. The bedrock aquifers are subject to depletion if withdrawals exceed the natural recharge rate, which is very slow, given that the water within these aquifers has accumulated over thousands of years. The negligible rate of natural recharge, the considerable increase in water withdrawal, and the semiarid climate of the region have led to a situation where the amount of withdrawal from the aquifers may be exceeding the amount of recharge."

Birkelo, who has been in the water business in El Paso County for 30 years, believes that rate of replenishment

depends on the area. There are some wells that have a higher water level than they did decades before, he said, even though "there have been more straws put into that glass of water over time." In other areas, he has seen water levels drop.

Bottom line: It's tough to know what's happening deep underground, he says. That's why oil companies "spend millions of dollars trying to see what's down there" and often end up with a hole in the ground and nothing to show for it. "We know more about outer space," Birkelo said, "than we do what's under our own two feet."



4091 Highway 74, Evergreen, CO 80439
 P: (303) 670-3348 • F: (303) 674-2849

Date: July 28, 2023

Client: Vincent Abushaban

Lab ID Number: CU003V-972

Property Address: 10650 Black Forest Rd, Colorado Springs, Colorado

Date & Time [Location] Collected: June 23, 2023 @ 6:25 AM
 [West Well Spigot] by Vince

REPORT OF
 WATER ANALYSIS

<u>Chemistry Test</u>	<u>Results</u>	<u>EPA/State 1° MCL</u>	<u>EPA/State 2° MCL</u>	<u>Acceptable</u>	<u>Note</u>
Copper	0.01 mg/L	1.3 mg/L	1.0 mg/L	Yes/Yes	
Fluoride	0.34 mg/L	4.0 mg/L	2.0 mg/L	Yes/Yes	
Hardness	4 gpg	None	10.0 gpg [Other MCL]	Yes	
Iron	0.25 mg/L	None	0.3 mg/L	Yes	
Manganese	0.079 mg/L	None	0.05 mg/L	No	1
Nitrate (as Nitrogen)	0.5 mg/L	10.0 mg/L	None	Yes	
pH	7.65	6.5-8.5 [EPA/State 2° MCL]	7.0-8.5 [Other MCL]	Yes/Yes	
Silica (Total)	25.0 mg/L	None	20 mg/L	No	2
Total Dissolved Solids (TDS)	67.3 mg/L	None	500 mg/L	Yes	
Turbidity	0.60 NTU	None	1 NTU	Yes	

REPORT OF RADIOCHEMISTRY WATER ANALYSIS

<u>Radionuclides:</u>	<u>Results</u>	<u>EPA/State 1° MCL</u>	<u>EPA/State MCLG</u>	<u>Acceptable</u>	<u>Note</u>
Gross Alpha (+-Precision*), pCi/l (T)	1.6 (+-1.6) pCi/l	**	Zero	**/No	3
Gross Beta (+-Precision*), pCi/l (T)	5.1 (+-2.5) pCi/l	50 pCi/L [Action Level]	Zero	Yes/No	4
Radon (+-Precision*), pCi/l (T)	348 (+-20.6) pCi/l	4,000 pCi/L [EPA Proposed MCL]	Zero [EPA Proposed MCL]	Yes/No	5

Definitions: NTU = Nephelometric Turbidity Unit, gpg = grains per gallon, MCL = Maximum Contaminant Level, MCLG = Maximum Contaminant Level Goal (Public Health Goal), mg/l = milligrams per liter, pCi/l = picocuries per liter, (T) = Total.

*Variability of the radioactive decay process (counting error) at the 95% confidence level, 1.96 sigma. Certification ID: CO/EPA CO00008.

**The MCL for Adjusted Gross Alpha is 15 pCi/l. Adjusted Gross Alpha is equal to Gross Alpha minus Uranium. The MCL for Uranium is 20 pCi/l. Combining the two MCL's gives a theoretical MCL for Gross Alpha = 35 pCi/l.

- 1 [Manganese](#) may cause blackish or gray staining on fixtures & clothes. Following oxidation with water, a bitter metallic taste may result. Manganese levels greater than 0.3 mg/l may cause health related issues in some individuals. Infants & people with liver disease should not drink water that is above 0.3 mg/l. Prolonged exposure to elevated Manganese may cause harm to the nervous system.
- 2 [Silica](#) is typically found as sand or quartz, as well as in the cell walls of [diatoms](#). Elevated silica levels can cause irreversible [fouling of reverse osmosis membranes](#). In addition, it can also contribute to scaling in pipes.
- 3 [Alpha particle](#) emitters that occur naturally include: [Radium-224](#), [Radium-226](#), [Radon-222](#), [Thorium](#) and [Uranium](#). The MCL for Gross Alpha is broken down by Uranium (20 pCi/l) and non-Uranium/Radon elements (15 pCi/l). Combining the two gives a theoretical MCL for non-radon Gross Alpha equal to 35 pCi/l. Some people and animals that drink water containing alpha emitters, over many years, may increase their [risk](#) of developing cancer. The maximum contamination level goal for Gross Alpha is zero. Due to the large amount of total or dissolved solids in the sample, reduced aliquots were used for the Gross Alpha analysis.
- 4 [Beta particle](#) emitters, not including Potassium⁴⁰, have a MCL equal to 50 pCi/liter. Naturally occurring Beta emitters include: [Lead-210](#), [Potassium-40](#) and [Radium 228](#). Please note that Radium 228 is a "bone seeker", which the body treats like calcium. Radium 228 (Beta emitter) & Radium 226 (Alpha emitter) currently have a combined MCL equal to 5 pCi/l, because they are both "bone seekers". Using Potassium Chloride in a water softener may result in elevated Gross Beta values. The maximum contaminant level goal for non- Potassium⁴⁰ Beta emitters is

zero. Due to the large amount of total or dissolved solids in the sample, reduced aliquots were used for the Gross Beta analysis.

- 5 [Radon-222](#) is classified as a known human carcinogen which has a MCL that is in the process of being set by EPA. The [proposed MCL](#) for Radon-222 is 4,000 pCi/l for states (i.e. Colorado) that have a "Multimedia Mitigation Program" that educates their residents about the dangers of radon in indoor air. The greatest risk of exposure to Radon-222 comes from inhaling the gas (i.e. exposure while showering). Some people and animals that live in a home with elevated Radon-222 levels in their water may increase their risk of developing cancer, especially lung cancer. Those who drink water, with elevated Radon-222, may increase their risk of developing stomach cancer. The proposed maximum contaminant level goal for Radon-222 is zero.

If you have any questions about this report, then please call MaryLynn Temple at 303-670-3348.

Sue Harley

Laboratory Manger
GeoWater Services, LLC