

***WATER RESOURCES REPORT***

*for*

***Atwell, LLC  
Mariah Trail Filing No. 1  
Subdivision***

***EPC Parcel #: 5100000511***

**April 2023**

**Prepared By:**



Atwell, LLC  
MARIAH TRAIL FILING NO. 1  
SUBDIVISION  
19205 MARIAH TRAIL  
EPC Parcel # 5100000511

WATER RESOURCES REPORT

APRIL 2023

Prepared for:

Atwell, LLC  
12295 Oracle Boulevard, Suite 200  
Colorado Springs, CO 80921

Prepared by:

RESPEC  
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## 1.0 INTRODUCTION AND EXECUTIVE SUMMARY

The purpose of this report is to address the specific water needs of a proposed subdivision of Parcel # 5100000511 in El Paso County, CO.

**EXECUTIVE SUMMARY:** The water rights and augmentation plan in place for the existing parcel are adequate to meet the needs of six (6) lots proposed for the subdivision on a 300-year basis.

## 2.0 PROJECTED LAND USES

### 2.1 Projected Land Uses

This report pertains to the existing 35-acre parcel that is proposed to be divided into six (6) lots, with three lots described as 5.01 acres, one lot at 5.06 acres, one lot at 5.14 acres, and one lot at 8.19 acres. Please refer to the *Land Use Exhibit* in **Appendix A**.

## 3.0 WATER NEEDS AND PROJECTED DEMANDS

### 3.1 Water Demand Summary

It is anticipated that the proposed six residential lots, one consisting of approximately 8.19 acres, one consisting of 5.14 acres, one consisting of 5.06 acres, and three (3) 5.01-acre lots, will use approximately 1.80 AF/year of water total for indoor household uses and a total of 3.75 AF/year of water combined water uses for the entire subdivision. This estimate is based upon information from the *Findings of Fact* contained in Court Case 2022CW3094 located in **Appendix C**. Water demands and wastewater loads are shown Table 3-1 below:

**Table 3-1: Summary of Expected Water Demands & Wastewater Loads**

# of SFEs	Water					Wastewater
	Annual Indoor Use 0.30 (AF/YR/SFE)	Average Daily Indoor Use (GPD)	Irrigation 0.05 (AF/1,000 SF)	Domestic Watering 0.0125 (AF/Horse/Year)	Total Indoor, Watering, & Irrigation (AF)	ADF (@ 90% Indoor Use) (GPD)
6	<i>Note 1</i> 1.800	1607	<i>Note 2</i> 1.800	<i>Note 3</i> 0.150	3.75	1446
<b>Total</b>					<b>3.75</b>	<b>1446</b>

*Note 1: Per 2022CW3094 Section 8.3.*

*Note 2: Assuming 0.05 per 1000 ft<sup>2</sup> per 2022CW3094 Section 8.3 and 6000 ft<sup>2</sup> of lawn/garden/trees*

*Note 3: Per 2022CW3094 Section 8.3 for a total of 12 horses (2 horses per house)*

3.2 *Unit Water User Characteristics*

Unit water user characteristics are counted on a *single-family equivalent* (SFE) basis. All single-family homes are counted as one SFE, and user characteristics were based on information provided in the *El Paso County Land Development Code*, Chapter 8.

3.3 *Demand versus Supply*

An overall demand of 3.75 acre-feet for the proposed subdivision is less than the amount of supply listed in the decrees, determinations, and *Findings of Fact* (provided in **Appendix C**) and is further discussed in Section 4.0 of this report.

**4.0 WATER RIGHTS AND SUPPLY**

4.1 *Water Rights*

Water rights, determinations, and replacement plan have been applied for as shown in **Appendix C**. Table 4-1 below summarizes the information from said water rights and pending determinations.

**Table 4-1: Water Rights Summary**

***Mariah Trail Filing No. 1 Subdivision***

Overall Water Supply Inventory

Land Formation/ Aquifer	Determination	Tributary Status	Area (Acres)	Total Water Decree (AF)	Annual Allocation 100-Year (AF/Year)	Annual Allocation 300-Year (AF/Year)
Dawson*	2022CW3094	NNT	35	2,103	21.03	7.01
Denver	2022CW3094	NT	35	2,802	28.02	9.34
Arapahoe	2022CW3094	NT	35	1,563	15.63	5.21
Laramie-Fox Hills**	2022CW3094	NT	35	1,068	10.68	3.56
<b>Total Legal Supply</b>					<b>75.36</b>	<b>25.12</b>
					100-Year	300-Year

**Beneficial Uses:** *Domestic Indoor, Industrial, Commercial, Fire Protection, Augmentation Indoor & Outdoor Irrigation, Livestock, Recreational, Fish/Wildlife, Storage*

\*Total amount of Dawson aquifer is 10.37 AF/yr. 3.36 AF/yr of Dawson aquifer is reserved for augmentation per 06CW189 Decree

\*\*All Laramie-Fox Hills aquifer water is reserved for use in the augmentation specified in the 06CW189 Decree

According to the *Findings of Fact contained in Court Case No. 2022CW3094* located in **Appendix C**, the following conditions are allowed for the subject property:

- Water may be withdrawn through the existing well (Permit #85835=F), as well as allowing up to five (5) additional wells (all 0.625 AF/year per well) to be developed on the subject property. The original permit number to operate this well is contained in **Appendix C**.
- Each well can use 0.3 AF/year for in-house use, 0.3 AF/year for irrigation of up to 6,000 square feet per lot, and stockwatering of up to 0.025 AF/year per well for up to two large domestic animals and fire protection. Total water allotted per well is 0.625 AF/year and a total of 3.75 AF/year for the subdivision.
- All additional wells to be drilled to the Dawson aquifer. All wells to be metered.
- Type of use to which the Dawson water pumped must be used for domestic indoor use, indoor and outdoor irrigation, commercial, industrial, livestock, fire protection, recreation, fish and wildlife, augmentation and storage, pursuant to the augmentation plan.

#### 4.2 *Adequacy of Water Rights*

Current water rights are adequate for buildout demands of six (6) lots to meet 2040 and 2060 buildout projections on a 300-year basis.

According to the Approval of Groundwater Rights found in Court Case 06CW189 and 22CW3094 the entire 35-acre property has appropriated water rights located in the Dawson, Denver, Arapahoe, and Laramie Fox-Hills confined aquifers. Of these formations, only the Dawson is considered not-nontributary while the Denver, Arapahoe, and Laramie Fox-Hills aquifers are considered non-tributary. The applicant has rights to consume water from all four formations, though use from the Dawson requires an augmentation and replacement plan for all uses. The associated determinations and approved augmentation plan are shown in the court cases included in **Appendix C**:

- There are 10.37 AF/year available on a 300-year supply basis out of the Dawson Formation with 3.36 AF/yr reserved for augmentation per the 06CW189 Decree leaving 7.01 AF/yr, which is greater than the estimated annual demand of 3.75 AF-year for all six (6) lots to be served by Dawson wells as needed.
- Assuming a 0.30 AF/yr domestic use per resident (**per 22CW3094 Section 8.3**) with 90% return flows through the septic system per resident, this results in a 0.27 AF/yr replacement flow back through the septic system per resident, or 1.62 AF/year total for the six residences. The augmentation plan assumed a conservative use of 0.2 AF/yr per residence for indoor use with a typical 10% consumption of such use, returning 0.18 AF/year per lot. At full buildout, a return of 1.08 AF/yr will be returned to the aquifer through the septic systems.

- The property is required to return 22.29% to the Dawson aquifer formation in the 300<sup>th</sup> year which is 0.836 AF total. Conservatively estimated return flows through the septic system total 1.08 AF/yr, which is in excess of required replacement water for alluvial depletions due to not-nontributary pumping from the Dawson Aquifer.

Conclusion:

The current water rights and augmentation plan in place are adequate to meet the estimated overall demand and resulting alluvial depletions of 0.836 acre-feet for six (6) lots.

4.3 *Description of Current Water Rights*

The subject area's current water rights involve non-renewable supplies in the Denver Basin, further discussed below.

Non-Renewable Denver Basin Supply

The Denver Basin is a vast, deep-rock aquifer that stretches from southeast of Colorado Springs to Greeley, and from the base of the front range to the eastern end of Elbert County. Rights granted in the Denver basin are based on the ownership of the surface property – the larger the parcel, the larger the allocation. This water is much deeper than typical residential wells, ranging up to 2,650 feet deep.

Denver Basin water is considered finite and therefore non-renewable. In the subject area, there are four main formations that make up the Denver Basin: Dawson, Denver, Arapahoe, and Laramie-Fox Hills (LFH), described from shallowest to deepest.

The subject property was granted water rights in the four Denver Basin formations as shown in **Table 4-1** above.

**5.0 WATER SYSTEM FACILITIES AND PHYSICAL SUPPLY**

5.1 *Source of Supply*

Supply for the six (6) lots will be met with future or existing wells completed in the Dawson aquifer. There is an existing well (Permit #85835-F) that is currently drilled into the Dawson formation and serving existing livestock. Any new wells will be drilled, screened, test-pumped, and completed in accordance with the Colorado Division of Water Resources rules and regulations.

5.2 *Water Treatment*

Water from the existing well was tested on 2/13/23 for constituents required by El Paso County regulations for a confined aquifer. Any desired treatment of existing and future wells will rely on the individual homeowners as this is not considered a *Community System* by the Colorado Department of Public Health and Environment.

### 5.3 *Water Storage*

Water storage (other than potential individual cisterns) will not be constructed. Therefore, a central water system with treatment and fire-flow capabilities will not be provided. The residents of each subdivided lot will be made aware of this since it will be included on the subdivision plat.

### 5.4 *Distribution, Pumping, and Transmission Lines*

Since there is no central water system proposed for this subdivision, no distribution, pumping, or transmission lines will be constructed.

### 5.5 *Water Quality*

The water quality in the Dawson aquifer formation in this area has typically been suitable for residential potable use. Water samples were obtained from the existing well (well permit #85835-F) constructed via an exterior water tap serving livestock from the address 19205 Mariah Trail. Water samples were obtained from this tap on 2/13/2023, with water quality testing performed Colorado Analytical Laboratories and Hazen Research, Inc., per the El Paso County Land Development Code section 8.4.7(B). Final results from this water quality testing can be found in **Appendix D**. All results were found to be below primary and secondary Maximum Contaminant Limits (MCLs).

Because of the absence of any and all evidence of fecal contamination in the form of E. Coli or Total Coliform, or that all sampled and analyzed constituents were below all primary and secondary standards the proposed water source emanating from the Dawson Aquifer is deemed safe for public consumption.

## 6.0 **EL PASO COUNTY MASTER PLANNING ELEMENTS**

### 6.1 *County Water Master Plan 2040 and 2060 Projections*

The subject property lies within the El Paso County Water Master Planning area, Region #2.

### 6.2 *Buildout (Including 2040 and 2060 Buildout):*

Expected buildout of the subject property are six (6) total lots. Demands for the entire subdivision are listed in Section 3.0 of this report, which include a total demand of 3.75 AF/year as described in Decree 22CW3094.

### 6.3 *Description of Long-Term Planning and Future Sources of Supply*

Per El Paso County criteria, the 300-year supply of water for the subject property appears to be more than adequate for full buildout, which would include both the 2040 and 2060 scenarios. However, the proposed supply in the Dawson aquifer is based on non-renewable sources.

If needed beyond the 300-year supply, the subdivision has nontributary water rights in the Laramie-Fox Hills formation. Please refer to the *Plan for Augmentation* in **Appendix C**.

6.4 *Water System Interconnects*

The closest source for a potential interconnect is the Woodmoor Water and Sanitation District #1 – approximately two miles to the west.

It is not anticipated (and Woodmoor Water and Sanitation District #1 has not been contacted) that an interconnect is needed or warranted.

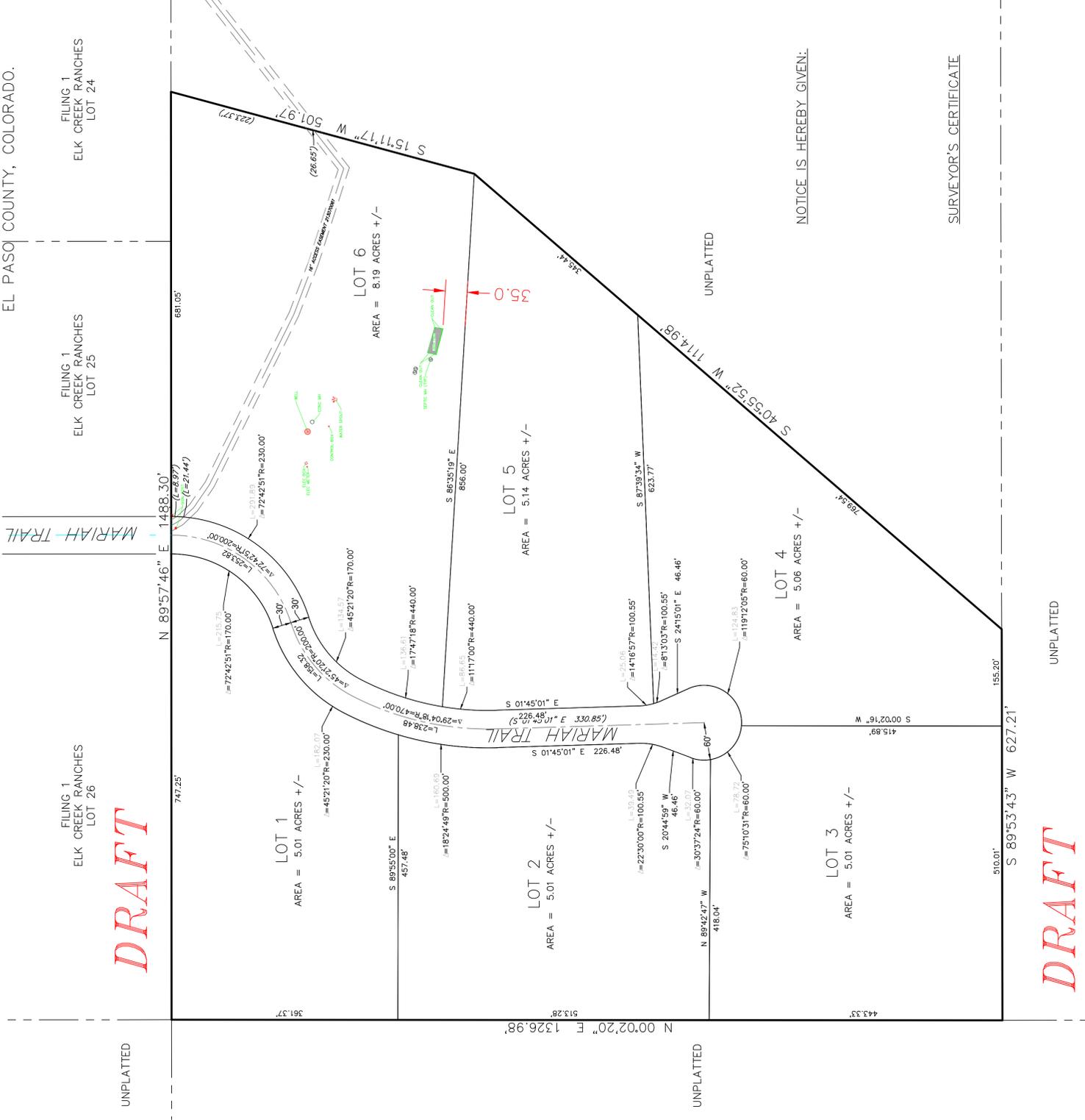
**7.0 CONCLUSION**

**The subject property has adequate water supply to meet the needs of the proposed subdivision on a 300-year basis.**

# *Appendix A*

# MARIAH TRAIL FILING NO. 1

A PORTION OF THE NORTHWEST QUARTER OF SECTION 7,  
TOWNSHIP 11 SOUTH, RANGE 65 WEST, OF THE 6TH PRINCIPAL MERIDIAN,  
EL PASO COUNTY, COLORADO.



### KNOW ALL MEN BY THESE PRESENTS:

THAT THOMAS D KIRK JR. BEING THE OWNER OF THE FOLLOWING DESCRIBED PROPERTY TO WIT:  
A TRACT OF LAND BEING IN A PORTION OF THE NORTHWEST QUARTER OF SECTION 7, TOWNSHIP 11 SOUTH, RANGE 65 WEST OF THE 6TH PRINCIPLE MERIDIAN, EL PASO COUNTY, COLORADO, DESCRIBE AS FOLLOWS:  
BEGINNING AT THE NORTHWEST CORNER OF SAID SECTION 7,  
THENCE N89°57'46"E, 1488.29 FEET ALONG THE NORTH LINE OF SAID NORTHWEST ¼;  
THENCE S15°11'17"W, 501.94 FEET;  
THENCE S89°53'43"W, 627.21 FEET TO A POINT ON THE WEST LINE OF SAID NORTHWEST ¼;  
THENCE N00°02'20"E, 126.99 FEET ALONG THE WEST LINE OF SAID NORTHWEST ¼ TO THE NORTHWEST CORNER THEREOF; AND THE POINT OF BEGINNING.

### OWNERS' CERTIFICATE:

THE UNDERSIGNED BEING THE OWNER IN THE LAND DESCRIBED HEREIN, HAS LAID OUT, SUBDIVIDED AND PLATTED SAID LAND INTO LOTS, STREETS AND EASEMENTS AS SHOWN HEREON UNDER THE NAME AND SUBDIVISION OF MARIAH TRAIL FILING NO. 1, ALL PUBLIC IMPROVEMENTS SO PLATTED ARE HEREBY DEDICATED TO PUBLIC USE AND SAID OWNER DOES HEREBY COVENANT AND AGREE THAT THE PUBLIC IMPROVEMENTS WILL BE CONSTRUCTED TO EL PASO COUNTY STANDARDS AND THAT PROPER RECORDING OF THIS INSTRUMENT SHALL CONSTITUTE NOTICE TO THE PUBLIC. THE PUBLIC IMPROVEMENTS SO DEDICATED WILL BECOME MATTERS OF MAINTENANCE BY 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 AND 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.

BY: THOMAS D KIRK, JR.

THOMAS D KIRK, JR.

### NOTARIAL:

STATE OF COLORADO) SS  
COUNTY OF EL PASO)  
I, THE ABOVE AND AFORMENTIONED WAS ACKNOWLEDGED BEFORE ME THIS \_\_\_\_\_ DAY OF \_\_\_\_\_, 2023 A.D., BY THOMAS D KIRK, JR., OWNER  
WITNESS MY HAND AND SEAL \_\_\_\_\_  
MY COMMISSION EXPIRES \_\_\_\_\_

- BEARINGS ARE BASED ON THE NORTH LINE OF THE NORTHWEST ¼ OF SECTION 7, TOWNSHIP 11S, RANGE 65W, OF THE 6TH P.M., EL PASO COUNTY, COLORADO MONUMENTED AS SHOWN.
- WESTERLY LINE OF LOT 2, COLORADO SPRINGS AIRPORT FILING NO. 1, AS BEARING N00°5'49"E, AS MONUMENTED BY A #4 REBAR W/CAP MARKED "MPW L.S. 11997" AT THE WEST PC AND A FOUND 3-1/2" ALUM CAP AT THE SW CORNER OF SEC 36, T14S, R65W, 6TH P.M.
- THIS PROPERTY LIES WITHIN ZONE X, AREA OF MINIMAL FLOOD HAZARD, INFORMATION OBTAINED FROM FEMA FLOOD INSURANCE RATE MAP, COMMUNITY PANEL NO. 08041C03056 DATED 12/7/2018.
- SET #5 REBAR WITH A 2" ALUMINUM CAP STAMPED "POLARIS, PLS 27605", FLUSH WITH THE GROUND AT ALL EXTERIOR CORNERS, UNLESS OTHERWISE NOTED.
- LINEAL UNITS SHOWN HEREON ARE US SURVEY FEET.
- ANY PERSON WHO KNOWINGLY REMOVES, ALTERS OR DEFACES ANY PUBLIC LAND SURVEY MONUMENT OR LAND BOUNDARY MONUMENT OR ACCESSORY COMMITS A CLASS TWO(2) MISDEMEANOR PURSUANT TO C.R.S. 18-4-508.
- FIELD WORK COMPLETED ON (DATE WILL BE ADDED AFTER FINAL APPROVAL).

### CLERK AND RECORDER'S CERTIFICATE

STATE OF COLORADO) SS  
COUNTY OF EL PASO) SS  
I HEREBY CERTIFY THIS INSTRUMENT WAS FILED FOR RECORD IN MY OFFICE AT \_\_\_\_\_ O'CLOCK \_\_\_\_\_ M., THIS \_\_\_\_\_ DAY OF \_\_\_\_\_, 2023 A.D., AND IS DULY RECORDED AT RECEPTION NUMBER \_\_\_\_\_ OF THE RECORDS OF EL PASO COUNTY.  
STEVE SCHLEIKER, CLERK AND RECORDER  
BY: \_\_\_\_\_ DEPUTY

NOTICE IS HEREBY GIVEN:

### NOTARIAL:

THE UNDERSIGNED, PROFESSIONAL LAND SURVEYOR, LICENSED IN THE STATE OF COLORADO, HEREBY CERTIFY THAT I AM THE AUTHOR OF THIS SURVEY AND THAT I HAVE DRAWN UNDER HIS RESPONSIBLE CHARGE AND ACCURATELY SHOWS THE DESCRIBED TRACT OF LAND, AND SUBDIVISION THEREOF, AND THE REQUIREMENTS TO TITLE 38 OF THE COLORADO REVISED STATUTES, 1973, AS AMENDED, HAVE BEEN MET TO THE BEST OF HIS KNOWLEDGE AND BELIEF AND IS NOT A GUARANTY OR WARRANTY, EITHER EXPRESSED OR IMPLIED.

### DEDICATION:

RANDALL D. HENRY  
COLORADO REGISTERED PROFESSIONAL  
LAND SURVEYOR NO. 27605

DRAFT

DRAFT

DRAFT

# MARIAH TRAIL FILING NO. 1

A PORTION OF THE NORTHWEST QUARTER OF SECTION 7,  
TOWNSHIP 11 SOUTH, RANGE 65 WEST, OF THE 6TH PRINCIPAL MERIDIAN,  
EL PASO COUNTY, COLORADO.

REGISTERED LAND SURVEYOR IN THE STATE OF COLORADO, NO. 27605 FOR AND ON BEHALF OF POLARIS SURVEYING, INC. NOTICE: THIS SURVEY IS BASED ON THE BEST AVAILABLE INFORMATION AND IS NOT A GUARANTY OR WARRANTY, EITHER EXPRESSED OR IMPLIED. ANY ACTION BASED UPON ANY DEFECT IN THIS SURVEY WITHIN THREE YEARS AFTER YOU FIRST DISCOVER SUCH DEFECT, IN NO EVENT, MAY BE BRINGED AGAINST POLARIS SURVEYING, INC. OR ANY OF ITS EMPLOYEES OR AGENTS UNLESS IT IS PROVEN THAT THE DEFECT WAS KNOWN TO POLARIS SURVEYING, INC. AT THE TIME OF CERTIFICATION SHOWN HEREON.

ZONE	REV	DESCRIPTION	DATE	APPROVED
	1	CLIENT COMMENTS	03/14/23	
	2	CLIENT COMMENTS	03/17/23	

DRAWN BY	T/W	DATE
RDH		02/21/2023

CHECKED BY	JOB NO.	SHEET
RDH	2-30109	1 of 1

FINAL PLAT  
OWNER: THOMAS D KIRK JR  
19205 MARIAH TRAIL, CO.SPR. 80508  
POLARIS SURVEYING, INC.  
1903 Labroy Street, Suite 102  
Colorado Springs, CO 80909  
(719)448-0844 FAX (719)448-9225

DATE OF PREPARATION: 02/21/23 PCD FILE NO.

# *Appendix B*

# WATER SUPPLY INFORMATION SUMMARY

Section 30-28-133.(d), C.R.S. requires that the applicant submit to the County, "Adequate evidence that a Water supply that is sufficient in terms of quantity, quality, and dependability will be available to ensure an adequate supply of water"

1. NAME OF DEVELOPMENT AS PROPOSED		<u>Mariah Trail Filing No. 1 Subdivision</u>	
2. LAND USE ACTION		<u>Minor Subdivision</u>	
3. NAME OF EXISTING PARCEL AS RECORDED		<u>19205 Mariah Trail</u>	
SUBDIVISION	<u>See Above</u>	FILING	<u>N/A</u>
BLOCK	<u>N/A</u>	Lot	<u>N/A</u>
4. TOTAL ACERAGE	<u>35</u>	5. NUMBER OF LOTS PROPOSED	<u>6</u>
6. PARCEL HISTORY - Please attach copies of deeds, plats, or other evidence or documentation. (In submittal package)			
A. Was parcel recorded with county prior to June 1, 1972? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO			
B. Has the parcel ever been part of a division of land action since June 1, 1972? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO			
If yes, describe the previous action			
7. LOCATION OF PARCEL - Include a map delineating the project area and tie to a section corner. (In submittal)			
<u>S1/2</u> OF		SW <u>14</u> SECTION 7	TOWNSHIP <u>11</u> S
		<input type="checkbox"/> N	S
		RANGE <u>66</u>	<input type="checkbox"/> E <input checked="" type="checkbox"/> W
PRINCIPAL MERIDIAN: <input checked="" type="checkbox"/> 6TH <input type="checkbox"/> N.M. <input type="checkbox"/> UTE <input type="checkbox"/> COSTILLA			
8. PLAT - Location of all wells on property must be plotted and permit numbers provided.			
Surveyors plat <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		If not, scaled hand-drawn sketch <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
9. ESTIMATED WATER REQUIREMENTS - Gallons per Day or Acre Foot per Year		10. WATER SUPPLY SOURCE	
HOUSEHOLD USE # <sup>1</sup>	<u>6</u> of units <u>0.300</u> AF/SFE/YR <u>1.800</u> AF	<input checked="" type="checkbox"/> EXISTING	<input checked="" type="checkbox"/> DEVELOPED
COMMERCIAL USE #	<u>0</u> SF <u>-</u> GPD <u>-</u> AF	WELLS	SPRING
IRRIGATION # <sup>2</sup>	<u>0.0500</u> AF/1000SF <u>1,607</u> GPD <u>1.800</u> AF	WELL PERMIT NUMBERS	
ANIMAL WATERING # <sup>4</sup>	<u>12</u> Horses <u>0.0125</u> AF/Horse/Year <u>0.150</u> AF	<u>85835</u>	
TOTAL	<u>3,348</u> GPD <u>3.75</u> AF*	<input type="checkbox"/> MUNICIPAL <input type="checkbox"/> ASSOCIATION <input type="checkbox"/> COMPANY <input type="checkbox"/> DISTRICT	
<sup>1</sup> Per 2022CW3094 Section 8.3 <sup>2</sup> Assuming 6,000 ft <sup>2</sup> of irrigatable land for 6 lots per 2022CW3094 Section 8.3 <sup>3</sup> Assuming 2 large animals for 6 lots per 2022CW3094 Section 8.3		<input checked="" type="checkbox"/> NEW WELLS Proposed Aquifers - (Check One) <input type="checkbox"/> Alluvial <input type="checkbox"/> Upper <input checked="" type="checkbox"/> Upper Dawson <input type="checkbox"/> Lower <input checked="" type="checkbox"/> Lower Dawson <input type="checkbox"/> Laramie Fox <input type="checkbox"/> Denver <input type="checkbox"/> Dakota <input type="checkbox"/> Other	
		WATER COURT DECREE CASE NUMBERS <u>Existing Well Permit #85835-F</u> <u>Case Number - 06CW189</u> <u>Case Number - 2022CW3094</u>	
11. ENGINEER'S WATER SUPPLY REPORT <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		If yes, please forward with this form. (This may be required before our review is completed)	
12. TYPE OF SEWAGE DISPOSAL SYSTEM			
<input checked="" type="checkbox"/> SEPTIC TANK/LEACH FIELD		<input type="checkbox"/> CENTRAL SYSTEM - DISTRICT NAME:	
<input type="checkbox"/> LAGOON		<input type="checkbox"/> VAULT - LOCATION SEWAGE HAULED	
<input type="checkbox"/> ENGINEERED SYSTEM (Attach a copy of engineering design)		<input type="checkbox"/> OTHER:	

# *Appendix C*

<b>DISTRICT COURT, WATER DIVISION 1, COLORADO</b> Weld County Courthouse P.O. Box 2038 Greeley, CO 80632	DATE FILED: February 3, 2023 2:24 PM CASE NUMBER: 2022CW3094  <b>▲ COURT USE ONLY ▲</b>
<b>APPLICATION FOR PLAN FOR AUGMENTATION OF THOMAS D. KIRK, JR., Applicant,</b>  IN EL PASO COUNTY	Case Number: 2022CW3094
<b>FINDINGS OF FACT, CONCLUSIONS OF LAW, RULING OF THE REFEREE, AND JUDGMENT AND DECREE</b>	

A claim for a plan for augmentation was filed in this case on July 29, 2022. All matters contained in the application having been reviewed, such testimony having been taken and evidence presented as was necessary, and being otherwise fully advised in the premises, it is hereby the Findings of Fact, Conclusions of Law, Ruling of the Referee, and Judgment and Decree, as follows:

**FINDINGS OF FACT**

1. Name and address of Applicant:  
  
Thomas D. Kirk, Jr.  
19205 Mariah Trail  
Colorado Springs, CO 80908
  
2. Statements of Opposition: No statements of opposition were filed and the time for filing of such statements has expired.
  
3. Subject Matter Jurisdiction: Timely and adequate notice of the application was published as required by statute, and the Court has jurisdiction over the subject matter of this proceeding and over the parties affected hereby, whether they have appeared or not.
  
4. Consultation: The Water Referee consulted with the Division Engineer, as required by C.R.S. § 37-92-302(4), on the application, on October 17, 2022, and the Division Engineer filed its summary of consultation on October 31, 2022.

**GROUNDWATER RIGHTS**

5. Subject Property: 35 acres being a portion of Lot 1, Section 7, Township 11 South, Range 65 West of the 6th P.M., also known as 19205 Mariah Trail, Colorado Springs, El Paso County, State of Colorado, as shown on **Exhibit A** (“Subject Property”).

6. Prior Decree Information: The groundwater underlying the Subject Property was decreed in Case No. 2006CW189, District Court, Water Division 1 on May 2, 2008, (the “06CW189 Decree”). The groundwater was conveyed to the Applicant via the quitclaim deeds recorded at Reception No. 221168131 on September 7, 2021, at the El Paso County Clerk and Recorder’s Office. The volumes below are based on a 300-year aquifer life:

Aquifer	Annual Amount (acre-feet)	Total Amount (acre-feet)
Dawson (NNT)*	7.01	2,103
Denver (NT)	9.34	2,802
Arapahoe (NT)	5.21	1,563
Laramie-Fox Hills (NT)**	3.56	1,068

\* The total amount of Dawson Aquifer groundwater is 10.37 acre-feet per year. 3.36 acre-feet per year (10.08 acre-feet per year for a 100-year withdrawal period) of Dawson Aquifer groundwater is reserved for use in the augmentation plan specified in the 06CW189 Decree.

\*\* All Laramie-Fox Hills Aquifer groundwater is reserved for use in the augmentation plan specified in the 06CW189 Decree.

7. 06CW189 Decreed Uses: The water withdrawn from the subject aquifers will be used, reused, successively used, for domestic, industrial, commercial, irrigation, livestock watering, fire protection, recreational, fish and wildlife, and for exchange and augmentation purposes, including storage, both on and off the Subject Property.

### **PLAN FOR AUGMENTATION**

8. Plan for Augmentation:

8.1 Groundwater to be Augmented: Up to 3.75 acre-feet per year for 300 years of not-nontributary Dawson Aquifer groundwater.

8.2 Water to be Used for Augmentation: Return flows associated with use of the not-nontributary Dawson Aquifer and return flows or direct discharge of nontributary groundwater.

8.3 The Dawson Aquifer groundwater will be used on up to six (6) lots, in up to six (6) individual wells (0.625 acre-feet per well), for in-house use in one single-family residence (0.3 acre-feet per year per well; 1.8 acre-feet per year total), irrigation, including lawn, garden, and trees of up to 6,000 square-feet per lot (0.3 acre-feet per well; 1.8 acre-feet per year total), stockwatering for up to 2 large domestic animals (0.025 acre-feet per well; 0.15 acre-feet per year total) and fire protection, through one or more wells on the Subject Property. Conservatively, water use in single-family dwellings will equal at least 0.2 acre-feet of water annually for in-house uses, and the use of non-evaporative septic systems

typically results in consumption of approximately 10% of such use, resulting in return flows of at least 0.18 acre-feet per year from each single-family residence, and 1.08 acre-feet per year at full build-out. Various components of this plan for augmentation are predicated on these estimations, and Applicant shall be required to use a non-evaporative septic system to treat and dispose of water used for in-house use.

- 8.4 Replacement During Pumping: During pumping of the Dawson Aquifer groundwater, Applicant will replace actual depletions to the affected stream system pursuant to C.R.S. § 37-90-137(9)(c.5). In the 300th year, the total depletion is 22.29% of the amount withdrawn or 0.836 acre-feet total. Return flow from in-house use of the Dawson Aquifer groundwater for each residence is at least 0.18 acre-feet per year, and 1.08 acre-feet per year at full build-out, as described above, and such return flow is sufficient to replace actual depletions for pumping of the entire 3.75 acre-feet per year for 300 years. Return flows accrue to the South Platte River system via Cherry Creek. Because return flows from all uses are estimated rather than measured, Applicant agrees that such return flows shall be used only to replace depletions under this plan for augmentation and will not be sold, leased, traded, or assigned in whole or in part for any other purpose. If for any reason, sufficient return flows are not available to replace the actual depletions shown on **Exhibit B**, the Applicant, or successors in interest, are required to pump water directly into the stream in the amount that has not been replaced by return flows. If such water is withdrawn from the Dawson Aquifer well(s) operated under the augmentation plan the amount of water being pumped from the well(s) for other purposes must be reduced so that the allowed annual withdrawal from the well(s) is not exceeded. Such replacement must be made prior to the irrigation season for the following year.
- 8.5 Post-pumping Depletion Augmentation: Assuming maximum pumping of 3.75 acre-feet per year for 300 years from the Dawson Aquifer, the maximum total depletion to the affected stream systems is approximately 22.29% of the annual amount withdrawn or 0.836 acre-feet in the 300th year. Applicant will reserve 3.75 acre-feet per year, 1,125 acre-feet total, of the nontributary Arapahoe Aquifer groundwater decreed in the 06CW189 Decree, owned by Applicant, for use in this plan, but reserves the right to substitute the use of other nontributary groundwater, including return flows, either underlying the Subject Property, or from another location which is legally available for such purpose, for replacement of post-pumping depletions at such time that post-pumping depletions may begin. The Court retains continuing jurisdiction in this matter to determine if the supply is adequate.
- 8.6 Applicant will begin making post pumping replacements when (1) the Applicant or successors in interest have acknowledged in writing that all withdrawals for beneficial use of the Dawson Aquifer groundwater has permanently ceased, or (2) for a period of 10 consecutive years that no Dawson Aquifer groundwater has

been withdrawn. Until such time as the post-pumping depletions begin the Applicant must continue to replace during pumping depletions to the stream using return flows, by pumping water directly to the stream to replace such depletions or using another replacement source approved by the Division Engineer. At the time that post pumping depletions begin as described in this paragraph, Applicant or successors in interest will be required to construct a well and pump groundwater to replace post-pumping depletions, subject to the terms and conditions of Paragraph 8.5. This condition constitutes a covenant running with the land.

- 8.7 Applicant will replace post-pumping depletions for the shortest of the following periods: (1) The period provided by C.R.S. § 37-90-137(9)(c.5), or (2) the expressed period specified by the Colorado Legislature, should it specify one and providing the Applicant obtain Water Court approval for such modification, or (3) the period determined by the State Engineer, should they choose to set such a period and have jurisdiction to do so, or (4) the period established through rulings of the Colorado Supreme Court on relevant cases, or (5) until Applicant petition the Water Court and the State Engineer's Office and prove that they have complied with any statutory requirement.
9. Failure of Applicant and/or successors in interest to comply with the terms of the decree may result in an order of the Division Engineer's office to curtail or eliminate pumping of the well. This decree shall be recorded in the real property records of El Paso County so that a title examination of the property, or any part thereof, shall reveal to all future purchasers the existence of this decree.
10. Administration of Plan for Augmentation:
  - 10.1 Applicant shall report to the Division Engineer for Water Division 1 upon request, a summary of the amount of water pumped by each Denver Basin well, the annual depletion, the amount of replacement water provided by each replacement source, the net impact on the stream and any other information required by the Division Engineer to properly administer the decree on an accounting form acceptable to the Division Engineer.
  - 10.2 All withdrawals which are the subject of this decree will be metered.
  - 10.3 Pursuant to C.R.S. § 37-92-305(8), the State Engineer shall curtail all out-of-priority diversions, the depletions from which are not so replaced as to prevent injury to vested water rights.
  - 10.4 The Applicant, or successors in interest, at the direction of the Division Engineer shall make post-pumping replacements to the South Platte River stream system via Cherry Creek, or its tributaries, pursuant to the amounts referenced on the depletion curve attached on **Exhibit B**.

Retained Jurisdiction for Plan for Augmentation:

- 10.5 Pursuant to C.R.S. § 37-92-304(6), the Court retains continuing jurisdiction over the plan for augmentation decreed herein for reconsideration of the question whether the provisions of this decree are necessary and/or sufficient to prevent injury to vested water rights of others. The Court also has jurisdiction for the purposes of determining compliance with the terms of the augmentation plan.
- 10.6 Any party seeking to invoke the retained jurisdiction of the Court shall file a verified petition with the Court. The petition to invoke retained jurisdiction or to modify this decree shall set forth with particularity the factual basis and the requested decretal language to effect the petition. The party lodging the petition shall have the burden of going forward to establish prima facie facts alleged in the petition. If the Court finds those facts to be established, Applicant shall thereupon have the burden of proof to show: (1) that any modification sought by Applicant will avoid injury to other appropriators, or (2) that any modification sought by Objector is not required to avoid injury to other appropriators, or (3) that any term or condition proposed by Applicant in response to the objector's petition does avoid injury to other appropriators.
- 10.7 The Court retains jurisdiction for the purpose of determining whether the continued reservation of the nontributary water for use on the Subject Property is required. After notice to the State Engineer's Office, if Applicant can demonstrate to the Court that post-pumping depletions need no longer be replaced, the Court may remove the requirement that the nontributary water must be reserved.

**CONCLUSIONS OF LAW**

11. Full and adequate notice of the application was given, and the Court has jurisdiction over the subject matter and over the parties whether they have appeared or not.
12. Applicant has complied with all requirements and met all standards and burdens of proof, including but not limited to C.R.S. §§ 37-90-137(9)(c.5), 37-92-103(9), 37-92-302, 37-92-304(6), 37-92-305(3), (4), (6), (8), to adjudicate the plan for augmentation and are entitled to a decree confirming and approving the plan for augmentation as described in the Findings of Fact.
13. The Water Court has jurisdiction over this proceeding pursuant to C.R.S. § 37-90-137(6). This Court concludes as a matter of law that the application herein is one contemplated by law pursuant to C.R.S. § 37-90-137(4). The application for a decree confirming Applicant's right to withdraw and use groundwater decreed herein from the Dawson Aquifer should be granted pursuant to C.R.S. §§ 37-90-137(4) and (9)(c.5), subject to the provisions of this decree. The withdrawal of up to 3.75 acre-feet per year and 1,125 acre-feet total of the Dawson Aquifer groundwater, and in accordance with the terms of this

decree and the 06CW189 Decree, will not injuriously affect the owner of or persons entitled to use water under a vested water right or a decreed conditional water right. The remaining amount of Dawson Aquifer groundwater decreed in Case No. 06CW189 and herein will not be withdrawn and used until it is included in a separate plan for augmentation.

### **JUDGMENT AND DECREE**

14. The Findings of Fact and Conclusions of Law set forth above are hereby incorporated into the terms of this Ruling and Decree as if the same were fully set forth herein.
15. Applicant and/or successors may withdraw the subject groundwater herein through wells to be permitted by the State Engineer's Office located anywhere on the Subject Property in the average annual amounts and at the estimated average rates of flow specified herein, subject to the limitations herein and the retained jurisdiction by this Court.
16. Applicant may withdraw an average annual amount of 3.75 acre-feet per year and not more than 1,125 acre-feet total of the Dawson Aquifer groundwater under the plan for augmentation decreed herein pursuant to § 37-90-137(9)(c.5), C.R.S.
17. The groundwater rights described in the Findings of Fact are hereby approved, confirmed and adjudicated, including and subject to the terms and conditions specified herein and in the 06CW189 Decree. No owners of or persons entitled to use water under a vested water right or decreed conditional water right will be injured or injuriously affected by the pumping of Applicant's groundwater resources as decreed herein.
18. Pursuant to C.R.S. § 37-92-305(5), the replacement water herein shall be of a quality so as to meet the requirements for which the water of the senior appropriator has normally used.
19. The plan for augmentation as described in the Findings of Fact is hereby approved, confirmed, and adjudicated, including and subject to the terms and conditions specified herein.
20. No owners of or person entitled to use water under a vested water right or decreed conditional water right will be injured or injuriously affected by the operation of the plan for augmentation as decreed herein.
21. **Retained Jurisdiction:**
  - 21.1 The Court retains jurisdiction as necessary to adjust the average annual amounts of groundwater available under the Subject Property to conform to actual local aquifer characteristics as determined from adequate information obtained from wells, pursuant to C.R.S. § 37-92-305(11). Within 60 days after completion of

any well decreed herein or any test hole(s), Applicant or any successor in interest to these water rights shall serve copies of such log(s) upon the State Engineer.

- 21.2 At such time as adequate data is available, any person, including the State Engineer, may invoke the Court's retained jurisdiction to make a Final Determination of Water Right. Within four months of notice that the retained jurisdiction for such purpose has been invoked, the State Engineer shall use the information available to him to make a final determination of water rights findings. The State Engineer shall submit such finding to the Water Court and the Applicant.
- 21.3 If no protest to such finding is made within 60 days, the Final Determination of Water Rights shall be incorporated into the decree by the Water Court. In the event of a protest, or in the event the State Engineer makes no determination within four months, such final determination shall be made by the Water Court after notice and hearing.
- 21.4 Except as otherwise provided in Paragraphs 23.1-23.3, above, pursuant to C.R.S. § 37-92-304(6), the 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 other, for a period of five (5) years. Any person, within such period, may petition the Court to invoke its retained jurisdiction. 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.
22. Continuing Jurisdiction: Pursuant to C.R.S. § 37-92-304(6), the Court retains continuing jurisdiction over the plan for augmentation decreed herein for reconsideration by the water judge on the question of injury to the vested rights of others for such period after the entry of such decision as is necessary or desirable to preclude or remedy any such injury.

23. The groundwater rights decreed herein are vested property rights appurtenant to the Subject Property and shall remain appurtenant unless expressly severed by conveyance to someone other than the property owner. If any deed for the Subject Property is silent to the conveyance of the water rights decreed herein, it is assumed that the water rights have been conveyed as an appurtenance to the Subject Property, unless all or part of the water rights have been previously severed.

Date: January 4, 2023



John S. Cowan  
Water Referee  
Water Division One

The Court finds that no protest was filed in this matter. The foregoing is confirmed and is made the judgment and decree of this Court.

Date: February 3, 2023



Todd L. Taylor  
Water Judge  
Water Division One

**Exhibit A - Application of Kirk  
Map and Legal Description of 19205 Mariah Trail**

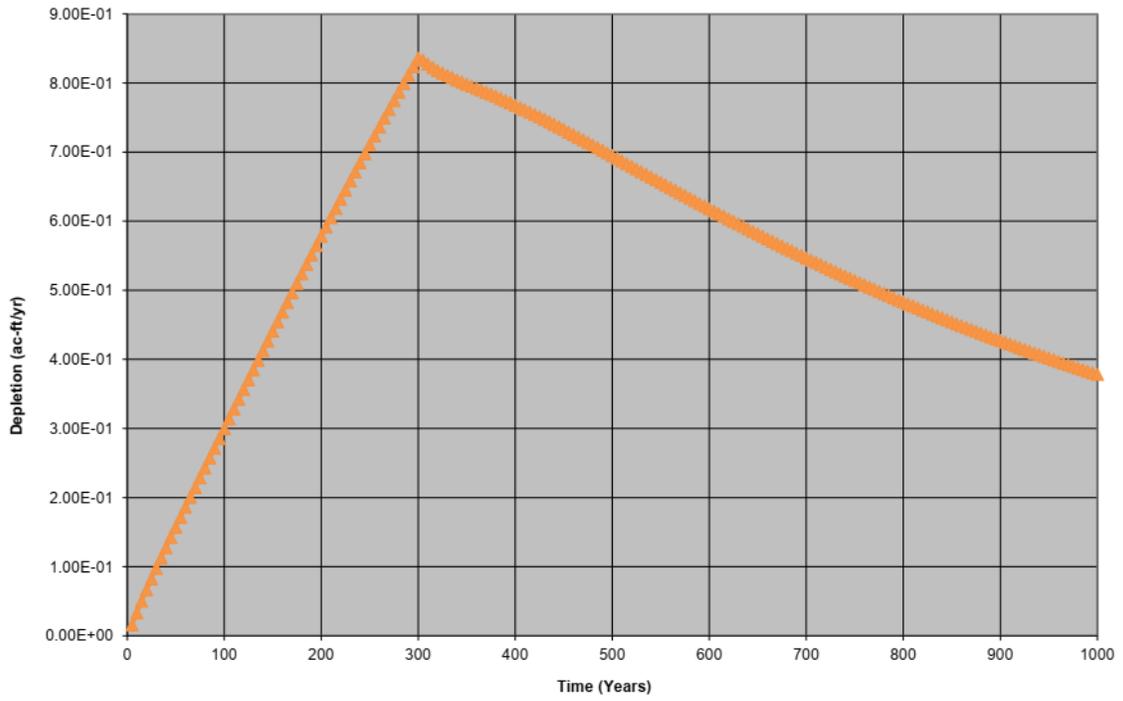


**A portion of Lot 1, Section 7, Township 11 South, Range 65 West of the 6th pm, County of El Paso, State of Colorado and also a part of a parcel recorded at Reception No. 213051986, records of El Paso County;**

**More particularly described as follows:**

**Beginning at the Northwest Corner of said Lot 1 from which the North 1/4 Corner of said Section 7 Bears N 89 degrees 57'46" E a distance of 3011.05 Feet;  
Thence N 89degrees 57'46"E on the North Line of said Lot 1 a distance of 1488.29 Feet;  
Thence S 15degrees 11'17" W a distance of 501.94 Feet;  
Thence S 40degrees 55'52" W a distance of 1114.98 Feet to a point on the South Line of said Lot 1;  
Thence S 89degrees 53'43" W on the South Line of said Lot 1 a distance of 627.21 feet to the Southwest Corner of said Lot 1;  
Thence N 00degrees 02'20"E on the West Line of said Lot 1 a distance of 1326.99 to the Point of Beginning;  
Containing 1,524,595 square feet or 35 acres more or less.**

Stream Depletion from Pumping in SEC 7 T11S R65W



Kirk  
22CW3094

EXHIBIT B

2002 CW 14 Raymond Morris  
2002 CW 14 Raymond Morris

<p>DISTRICT COURT, WATER DIVISION 1, COLORADO</p> <p>Court Address: P.O. Box 2038 Greeley, Colorado 80632</p> <hr/> <p><b>MARIAH MEADOWS, LLLP, AND SANDRA AND LOWELL HAUGEN, Applicants,</b></p> <p><b>IN EL PASO COUNTY</b></p> <hr/> <p>Attorneys: Petrock &amp; Fendel, P.C. Scott M. Huyler, Atty. Reg. #27342 700 Seventeenth Street, Suite 1800 Denver, Colorado 80202 Telephone: (303) 534-0702</p>	<p>FILED Document CO Weld County District Court 19th JD Filing Date: Aug 31 2006 10:53AM MDT Filing ID: 12240572 Review Clerk: Connie S Koppes</p> <p><b>Δ COURT USE ONLY Δ</b></p> <p>Case Number: 2006CW <u>189</u></p>
<p><b>APPLICATION FOR UNDERGROUND WATER RIGHTS FROM NONTRIBUTARY AND NOT NONTRIBUTARY SOURCES AND FOR APPROVAL OF PLAN FOR AUGMENTATION AND CHANGE OF WATER RIGHT, IN THE NONTRIBUTARY DENVER, ARAPAHOE AND LARAMIE-FOX HILLS AND THE NOT NONTRIBUTARY DAWSON AQUIFERS.</b></p>	

NO ST REVW  
51 φ

1. Names, Addresses, and telephone numbers of Applicants:

Mariah Meadows, LLLP  
2790 N. Academy Blvd., Suite 350  
Colorado Springs, CO 80917  
(719) 592-0833

Sandra and Lowell Haugen  
18885 Brown Road  
Colorado Springs, CO 8090801101  
(719) 495-4279

2. Well Permits: Well permits will be applied for when Applicants or successors in interest are prepared to drill wells.

3. Legal Description of Subject Property: The wells which will withdraw groundwater from the subject not nontributary and nontributary aquifers will be located on approximately 170 acres of land located in Section 7, T11S, R65W of the 6th P.M, as described and shown on Attachment A hereto (Subject Property). Applicant Mariah Meadows, LLLP, is the owner of the Subject Property and the groundwater requested herein.

4. Source of Water Rights: The source of the groundwater to be withdrawn from the Dawson aquifer is not nontributary as described in Sections 37-90-103(10.7) and 37-90-137(9)(c), C.R.S. The ground water to be withdrawn from the Denver, Arapahoe and Laramie-Fox Hills aquifers is nontributary groundwater as described in 37-90-103(10.5), C.R.S.

5. Estimated Amounts and Rates of Withdrawal: The wells will withdraw the subject amounts of groundwater at rates of flow necessary to efficiently withdraw the entire decreed amounts. Applicant will withdraw the subject groundwater through wells to be located at any location on the Subject Property. Applicant waives the 600 foot spacing rule as described in Section 37-90-137(2), C.R.S. for wells located on the Subject Property. The estimated average annual amounts of withdrawal available from the subject aquifers as indicated below, are based upon the Denver Basin Rules, 2 C.C.R. 402-6. Applicant estimates the following annual amounts are representative of the Dawson, Denver, Arapahoe and Laramie-Fox Hills aquifers underlying the Subject Property:

<u>Aquifer</u>	<u>Saturated Thickness</u>	<u>Estimated Annual Amount</u>
Dawson	460 feet	156 acre-feet(NNT)
Denver	475 feet	137 acre-feet(NT)
Arapahoe	265 feet	76 acre-feet(NT)
Laramie-Fox Hills	205 feet	52 acre-feet(NT)

6. Well Fields: Applicant requests that this Court determine that Applicant has the right to withdraw all of the legally available groundwater lying below the Subject Property, through wells which may be located anywhere on the Subject Property, and any additional wells which may be completed in the future as Applicant's well fields. As additional wells are constructed, applications will be filed in accordance with 37-90-137(10), C.R.S. Applicant Mariah Meadows, LLLP, is also the owner of the same type of groundwater requested herein and underlying a contiguous 61 acres of land located in the W1/2 of Section 7, T11S, R65W, as shown on Attachment A, and as decreed in Case No. 2005CW260, District Court, Water Division 1. Applicant requests that the groundwater in Case No. 2005CW260 underlying Applicant's 61 acres be withdrawn in combination with the same type of groundwater requested herein underlying the Subject Property, through wells to be located on the 61 acres or the Subject Property herein.

7. The groundwater will use and reuse the groundwater for domestic, industrial, commercial, irrigation, livestock watering, fire protection, recreational, fish and wildlife, and for exchange and augmentation purposes, including storage, both on and off the Subject Property.

8. Jurisdiction: The Water Court has jurisdiction over the subject matter of this application pursuant to 37-92-302(2), and 37-90-137(6), C.R.S.

9. Description of plan for augmentation:

A. Water and structures to be augmented: Approximately 55.1 acre-feet per year over a 300 year pumping period of not nontributary Dawson aquifer water underlying the Subject Property as requested herein, and located underlying a contiguous approximately 101 acre parcel of land as shown on Attachment A hereto. Applicant Mariah Meadows, LLLP is the owner of approximately 61 acres and Applicants Sandra and Lowell Haugen are the owners of approximately 40 acres of the 101 acres as shown on Attachment A. The Dawson aquifer groundwater underlying the 101 acres was decreed in Case No. 2005CW260, District Court, Water Division 1, in the amount of 81.2 acre-feet per year. Applicant Mariah Meadows, LLLP, is the owner of approximately 49 acre-feet per year of not nontributary Dawson aquifer groundwater decreed in that case which can be used in this augmentation plan in combination with the Dawson aquifer groundwater underlying the Subject Property. Applicant Mariah Meadows, LLLP, will use 52.1 acre-feet per year for 300 years of its Dawson aquifer water pursuant to this augmentation plan. Applicants Sandra and Lowell Haugen are the owners of approximately 32.2 acre-feet per year of not nontributary Dawson aquifer groundwater decreed in Case No. 2005CW260, of which 3 acre-feet per year for 300 years will be withdrawn pursuant to this augmentation plan. The terms and conditions and operation of the augmentation plan will be combined for all Dawson aquifer wells located on all parcels.

B. Water rights to be used for augmentation: Return flows from the use of not nontributary and nontributary groundwater and direct discharge of nontributary ground water requested herein and underlying Applicants' 101 acres as also decreed in Case No. 2005CW260.

C. Statement of plan for augmentation: Applicant Mariah Meadows, LLLP, with use 52.1 acre-feet per year for 300 years of its Dawson aquifer groundwater to serve up to 53 residential lots, through individual wells (including existing Well Permit Nos. 184802 and 108262, if necessary) for inhouse and irrigation use, to be located on the Subject Property and 61 acre tract. The wells will operate at rates of flow of 15 gpm. For purposes of this application, Applicant Mariah Meadows, LLLP, estimates that each lot will require approximately 0.7 acre-feet annually for inhouse use (0.3 acre-feet) and irrigation (0.4 acre-feet limited to irrigation of 7000 square-feet of irrigated area). The remaining 15 acre-feet per year will be used for irrigation, storage, and fire protection purposes within the approximately 231 acres. The 3 acre-feet per year owned by Applicant

Haugens will be used to serve one residential lot for inhouse use, irrigation of one acre of home lawn and garden, and stockwatering purposes for 300 years. Applicants reserve the right to revise the number of lots to be served and the values and amounts referenced above without revising or republishing this application. The lots will utilize non-evaporative septic systems. Consumptive use associated with inhouse use will be approximately 10% of water used and it is estimated that approximately 10% of water used for irrigation will be returned to the stream system. Storage and fire protection will be 100% consumed.

During pumping Applicants will replace actual depletions to the affected stream system pursuant to 37-90-137(9)(c), C.R.S. Because depletions may occur in both Water Divisions 1 and 2, this application is being filed in both divisions. Return flows from the development through nonevaporative septic systems and irrigation use accrue to the Cherry Creek and South Platte River stream system and those return flows are sufficient to replace actual depletions to that system while the wells are being pumped. Depletions which may occur to the Monument Creek and Arkansas River stream system may not be replaced by return flows from use of the water. Applicants request that the total amount of depletions to both the South Platte and Arkansas River stream systems be returned to the South Platte stream system and for a finding that those replacements are sufficient. Applicants will reserve an equal amount of nontributary groundwater underlying the Subject Property and as decreed in Case No. 2005CW260 for replacement of post-pumping depletions.

10. Remarks:

A. Applicant claims the right to withdraw more than the average annual amounts estimated in paragraph 5B above pursuant to Rule 8A of the Statewide Rules, 2 C.C.R. 402-7.

B. Although Applicant has estimated the amounts of water available for withdrawal from the subject aquifers based on estimates of relative values for specific yield and saturated thickness, Applicant requests the right to revise the estimates upward or downward, based on better or revised data, without the necessity of amending this application or republishing the same.

C. Applicants will withdraw part of the not nontributary Dawson aquifer water requested herein and as decreed in Case No. 2005CW260 under the plan of augmentation requested herein pursuant to 37-90-137(9)(c), C.R.S.

WHEREFORE, Applicants pray that this Court enter a Decree:

11. Granting the application herein and awarding the water rights claimed herein as final water rights, except as to those issues for which jurisdiction of the Court will be specifically retained;

12. Specifically determining that:

A. Applicant has complied with 37-90-137(4), C.R.S., and water is legally available for withdrawal by the wells proposed herein, but that jurisdiction will be retained with respect to the average annual amounts of withdrawal specified herein to provide for the adjustment of such amounts to conform to actual local aquifer characteristics from adequate information obtained from wells or test holes drilled on or near Applicant's property, pursuant to 37-92-305(11), C.R.S. and Denver Basin Rule 9.A.;

B. The groundwater in the Dawson aquifer is not nontributary and groundwater in the Denver, Arapahoe and Laramie-Fox Hills aquifers is nontributary groundwater;

C. Vested or conditionally decreed water rights of others will not be materially injured by the withdrawals of groundwater and the plan for augmentation proposed herein;

FURTHER, Applicants pray that this Court grant such other relief as seems proper in the premises.

RESPECTFULLY submitted this 30th day of August, 2006.

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Scott M. Huyler

ATTORNEYS FOR APPLICANTS

STATE OF COLORADO )  
 ) ss.  
COUNTY OF DENVER )

Scott M. Huyler, being first duly sworn upon oath, deposes and says that he has read the foregoing application, knows the contents thereof, and that the same are true to the best of his knowledge.

---

Scott M. Huyler

Subscribed under oath before me on 8/30/06.

My commission expires: 2/18/08

---

Notary Public

*ORIGINAL SIGNATURE OF SCOTT M. HUYLER ON FILE AT THE OFFICES OF  
PETROCK & FENDEL, P.C.*



**ORIGINAL PERMIT APPLICANT(S)**

ARVINA LEE DONAHUE  
 THOMAS D KIRK Jr

**APPROVED WELL LOCATION**

Water Division: 1      Water District: 8  
 Designated Basin:      N/A  
 Management District: N/A  
 County:                  EL PASO  
 Parcel Name:            N/A  
 Physical Address:      19205 MARIAH TRAIL COLORADO  
    SPRINGS, CO 80908  
 NW 1/4 NW 1/4 Section 7 Township 11.0 S Range 65.0 W Sixth P.M.

**UTM COORDINATES (Meters, Zone: 13, NAD83)**

Easting:      524528.0      Northing:      4329473.0

**PERMIT TO CONSTRUCT A NEW WELL**

**ISSUANCE OF THIS PERMIT DOES NOT CONFER A WATER RIGHT**  
**CONDITIONS OF APPROVAL**

- 1) This well shall be used in such a way as to cause no material injury to existing water rights. The issuance of this permit does not ensure that no injury will occur to another vested water right or preclude another owner of a vested water right from seeking relief in a civil court action.
- 2) The construction of this well shall be in compliance with the Water Well Construction Rules 2 CCR 402-2, unless approval of a variance has been granted by the State Board of Examiners of Water Well Construction and Pump Installation Contractors in accordance with Rule 18.
- 3) Approved pursuant to CRS 37-90-137(4) on the condition that this well is operated in accordance with the augmentation plan approved by the Division 1 Water Court in Case No. 06CW0189. If the well is not operated in accordance with the terms of said decree, it will be subject to administration including orders to cease diverting water.
- 4) The use of groundwater from this well is limited to in-house use and irrigation of 7,000 square-feet.
- 5) Production from this well is limited to the Dawson aquifer. The total depth of the well shall not exceed 1,080 feet below ground surface, which corresponds to the base of the Dawson aquifer. At this location the well must be constructed in accordance with Well Construction Rule 10.4.6 (2 CCR 402-2) for a Type 2 aquifer.
- 6) The pumping rate of this well shall not exceed 15 GPM.
- 7) The average annual amount of groundwater to be withdrawn shall not exceed 0.7 acre-feet and the total volume of groundwater to be withdrawn shall not exceed 210 acre-feet.
- 8) **CONDITION REVOKED ON 09/14/2021 REPLACED BY CONDITION #9.**  
 The entire length of the hole shall be geophysically logged as required by Rule 9 of the Statewide Nontributary Ground Water Rules prior to installing casing.
- 9) This well will not be drilled deeper than the base of the Dawson aquifer, which is present at the surface, therefore a geophysical log would not provide DWR with data useful to the administration of groundwater in this area. The requirement of Rule 9 of the Statewide Nontributary Ground Water Rules to geophysically log the entire length of the hole, is therefore waived. 09/14/2021 AML
- 10) The owner shall mark the well in a conspicuous location with well permit number(s), name of the aquifer, and court case number(s) as appropriate. The owner shall take necessary means and precautions to preserve these markings.
- 11) A totalizing flow meter must be installed on this well and maintained in good working order. Permanent records of all diversions must be maintained by the well owner (recorded at least annually) and submitted to the Division Engineer upon request.
- 12) This well shall be constructed not more than 200 feet from the location specified on this permit.
- 13) The return flow from the use of this well must be through an individual wastewater disposal system of the non-evaporative type where the water is returned to the same stream system in which the well is located.
- 14) This well is subject to administration by the Division Engineer in accordance with applicable decrees, statutes, rules, and regulations.

WELL PERMIT NUMBER 85835-F

RECEIPT NUMBER 10013578

NOTE: This well is withdrawing water from a non-renewable aquifer. While the withdrawals from this aquifer are administered based on a 100 year aquifer life, water level declines may prevent this well from diverting the permitted amounts for that 100 years.

NOTE: To ensure a maximum productive life of this well, perforated casing should be set through the entire producing interval of the approved zone or aquifer indicated above.

NOTE: This permit will expire on the expiration date unless the well is constructed and a pump is installed by that date. A Well Construction and Yield Estimate Report (GWS-31) and Pump Installation and Production Equipment Test Report (GWS-32) must be submitted to the Division of Water Resources to verify the well has been constructed and the pump has been installed. A one-time extension of the expiration date may be available. Contact the DWR for additional information or refer to the extension request form (GWS-64) available at: [dwr.colorado.gov](http://dwr.colorado.gov)

*Wenli Dickinson*

Date Issued: 7/28/2021

Expiration Date: 7/28/2022

Issued By WENLI DICKINSON

**PERMIT HISTORY**

09-14-2021 GEOPHYSICAL LOG WAIVED

# *Appendix D*

***El Paso County Land Development Code  
Water Quality Requirements and Results  
Dawson Confined Aquifer  
Mariah Trail Minor Subdivision  
Sampled February 13, 2023***

<b>Compound</b>	<b>Units</b>	<b>MCL/SMCL</b>	<b>Result</b>
Antimony	mg/l	0.006	ND
Arsenic	mg/l	0.01	0.0012
Barium	mg/l	2	0.0969
Beryllium	mg/l	0.004	0.0002
Cadmium	mg/l	0.005	0
Chromium	mg/l	0.1	0
Cyanide (Total)	mg/l	0	ND
Fluoride	mg/l	4	0.18
Mercury	mg/l	0.002	0
Nitrate as N	mg/l	10	3.32
Nitrite as N	mg/l	1	0
Total Nitrate/Nitrite as N	mg/l	10	3.32
Selenium	mg/l	0.05	0.0021
Thallium	mg/l	0.002	0
Aluminum	mg/l	0.05-0.2	0.062
Chloride	mg/l	250	4
Langlier Index			-1.7
Iron	mg/l	0.3	0.124
Manganese	mg/l	0.05	0.0217
pH		6.5 - 8.5	6.98
Silver	mg/l	0.1	0
Sulfate	mg/l	250	10.5
TDS	mg/l	500	143
Zinc	mg/l	5	0.113
Gross Alpha/Beta	pCi/l	15	1.2
Combined Radium 226+228	pCi/l	5	4.5
Total Coliform	#/100 ml	Absent	Absent

Green = Result below MCL - Acceptable Water Quality

**Analytical Results**

**TASK NO: 230214135**

**Report To:** Stephanie Schwenke

**Company:** RESPEC

5540 Tech Center Drive

Suite 100

Colorado Springs CO 80919

**Bill To:** Stephanie Schwenke

**Company:** RESPEC

5540 Tech Center Drive

Suite 100

Colorado Springs CO 80919

<b>Task No.:</b> 230214135	<b>Date Received:</b> 2/14/23
<b>Client PO:</b>	<b>Date Reported:</b> 3/20/23
<b>Client Project:</b> New Ground Water Source	<b>Matrix:</b> Water - Drinking

Lab Number	Customer Sample ID	Sample Date/Time	Test	Result	Method	Date Analyzed
230214135-01A	Kirk Well #1	2/13/23 12:30 PM	Total Coliform	<b>Absent</b>	SM 9223	2/15/23
			E-Coli	<b>Absent</b>	SM 9223	2/15/23

**Abbreviations/ References:**

Absent = Coliform Not Detected

Present = Coliform Detected - Chlorination Recommended

Date Analyzed = Date Test Completed

SM = "Standard Methods for the Examination of Water and Wastewater"; APHA; 19th Edition; 1995



DATA APPROVED FOR RELEASE BY



**EPC Confined Aquifer Sampling Requirements**

Field Measurements

pH

Temp

Radionuclides

Radium 226 and Radium 228

Gross alpha/Beta

Inorganics

Antimony

Arsenic

Barium

Beryllium

Cadmium

Chromium

Cyanide (Total)

Fluoride

Mercury

Nitrate

Nitrite

Selenium

Thallium

Secondary MCLs

Aluminum

Chloride

Corrosivity

Iron

Manganese

Silver

Sulfate

Zinc

TDS

Bacteriological:

Total Coliform

*-P/A per coc. st*



**Analytical QC Summary**

**TASK NO: 230214135**

**Report To:** Stephanie Schwenke  
**Company:** RESPEC

**Receive Date:** 2/14/23  
**Project Name:** New Ground Water Source

Test	QC Batch ID	QC Type	Result	Method		
Total Alkalinity	QC62933	Blank	ND	SM 2320-B		
Total Dissolved Solids	QC62905	Blank	ND	SM 2540-C		

Test	QC Batch ID	QC Type	Limits	% Rec	RPD	Method
Total Alkalinity	QC62933	Duplicate	0 - 20	-	1.5	SM 2320-B
		LCS	90 - 110	106.0	-	
		LCS-2	90 - 110	105.5	-	
Total Dissolved Solids	QC62905	Duplicate	0 - 20	-	0.6	SM 2540-C
		LCS	85 - 115	101.7	-	

All analyses were performed in accordance with approved methods under the latest revision to 40 CFR Part 136 unless otherwise identified. Based on my inquiry of the person or persons directly responsible for analyzing the wastewater samples and generating the report (s), the analyses, report, and information submitted are, to the best of my knowledge and belief, true, accurate, and complete.



DATA APPROVED FOR RELEASE BY

**Abbreviations/ References:**

RL = Reporting Limit = Minimum Level  
 mg/L = Milligrams Per Liter or PPM  
 ug/L = Micrograms Per Liter or PPB  
 mph/100 mls = Most Probable Number Index/ 100 mls  
 Date Analyzed = Date Test Completed

(d) RPD acceptable due to low duplicate and sample concentrations.  
 (s) Spike amount low relative to the sample amount.  
 ND = Not Detected at Reporting Limit.

**Report To:** Stephanie Schwenke  
**Company:** RESPEC  
5540 Tech Center Drive  
Suite 100  
Colorado Springs CO 80919

**Bill To:** Stephanie Schwenke  
**Company:** RESPEC  
5540 Tech Center Drive  
Suite 100  
Colorado Springs CO 80919

**Task No.:** 230214135  
**Client PO:**  
**Client Project:** New Ground Water Source

**Date Received:** 2/14/23  
**Date Reported:** 3/20/23  
**Matrix:** Water - Drinking

**Customer Sample ID** Kirk Well #1  
**Sample Date/Time:** 2/13/23 12:30 PM  
**Lab Number:** 230214135-01

Test	Result	Method	RL	MCL	Date Analyzed	QC Batch ID	Analyzed By
Chloride	4.0 mg/L	EPA 300.0	0.1 mg/L		2/15/23	QC62951	MLT
Fluoride	0.18 mg/L	EPA 300.0	0.10 mg/L	4	2/15/23	QC62952	MLT
Nitrate Nitrogen	3.32 mg/L	EPA 300.0	0.05 mg/L	10	2/15/23	QC62949	MLT
Nitrite Nitrogen	ND	EPA 300.0	0.03 mg/L	1	2/15/23	QC62950	MLT
Sulfate	10.5 mg/L	EPA 300.0	0.1 mg/L		2/15/23	QC62953	MLT
Cyanide-Total	ND	EPA 335.4	0.005 mg/L	0.02	2/16/23	QC62986	DPL
<b>Total</b>							
Iron	0.124 mg/L	EPA 200.7	0.005 mg/L	0.3	2/15/23	QC62935	MAT
Aluminum	0.062 mg/L	EPA 200.8	0.001 mg/L	0.05	2/16/23	QC62979	MBN
Antimony	ND	EPA 200.8	0.0012 mg/L	0.006	2/16/23	QC62979	MBN
Arsenic	0.0012 mg/L	EPA 200.8	0.0006 mg/L	0.01	2/16/23	QC62979	MBN
Barium	0.0969 mg/L	EPA 200.8	0.0007 mg/L	2	2/16/23	QC62979	MBN
Beryllium	0.0002 mg/L	EPA 200.8	0.0001 mg/L	0.004	2/16/23	QC62979	MBN
Cadmium	ND	EPA 200.8	0.0001 mg/L	0.005	2/16/23	QC62979	MBN
Chromium	ND	EPA 200.8	0.0015 mg/L	0.1	2/16/23	QC62979	MBN
Manganese	0.0217 mg/L	EPA 200.8	0.0008 mg/L	0.05	2/16/23	QC62979	MBN
Mercury	ND	EPA 200.8	0.0001 mg/L	0.002	2/16/23	QC62979	MBN
Selenium	0.0021 mg/L	EPA 200.8	0.0008 mg/L	0.05	2/16/23	QC62979	MBN
Silver	ND	EPA 200.8	0.0005 mg/L	0.1	2/16/23	QC62979	MBN
Thallium	ND	EPA 200.8	0.0002 mg/L	0.002	2/16/23	QC62979	MBN
Zinc	0.113 mg/L	EPA 200.8	0.001 mg/L	5	2/16/23	QC62979	MBN

**Abbreviations/ References:**

RL = Reporting Limit = Minimum Level  
mg/L = Milligrams Per Liter or PPM  
ug/L = Micrograms Per Liter or PPB  
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Date Analyzed = Date Test Completed

(d) RPD acceptable due to low duplicate and sample concentrations.  
(s) The accuracy of the spike recovery value is reduced due to the analyte concentration in the sample being disproportionate to the spike level. The laboratory control sample recovery was acceptable

MCL = Maximum contaminant level per the EPA  
ND = Not Detected at Reporting Limit.

**Analytical QC Summary**

**TASK NO: 230214135**

**Report To:** Stephanie Schwenke  
**Company:** RESPEC

**Receive Date:** 2/14/23  
**Project Name:** New Ground Water Source

Test	QC Batch ID	QC Type	Result	Method
Chloride	QC62951	Blank	ND	EPA 300.0
Cyanide-Total	QC62986	Blank	ND	EPA 335.4
Fluoride	QC62952	Blank	ND	EPA 300.0
Aluminum	QC62979	Method Blank	ND	EPA 200.8
Antimony	QC62979	Method Blank	ND	EPA 200.8
Arsenic	QC62979	Method Blank	ND	EPA 200.8
Barium	QC62979	Method Blank	ND	EPA 200.8
Beryllium	QC62979	Method Blank	ND	EPA 200.8
Cadmium	QC62979	Method Blank	ND	EPA 200.8
Chromium	QC62979	Method Blank	ND	EPA 200.8
Manganese	QC62979	Method Blank	ND	EPA 200.8
Mercury	QC62979	Method Blank	ND	EPA 200.8
Selenium	QC62979	Method Blank	ND	EPA 200.8
Silver	QC62979	Method Blank	ND	EPA 200.8
Thallium	QC62979	Method Blank	ND	EPA 200.8
Zinc	QC62979	Method Blank	ND	EPA 200.8
Iron	QC62935	Method Blank	ND	EPA 200.7
Nitrate Nitrogen	QC62949	Blank	ND	EPA 300.0
Nitrite Nitrogen	QC62950	Blank	ND	EPA 300.0
Sulfate	QC62953	Blank	ND	EPA 300.0

Test	QC Batch ID	QC Type	Limits	% Rec	RPD	Method
Chloride	QC62951	Duplicate	0 - 20	-	0.3	EPA 300.0
		LCS	90 - 110	103.8	-	
		MS	75 - 125	97.8	-	
Cyanide-Total	QC62986	Duplicate	0 - 20	-	0.0	EPA 335.4
		LCS	90 - 110	94.4	-	
		MS	75 - 125	99.0	-	
Fluoride	QC62952	Duplicate	0 - 20	-	0.2	EPA 300.0
		LCS	90 - 110	99.3	-	
		MS	75 - 125	89.7	-	
Aluminum	QC62979	LCS	90 - 110	98.0	-	EPA 200.8
		MS	70 - 130	110.2	-	
		MSD	0 - 10	-	1.0	
Antimony	QC62979	LCS	90 - 110	100.4	-	EPA 200.8
		MS	70 - 130	106.2	-	
		MSD	0 - 10	-	1.2	
Arsenic	QC62979	LCS	90 - 110	98.5	-	EPA 200.8
		MS	70 - 130	122.6	-	
		MSD	0 - 10	-	5.9	
Barium	QC62979	LCS	90 - 110	97.0	-	EPA 200.8

**Abbreviations/ References:**

RL = Reporting Limit = Minimum Level  
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 ug/L = Micrograms Per Liter or PPB  
 mpn/100 mls = Most Probable Number Index/ 100 mls  
 Date Analyzed = Date Test Completed

(d) RPD acceptable due to low duplicate and sample concentrations.  
 (s) The accuracy of the spike recovery value is reduced due to the analyte concentration in the sample being disproportionate to the spike level. The laboratory control sample recovery was acceptable

MCL = Maximum contaminant level per the EPA  
 ND = Not Detected at Reporting Limit.

Test	QC Batch ID	QC Type	Limits	% Rec	RPD	Method
		MS	70 - 130	94.2	-	
		MSD	0 - 10	-	0.1	
Beryllium	QC62979	LCS	90 - 110	95.8	-	EPA 200.8
		MS	70 - 130	102.2	-	
		MSD	0 - 10	-	2.8	
Cadmium	QC62979	LCS	90 - 110	94.9	-	EPA 200.8
		MS	70 - 130	108.0	-	
		MSD	0 - 10	-	3.6	
Chromium	QC62979	LCS	90 - 110	102.3	-	EPA 200.8
		MS	70 - 130	107.2	-	
		MSD	0 - 10	-	1.6	
Manganese	QC62979	LCS	90 - 110	100.2	-	EPA 200.8
		MS	70 - 130	104.5	-	
		MSD	0 - 10	-	1.5	
Mercury	QC62979	LCS	90 - 110	99.2	-	EPA 200.8
		MS	70 - 130	96.7	-	
		MSD	0 - 10	-	0.3	
Selenium	QC62979	LCS	90 - 110	99.7	-	EPA 200.8
		MS	70 - 130	108.5	-	
		MSD	0 - 10	-	10.0	
Silver	QC62979	LCS	90 - 110	91.7	-	EPA 200.8
		MS	70 - 130	84.3	-	
		MSD	0 - 10	-	5.2	
Thallium	QC62979	LCS	90 - 110	95.9	-	EPA 200.8
		MS	70 - 130	102.1	-	
		MSD	0 - 10	-	3.6	
Zinc	QC62979	LCS	90 - 110	100.3	-	EPA 200.8
		MS	70 - 130	114.7	-	
		MSD	0 - 10	-	6.2	
Iron	QC62935	Duplicate	0 - 20	-	8.5	EPA 200.7
		LCS	90 - 110	98.0	-	
		MS	75 - 125	107.1	-	
Nitrate Nitrogen	QC62949	Duplicate	0 - 20	-	0.0	EPA 300.0
		LCS	90 - 110	99.9	-	
		MS	75 - 125	90.0	-	
Nitrite Nitrogen	QC62950	Duplicate	0 - 20	-	0.0	EPA 300.0
		LCS	90 - 110	93.2	-	
		MS	75 - 125	89.5	-	
Sulfate	QC62953	Duplicate	0 - 20	-	0.2	EPA 300.0
		LCS	90 - 110	103.4	-	
		MS	75 - 125	97.6	-	

All analyses were performed in accordance with approved methods under the latest revision to 40 CFR Part 136 unless otherwise identified. Based on my inquiry of the person or persons directly responsible for analyzing the wastewater samples and generating the report (s), the analyses, report, and information submitted are, to the best of my knowledge and belief, true, accurate, and complete.



DATA APPROVED FOR RELEASE BY

**Abbreviations/ References:**

RL = Reporting Limit = Minimum Level  
mg/L = Milligrams Per Liter or PPM  
ug/L = Micrograms Per Liter or PPB  
mpn/100 mls = Most Probable Number Index/ 100 mls  
Date Analyzed = Date Test Completed

(d) RPD acceptable due to low duplicate and sample concentrations.  
(s) The accuracy of the spike recovery value is reduced due to the analyte concentration in the sample being disproportionate to the spike level. The laboratory control sample recovery was acceptable

MCL = Maximum contaminant level per the EPA  
ND = Not Detected at Reporting Limit.



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

Lab Control ID: 23H01288  
Received: Feb 15, 2023  
Reported: Mar 16, 2023  
Purchase Order No.  
None Received

Customer ID: 20040H  
Account ID: Z01034

Stuart Nielson  
Colorado Analytical Laboratories, Inc.  
10411 Heinz Way  
Commerce City, CO 80640

# ANALYTICAL REPORT

*Report may only be copied in its entirety.  
Results reported herein relate only to discrete samples  
submitted by the client. Hazen Research, Inc. does not warrant  
that the results are representative of anything other than the  
samples that were received in the laboratory*

By:   
Roxanne Sullivan  
Analytical Laboratories Director

Customer ID: 20040H  
 Account ID: Z01034  
**ANALYTICAL REPORT**

Stuart Nielson  
 Colorado Analytical Laboratories, Inc.

<b>Lab Sample ID</b>			23H01288-001					
<b>Customer Sample ID</b>			230214135-01D - New Ground Water Source - Kirk Well #1 sampled on 02/13/23 @ 1230					
<b>Parameter</b>	<b>Units</b>	<b>Code</b>	<b>Result</b>	<b>Precision* +/-</b>	<b>Detection Limit</b>	<b>Method</b>	<b>Analysis Date / Time</b>	<b>Analyst</b>
Gross Alpha	pCi/L	T	1.2	1.4	0.1	SM 7110 B	3/6/23 @ 0901	KT
Gross Beta	pCi/L	T	<3.1	2.5	3.1	SM 7110 B	3/6/23 @ 0901	KT
Radium-226	pCi/L	T	NR	-	-	SM 7500-Ra B	-	-
Radium-228	pCi/L	T	NR	-	-	EPA Ra-05	-	-

NR - Not Requested - Analysis not requested on this sample.

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) = Total Residual (AR) = As Received < = Less Than

Customer ID: 20040H  
 Account ID: Z01034  
**ANALYTICAL REPORT**

Stuart Nielson  
 Colorado Analytical Laboratories, Inc.

<b>Lab Sample ID</b>			23H01288-002					
<b>Customer Sample ID</b>			230214135-01E - New Ground Water Source - Kirk Well #1 sampled on 02/13/23 @ 1230					
<b>Parameter</b>	<b>Units</b>	<b>Code</b>	<b>Result</b>	<b>Precision* +/-</b>	<b>Detection Limit</b>	<b>Method</b>	<b>Analysis Date / Time</b>	<b>Analyst</b>
Gross Alpha	pCi/L	T	NR	-	-	SM 7110 B	-	-
Gross Beta	pCi/L	T	NR	-	-	SM 7110 B	-	-
Radium-226	pCi/L	T	1.6	0.5	0.2	SM 7500-Ra B	3/2/23 @ 1256	KT
Radium-228	pCi/L	T	2.9	0.8	0.2	EPA Ra-05	3/7/23 @ 0717	JR

NR - Not Requested - Analysis not requested on this sample.

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) = Total Residual (AR) = As Received < = Less Than

**Batch QC Summary Form**

Analyte: Gross Alpha

Control Standard/LFB: ID: C11a-003 pCi/mL: 57.4 (use 1 diluted)

Spike Solution: ID: C11a-003 pCi/mL: 57.4 (use 1 mL)

Spike Recovery Calculation: Sample: Tap\*

$$\text{Calculation: } \frac{(43.7) (1.000) - (0.0) (0.200)}{57.4} \times 100 = 76\%$$

**Batch QC Evaluation:**

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

\* 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 evaluated in this report.

**Batch Listing by Lab Control Number:**

<u>23H01252</u>	<u>23H01306</u>
<u>23H01284</u>	<u>23H01311</u>
<u>23H01287</u>	<u>23H01312</u>
<u>23H01288</u>	<u>23H01316</u>
<u>23H01290</u>	<u>23H01217</u>
<u>23H01291</u>	<u>23H01300</u>
<u>23H01292</u>	<u>23H01299</u>
<u>23H01293</u>	_____
<u>23H01304</u>	_____
<u>23H01305</u>	_____

Evaluator:

*Michelle Stringer* \_\_\_\_\_

03/07/2023

Date

**Batch QC Summary Form**

Analyte: Gross Beta

Control Standard/LFB: ID: C11a-003 pCi/mL: 44 (use 1 diluted)

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

Spike Recovery Calculation: Sample: Tap\*

$$\text{Calculation: } \frac{(37.8) (1.000) - (0.0) (0.200)}{44} \times 100 = 86\%$$

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 evaluated in this report.

Batch Listing by Lab Control Number:

<u>23H01252</u>	<u>23H01306</u>
<u>23H01284</u>	<u>23H01311</u>
<u>23H01287</u>	<u>23H01312</u>
<u>23H01288</u>	<u>23H01316</u>
<u>23H01290</u>	<u>23H01217</u>
<u>23H01291</u>	<u>23H01300</u>
<u>23H01292</u>	<u>23H01299</u>
<u>23H01293</u>	_____
<u>23H01304</u>	_____
<u>23H01305</u>	_____

Evaluator:

*Michelle Stringer* \_\_\_\_\_

03/07/2023

Date

**Batch QC Summary Form**

Analyte: Radium-226

Control Standard/LFB: ID: C1-002 pCi/mL: 23 (use 2 diluted)

Spike Solution: ID: C1-002 pCi/mL: 23 (use 2 mL)

Spike Recovery Calculation: Sample: 23H01287-02b

Calculation: 
$$\frac{(47.4) (1.000) - (0.0) (0.200)}{46} \times 100 = 103\%$$

Batch QC Evaluation:

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

\* 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 evaluated in this report.

Batch Listing by Lab Control Number:

23H01252 \_\_\_\_\_  
23H01254 \_\_\_\_\_  
23H01283 \_\_\_\_\_  
23H01287 \_\_\_\_\_  
23H01288 \_\_\_\_\_  
23H01289 \_\_\_\_\_  
23H01286 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Evaluator:

*Michelle Stringer* \_\_\_\_\_

03/09/2023

Date

**Batch QC Summary Form**

Analyte: Radium-228

Control Standard/LFB: ID: C6-004 pCi/mL: 12.7 (use 5 diluted)

Spike Solution: ID: C6-004 pCi/mL: 12.7 (use 5 mL)

Spike Recovery Calculation: Sample: 23H01254

$$\text{Calculation: } \frac{(66.2) (1.000) - (3.3) (1.000)}{63.5} \times 100 = 99\%$$

Batch QC Evaluation:

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

\* 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 evaluated in this report.

Batch Listing by Lab Control Number:

23H01242 \_\_\_\_\_  
23H01252 \_\_\_\_\_  
23H01253 \_\_\_\_\_  
23H01254 \_\_\_\_\_  
23H01283 \_\_\_\_\_  
23H01286 \_\_\_\_\_  
23H01287 \_\_\_\_\_  
23H01288 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Evaluator:

*Michelle Stringer* \_\_\_\_\_

03/15/2023

Date

