DRIFTWOOD ESTATES
Minor Subdivision

UPDATED WATER RESOURCES REPORT

For
Driftwood Estates Minor Subdivision

April 30, 2024

Prepared By:

MONSON, CUMMINS, SHOHET & FARR, LLC
WWW.COWATERLAW.COM

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

Executive Summary:

Water Resources Report – Driftwood Estates Minor Subdivision

Ryan W. Farr of Monson, Cummins, Shohet & Farr, LLC, on behalf of the Applicant, Andrew C. Alm, ("Owner"), provides the following Water Resources/Wastewater Disposal Report in support of the Driftwood Estates Minor Subdivision. The undersigned has been practicing water law almost exclusively, for nearly 11 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 El Paso County Board of County Commissioners, the sufficiency in terms of quantity and dependability, of the water rights and resources to be utilized in the proposed Driftwood Estates Minor Subdivision (the "Subdivision"), in El Paso County, Colorado.

The Property consists of approximately 12.72 acres located at the current street addresses of 3275 Center Ice View, Colorado Springs, Colorado 80921, in the NE1/4 of the NE1/4 of Section 33, Township 11 South, Range 67 West of the 6th P.M; El Paso County Parel No. 7133007024. Each of the two (2) lots in the Subdivision is to be provided water and sewer/septic services through an on-site individual well and Individual Septic Disposal Systems ("ISDS"). The proposed minor subdivision has Lot 1 containing approximately 7.71 acres, and Lot 2 containing approximately 5.01 acres with both lots projected to have residential structures constructed in the future.

There is not currently a well on the property. The approved augmentation plan set forth in the decree in Case No. 23CW3022, District Court, Water Division 2 ("Decree") allows the choice for one lot to be served by a Denver aquifer well and one lot to be served by a Dawson aquifer well, or, in the alternative, for both lots to be served by Denver aquifer wells. Any constructed Denver aquifer well is a allowed a maximum of 0.85 acre-feet per year, and if a Dawson well is utilized, it is allowed a maximum of 0.42 acre-feet per year. Such water supply demand for either Denver aquifer wells or a Dawson aquifer well is consistent with that of rural residential homes' historical demands. The Decree in provides for a 300-year water supply for both lots within the Subdivision, with each lot utilizing an ISDS of a non-evaporative nature.

The water resources to be utilized on the residential lots in the Subdivision are typical of rural residential development in this area of El Paso County, Colorado. The Decree 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.

I. INTRODUCTION

The purpose of this report is to provide an outline of the water resources,

associated wastewater requirements, necessary for approval of the Driftwood Estates Minor Subdivision, as proposed.

1.1 New Development Description: The Subdivision consists of approximately 12.72 acres located at the current addresses of 3275 Center Ice View, Colorado Springs, Colorado 80921. The Property will be subdivided into two total lots. **Exhibit A**, attached hereto, is the plan for the Subdivision as proposed, prepared by LWA Land Surveying Inc.

II. PROJECTION OF WATER NEEDS

2.1 Analysis of Water Demands: It is expected that the two residential lots in the Subdivision will utilize two individual wells (one well per lot) with both either drilled to the Denver aquifer or with one drilled to the Denver aquifer and the other drilled to the Dawson aquifer for domestic-type uses, including in-house, landscape/irrigation of lawn and gardens, watering of domestic animals and stock, and fire protection. The demand for Lot 1 is 0.85 annual acre-feet (meeting the minimum of 0.26 annual acre-feet per El Paso County Code) for in-house and other residential purposes, irrigation of lawn and garden, and the watering of livestock consistent with the Decree and El Paso County Land Development Code Section 8.4.7. The demand for Lot 2, whether Lot 2 utilizes a Denver well or Dawson well, is 0.42 annual acre-feet (meeting the minimum of 0.26 acre-feet per El Paso County Code) for in-house and other residential purposes, irrigation of lawn and garden, and the watering of livestock consistent with the Decree and El Paso County Land Development Code Section 8.4.7. However, if Lot 2 constructs a Denver well, it shall be able to pump up to 0.85 acre-feet annually pursuant to the terms of the Decree. The proposed Driftwood Estates Filing No. 1, Lot 1 shall be restricted to utilizing a Denver aquifer well with Lot 2 having the option of utilizing a Dawson aquifer well or a Denver aquifer well. Once the owners of Lot 2 construct either a Dawson well or a Denver well, that aquifer will become the source of supply for Lot 2 and Lot 2 shall not have the option of switching to the other aquifer without County and Water Court approval.

There are no wells currently constructed on the property. Based on past experience with the numerous Dawson and Denver aquifer wells serving rural residential properties throughout El Paso County, the rate of production from the wells is anticipated to be around 15 gallons per minute, which should be more than sufficient to meet demand for in-house and other uses.

III. PROPOSED WATER RIGHTS AND FACILITIES

3.1 Water Rights: An Augmentation Plan utilizing the underlying Denver and Dawson aquifers was approved by Water Court, Water Division 2 on December 13, 2023. A copy of the recorded decree is attached hereto as **Exhibit B**, which includes the following specific quantities of water supplies that will meet both legal and physical needs on a 300-year basis:

AQUIFER	Saturated Thickness (ft)	Total Water Adjudicated (Acre Feet)	Annual Average Withdrawal – 100 Years (Acre Feet)	Annual Average Withdrawal – 300 Years (Acre Feet)
Dawson (NNT)	50	127	1.27	0.42
Denver (NNT)	260	561	5.61	1.87
Arapahoe (NT)	380	820	8.2	2.73
Laramie Fox Hills (NT)	125	238	2.38	0.79

All depletions are augmented in time, place and amount through septic return flows during pumping and through dedication of nontributary groundwater in the Arapahoe aquifer for depletions occurring after pumping ceases.

3.2 Source of Supply: Rural residential water supply demand will be met using either two not-nontributary Denver aquifer wells or one not-nontributary Denver aquifer well and one not-nontributary Dawson aquifer well in accordance with the plan for augmentation set forth in the Decree. 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 Pumping Rates for Service: The Dawson Denver aquifers in the location of the Subdivision is generally known to produce approximately 10-25 gallons per minute, more than sufficient for single family residential and accessory uses.

3.4 Water Quality: A water quality report is attached hereto as **Exhibit C** prepared by BBA Water Consultants.

IV. WASTEWATER AND WASTEWATER TREATMENT – While soils, geology and geotechnical analysis will be provided by other of Owner's consultants, the Owner provides a summary of ISDS to be utilized herein, as relates to water usage and resulting return flows which support the approved Augmentation Plan.

4.1 Septic/Wastewater Loads: Septic projections are based on similar Denver Basin residential uses on rural residential lots. Average daily wastewater loads are expected to be approximately 200 gallons per day per single-family residence assuming residential in-house use at the 0.26 acre-feet per year rate described in the approved Augmentation Plan. Maximum daily wastewater loads are expected to be roughly 210 gallons per day per single-family residence based on the El paso County Land Development Code residential demand standard of 0.26 acre-feet per year.

4.2 On-Site Wastewater Treatment Systems: The two residential lots within the Subdivision will be served by individual onsite wastewater treatment systems. The onsite wastewater treatment systems will be installed according to El Paso County Guidelines and properly maintained to prevent contamination of surface and subsurface water resources.

Respectfully submitted this 30th day of April, 2024.

MONSON, CUMMINS, SHOHET & FARR, LLC

/s/ Ryan W. Farr

Ryan W. Farr

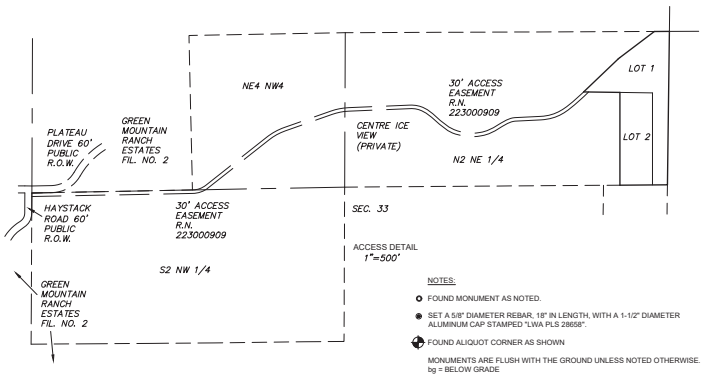
Exhibits:
A – Plat of the Property
B – Decree
C – Water Quality Report

DRIFTWOOD ESTATES FILING NO. 1

A SUBDIVISION IN THE NORTHEAST QUARTER OF THE
NORTHEAST QUARTER OF SECTION 33,
TOWNSHIP 11 SOUTH, RANGE 67 WEST OF THE 6TH P.M.
EL PASO COUNTY, COLORADO

EXHIBIT A

Water Resource Report



NOTES:

- FOUND MONUMENT AS NOTED.
- SET A 5/8" DIAMETER REBAR, 18" IN LENGTH, WITH A 1-1/2" DIAMETER ALUMINUM CAP STAMPED "LWA PLS 28658".
- FOUND ALIQUOT CORNER AS SHOWN

MONUMENTS ARE FLUSH WITH THE GROUND UNLESS NOTED OTHERWISE.
bg = BELOW GRADE

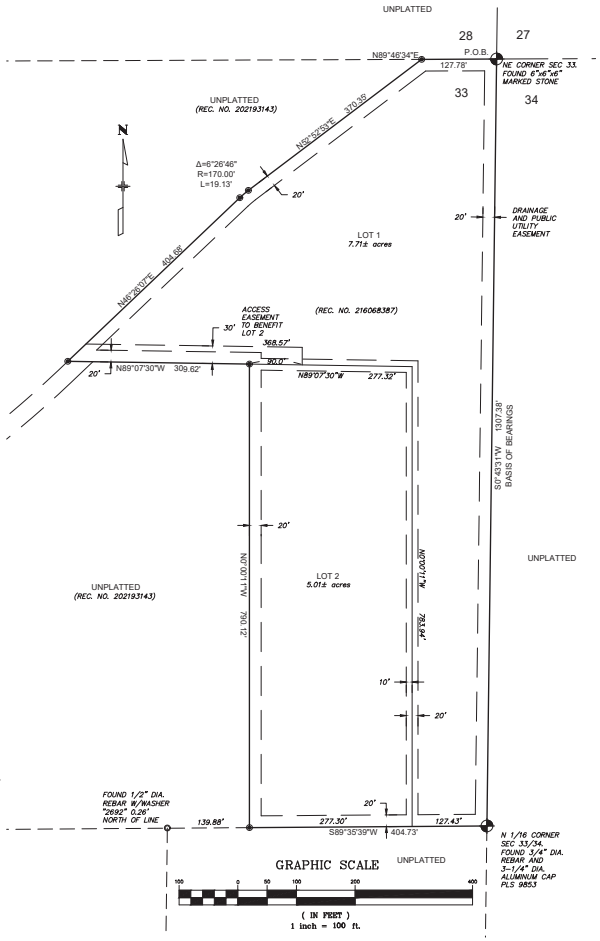
RESEARCH FOR RECORDED RIGHTS OF WAY AND EASEMENTS WAS DONE BY LAND TITLE GUARANTEE COMPANY, ORDER NUMBER SR55113840 EFFECTIVE DATE 8/28/2023.

THIS DRAWING DOES NOT CONSTITUTE A TITLE SEARCH BY KEVIN M. O'LEARY OR LWA LAND SURVEYING INC.

DIMENSIONS SHOWN ARE BASED ON FIELD MEASUREMENTS.

BASIS OF BEARINGS: THE EAST LINE OF THE NORTHEAST QUARTER OF THE NORTHEAST QUARTER OF SECTION 33, S00°43'31"W A DISTANCE OF 1307.38 FEET. THE DIRECTION IS BASED ON THE LAND SURVEY PLAT BY W.K. CLARK AND ASSOCIATES, DATED 6/2/200 AND DEPOSIT NUMBER 200900129. THE LINE IS MONUMENTED BY A 6"x6"x6" STONE ON THE NORTH AND A 3/4" DIAMETER REBAR WITH A 3-1/4" DIAMETER ALUMINUM CAP "N 1/16 SEC 33/34 PLS 9853 1999"

UNITS OF MEASURE ARE U.S. SURVEY FEET.



NOTES:

1. STRUCTURAL FOUNDATIONS ON THE LOTS IN THIS SUBDIVISION SHALL BE DESIGNED BY A COLORADO REGISTERED PROFESSIONAL ENGINEER.

2. THE FOLLOWING REPORTS HAVE BEEN SUBMITTED IN ASSOCIATION WITH THE PRELIMINARY PLAN OR FINAL PLAT FOR THIS SUBDIVISION AND ARE ON FILE AT THE COUNTY DEVELOPMENT SERVICES DEPARTMENT: DRAINAGE REPORT; WATER RESOURCES REPORT; WASTEWATER DISPOSAL REPORT; GEOLOGY AND SOILS REPORT; FIRE PROTECTION REPORT; WILDFIRE HAZARD REPORT, NATURAL FEATURES REPORT AND NOXIOUS WEED MANAGEMENT PLAN.

3. ALL PROPERTY OWNERS ARE RESPONSIBLE FOR MAINTAINING PROPER STORM WATER DRAINAGE IN AND THROUGH THEIR PROPERTY. PUBLIC DRAINAGE EASEMENTS AS SPECIFICALLY NOTED ON THE PLAT SHALL BE MAINTAINED BY THE INDIVIDUAL LOT OWNERS UNLESS OTHERWISE INDICATED. HOMEBUILDERS ARE RESPONSIBLE TO ENSURE PROPER DRAINAGE AROUND STRUCTURES, INCLUDING ELEVATIONS OF FOUNDATIONS AND WINDOW WELLS IN RELATION TO SIDE LOT DRAINAGE EASEMENTS AND SWALES. HOMEOWNERS SHALL NOT CHANGE THE GRADE OF THE LOT OR DRAINAGE SWALES WITHIN SAID EASEMENTS, AS CONSTRUCTED BY THE BUILDER, IN A MANNER THAT WOULD CAUSE ADVERSE DRAINAGE IMPACTS TO PROPERTIES. STRUCTURES, FENCES, MATERIALS OR LANDSCAPING THAT COULD IMPEDE THE FLOW OR RUNOFF SHALL NOT BE PLACED IN DRAINAGE EASEMENTS.

4. MAILBOXES SHALL BE INSTALLED IN ACCORDANCE WITH ALL EL PASO COUNTY AND UNITED STATES POSTAL SERVICE REGULATIONS.

5 THIS PROPERTY IS SUBJECT TO THE DECLARATION OF COVENANTS, CONDITIONS AND RESTRICTIONS FOR _____ OF THE EL PASO COUNTY RECORDS.

6. THE 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 DEPARTMENT OF WILDLIFE, COLORADO DEPARTMENT OF TRANSPORTATION, U.S. ARMY CORP. OF ENGINEERS, THE U.S. FISH AND WILDLIFE SERVICE REGARDING THE ENDANGERED SPECIES ACT.

7. THE ADDRESSES EXHIBITED ON THIS PLAT ARE FOR INFORMATIONAL PURPOSES ONLY. THEY ARE NOT THE LEGAL DESCRIPTION AND ARE SUBJECT TO CHANGE.

8. INDIVIDUAL LOT PURCHASERS ARE RESPONSIBLE FOR CONSTRUCTING DRIVEWAYS, INCLUDING NECESSARY DRAINAGE CULVERTS PER LAND DEVELOPMENT CODE SECTION 6.3.3.C.2 AND 6.3.3.C.3. DUE TO THEIR LENGTH OR GRADE, SOME OF THE DRIVEWAYS WILL NEED TO BE SPECIFICALLY APPROVED BY THE FIRE DISTRICT AND ECM ADMINISTRATOR. NO DRIVEWAY SHALL BE ESTABLISHED UNLESS AN ACCESS PERMIT HAS BEEN GRANTED BY EL PASO COUNTY.

9. THE SUBDIVIDER AGREES ON BEHALF OF HIMSELF AND ANY DEVELOPER OR BUILDER SUCCESSORS AND ASSIGNEES THAT THE SUBDIVIDER AND/OR SAID SUCCESSORS AND ASSIGNS SHALL BE REQUIRED TO PAY TRAFFIC IMPACT FEES IN ACCORDANCE WITH THE EL PASO COUNTY ROAD IMPACT FEE PROGRAM RESOLUTION (RESOLUTION 19-471) OR ANY AMENDMENTS THERETO, AT OR PRIOR TO THE TIME OF BUILDING PERMIT SUBMITTALS. THE FEE OBLIGATION, IF NOT PAID AT FINAL PLAT RECORDING, SHALL BE DOCUMENTED ON ALL SALES DOCUMENTS AND ON PLAT NOTES TO ENSURE THAT A TITLE SEARCH WOULD FIND THE FEE OBLIGATION BEFORE THE SALE OF THE PROPERTY.

10. THIS PROPERTY IS LOCATED WITHIN AND SERVICED BY THE MOUNTAIN VIEW ELECTRIC ASSOCIATION SERVICE DISTRICT, THE TRI-LAKES MONUMENT FIRE PROTECTION DISTRICT, LEWIS PLAMER SCHOOL DISTRICT NO. 38, THE BLACK HILLS ENERGY CORPORATION SERVICE DISTRICT AND FOREST LAKES WATER AND SANITATION.

11. DRAINAGE EASEMENTS: NO PERMANENT DWELLING UNIT, TEMPORARY OR PERMANENT STRUCTURES, INCLUDING SHEDS AND OUT BUILDING, WATER WELL OR WASTEWATER TREATMENT SYSTEM MAY BE CONSTRUCTED IN THE DRAINAGE EASEMENTS SHOWN ON THIS PLAT. DRAINAGE CULVERTS AND FENCES THAT DO NOT BLOCK OR IMPEDE STORM WATER RUNOFF ARE ALLOWED IN AND ACROSS DRAINAGE EASEMENTS.

12. A "GEOLOGIC HAZARD EVALUATION AND SOILS AND FOUNDATION INVESTIGATION _____ EL PASO COUNTY, COLORADO", CTL THOMPSON INC., PROJECT NO. _____, DATED SEPTEMBER __, 2023 IS HELD UNDER THE _____ AT THE EL PASO COUNTY PLANNING AND COMMUNITY DEVELOPMENT DEPARTMENT. GEOLOGIC HAZARDS THAT WOULD PRECLUDE THE PROPOSED DEVELOPMENT WERE NOT FOUND TO BE PRESENT AT THIS SITE. GEOLOGIC CONSTRAINTS ARE POTENTIALLY PRESENT, AND INCLUDE: SPORADIC LENSES OF EXPANSIVE CLAYSTONE BEDROCK AND POTENTIAL FOR EXPANSIVE/SETTLEMENT PRONE SOILS. THESE GEOLOGIC AND ENGINEERING CONDITIONS ARE RELATIVELY COMMON TO THE AREA AND CAN BE SATISFACTORILY MITIGATED THROUGH PROPER ENGINEERING, DESIGN, AND CONSTRUCTION PRACTICES.

13. THIS PROPERTY IS LOCATED WITHIN ZONE X "AREAS DETERMINED TO BE OUTSIDE 500-YEAR FLOOD PLAIN" AS DETERMINED BY THE FLOOD INSURANCE RATE MAP NUMBER 08041C0276G, EFFECTIVE DATE DECEMBER 7, 2018.

14. FIRE PROTECTION REPORT RECOMMENDATIONS. AS A CONDITION OF APPROVAL OF THIS PLAT BY THE BOARD OF COUNTY COMMISSIONERS, NO CONVEYANCE, SALE OR TRANSFER OF TITLE OF LOTS 1-2 IDENTIFIED HEREON, SHALL BE MADE, NOR ANY BUILDING PERMIT OR CERTIFICATE OF OCCUPANCY BE ISSUED BY EL PASO COUNTY, UNTIL SUCH TIMES AS THE FOLLOWING HAS BEEN ACCOMPLISHED BY THE PROPERTY OWNER. A LETTER OF COMPLIANCE HAS BEEN RECEIVED FROM THE COLORADO STATE FOREST SERVICE, FIRE DEPARTMENT, FIRE MARSHALL, OR OTHER QUALIFIED PROFESSIONAL STATING PRACTICES DESIGNATED TO REDUCE WILDFIRE HAZARDS HAS BEEN COMPLETED IN ACCORDANCE WITH THE WILDLAND FIRE AND HAZARD MITIGATION PLAN. SUCH WORK MAY INCLUDE, BUT IS NOT NECESSARILY LIMITED TO THE FOLLOWING: *FOREST WIDE THINNINGS, *FUELBREAK THINNINGS, *PRUNINGS, *DEBRIS DISPOSAL.

EASEMENTS:

THE SUBDIVISION BOUNDARY IS HEREBY PLATTED WITH A TWENTY (20) FOOT WIDE EASEMENT FOR DRAINAGE AND PUBLIC UTILITIES; FRONT AND SIDE LOT LINES ARE HEREBY PLATTED WITH A TEN (10) FOOT EASEMENT FOR DRAINAGE AND PUBLIC UTILITIES ONLY; THE SOLE RESPONSIBILITY FOR MAINTENANCE OF THE EASEMENT AREAS IS VESTED WITH THE PROPERTY OWNERS.

SURVEYOR'S CERTIFICATION:

I, KEVIN M. O'LEARY, A DULY REGISTERED PROFESSIONAL LAND SURVEYOR IN THE STATE OF COLORADO, DO HEREBY CERTIFY THAT THIS PLAT TRULY AND CORRECTLY REPRESENTS THE RESULTS OF A SURVEY MADE ON THE DATE OF THE SURVEY, BY ME OR UNDER MY DIRECT SUPERVISION AND THAT ALL MONUMENTS EXIST AS SHOWN HEREON; THAT MATHEMATICAL CLOSURE ERRORS ARE LESS THAN 1:10,000; AND THAT SAID PLAT HAS BEEN PREPARED IN FULL COMPLIANCE WITH ALL APPLICABLE LAWS OF THE STATE OF COLORADO DEALING WITH MONUMENTS, SUBDIVISION, OR SURVEYING OF LAND AND ALL APPLICABLE PROVISIONS OF THE EL PASO COUNTY LAND DEVELOPMENT CODE.

I ATTEST THE ABOVE ON THIS ___ DAY OF _____, 2023.

_____ _____
KEVIN M. O'LEARY DATE
COLORADO REGISTERED PLS #28658
FOR AND ON BEHALF OF
LWA LAND SURVEYING, INC.

"NOTICE: ACCORDING TO COLORADO LAW YOU MUST COMMENCE ANY LEGAL ACTION BASED UPON ANY DEFECT IN THIS SURVEY WITHIN THREE YEARS AFTER YOU FIRST DISCOVER SUCH DEFECT. IN NO EVENT MAY ANY ACTION BASED UPON ANY DEFECT IN THIS SURVEY BE COMMENCED MORE THAN TEN YEARS FROM THE DATE OF THE CERTIFICATION SHOWN HEREON."

BE IT KNOWN BY THESE PRESENTS:

THAT ANDREW C. ALM, IS THE OWNER OF THE FOLLOWING DESCRIBED TRACT OF LAND, TO WIT:

A PARCEL OF LAND BEING A PORTION OF THE NORTHEAST QUARTER OF THE NORTHEAST QUARTER OF SECTION 33, TOWNSHIP 11 SOUTH, RANGE 67 WEST OF THE SIXTH PRINCIPAL MERIDIAN, EL PASO COUNTY, COLORADO, BEING MORE PARTICULARLY AS FOLLOWS:

BEGINNING AT THE NORTHEAST CORNER OF SECTION 33;

THENCE S00° 43' 31" W, ON THE EAST LINE OF THE NORTHEAST QUARTER OF THE NORTHEAST QUARTER SAID SECTION 33, ALSO BEING THE EASTERLY BOUNDARY OF A PARCEL OF LAND DESCRIBED IN THE DOCUMENT RECORDED UNDER RECEPTION NO. 216068387 OF THE RECORDS OF EL PASO COUNTY, COLORADO, A DISTANCE OF 1307.38 FEET TO THE SOUTHEAST CORNER OF THE NORTHEAST QUARTER OF THE NORTHEAST QUARTER OF SECTION 33 AND OF SAID PARCEL DESCRIBED IN THE DOCUMENT RECORDED UNDER RECEPTION NO. 216068387;

THENCE S89° 35' 39"W ON THE SOUTH LINE OF SAID PARCEL AND THE SOUTH LINE OF THE NORTHEAST QUARTER OF THE NORTHEAST QUARTER A DISTANCE OF 404.73 FEET TO THE SOUTHWESTERLY CORNER OF SAID PARCEL;

THENCE ON THE WESTERLY BOUNDARY OF SAID PARCEL OF LAND DESCRIBED IN THE DOCUMENT RECORDED UNDER RECEPTION NO. 216068387 THE FOLLOWING (5) COURSES:

1. THENCE N00° 00' 11" W A DISTANCE OF 790.12 FEET;
2. THENCE N89° 07' 30" W A DISTANCE OF 309.62 FEET;
3. THENCE N46° 26' 07" E A DISTANCE OF 404.68 FEET TO A POINT OF CURVE;
4. THENCE ON THE ARC OF A CURVE TO THE RIGHT HAVING A RADIUS OF 170.00 FEET, THROUGH A CENTRAL ANGLE OF 06° 26' 46", AN ARC DISTANCE OF 19.13 FEET TO A POINT OF TANGENT;
5. THENCE N52° 52' 53" E A DISTANCE OF 370.35 FEET TO A POINT ON THE NORTH LINE OF THE NORTHEAST QUARTER OF THE NORTHEAST QUARTER OF SECTION 33 ;

THENCE N89° 46' 34" E ON SAID NORTH LINE OF THE NORTHEAST QUARTER OF THE NORTHEAST QUARTER OF SAID SECTION 33 A DISTANCE OF 127.78 FEET TO THE POINT OF BEGINNING.

CONTAINING A MEASURED AREA OF 12.72 ACRES, MORE OR LESS.

OWNERS CERTIFICATE

THE UNDERSIGNED, BEING THE OWNER, MORTGAGEE, BENEFICIARIES OF DEEDS OF TRUST AND HOLDERS OF OTHER INTERESTS IN THE LAND DESCRIBED HEREIN, HAVE LAID OUT, SUBDIVIDED AND PLATTED SAID LANDS INTO LOTS AND EASEMENTS AS SHOWN HEREON UNDER THE NAME AND SUBDIVISION OF DRIFTWOOD ESTATES FILING NO. 1. ALL PUBLIC IMPROVEMENTS REQUIRED BY THIS LAND USE ACTION ARE HEREBY DEDICATED TO PUBLIC USE AND SAID OWNER DOES HEREBY COVENANT AND AGREE THAT THESE PUBLIC IMPROVEMENTS WILL BE CONSTRUCTED TO EL PASO COUNTY STANDARDS AND THAT PROPER DRAINAGE AND EROSION CONTROL FOR THE SAME WILL BE PROVIDED AT SAID OWNER'S EXPENSE, ALL TO THE SATISFACTION OF THE BOARD OF COUNTY COMMISSIONERS OF EL PASO COUNTY, COLORADO. UPON ACCEPTANCE BY RESOLUTION, ALL PUBLIC IMPROVEMENTS SO DEDICATED WILL BECOME MATTERS OF MAINTENANCE BY EL PASO COUNTY, COLORADO. THE UTILITY EASEMENTS SHOWN HEREON ARE HEREBY DEDICATED FOR PUBLIC UTILITIES, COMMUNICATION SYSTEMS AND OTHER PURPOSES AS SHOWN HEREON. THE ENTITIES RESPONSIBLE FOR PROVIDING THE SERVICES FOR WHICH THE EASEMENTS ARE ESTABLISHED ARE HEREBY GRANTED THE PERPETUAL RIGHT OF INGRESS AND EGRESS FROM AND TO ADJACENT PROPERTIES FOR INSTALLATION, MAINTENANCE AND REPLACEMENT OF UTILITY LINES AND RELATED FACILITIES.

IN WITNESS WHEREOF:

THE AFOREMENTIONED ANDREW C. ALM, INC HAS EXECUTED THIS INSTRUMENT THIS _____ DAY OF_____ 2023.

_____
ANDREW C. ALM

NOTARIAL:

STATE OF COLORADO)
COUNTY OF EL PASO) SS

THE FOREGOING INSTRUMENT WAS ACKNOWLEDGED BEFORE ME THIS _____ DAY OF _____ 2023 BY ANDREW C. ALM

MY COMMISSION EXPIRES: _____ _____
NOTARY PUBLIC

BOARD OF COUNTY COMMISSIONERS APPROVAL:

THIS PLAT FOR DRIFTWOOD ESTATES FILING NO. 1 WAS APPROVED FOR FILING BY THE EL PASO COUNTY, COLORADO BOARD OF COUNTY COMMISSIONERS ON THIS ___ DAY OF _____, OF 2023, SUBJECT TO ANY NOTES SPECIFIED HEREON AND ANY CONDITIONS INCLUDED IN THE RESOLUTION OF APPROVAL. THE DEDICATIONS OF LAND TO THE PUBLIC AND EASEMENTS ARE ACCEPTED.

_____
CHAIR, BOARD OF COUNTY COMMISSIONERS DATE

_____
DIRECTOR PLANNING AND COMMUNITY DEVELOPMENT DATE

RECORDING:

STATE OF COLORADO)
COUNTY OF EL PASO) SS

I HEREBY CERTIFY THAT THIS INSTRUMENT WAS FILED FOR RECORD AT MY OFFICE AT ____ O'CLOCK ___ M., THIS ____ DAY OF _____, 2023, AND IS DULY RECORDED AT RECEPTION NO. _____
OF THE RECORDS OF EL PASO COUNTY, COLORADO.

STEVE SCHLEIKER

BY: _____
COUNTY CLERK AND RECORDER

FEE: _____

SURCHARGE: _____

FEES:

DRAINAGE FEES: _____

BRIDGE FEES: _____

SCHOOL FEES: _____

PARK FEES: _____

FILE NO. VR-23-__

PREPARED BY
LWA LAND SURVEYING, INC.
953 E. FILLMORE STREET
COLORADO SPRINGS, COLORADO 80907
Phone (719) 636-5179

OCTOBER 3, 2023
PROJECT 23054
ALM.DWG
SHEET 1 OF 1

EXHIBIT B

Water Resource Report

223101494 12/13/2023 8:51 AM
PGS 17 $93.00 DF $0.00
Electronically Recorded Official Records El Paso County CO
Steve Schleiker, Clerk and Recorder
TD1000 N

DISTRICT COURT, WATER DIVISION 2, COLORADO Court Address: 501 North Elizabeth Street, Suite 116, Pueblo, CO 81003 Phone Number: (719) 404-8832	DATE FILED: December 13, 2023 7:32 AM CASE NUMBER: 2023CW3022
CONCERNING THE APPLICATION FOR WATER RIGHTS OF: **ANDREW ALM** **IN EL PASO COUNTY**	▲ COURT USE ONLY ▲ Case No.: 23CW3022 Ctrm.: 502

FINDINGS OF FACT, CONCLUSIONS OF LAW, RULING OF REFEREE AND DECREE: ADJUDICATING DENVER BASIN GROUNDWATER AND APPROVING PLAN FOR AUGMENTATION

THIS MATTER comes before the Water Court on the Application filed by Andrew Alm. Having reviewed said Application and other pleadings on file, and being fully advised on this matter, the Water Court makes the following findings and orders:

FINDINGS OF FACT

1. The Applicant in this case is Andrew Alm. His address is 2383 Collegiate Drive, Colorado Springs, CO 80918 ("Applicant"). The Applicant is the owner of land totaling approximately 12.7 acres on which the structures sought to be adjudicated and augmented herein are located, and under which lies the Denver Basin groundwater described in this decree, and is the owner of the place of use where the water will be put to beneficial use, except for any potential off-property uses as described in Paragraph 19.

2. The Applicant filed this Application with the Water Court for Water Division 2 on May 15, 2023. The Application was referred to the Water Referee in Division 2 on May 16, 2023.

3. The time for filing statements of opposition to the Application expired on the last day of July 2023. No statements of opposition were filed in this case.

4. Applicant notified the Court in its application that there is no lienholder on the property, satisfying the notice requirements of C.R.S. § 37-92-302(2)(b).

5. On June 2, 2023, the Division 2 Water Court ordered that publication occur in *The Gazette* in El Paso County, and the *Douglas News Press* in Douglas County.

6. The Clerk of this Court has caused publication of the Application filed in this matter as provided by statute and the publication costs have been paid. On June 22,

2023, proof of publication in the *Douglas News Press* was filed with the Division 2 Water Court. On July 12, 2023, proof of publication in *The* Gazette was filed with the Division 2 Water Court. All notices of the Application have been given in the manner required by law.

7. Pursuant to C.R.S. § 37-92-302(2), the Office of the State Engineer has filed Determination of Facts for each Denver Basin aquifer with this Court on August 4, 2023 and as amended on October 25, 2023, which have been considered by the Court in the entry of this decree.

8. Pursuant to C.R.S. § 37-92-302(4), the office of the Division Engineer for Water Division No. 2 filed its Consultation Report dated September 26, 2023, and a response to the Consultation Report was not required by the Water Court. However, Applicant filed a Response to Consultation Report on October 16, 2023, to address the inconsistency in the size of the Applicant's property. The Consultation Report and Response to the Consultation Report have been considered by the Water Court in the entry of this decree. The Division Engineer filed a Supplemental Consultation Report on November 14, 2023.

9. The Water Court has jurisdiction over the subject matter of these proceedings and over all who have standing to appear as parties whether they have appeared or not. The land and water rights involved in this case are not within a designated groundwater basin.

GROUNDWATER RIGHTS

10. The Application requested quantification and adjudication of a vested underground water right from the Denver Basin Groundwater underlying the Applicant's property described in Paragraph 13, below, and to use up to two wells on Applicant's property that may be constructed to the underlying aquifers, and any additional or replacement wells associated therewith, for withdrawal of Applicant's full entitlement of supply from the Denver Basin under the plan for augmentation decreed herein. Applicant also requested quantification and adjudication of vested underground water rights and uses from the Dawson, Denver, Arapahoe, and Laramie-Fox Hills aquifers underlying the Applicant's property. The following findings are made with respect to such underground water rights and use of wells on the Applicant's property:

11. The land overlying the groundwater subject to the adjudication in this case is owned by the Applicant and consists of approximately 12.7 acres located in the NE¼ of the NE¼ of Section 33, Township 11 South, Range 67 West of the 6th P.M., El Paso County, Colorado, more specifically described as 3275 Center Ice View, Colorado Springs, CO 80921, as shown on **Exhibit A**. ("Applicant's Property"). Applicant intends

to subdivide the property into up to two (2) lots. All groundwater adjudicated herein shall be withdrawn from the overlying land unless there is a further order of this Court allowing otherwise following the filing of a new water court application.

12. There are no existing wells on the Applicant's Property. Applicant intends to construct two wells on the Applicant's Property, along with any additional or replacement wells ("Alm Wells"). Applicant is awarded the vested right to use the Alm Wells for the extraction and use of groundwater from the not nontributary Dawson and Denver aquifer pursuant to the plan for augmentation decreed herein. Upon entry of this decree and submittal by the Applicant of a complete well permit application and filing fee, the State Engineer shall conduct an analysis and issue well permits for the Alm Wells pursuant to C.R.S. § 37-90-137(4), if determined appropriate, consistent with and referencing the plan for augmentation decreed herein.

13. Of the statutorily described Denver Basin aquifers, the Dawson, Denver, Arapahoe, and Laramie-Fox Hills aquifers all exist beneath the Applicant's Property. The Dawson and Denver aquifers underlying the Applicant's Property contain not nontributary water, while the water of the Arapahoe and Laramie-Fox Hills aquifers underlying the Applicant's Property is nontributary. The quantity of water in the Denver Basin aquifers exclusive of artificial recharge underlying the Applicant's Property is as follows:

Aquifer	**Net Sand (ft)**	**Total Appropriation (Acre Feet)**	**Annual Avg. Withdrawal 100 Years (Acre Feet)**	**Annual Avg. Withdrawal 300 Years (Acre Feet)**
Dawson (NNT)	50	127	1.27	0.42
Denver (NNT)	260	561	5.61	1.87
Arapahoe (NT)	380	820	8.2	N/A
Laramie-Fox Hills (NT)	125	238	2.38	N/A

The terms and conditions set forth in this decree governing the withdrawal and use of groundwater from the Denver Basin aquifers underlying the Applicant's Property are applicable only to permitted non-exempt wells constructed into the aquifers.

14. Pursuant to C.R.S. § 37-90-137(9)(c.5)(I), the augmentation requirements for wells in the Dawson aquifer require the replacement to the affected stream systems of actual stream depletions on an annual basis. The Applicant's Property is located more than 1 mile from any point of contact with a surface stream. Pursuant to C.R.S. §37-90-

137(9)(c.5)(I), depletions from the Denver aquifer would require replacement of actual stream depletions or 4% of the amount of water pumped on an annual basis depending whereupon the wells are located on the Applicant's Property. Applicant shall not be entitled to construct a non-exempt well or use water from the not nontributary Dawson or Denver aquifers except pursuant to an approved augmentation plan in accordance with C.R.S. §37-90-137(9)(c.5), including as decreed herein.

15. Subject to the herein decree requirements, Applicant shall be entitled to withdraw all legally available groundwater in the Denver Basin aquifers underlying Applicant's Property. Said amounts may be withdrawn over the 100-year life for the aquifers as set forth in C.R.S. § 37-90-137(4), or withdrawn over a longer period of time based upon local governmental regulations or Applicant's water needs, provided withdrawals during such longer period are in compliance with the total amounts available to Applicant as decreed herein and the augmentation requirements of this decree. This decree describes a pumping period of 300-years, as required by El Paso County, Colorado Land Use Development Code §8.4.7(C)(1). The average annual amounts of groundwater available for withdrawal from the underlying Denver Basin aquifers, based upon the 100-year and 300-year aquifer life calculations, are determined and set forth above, based upon the October 25, 2023, Office of the State Engineer Determination of Facts described in Paragraph 7.

16. Applicant shall be entitled to withdraw an amount of groundwater in excess of the average annual amount decreed herein from the Denver Basin aquifers underlying Applicant's Property, so long as the sum of the total withdrawals from wells in each of the aquifers does not exceed the product of the number of years since the date of issuance of the original well permit or the date of entry of the decree herein, whichever comes first, and the average annual volume of water which Applicant is entitled to withdraw from each of the aquifers underlying Applicant's Property, subject to the requirement that such banking and excess withdrawals do not violate the terms and conditions of the plan for augmentation decreed herein and any other plan for augmentation decreed by the Court that authorizes withdrawal of the Denver Basin groundwater decreed herein.

17. Subject to the terms and conditions in the plan for augmentation decreed herein and final approval by the State Engineer's Office pursuant to the issuance of well permits in accordance with C.R.S. §§ 37-90-137(4) or 37-90-137(10), the Applicant shall have the right to use the ground water from the Dawson, Denver, Arapahoe, and Laramie Fox Hills aquifers for beneficial uses upon the Applicant's Property consisting of domestic in a single-family dwelling and guest house, structure and equipment washing, hot tub, lawn, garden and greenhouse, irrigation, stock water, commercial, recreation, wildlife, fire protection, and also for storage and augmentation purposes associated with such uses. The amount of groundwater decreed for such uses upon the Applicant's Property is reasonable as such uses are to be made for the long-term use and enjoyment of the

Applicant's Property and is to establish and provide for adequate water reserves. The nontributary groundwater may be used, reused, and successively used to extinction, both on and off the Applicant's Property subject, however, to the limitations imposed on the use of the Arapahoe and Laramie-Fox Hills aquifer groundwater by this decree and the requirement under C.R.S. § 37-90-137(9)(b) that no more than 98% of the amount withdrawn annually shall be consumed. Applicant may use such water by immediate application or by storage and subsequent application to the beneficial uses and purposes stated herein. Provided however, as set forth above, Applicant shall only be entitled to construct a non-exempt well or use water from the not nontributary Dawson and Denver aquifers pursuant to a decreed augmentation plan entered by the Court, including that plan for augmentation decreed herein.

18. Applicant has waived the 600-feet well spacing requirement for wells to be constructed upon the Applicant's Property. Pumping from the Alm Wells or wells constructed into the Arapahoe and Laramie-Fox Hills aquifers, will not exceed 100 g.p.m., though actual pumping rates for these wells will vary according to aquifer conditions and well production capabilities. The Applicant may withdraw Dawson and Denver aquifer groundwater from the Alm Wells or from wells constructed into the Arapahoe and Laramie-Fox Hills aquifers, at rates of flow necessary to withdraw the entire amounts decreed herein. The actual depth of each well to be constructed within the respective aquifers will be determined by topography and actual aquifer conditions.

19. Withdrawals of groundwater available from the nontributary Arapahoe and Laramie-Fox Hills aquifer beneath the Applicant's Property in the amounts determined in accordance with the provisions of this decree will not result in injury to any other vested water rights or to any other owners or users of water.

PLAN FOR AUGMENTATION

20. The structures to be augmented are the Alm Wells, to be constructed to the not nontributary Dawson and Denver aquifers underlying the Applicant's Property.

21. Pursuant to C.R.S. § 37-90-137(9)(c.5), the augmentation obligation for the Alm Wells requires the replacement of actual stream depletions for any well constructed into the Dawson aquifer and the replacement of either actual stream depletions or 4% of the amount of water pumped on an annual basis depending on whereupon the wells are located on the Applicant's Property for any well constructed into the Denver Aquifer. However, Applicant shall replace actual stream depletions rather than 4% of the amount of water pumped on an annual basis for use of the Denver aquifer in order to assure the ability to construct Denver wells at any location upon the Applicant's Property. The water to be used for augmentation during pumping is the septic system return flows of the not nontributary Alm Wells pumped as set forth in this plan for augmentation. The water to

be used for augmentation of depletions following the pumping period described in this decree is the reserved portion of Applicant's nontributary water rights in the Arapahoe aquifer as described in Paragraph 21.D. Applicant shall provide for the augmentation of stream depletions caused by pumping Alm Wells as approved herein. Water use criteria is determined as follows:

A. Use: Based on a 300-year pumping period, pumping from the Denver aquifer by the Alm Wells will be a maximum of 1.7 acre-feet of water per year per lot, with each lot pumping a maximum of 0.85 acre-feet per year if both wells are constructed to the Denver aquifer. If one lot is utilizing Denver aquifer water and the other lot is using Dawson aquifer water, then maximum pumping from the Denver aquifer will be 0.85 acre-feet per year and maximum pumping from the Dawson will be 0.42 acre-feet per year for a 300-year pumping period. Such uses shall be for domestic, structure and equipment washing, hot tub, lawn, garden and greenhouse, irrigation, stock water, commercial, recreation, wildlife, fire protection, and also for storage and augmentation purposes associated with such uses.

B. Depletions: The maximum annual stream depletions over a 300-year pumping period for the Denver aquifer amounts to approximately 26.12% of pumping and depletions over a 300-year pumping period for the Dawson aquifer amounts to 8.11% of pumping. Maximum annual depletions are therefore 0.444 acre-feet in year 300 if both lots are utilizing the Denver aquifer or 0.222 acre-feet if only one lot is utilizing the Denver aquifer. If the Dawson aquifer is also being utilized, maximum annual depletions are therefore 0.034 acre-feet in year 300. Should pumping be less than 1.7 acre-feet annually if both lots are pumping from the Denver aquifer, or should pumping be less than 0.85 acre-feet from the Denver aquifer and 0.42 acre-feet from the Dawson aquifer if one lot is utilizing the Denver aquifer and the other lot is using the Dawson aquifer, resulting depletions and required replacements will be correspondingly reduced.

C. Augmentation of Depletions During Pumping Life of Well: Pursuant to C.R.S. § 37-90-137(9)(c.5) and the above determination as to the Denver aquifer, Applicant shall replace actual stream depletion of the water pumped from the Dawson aquifer (if utilized) and the Denver aquifer. Applicant has shown that, provided water is delivered for indoor use and treated as required by this decree, depletions during pumping will be effectively replaced by residential return flows from non-evaporative septic systems. The annual consumptive use for non-evaporative septic systems is estimated at 10% per year per residence. At the household indoor use rate of 0.25 acre-feet per year, 0.225 acre-feet per residence is replaced to the stream system per year, utilizing a non-evaporative septic system. Thus, during the pumping period, the total maximum annual stream depletions of 0.444 acre-feet (if both lots are utilizing the Denver aquifer) will be sufficiently augmented, and the total maximum annual stream depletions of 0.256 acre-feet (if one lot is utilizing the Dawson aquifer and one lot is utilizing the Denver

aquifer) will be sufficiently augmented, provided septic system return flows are generated by indoor use in each situation. The calculation of non-evaporative septic system return flows from indoor residential use of 0.25 acre-feet per residence shows that depletions that result from pumping the annual amounts described in Paragraph 21.A for either two lots or one lot will also be adequately replaced during the pumping period for the wells under the plan for augmentation as use on each lot is sufficiently augmented by septic system return flows from each lot.

D. Augmentation of Post Pumping Depletions: This plan for augmentation shall have a pumping period of 300 years. For the replacement of post-pumping depletions which may be associated with the use of the Alm Wells, Applicant will reserve 521 acre-feet of the nontributary Arapahoe aquifer groundwater decreed herein, subject to decrease for any during pumping replacement credit. The amount of nontributary Arapahoe aquifer groundwater reserved may be reduced as may be determined through this Court's retained jurisdiction as described in this decree. If the Court, by order, reduces the Applicant's obligation to account for and replace such post-pumping depletions for any reason, it may also reduce the amount of Arapahoe aquifer groundwater reserved for such purposes, as described herein. Applicant also reserves the right to substitute other legally available augmentation sources for such post-pumping depletions upon further approval of the Court under its retained jurisdiction. Even though this reservation is made, under the Court's retained jurisdiction, Applicant reserves the right in the future to prove that post-pumping depletions will be noninjurious. Pursuant to C.R.S. § 37-90-137(9)(b), no more than 98% of water withdrawn annually from a nontributary aquifer shall be consumed. The reservation of a total of 521 acre-feet of Arapahoe aquifer groundwater results in approximately 510 acre-feet of available post-pumping augmentation water, which will be sufficient to replace post-pumping depletions from pumping a potential total of 510 acre-feet from the Denver aquifer over 300 years.

E. Permit: Upon entry of a decree in this case, the Applicant will be entitled to apply for and receive well permits for the Alm Wells for the uses in accordance with this decree and otherwise in compliance with C.R.S. § 37-90-137.

F. Additional or Alternative Sources: Pursuant to C.R.S. § 37-92-305(8), the Court may authorize water from additional and alternative sources to be used for replacement in this plan for augmentation if such sources are decreed or lawfully available for such use. This paragraph sets forth the procedures under which such additional and/or alternative sources may be used in this plan for augmentation. In order to add additional and/or alternative sources to this plan for augmentation, the following procedures must be followed. These procedures are adequate to prevent injury to other water rights that might otherwise result from the addition of these sources to this plan for augmentation.

i. Additional Water Rights Separately Decreed or Lawfully Available for Augmentation Use. If a water right is decreed or lawfully available for augmentation use and not already approved for such use under this decree, the Applicant shall give written Notice of Use of Water Right for Augmentation ("Notice") to the Court and the Division Engineer, which shall describe: (1) the water right by name and decree, if any; (2) the annual and monthly amount of water available to the Applicant from the water right; (3) the manner by which the water will be used to replace out-of-priority depletions in time, location and amount; (4) the date of initial use of the water in this plan for augmentation; (5) the duration of use of the water in this plan for augmentation; (6) evidence that the claimed amount of water is available for use in this plan for augmentation and will not be used by another person; and (7) the manner in which the Applicant will account for use of the water in this plan for augmentation. The Notice shall also specifically include a request that the Court enter an Order either affirming or denying the Applicant's proposal, and that said Order be attached to this decree.

ii. Objection to Use of New Source. If any person, including the Division Engineer, wishes to object to the addition of the noticed water rights to this plan for augmentation, a written objection shall be filed with the Court within sixty-three (63) days after the date the Notice was given by the Applicant. If no objection is so filed, the Court shall promptly enter an Order affirming the Applicant's immediate use of the noticed water rights. If an objection is so filed, then the Applicant may not use the noticed water rights until the Court has determined whether and under what terms and conditions the water rights may be used in this plan.

iii. Hearing on Use of New Source. Where an objection has been filed to the use of a noticed water right in this plan for augmentation, the Court shall promptly schedule a hearing to determine whether and under what terms and conditions the water right may be used in this plan for augmentation. The Court shall conduct whatever proceedings are needed to appropriately address and resolve the disputed issues. At such hearing, the Court shall impose such terms and conditions as necessary to prevent injury to vested water rights and decreed conditional rights, including a period of retained jurisdiction for the water right. Applicant shall have the burden of proof that the use of any noticed water right will not cause injury to other water users.

22. This decree, upon recording, shall constitute a covenant running with Applicant's Property, benefitting and burdening said land, and requiring construction of well(s) to the nontributary Arapahoe aquifer and pumping of water to replace post-pumping depletions under this decree. Subject to the requirements of this decree, in order to determine the amount and timing of post-pumping replacement obligations under this augmentation plan, Applicant or his successors shall use information commonly used by the Colorado Division of Water Resources for augmentation plans of this type at the time the post-pumping obligation commences. Pursuant to this covenant, the water from

the nontributary Arapahoe aquifer reserved herein may not be severed in ownership from the Applicant's Property. This covenant shall be for the benefit of, and enforceable by, third parties owning vested water rights who would be injured by the failure to provide for the replacement of post-pumping depletions under the decree, and shall be specifically enforceable by such third parties against the owner of the Applicant's Property.

23. Applicant or his successors shall be required to initiate pumping from the Arapahoe aquifer for the replacement of post-pumping depletions when either: (i) the absolute total amount of water available from the Denver aquifer, or Denver and Dawson aquifers, allowed to be withdrawn under the plan for augmentation decreed herein has been pumped; (ii) the Applicant or his successors in interest have acknowledged in writing that all withdrawals for beneficial use through the Alm Wells have permanently ceased; (iii) a period of 10 consecutive years where no withdrawals of groundwater from the Alm Wells has occurred; or (iv) accounting shows that return flows from the use of the water being withdrawn is insufficient to replace depletions caused by the withdrawals that already occurred and direct replacement to the stream system from the Alm Wells is insufficient to cover such depletions

24. Unless modified by the Court under its retained jurisdiction, Applicant and his successors shall be responsible for accounting and replacement of post-pumping depletions as set forth herein. Should Applicant's obligation hereunder to account for and replace such post-pumping stream depletions be reduced or abrogated for any reason, Applicant may petition the Court to also modify or terminate the reservation of the Arapahoe aquifer groundwater.

25. The term of this augmentation plan is for a minimum of 300 years, however, the length of the plan for a particular well or wells may be extended beyond such time provided the total plan pumping allocated to such well or wells is not exceeded. Should the actual operation of this augmentation plan depart from the planned diversions described in Paragraph 21 such that annual diversions are increased through banking or the duration of the plan is extended, the Applicant must prepare and submit a revised model of stream depletions caused by the actual pumping or intended schedule. This analysis must utilize depletion modeling acceptable to the State Engineer, and to this Court, and must represent the water use under the plan for the entire term of the plan to date. The analysis must show that return flows have equaled or exceeded actual stream depletions throughout the pumping period and that reserved nontributary water remains sufficient to replace post-pumping depletions. The Applicant shall provide notice of the revised model submissions to the State Engineer and this Court and the State Engineer shall have thirty-five (35) days for review and comment about the revised modeling, upon which, the Applicant will be allowed thirty-five (35) days to respond to the comments of the State Engineer. After this notice and comment period, if the revised depletion modeling is acceptable to the State Engineer, this Court may give approval for the

extension of this augmentation plan past the 300-year minimum.

26. Consideration has been given to the depletions from Applicant's use and proposed uses of water, in quantity, time, and location, together with the amount and timing of augmentation water which will be provided by the Applicant, and the existence, if any, of injury to any owner of or person entitled to use water under a vested water right.

27. It is determined that the timing, quantity and location of replacement water under the protective terms in this decree are sufficient to protect the vested rights of other water users and eliminate injury thereto. The replacement water shall be of a quantity and quality so as to meet the requirements for which the water of senior appropriators has normally been used, and provided of such quality, such replacement water shall be accepted by the senior appropriators for substitution for water derived by the exercise of the Alm Wells. As a result of the operation of this plan for augmentation, the depletions from the Alm Wells will not result in injury to the vested water rights of others.

CONCLUSIONS OF LAW

28. The application for adjudication of Denver Basin groundwater and approval of plan for augmentation was filed with the Water Clerk for Water Division 2, pursuant to C.R.S. §§ 37-92-302(1)(a) and 37-90-137(9)(c.5).

29. The Applicant's request for adjudication of these water rights is contemplated and authorized by law, and this Court and the Water Referee have exclusive jurisdiction over these proceedings. C.R.S. §§ 37-92-302(1)(a), 37-92-203, and 37-92-305.

30. Subject to the terms of this decree, the Applicant is entitled to the sole right to withdraw all the legally available water in the Denver Basin aquifers underlying the Applicant's Property as decreed herein, and the right to use that water to the exclusion of all others.

31. The Applicant has complied with C.R.S. § 37-90-137(4), and the groundwater is legally available for withdrawal by the requested nontributary well(s), and legally available for withdrawal by the requested not nontributary well(s) upon the entry of this decree approving a plan for augmentation pursuant to C.R.S. § 37-90-137(9)(c.5), and the issuance of a well permit by the State Engineer's Office. Applicant is entitled to a decree from this Court confirming their rights to withdraw groundwater pursuant to C.R.S. § 37-90-137(4).

32. The Denver Basin water rights applied for in this case are not conditional water rights, but are vested water rights determined pursuant to C.R.S. § 37-90-137(4).

No applications for diligence are required. The claims for nontributary and not nontributary groundwater meet the requirements of Colorado Law.

33. The determination and quantification of the nontributary and not nontributary groundwater rights in the Denver Basin aquifers as set forth herein is contemplated and authorized by law. C.R.S. §§ 37-90-137, and 37-92-302 through 37-92-305.

34. The Applicant's request for approval of a plan for augmentation is contemplated and authorized by law. If administered in accordance with this decree, this plan for augmentation will permit the uninterrupted diversions from the Alm Wells as described herein without adversely affecting any other vested water rights in the Arkansas River and South Platte River or their tributaries and when curtailment would otherwise be required to meet a valid senior call for water. C.R.S. §§ 37-92-305(3), (5), and (8).

IT IS THEREFORE ORDERED, ADJUDGED AND DECREED AS FOLLOWS:

35. All of the foregoing Findings of Fact and Conclusions of Law are incorporated herein by reference, and are considered to be a part of this decretal portion as though set forth in full.

36. The Application for Adjudication of Denver Basin Groundwater and Plan for Augmentation filed by the Applicant is approved, subject to the terms of this decree.

A. Applicant is awarded a vested right to 127 acre-feet of groundwater from the not nontributary Dawson aquifer underlying Applicant's Property, as quantified in Paragraph 13 or as modified by the Court under its retained jurisdiction.

B. Applicant is awarded a vested right to 561 acre-feet of groundwater from the not nontributary Denver aquifer underlying Applicant's Property, as quantified in Paragraph 13 or as modified by the Court under its retained jurisdiction.

C. Applicant is awarded a vested right to 820 acre-feet of groundwater from the nontributary Arapahoe aquifer underlying Applicant's Property, as quantified in Paragraph 13 or as modified by the Court under its retained jurisdiction. Subject to the provisions of Rule 8 of the Denver Basin Rules, 2 CCR 402-6, limiting consumption to ninety-eight percent of the amount withdrawn, and the other terms and conditions of this decree, including the reservation of 521 acre-feet to be utilized only for replacement of post-pumping depletions under the plan for augmentation decreed herein, as described in Paragraph 21.D., above, Applicant's Arapahoe aquifer groundwater may be utilized for all purposes described in Paragraph 17.

D. Applicant is awarded a vested right to 238 acre-feet of groundwater from the nontributary Laramie-Fox Hills aquifer underlying Applicant's Property, as quantified in Paragraph 13 or as modified by the Court under its retained jurisdiction. Subject to the provisions of Rule 8 of the Denver Basin Rules, 2 CCR 402-6, limiting consumption to ninety-eight percent of the amount withdrawn, Applicant's Laramie-Fox Hills aquifer groundwater may be utilized for all purposes described in Paragraph 17.

37. The Applicant has furnished acceptable proof as to all claims and, therefore, the Application for Adjudication of Denver Basin Groundwater and Plan for Augmentation, as filed by the Applicant, is granted and approved in accordance with the terms and conditions of this decree. Approval of this Application will not result in any injury to senior vested water rights.

38. The Applicant shall comply with C.R.S. § 37-90-137(9)(b), requiring the relinquishment of the right to consume two percent (2%) of the amount of the nontributary groundwater withdrawn annually. Ninety-eight percent (98%) of the nontributary groundwater withdrawn annually may therefore be consumed. No plan for augmentation shall be required to provide for such relinquishment. Applicant shall be required to demonstrate to the State Engineer prior to the issuance of a well permit that no more than ninety-eight percent of the groundwater withdrawn annually will be consumed.

39. The Alm Wells shall be operated such that combined pumping from Denver aquifer wells on two lots does not exceed 1.7 annual acre feet (510 acre-feet total) or pumping from one lot using Denver aquifer water does not exceed the 0.85 acre-feet annually (255 acre-feet total) and pumping from the other lot from the Dawson aquifer does not exceed 0.42 acre-feet annually (126 acre-feet total), and are in accordance with the requirements of the plan for augmentation described herein. Consistent with Rule 11.A of the Statewide Nontributary Ground Water Rules, the Denver Basin groundwater decreed herein must be withdrawn from the "overlying land" as defined in Rule 4.A.8 of the Statewide Nontributary Ground Water Rules, and the Alm Wells shall be constructed on the overlying land. The State Engineer, the Division Engineer, and/or the Water Commissioner shall not curtail the diversion and use of water by the Alm Wells so long as the return flows from the annual diversions associated with the Alm Wells accrue to the stream system pursuant to the conditions contained herein. To the extent that Applicant or one of his successors or assigns is ever unable to provide the replacement water required, then the Alm Wells shall not be entitled to operate under the protection of this plan, and shall be subject to administration and curtailment in accordance with the laws, rules, and regulations of the State of Colorado. Pursuant to C.R.S. § 37-92-305(8), the State Engineer shall curtail all out-of-priority diversions which are not so replaced as to prevent injury to vested water rights. In order for this plan for augmentation to operate, return flows from the septic systems discussed herein shall at all times during pumping be in an amount sufficient to replace the amount of stream depletions, and cannot be

sold, leased, or otherwise used for any purpose inconsistent with the augmentation plan decreed herein. Applicant shall be required to have any wells pumping from the Denver and Dawson aquifers on the Applicant's Property providing water for in-house use and generating septic system returns prior to pumping the wells for any of the other uses identified in Paragraphs 17 or 21.A.

40. The Court retains jurisdiction over this matter to make adjustments in the allowed average annual amount of withdrawal from the Denver Basin aquifers, either upwards or downwards, to conform to actual local aquifer characteristics, and the Applicant need not file a new application to request such adjustments. The retained jurisdiction described in this Paragraph 40 is applicable only to the quantities of water available underlying Applicant's Property, and does not affect or include the augmentation plan decreed herein, the retained jurisdiction for which is described in Paragraphs 41 and 42, below.

A. At such time as adequate data may be available, Applicant or the State Engineer may invoke the Court's retained jurisdiction as provided in this Paragraph 40 for purposes of making a final determination of water rights as to the quantities of water available and allowed average annual withdrawals from any of the Denver Basin aquifers quantified and adjudicated herein. Any person seeking to invoke the Court's retained jurisdiction for such purpose shall file a verified petition with the Court setting forth with particularity the factual basis for such final determination of Denver Basin water rights under this decree, together with the proposed decretal language to effect the petition. Within one hundred twenty-six (126) days of the filing of such verified petition, the State Engineer's Office shall utilize such information as available to make a final determination of water rights finding, and shall provide such information to the Court and Applicant.

B. If no protest is filed with the Court to such findings by the State Engineer's Office within sixty-three (63) days, this Court shall incorporate by entry of an Amended Decree such "final determination of water rights", and the provisions of this Paragraph 40 concerning adjustments to the Denver Basin groundwater rights based upon local aquifer conditions shall no longer be applicable. In the event of a protest being timely filed, or should the State Engineer's Office make no timely determination as provided in Paragraph 40.A., above, the "final determination of water rights" sought in the petition may be made by the Water Court after notice to all parties and following a full and fair hearing, including entry of an Amended Decree, if applicable in the Court's reasonable discretion.

41. Pursuant to C.R.S. § 37-92-304(6), the Court shall retain continuing jurisdiction over the plan for augmentation decreed herein for reconsideration of the question of whether the provisions of this decree are necessary and/or sufficient to prevent injury to vested water rights of others, as pertains to the use of Denver Basin

groundwater supplies adjudicated herein for augmentation purposes. The Court also retains continuing jurisdiction for the purpose of determining compliance with the terms of the augmentation plan. The Court further retains jurisdiction should the Applicant later seek to amend this decree by seeking to prove that post-pumping depletions are noninjurious, that the extent of replacement for post-pumping depletions is less than the amount of water reserved herein, and other post-pumping matters addressed in Paragraph 21.D. The Court's retained jurisdiction may be invoked using the process set forth in Paragraph 42.

42. Except as otherwise specifically provided in Paragraphs 40-41, above, pursuant to the provisions of C.R.S. §37-92-304(6), this plan for augmentation decreed herein shall be subject to the reconsideration of this Court on the question of material injury to vested water rights of others, for a period from the date of entry of this decree until five (5) years following the date that Applicant began operation of the plan for augmentation based on the subdivision of the Applicant's Property and withdrawal of water from Alm Wells. Any person seeking to invoke the Court's retained jurisdiction shall file a verified petition with the Court setting forth with particularity the factual basis for requesting that the Court reconsider injury to petitioner's vested water rights associated with the operation of this decree, together with proposed decretal language to effect the petition. The party filing the petition shall have the burden of proof of going forward to establish a prima facie case based on the facts alleged in the petition. If the Court finds those facts are established, Applicant shall thereupon have the burden of proof to show: (i) that the petitioner is not injured, or (ii) that any modification sought by the petitioner is not required to avoid injury to the petitioner, or (iii) that any term or condition proposed by Applicant in response to the petition does avoid injury to the petitioner. The Division of Water Resources as a petitioner shall be entitled to assert injury to the vested water rights of others. If no such petition is filed within such period and the retained jurisdiction period is not extended by the Court in accordance with the provisions of the statute, this matter shall become final under its own terms.

43. Pursuant to C.R.S. § 37-92-502(5)(a), the Applicant shall install and maintain such water measurement devices and recording devices as are deemed necessary by the State Engineer or Division Engineers, and the same shall be installed and operated in accordance with instructions from said entities.

44. The vested water rights, water right structures, and plan for augmentation decreed herein shall be subject to all applicable administrative rules and regulations, as currently in place or as may in the future be promulgated, of the offices of Colorado State and Division Engineers for administration of such water rights, to the extent such rules and regulations are uniformly applicable to other similarly situated water rights and water users. The Alm Wells shall be permitted as non-exempt structures under the plan for augmentation decreed herein, which plan shall be implemented upon the construction

and use of any of the Alm Wells. The State Engineer shall identify in any permits issued pursuant to this decree the specific uses which can be made of the groundwater to be withdrawn, and, to the extent the well permit application requests a use that has not been specifically identified in this decree, shall not issue a permit for any proposed use, which use the State Engineer determines to be speculative at the time of the well permit application or which would be inconsistent with the requirements of this decree, any separately decreed plan for augmentation, or any modified decree and augmentation plan.

45. The Ruling of Referee, when entered as a decree of the Water Court, shall be recorded in the real property records of El Paso County, Colorado.

DATED: November 20, 2023.

BY THE REFEREE:

Kate Brewer, Water Referee
Water Division 2

DECREE

THE COURT FINDS THAT NO PROTEST WAS MADE IN THIS MATTER, THEREFORE THE FORGOING RULING IS CONFIRMED AND APPROVED, AND IS HEREBY MADE THE JUDGMENT AND DECREE OF THIS COURT.

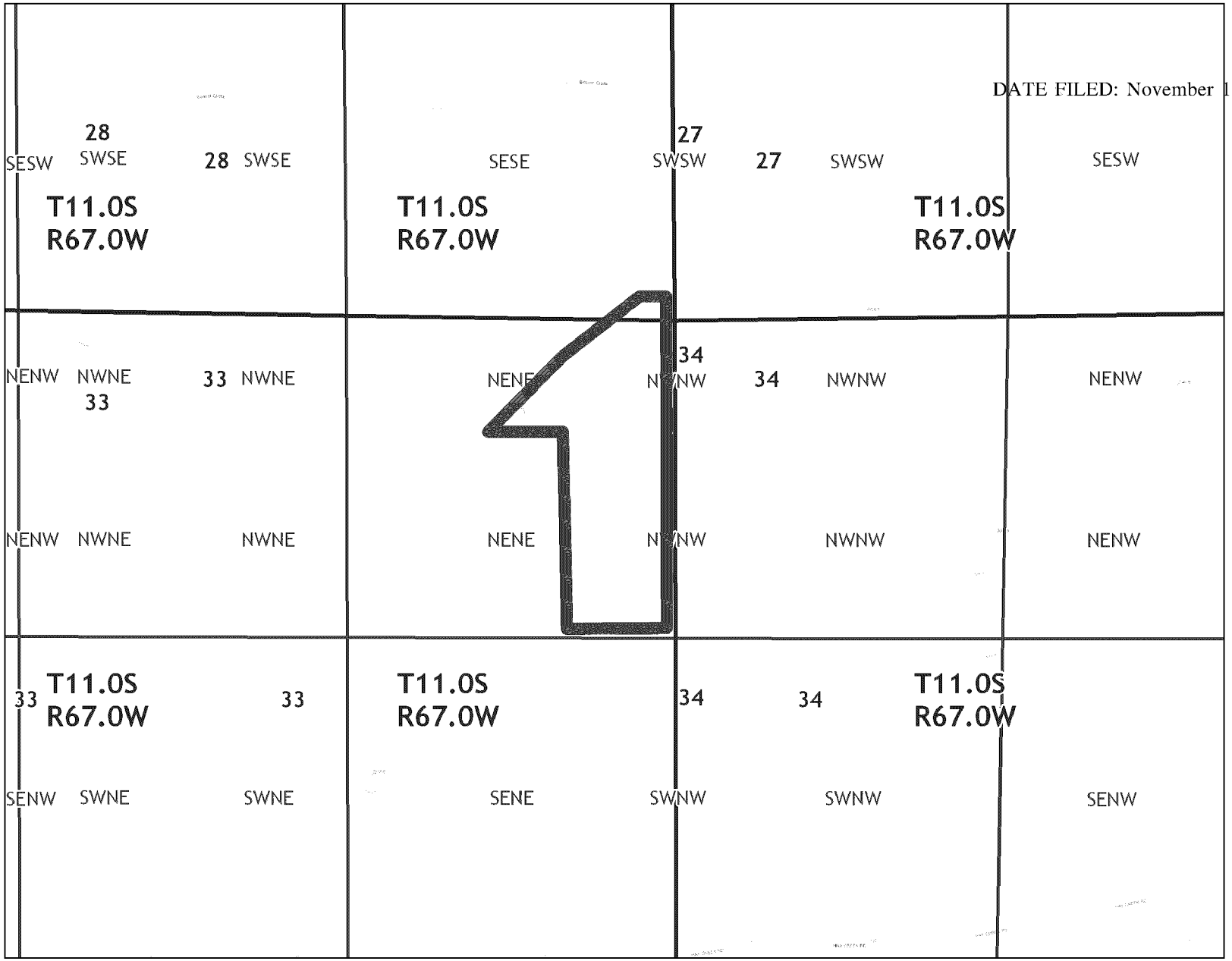
DATED: December 13, 2023.

BY THE COURT:

Honorable Gregory J. Styduhar,
Water Judge, Water Division 2
State of Colorado

COLORADO'S
Decision Support Systems
CWCB / DWR

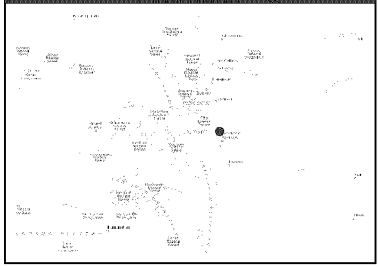
Exhibit A - Topo Alm Property



Legend

- Township
- Section
- Q40
- County

Location



Notes

1,169 0 585 1,169 Feet

1: 7,016

This product is for informational purposes and may not have been prepared for, or be suitable for legal, engineering, or surveying purposes. Users of this information should review or consult the primary data and information sources to ascertain the usability of the information.

Date Prepared: 5/15/2023 3:40:56 PM

BBA
Water Consultants, Inc.

Christopher J. Sanchez
Jeffrey A. Clark
Daniel O. Niemela
Jonathan D. George
Kristina L. Wynne
Austin P. Malotte
Michael A. Sayler
Charles E. Stanzione

EXHIBIT C

Water Resource Report

January 10, 2024

Andrew Alm
2383 Collegiate Drive
Colorado Springs, CO 80918

RE: Alm Subdivision / Driftwood Estates - Dawson and Denver Aquifer Water Quality

Dear Mr. Alm:

We understand that El Paso County has requested a report presenting the water quality of the source water supplying the properties at the Alm Subdivision, also known as Driftwood Estates. We further understand that El Paso County requires a report of water quality of the source water for the subdivision in accordance with County code. County code specifies an extensive list of water quality parameters for the purposes of water quality sampling. As summarized below, the Driftwood Estates subdivision will be sourced by Denver Basin ground water pumped from the Dawson and Denver aquifers, and the physical water supply sources do not yet exist at the property. Therefore, an opportunity does not exist for sampling the specific water supply wells. Instead, we are presenting examples of water quality from similar Dawson and Denver sources and justification for relying on those water quality results.

Denver Basin Ground Water Quality

The Denver Basin aquifers are comprised of interbedded layers of sandstone and shale / clay layers. The interbedded sand and clay layers limit the interaction between the groundwater in the aquifers and surface contaminants. Ground water that does recharge the bedrock aquifers from the surface is required to take an indirect travel path to a pumping well and the movement of that water through the aquifer systems over time provides extensive opportunity for natural filtration through the bedrock sand, gravel and silt layers in the formations.

Due to the physical isolation between the aquifers and surface influences, the ground water in the aquifers is allocated based on a 100-year aquifer life, because it is recognized that it will take a very long time for water pumped from the aquifers to be replaced by surface water. The aquifers are classified as a non-renewable source as a result of the physical isolation from the stream system.

Denver Basin ground water is generally considered to be of potable water quality. Concentrations of iron and manganese and sometime sodium exceed the State's secondary (unregulated) standards, but these are not exceedances of the primary drinking water standards. High iron and manganese can result in taste and staining issues, but in our professional experience, are not a concern as it relates to human health considerations. Also, these parameters can be treated through conventional residential treatment systems, if desired. The Dawson and Denver aquifers are the two shallowest bedrock-aquifers in the Denver Basin.

Water Quality Information

BBA researched nearby water quality data to provide examples of the water quality that can be expected from the Dawson and Denver aquifers at Driftwood Estates. Two sources of information were identified. One is a USGS report titled Quality of groundwater in the Denver Basin Aquifer System, Colorado [1] and the other is a single water quality sample from the Denver aquifer.

The USGS Report presents water quality data throughout the Denver Basin aquifer system, but the report intentionally presents some of the water quality data in a manner which makes it impossible to tie specific samples to a specific location. As a result, we have aggregated data in the Dawson and Denver aquifers for all of El Paso County and summarized in Tables 1 and 2.

As summarized in the tables, there are not any well samples in which the primary drinking water regulations were exceeded. There were some samples from which the secondary standards were exceeded, including iron, manganese, and radon.

BBA had information in our files regarding a Denver aquifer well drilled located approximately 6 miles north of the property, yielded potable water that is summarized in Table 3[2]. This well sample also shows that the concentration of iron exceeded the State's secondary standard but there were no parameters that exceeded the State's primary drinking water standards.

In summary, although the specific water supply sources do not exist at the property, we believe that wells constructed in the Dawson and Denver aquifers will meet the State's primary drinking water regulations. Iron and manganese may exceed the State's secondary standards, but if that occurs, the water user can install a water treatment system to reduce the concentration of those parameters to achieve the desired taste and aesthetic of the water supply.

As always, please do not hesitate to contact us if you have questions or comments.

Very truly yours,

BBA Water Consultants, Inc.

Fiona Swoop
Hydrogeologist

Christopher J. Sanchez, P.G.
Principal-Hydrogeologist

FS/CJS/jeb
Enclosure
2224.00

[1] Musgrove, M., Beck, J.A., Paschke, S.S., Bauch, N.J., and Mashburn, S.L., 2014, Quality of groundwater in the Denver Basin aquifer system, Colorado, 2003–5: U.S. Geological Survey Scientific Investigations Report 2014–5051, 107 p., http://dx.doi.org/10.3133/sir20145051

[2] Denver aquifer data point located in NW ¼ , Section 5, T 11 S, R 67 W 6th PM.

Table 1.

El Paso County
Summary of Average Groundwater Quality Data for from USGS SIR 2014-5051

Dawson Aquifer

Parameter		Secondary Drinking Water Standard (mg/L)	Primary Drinking Water Standard (mg/L)	Wells Above Standard/Total Wells Tested	Average Amount (mg/L)	Highest Amount Detected (mg/L)
Bicarbonate	HCO3				66.09	87.80
Chloride	Cl-	250		0/8	2.49	6.27
Fluoride		2	4	0/8	0.39	0.85
Sulfate	SO4	250		**1/8**	52.81	261.21
Total Dissolved solids		500		**1/8**	183.17	505.28
Aluminum	Al	0.05 to 0.2		0/8	0.00	0.00
Antimony	Sb		0.006	0/8	0.00	0.00
Arsenic	As		0.01	0/8	0.00	0.00
Barium	Ba		2	0/8	0.05	0.08
Beryllium	Be		0.004	0/8	0.00	0.00
Cadmium	Cd		0.005	0/8	0.00	0.00
Copper	Cu	1	1.3*	0/8	0.01	0.03
Iron	Fe	0.3		0/8	0.06	0.43
Lead	Pb	0.002	0.015	0/8	0.00	0.00
Manganese	Mn	0.05		**2/8**	0.13	0.52
Nickel	Ni		NA		0.00	0.00
Selenium	Se		0.05	0/8	0.00	0.02
Silver	Ag	0.1		0/8	0.00	0.00
Sodium	Na				14.23	31.47
Thallium	Tl		0.002	0/8	0.00	0.00
Uranium	U		0.03	0/8	0.00	0.01
Radon-222	Rn	4,000 pCi/L**	300 pCi/L**	**1/8**	2785 pCi/L	4611 pCi/L

Primary and Secondary Drinking Water Standards: REGULATION NO. 11 - COLORADO PRIMARY DRINKING WATER REGULATIONS 5 CCR 1002-11

* Action Level per Water Quality Control Commission Regulation 11, amended 11/13/2018.

** Maximum Contaminant Level (MCL) and Alternative MCL (U.S. Environmental Protection Agency, 2013).

Table 2.

El Paso County
Summary of Average Groundwater Quality Data for from USGS SIR 2014-5051

Denver Aquifer

Parameter		Secondary Drinking Water Standard (mg/L)	Primary Drinking Water Standard (mg/L)	Wells Above Standard/Total Wells Tested	Average Amount (mg/L)	Highest Amount Detected (mg/L)
Bicarbonate	HCO3				132.55	154.00
Chloride	Cl-	250		0/4	2.13	2.47
Fluoride		2	4	0/4	0.88	1.33
Sulfate	SO4	250		0/4	30.28	62.42
Total Dissolved solids		500		0/4	180.40	225.40
Aluminum	Al	0.05 to 0.2		0/4	0.00	0.00
Antimony	Sb		0.006	0/4	0.00	0.00
Arsenic	As		0.01	0/4	0.00	0.00
Barium	Ba		2	0/4	0.03	0.07
Beryllium	Be		0.004	0/4	0.00	0.00
Cadmium	Cd		0.005	0/4	0.00	0.00
Copper	Cu	1	1.3*	0/4	0.00	0.01
Iron	Fe	0.3		**1/4**	0.26	0.56
Lead	Pb	0.002	0.015*	0/4	0.00	0.00
Manganese	Mn	0.05		**2/4**	0.05	0.11
Nickel	Ni		NA		0.00	0.00
Selenium	Se		0.05	0/4	0.00	0.01
Silver	Ag	0.1		0/4	0.00	0.00
Sodium	Na				34.37	63.44
Thallium	Tl		0.002	0/4	0.00	0.00
Uranium	U		0.03	0/4	0.00	0.00
Radon-222	Rn	4,000 pCi/L**	300 pCi/L**	0/4	-	-

Primary and Secondary Drinking Water Standards: REGULATION NO. 11 - COLORADO PRIMARY DRINKING WATER REGULATIONS 5 CCR 1002-11

* Action Level per Water Quality Control Commission Regulation 11, amended 11/13/2018.
** Maximum Contaminant Level (MCL) and Alternative MCL (U.S. Environmental Protection Agency, 2013).

Table 3

Denver Aquifer Well
Location: NW 1/4, Section 4, Township 11 S, Range 67 W 6th PM

Water Quality Summary

Parameter		Results (mg/L)	Secondary Drinking Water Standard (mg/L)	Primary Drinking Water Standard (mg/L)
Bicarbonate	HCO3	93.9		
Carbonate	CO3	< 0.2		
Chloride	Cl-	1.0	250	
Cyanide		< 0.005		0.2
Fluoride		0.53	2	4
Nitrogen, Nitrate	NO3 as N	0.15		10
Nitrogen, Nitrite	NO2 as N	0.04		1
Sulfate	SO4	8.3	250	
Total Dissolved Solids		166	500	
Turbidity		0.84 NTU		
pH		7.59	6.5 to 8.5	
E-Coli		< 1 mpn/100 mL		
Fecal Coliform		< 2 mpn/100mL		
Total Coliform		< 1 mpn/100 mL		< 5%[a]
Aluminum	Al	0.011	0.05 to 0.2	
Antimony	Sb	< 0.001		0.006
Arsenic	As	< 0.001		0.01
Asbestos		< 0.16 million struct/L		7 million fibers/L
Barium	Ba	0.113		2
Beryllium	Be	< 0.001		0.004
Cadmium	Cd	<0.001		0.005
Calcium as CaCO3	Ca	107.2		
Chromium	Cr	< 0.001		0.1
Copper	Cu	< 0.0008		1.3*
Iron	Fe	0.375	0.3	
Lead	Pb	< 0.0001		0.015*
Manganese	Mn	0.0207	0.05	
Mercury	Hg	< 0.0001		0.002
Nickel	Ni	0.002		
Selenium	Se	< 0.001		0.05
Silver	Ag	< 0.0005	0.1	
Sodium	Na	7.2		
Thallium	Tl	< 0.001		0.002
Uranium	U	0.0031		0.03
		pCi/L		**pCi/L**
Gross alpha, Total		3.8		15
Gross beta, Total		< 4.2		50
Radium - 226		0.5		
Radium - 228		3.4		
Radium - 226/228		3.9		5

Notes:
1) Standards reflect requirements of water delivered to the consumer, the State does not apply the standards at the wellhead.
* Action Level per Water Quality Control Commission Regulation 11, amended 11/13/2018.
a - No more than 5.0 percent samples total coliform-positive in a month. Every sample that has total coliform must be analyzed for either fecal coliforms or E. coli. If two consecutive TC-positive samples, and one is also positive for E. coli or fecal coliforms, system has an acute MCL violation.

Hazen Research, Inc.
4601 Indiana Street
Golden, CO 80403 USA
Tel: (303) 279-4501
Fax: (303) 278-1528

Lab Control ID: 24H02742
Received: Sep 05, 2024
Reported: Oct 02, 2024
Purchase Order No.
None Received

Customer ID: 05377Z
Account ID: Z01034

Rebecca Manzanares
Colorado Analytical Laboratories, Inc.
10411 Heinz Way
Commerce City, CO 80640

ANALYTICAL REPORT

Reviewed and approved by:

Haley Jones
Analytical QA Manager

Hazen Research, Inc.
4601 Indiana Street
Golden, CO 80403 USA
Tel: (303) 279-4501
Fax: (303) 278-1528

Lab Control ID: 24H02742
Received: Sep 05, 2024
Reported: Oct 02, 2024
Purchase Order No.
None Received

Customer ID: 05377Z
Account ID: Z01034

ANALYTICAL REPORT

Rebecca Manzanares
Colorado Analytical Laboratories, Inc.

Lab Sample ID	24H02742-001							
Customer Sample ID	**240904135-01D** - Alm - 2224.00 - B-1 - B-9 sampled on 09/04/24 @ 1140							
Parameter	**Units**	**Code**	Result	Precision* +/-	Detection Limit	Method	Analysis Date / Time	Analyst
Gross Alpha	**pCi/L**	**T**	8.4	3.2	1.6	SM 7110 B	09/11/24 @ 0818	JR
Gross Beta	**pCi/L**	**T**	9.1	2.8	1.8	SM 7110 B	09/11/24 @ 0818	JR

Lab Sample ID	24H02742-002							
Customer Sample ID	**240904135-01E** - Alm - 2224.00 - B-1 - B-9 sampled on 09/04/24 @ 1140							
Parameter	**Units**	**Code**	Result	Precision* +/-	Detection Limit	Method	Analysis Date / Time	Analyst
Radium-226	**pCi/L**	**T**	1.8	0.6	0.1	SM 7500-Ra B	09/10/24 @ 0956	KT
Radium-228	**pCi/L**	**T**	6.4	1.0	0.2	EPA pg.19	09/24/24 @ 0955	JR

Certification ID's: CO/EPA CO00008

*Variability of the radioactive decay process (counting error) at the 95% confidence level, 1.96 sigma.

Codes: (T) = Total (D) = Dissolved (S) = Suspended (R) = Replicate Sample (AR) = As Received < = Less Than

HAZEN RESEARCH, INC.
RADIOCHEMISTRY LABORATORY Date: 09/11/2024

Batch QC Summary Form

Analyte: Gross Alpha

Control Standard/LFB: ID: C11-006 pCi/mL: 57.4 (use 1 diluted)

Spike Solution: ID: C11-006 pCi/mL: 57.4 (use 1 mL)

Spike Recovery Calculation: Sample: Tap

$$\text{Calculation: } \frac{(305.4)\ (0.200) - (1.4)\ (0.200)}{57.4} \times 100 = 106\%$$

Batch QC Evaluation:

Parameter	Criteria	Pass	Fail	N/A
Control Std./LFB	+/- 30 %	x		
Spike Recovery	70 - 130 %	x		
Blank	< or = 3 x Uncertainty	x		
Duplicate 1	95% confidence interval overlap	x		
Duplicate 2 *	95% confidence interval overlap	x		

* Required for batch size greater than 10 samples.

Conclusions:

x Batch QC Passes**
_____ Batch QC Fails
_____ Batch QC Passes, with exceptions**:

Reruns Required: _____

Narrative:

**All QC data provided in this section of the report met the acceptance criteria specified in the analytical methods and procedures. State Maximum Contamination Levels (MCLs) are not evaluted in this report.

Batch Listing by Lab Control Number:

24H02633	24H02729
24H02700	24H02730
24H02701	24H02737
24H02705	24H02742
24H02717	24H02743
24H02718	24H02753
24H02719	
24H02720	
24H02721	
24H02722	

Evaluator: 

09/17/2024
Date

HAZEN RESEARCH, INC.
RADIOCHEMISTRY LABORATORY Date: 09/11/2024

Batch QC Summary Form

Analyte: Gross Beta

Control Standard/LFB: ID: C11-006 pCi/mL: 44 (use 1 diluted)

Spike Solution: ID: C11-006 pCi/mL: 44 (use 1 mL)

Spike Recovery Calculation: Sample: Tap

$$\text{Calculation: } \frac{(197.4)\ (0.200) - (2.0)\ (0.200)}{44} \times 100 = 88.8\%$$

Batch QC Evaluation:

Parameter	Criteria	Pass	Fail	N/A
Control Std./LFB	+/- 30 %	x		
Spike Recovery	70 - 130 %	x		
Blank	< or = 3 x Uncertainty	x		
Duplicate 1	95% confidence interval overlap	x		
Duplicate 2 *	95% confidence interval overlap	x		

* Required for batch size greater than 10 samples.

Conclusions:

x Batch QC Passes**
_____ Batch QC Fails
_____ Batch QC Passes, with exceptions**:

Reruns Required: _____

Narrative:

**All QC data provided in this section of the report met the acceptance criteria specified in the analytical methods and procedures. State Maximum Contamination Levels (MCLs) are not evaluted in this report.

Batch Listing by Lab Control Number:

24H02633	24H02729
24H02700	24H02730
24H02701	24H02737
24H02705	24H02742
24H02717	24H02743
24H02718	24H02753
24H02719	
24H02720	
24H02721	
24H02722	

Evaluator: _____

09/17/2024
Date

HAZEN RESEARCH, INC.
RADIOCHEMISTRY LABORATORY Date: 09/09/2024

Batch QC Summary Form

Analyte: Radium-226

Control Standard/LFB: ID: C73-006 pCi/mL: 21.1 (use 2 diluted)

Spike Solution: ID: C73-006 pCi/mL: 21.1 (use 2 mL)

Spike Recovery Calculation: Sample: 24H02729-02d

$$\text{Calculation: } \frac{(42.4)\ (1.000) - (0.1)\ (1.000)}{42.2} \times 100 = 100\%$$

Batch QC Evaluation:

Parameter	Criteria	Pass	Fail	N/A
Control Std./LFB	+/- 20 %	x		
Spike Recovery	80 - 120 %	x		
Blank	< or = 3 x Uncertainty	x		
Duplicate 1	95% confidence interval overlap	x		
Duplicate 2 *	95% confidence interval overlap			x

* Required for batch size greater than 10 samples.

Conclusions:

x Batch QC Passes**
_____ Batch QC Fails
_____ Batch QC Passes, with exceptions**:

Reruns Required: _____

Narrative:

**All QC data provided in this section of the report met the acceptance criteria specified in the analytical methods and procedures. State Maximum Contamination Levels (MCLs) are not evaluted in this report.

Batch Listing by Lab Control Number:

24H02717	
24H02718	
24H02719	
24H02720	
24H02729	
24H02730	
24H02742	
24H02743	

Evaluator: 

09/13/2024
Date

HAZEN RESEARCH, INC.
RADIOCHEMISTRY LABORATORY Date: 09/23/2024

Batch QC Summary Form

Analyte: Radium-228

Control Standard/LFB: ID: C6-008 pCi/mL: 14.2 (use 5 diluted)

Spike Solution: ID: C6-008 pCi/mL: 14.2 (use 5 mL)

Spike Recovery Calculation: Sample: 24H02742-2d

$$\text{Calculation: } \frac{(75.0)\ (1.000) - (6.4)\ (1.000)}{71} \times 100 = 96.6\%$$

Batch QC Evaluation:

Parameter	Criteria	Pass	Fail	N/A
Control Std./LFB	+/- 20 %	**x**		
Spike Recovery	80 - 120 %	**x**		
Blank	< or = 3 x Uncertainty	**x**		
Duplicate 1	95% confidence interval overlap	**x**		
Duplicate 2 *	95% confidence interval overlap			**x**

* Required for batch size greater than 10 samples.

Conclusions:

x Batch QC Passes**
_____ Batch QC Fails
_____ Batch QC Passes, with exceptions**:

Reruns Required: _____

Narrative:

**All QC data provided in this section of the report met the acceptance criteria specified in the analytical methods and procedures. State Maximum Contamination Levels (MCLs) are not evaluted in this report.

Batch Listing by Lab Control Number:

24H02841	
24H02845	
24H02733	
24H02742	
24H02768	
24H02769	
24H02770	
24H02790	

Evaluator: Roxanne Sullivan

10/01/2024
Date

24H 02742

Colorado Analytical LABORATORIES, INC.

Ship To: Hazen Research
Preserved: Y / N
HNO3 Lot #: _____
Date Preserved: _____

Report To Information	Bill To Information: (If different from report to)	Project Name
Company Name: Colorado Analytical Laboratory Report To: Rebecca Manzanares E-Mail: rebeccamanzanares@coloradolab.com		2224.00 Alm
Address: 10411 Heinz Way Commerce City, CO 80640 Phone: 303-659-2313	**Address:** CAL TASK 240904135 ARF	Compliance Samples: Yes ☐ No ☑ Submit Data to CDPHE: Yes ☐ No ☑

Tests Requested

Sample Date/Time		Sample ID	Matrix	Radium 226 (Sub)	Gross Alpha/Beta (Sub)	Radium 228 (Sub)	Container Type
9/4/24	11:40 AM	240904135-01D - B-1 - B-9	Water - Drinking		X		1L - Unpreserved
9/4/24	11:40 AM	240904135-01E - B-1 - B-9	Water - Drinking	X		X	4 - 1L - Unpreserved

Comment:

Hazen Preservation Checks
9/05/24 12:05 Intial pH 7
A 16 Lot Preservered by DE
9/06/24 9:35 pH √ by DE
Final pH 2

8.6°C

4.4

Relinquished by: (Signature)	Date: Time:	Received by: (Signature)	Date: Time:	Relinquished by: (Signature)	Date: Time:	Received by: (Signature)	Date: Time:
[signature]	9/5/24 0900	[signature]	09/05/24 12:00				

Table 1.
El Paso County
Denver Aquifer Well (Permit 82782-F)
Aquifer Water Quality Results: Well Tested 9/4/2024

Inorganic Chemicals	Primary Maximum Contaminants	Denver Aquifer Results	Units
Antimony	0.01	ND	mg/L
Arsenic	0.01	ND	mg/L
Barium	2.04	0.105	mg/L
Beryllium	0.00	0.0007	mg/L
Cadmium	0.01	ND	mg/L
Chromium	0.17	ND	mg/L
Cyanide (Total)[1]	0.28	ND	mg/L
Fluoride	4.09.	1.81	mg/L
Mercury	0.00	ND	mg/L
Nitrate (as Nitrogen)	10.00	0.98	mg/L
Nitrite (as Nitrogen)	1.00	ND	mg/L
Total Nitrate and Nitrite (as Nitrogen)	10	0.98	mg/L
Selenium	0.05	0.0011	mg/L
Thallium	0.00	ND	mg/L

Inorganic Chemicals	Secondary Maximum Contaminants	Denver Well Results	Units
Aluminum	0.05 - 0.2	0.02	mg/L
Chloride	250.00	2.50	mg/L
Corrosivity	Non-corrosive	-1.91	LI[2]
Iron	0.30	0.01	mg/L
Manganese	0.05	ND	mg/L
pH	6.5-8.57	6.26	N/A
Silver	0.1	ND	mg/L
Sulfate	250.00	15.40	mg/L
Total dissolved Solids (TDS)	500.00	129.00	mg/L
Zinc	5.00	0.15	mg/L
Radionuclides			
Gross Alpha/Beta - Water	15	8.4/9.1	pCi/L
Combined radium-226/radium-228	5[3]	1.8/6.4	pCi/L
Bacteriological			
Total Coliform	Absence	Absent	N/A

[1]If total cyanide is 0.2 mg/L, or greater then further analysis for free cyanide is required.
[2]Langelier Index takes pH, TDS, alkalinity, and hardness into account to understand potential corrosiveness.
[3] Based on CO State Primary Drinking Water Standards

mg/L = Milligram Per Liter of PPM
ND = Not Detected
Primary and Secondary Maximum Contaminants Levels Source: Land Development Code Count of El Paso, CO, 8.4.7 paragraph 10a
"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." - Land Development Code County of El Paso, CO 8.4.7. paragraph 10a
Ground Water sample collected by Fiona Swope, BBA, on 9/4/2024.
Ground Water Sample was delivered 9/4/2024 to Colorado Analytical Labs, Lakewood Location.
Water Quality analysis done by Colorado Analytical Labs.

International Headquarters & Laboratory
Phone 630 505 0160

WWW.WQA.ORG
A not-for-profit organization

RADIUM FACT SHEET

Contaminant	In Water As	Maximum Contaminant Level
Radium (Ra)	Ra^{2+}	**US EPA (Radium 226 and 228 combined):** MCL* = 5.0 pCi/L MCLG** = zero pCi/L **WHO† Guideline:** Radium 226 = 1 Bq/l Radium 228 = 0.1 Bq/l **Health Canada (Radium 226 only):** MAC*** = 0.5 Bq/L (13.5 pCi/L)
Sources of Contaminant	Radioactive decay of uranium and thorium in rocks and soil	
Potential Health Effects	Increased risk of cancer	
Treatment Methods	Cation Exchange Softening Reverse Osmosis Distillation Electrochemical deionization†† Lime Softening	

*Maximum Contaminant Level (MCL) — The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to MCLGs as feasible using the best available treatment technology and taking cost into consideration. MCLs are enforceable standards.

**Maximum Contaminant Level Goal (MCLG) - The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety and are non-enforceable public health goals.

***Maximum Acceptable Concentration (MAC) - established for parameters which when present above a certain concentration, have known or suspected adverse health effects.

†WHO - World Health Organization

††Check with unit manufacturer to confirm percent reduction in concentration

Radium is formed when uranium and thorium undergo radioactive decay in the environment. Uranium and thorium are found in small amounts in most rocks and soil. Radium is constantly being produced by the radioactive decay of uranium and thorium. Two of the main radium isotopes found in the environment are radium-226 and radium-228 with an atomic weight of 226 and 228. Radium has been used as a radiation source for treating cancer, in radiography of metals, and combined with other metals as a neutron source for research and radiation instrument calibration.

Surface water sources and shallow wells will typically have lower levels of radium while deeper wells may at times have higher concentrations, depending on several natural factors.

HEALTH EFFECTS

Radium emits energy in the form of alpha particles and gamma rays, and will also decay to form radon. Radium in drinking water is of primary concern because this radiation may cause cancer, kidney damage, and birth defects. Additionally, the decay of radium into radon presents another contaminant of health concern in drinking water as well as in the air. The National Academy of Sciences reported that exposure to radon in the air is the second cause of lung cancer next to cigarette smoking.

TREATMENT METHODS

Residential **Point-of-Entry** **Point-of-Use**	Cation Exchange Softening Electrochemical deionization Reverse Osmosis Distillation
Municipal	Lime softening
Visit WQA.org or NSF.org to search for products certified to NSF/ANSI 44, 58, 62, and WQA S-300 for radium reduction.	

When proper regeneration procedures are employed in ion exchange treatment methodologies (e.g., conventional water softeners), radium along with barium, calcium, and magnesium are effectively reduced. Radium removal has been shown to continue well after the hardness breakthrough point on both new and old cation resin beds, while barium breakthrough occurs shortly after hardness. Reverse osmosis and distillation are also effective at reducing radium.

There are established standards for reducing radium by cation exchange softeners, reverse osmosis systems, and distillers. These standards actually utilize barium (Ba^{2+}) as a conservative surrogate to demonstrate radium reduction. There are many softeners, RO devices, and distillers tested and certified for the reduction of radium by independent testing and certifying organizations.

Discharge regulations for wastewater containing radium may vary from area to area. Consult the local health department, Environmental Protection Agency (EPA), or Department of Environmental Protection Agency (DEP) when there are waste products of potential concern.

The treatment methods listed herein are generally recognized as techniques that can effectively reduce the listed contaminants sufficiently to meet or exceed the relevant MCL. However, this list does not reflect the fact that point-of-use/point-of-entry (POU/POE) devices and systems currently on the market may differ widely in their effectiveness in treating specific contaminants, and performance may vary from application to application. Therefore, selection of a particular device or system for health contaminant reduction should be made only after careful investigation of its performance capabilities

based on results from competent equipment validation testing for the specific contaminant to be reduced.

As part of the installation procedure of POE products, the performance characteristics should be verified by tests conducted under established test procedures and water analysis. Thereafter, the treated water should be monitored periodically to verify continued performance. The water treatment equipment must be controlled diligently to ensure that acceptable feedwater conditions and equipment capacity are not exceeded.

Visit WQA.org to find water professionals in your area. Note that Certified Water Specialists have passed the water treatment educational program with the Water Quality Association and continue their education with recertification every 3 years.

REGULATIONS

In the United States the EPA, under the authority of the Safe Drinking Water Act (SDWA), has set the Maximum Contaminant Level Goal (MCLG) for radium at zero pCi/L (Ra 226 and 228 combined). This is the health-based goal at which no known or anticipated adverse effects on human health occur and for which an adequate margin of safety exists. The US EPA has set this level of protection based on the best available science to prevent potential health problems. Based on the MCLG, EPA has set an enforceable regulation for Radium, the Maximum Contaminant Level (MCL), at 5 pCi/L. MCLs are set as close to the MCLG as possible, considering cost, benefits and the ability of public water systems to detect and remove contaminants using suitable treatment technologies.

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