

WATER RESOURCES REPORT

for

DELROY JOHNSON SUBDIVISION

EPC Parcel #: 6100000157

**January 2021
Revised: May 2021**

Prepared By:



DELROY JOHNSON SUBDIVISION
EPC Parcel # 6100000157

WATER RESOURCES REPORT

January 2021
Revised: May 2021

Prepared for:

Delroy Johnson
14502 State Highway 83
Colorado Springs, CO 80921

Prepared by:

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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 # 6100000157 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 four (4) 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 28.6-acre parcel that is proposed to be divided into four (4) lots. Please refer to the *Land Use Exhibit* in **Appendix A** depicting the proposed subdivision.

3.0 WATER NEEDS AND PROJECTED DEMANDS

3.1 Water Demand Summary

It is anticipated that each lot will use 0.373 acre-feet (AF) of water per year. This estimate is based information provided in Chapter 8 of the *El Paso County Land Development Code* as well as *Section III* of the *Findings of Fact* located in **Appendix C**. Water demands and wastewater loads are shown in Table 3-1 below:

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

Water					Wastewater	
# of SFE's	Annual Indoor Use 0.26 (AF/YR/SFE)	Average Daily Indoor Use (GPD)	Irrigation 0.0566 (AF/1,000 SF)	Total Indoor, Watering, & Irrigation (AF)	ADF (@ 90% Indoor Use (GPD))	
	<i>Note 1</i>		<i>Notes 1,2</i>			
4	1.040	928	0.453	1.493	836	
<i>Note 1: Per 8.4.7(B)(7)(d) of the EPC Land Development Code</i>						
<i>Note 2: Assuming 2,000 square feet of irrigation per lot</i>						

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 1.493 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 and determinations were done by the Colorado Office of the State Engineer and are included in **Appendix C**. Table 4-1 below summarizes the information from said water rights and determinations.

Table 4-1: Water Rights Summary

Land Formation/ Aquifer	Determination	Tributary Status	Area	Decreed Water 100-Year	Annual Allocation 100-Year	Annual Allocation 300-Year
			(Acres)	(AF)	(AF/Year)	(AF/Year)
Dawson	458-BD	NNT	28.62	1,570	15.70	5.23
Denver	457-BD	NNT	28.62	2,530	25.30	8.43
Arapahoe	457-BD	NNT	28.62	1,100	11.00	3.67
Laramie-Fox Hills	457-BD	NT	28.62	816	8.16	2.72
Total Legal Supply					60.16	20.05
					<i>100-Year</i>	<i>300-Year</i>

Beneficial Uses: *Domestic Indoor*
Lawn & Garden Irrigation
Water for Domestic Animals

Note that only the Dawson formation is to be used for the proposed lots in this subdivision. According to the *Findings of Fact* located in **Appendix C**, the following conditions are allowed for the subject property:

- Water in the Dawson may be withdrawn through the existing well, as well as four (4) additional wells, allowing up to five (5) parcels to be developed on the subject property.
- There shall be one (1) Dawson aquifer well per lot.
- Each well must provide water to a house on the same lot, ensuring that during pumping, return flows from septic systems alone will always equal or exceed stream depletions in the same year.
- It is not necessary to restrict the type of use to which the Dawson water pumped (pursuant to the augmentation plan) is put.

- The acre-feet of water each Dawson aquifer well is allowed to divert on an annual basis shall be calculated by dividing the number of lots into the number 3, but in no event shall exceed 1.0 acre-foot per well per year.

4.2 *Adequacy of Water Rights*

Current water rights are adequate for buildout demands of four (4) lots and meet 2040 and 2060 buildout projections on a 300-year basis.

According to the *Findings of Fact* (Court Case Numbers 02CW119 and 02CW 184) located in **Appendix C**:

- If the subdivision of the property occurs more than 15 years after the decree (which is the case), the maximum amount of allowable withdrawal for each Dawson aquifer well shall be calculated by:
 - Subtracting the existing Dawson aquifer well's cumulative withdrawals (AF) from 900, and
 - Dividing the result above by 1,500.
- In this case, the amount of cumulative withdrawals from the Dawson aquifer (assuming the maximum allowable of 1.0 AF/year) since the well permit was issued in 2003 equals 17 acre-feet.
- Therefore, $(900-17)/1,500 = 0.5887$ acre-feet per well (2.355 AF total)

Conclusion:

The current water rights and augmentation plan in place are adequate to meet the estimated overall demand of 1.493 acre-feet for four (4) 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 has numerous determinations under its existing boundaries, which total 20.05 annual acre-feet on a 300-year basis, and 60.16 annual acre-feet on a 100-year basis.

5.0 WATER SYSTEM FACILITIES AND PHYSICAL SUPPLY

5.1 *Source of Supply*

Supply for the existing residence on the subject property will continue to be met via the existing well (see well permit in **Appendix C**).

Supply for the three (3) additional lots will be met with future wells completed in the Dawson aquifer. These wells will be drilled, screened, test-pumped, and completed accordance with the Colorado Division of Water Resources rules and regulations.

5.2 *Water Treatment*

Water in the existing well was tested in December of 2020 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*

Of the required constituents that were tested, two were out of typical ranges: the *Langelier Index* (-2.48) and *pH* (6.43).

A negative Langelier Index indicates that the water may be corrosive, while a positive Langelier Index indicates that the water may tend to deposit calcium carbonate, forming scales in a distribution system. If the index is close to zero, then the water tends to be neither strongly corrosive nor scale-forming.

With a range from 0 to 14 (with 7 being neutral), pH is a measure of how acidic/basic water is. A pH of less than 7 indicates acidity, whereas a pH of greater than 7 indicates a base.

The water from the sampled source may be corrosive. This does not tend to be a problem especially since new plumbing materials cannot be comprised of lead or lead solder. It is recommended that copper materials not be used to ensure no leaching occurs.

Water quality results from the existing on-site well are included in **Appendix D**.

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 is four (4) total lots, ranging from 5.0 acres to 13.3 acres in size. Demands for the entire subdivision are listed in Section 3.0 of this report.

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 water rights in the Denver, Arapahoe, and Laramie-Fox Hills formations, although a portion of the LFH water right is dedicated to augmentation to offset post-pumping depletions. Please refer to the *Plan for Augmentation* in **Appendix C**.

6.4 Water System Interconnects

The closest source for a potential interconnect is Colorado Springs Utilities – approximately 0.6 miles to the southwest.

It is not anticipated (and Colorado Springs Utilities has not been contacted) that an interconnect is needed or warranted.

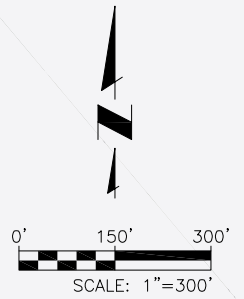
7.0 CONCLUSION

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

Appendix A

EXISTING LAND USE

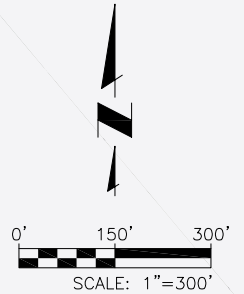
EXISTING
BOUNDARY



CO-83

PROPOSED LAND USE

EXISTING
BOUNDARY



LOT 3
5.1 AC.

LOT 4
5.2 AC.

LOT 2
5.0 AC.

LOT 1
13.3 AC.

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>Delroy Johnson Subdivision</u>	
2. LAND USE ACTION <u>Replat</u>	
3. NAME OF EXISTING PARCEL AS RECORDED <u>Unnamed</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>28.62</u>	5. NUMBER OF LOTS PROPOSED <u>4</u>
PLAT MAPS ENCLOSED <input type="checkbox"/>	
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 checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
If yes, describe the previous action <u>Platted but not recorded.</u>	
7. LOCATION OF PARCEL - Include a map delineating the project area and tie to a section corner. (In submittal)	
<u>S 1/2</u> OF <u>SW 1/4</u> SECTION 34 TOWNSHIP <u>11</u> <input type="checkbox"/> N <input checked="" type="checkbox"/> 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 type="checkbox"/> YES <input checked="" type="checkbox"/> NO If not, scaled hand-drawn sketch <input type="checkbox"/> Y <input type="checkbox"/> NO	
9. ESTIMATED WATER REQUIREMENTS - Gallons per Day or Acre Foot per Year	
HOUSEHOLD USE # * <u>4</u> of units <u>0.260</u> AF/SFE/YR <u>1.040</u> AF	
COMMERCIAL USE # <u>0</u> SF <u>-</u> GPD <u>-</u> AF	
IRRIGATION # ** <u>0.0566</u> AF/1000SF <u>404</u> GPD <u>0.453</u> AF	
TOTAL <u>1,333</u> GPD <u>1.493</u> AF *	
* Per 8.4.7(B)(&)(d) of the EPC Land Development Code	
** Assuming 2,000 SF of irrigation per lot	
10. WATER SUPPLY SOURCE	
<input checked="" type="checkbox"/> EXISTING <input checked="" type="checkbox"/> DEVELOPED <input checked="" type="checkbox"/> NEW WELLS	
WELLS SPRING WELL PERMIT NUMBERS <u>179281</u>	
<input type="checkbox"/> MUNICIPAL <input type="checkbox"/> ASSOCIATION <input type="checkbox"/> COMPANY <input type="checkbox"/> DISTRICT	
NAME: <u>N/A</u>	
LETTER OF COMMITMENT FOR SERVICE <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	
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 TO:	
<input type="checkbox"/> ENGINEERED SYSTEM (Attach a copy of engineering design) <input type="checkbox"/> OTHER:	

Appendix C

DISTRICT COURT, WATER DIVISION NO. 2 PUEBLO COUNTY, COLORADO Pueblo County Judicial Bldg., 320 W. 10 th Street, Pueblo, Colorado 81003	
Concerning the Application for Water Rights of: DELROY L. JOHNSON and JANET M. JOHNSON In El Paso County.	▲ COURT USE ONLY ▲
MacDougall, Woldridge & Worley, P.C. Henry D. Worley 530 Communication Circle, Suite 204 Colorado Springs, CO 80905-1743 Phone: (719) 520-9288, Fax: (719) 520-9447 Email: hworley@waterlaw.tv Atty Reg. No. 14368	Case No. 02CW119 (Div. 2) Case No. 02CW184 (Div. 1)
CERTIFICATE OF MAILING	

I hereby certify on this 12TH day of December, 2002 that a true and correct copy of the foregoing **Summary of Consultation** and **Determination of Facts** reports were sent, via U.S. Mail, postage prepaid, addressed as follows:

Mardell R. Cline
 Clerk, Water Division 2
 Pueblo County Judicial Building
 320 W. 10th Street
 Pueblo, CO 81003

William Kelly Dude
 Anderson, Dude & Lebel, P.C.
 P.O. Box 240
 Colorado Springs, CO 80901

BY: Henry D. Worley
 Henry D. Worley, Esq.

STATE OF COLORADO

WATER DIVISION ONE OFFICE OF THE STATE ENGINEER

Division of Water Resources
Department of Natural Resources

810 9th Street, Suite 200
Greeley, Colorado 80631
Phone: (970) 352-8712
FAX: (970) 392-1816

www.water.state.co.us



Bill Owens
Governor

Greg E. Walcher
Executive Director

Hal D. Simpson, P.E.
State Engineer

Richard L. Stenzel
Division Engineer

December 3, 2002

SUMMARY OF CONSULTATION HELD NOVEMBER 20, 2002

CASE NO. 02CW184, Delroy L. Johnson and Janet M. Johnson, El Paso County

AUGUST 2002 RESUME

The applicants are seeking underground water rights from the not nontributary Dawson, Denver and Arapahoe aquifer and the nontributary Laramie-Fox Hills aquifers. The subject property consists of approximately 28.62 acres in Section 34, Township 11 South, Range 66 West, 6th Principal Meridian. The water proposed to be withdrawn will be placed to many beneficial uses.

The application requests a plan for augmentation to replace depletions associated with withdraw of not-nontributary water out of the Dawson aquifer. The result of ground water modeling assuming constant withdrawals at 3.0 acre-feet per year (the applicant's proposed withdrawal rate) for 300 years (the applicant's proposed period of pumping), with no subsequent withdrawals shows maximum depletions during pumping occur at year 300 and are 0.70 acre-feet per year, and maximum depletions after pumping has ceased occur at year 310 and are also 0.70 acre-feet per year.

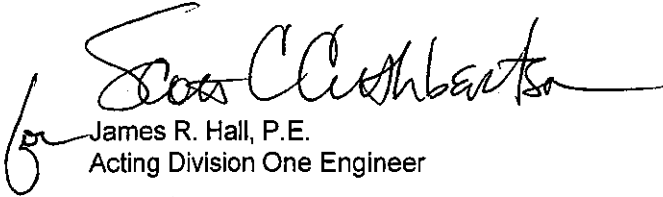
Please provide a written response to the following concerns to Water Court, P.O. Box 2038, Greeley, Colorado 80632. If there are questions regarding this letter, telephone Raymond Liesman at (970) 351-7300, Ext. 4598.

1. The applicant should be limited to that amount of water found to be available for appropriation in the Determination of Facts Report of the State Engineer issued for this case on October 22, 2002.
2. The applicants should be required to document that the claimed return flows cover the during pumping stream depletions in time, location and amount. Prior to obtaining credits for any such return flow, evidence of the existence of a water table in hydraulic connection with the stream system may be required. Such evidence should be from wells or piezometers located on and in the vicinity of the property which are satisfactory to the State Engineer. Until evidence is provided that the claimed return flows are accruing to the stream system, the applicant may be required to provide an alternate source of augmentation water.
3. If not already in place, properly maintained measuring devices, acceptable to the Division Engineer or Water Commissioner may be required for the administration of this water right.
4. The applicants can not use any water from the not-nontributary aquifer until a court approved augmentation plan is in place that will provide for replacement of depletions as required by C.R.S. 37-90-137(9)(c). Replacement of depletions from pumping the aquifer must be made to the affected stream systems to prevent any injurious effect to vested water rights. If not replaced, it appears that the post pumping stream depletions will injure vested water rights in the over appropriated South Platte River drainage. Post pumping depletions should be required for as long as injurious depletions occur. The post pumping augmentation source should be either a renewable surface supply of sufficient amount to cover the maximum anticipated depletions or reservation of a quantity of decreed nontributary water equal to the total amount of water that will be pumped. If previously decreed nontributary water is reserved for augmentation, identification of a specific amount of water from a specific aquifer should be required and the decree should include a provision for a covenant running with the land that would require drilling of a well and pumping of the water to replace injurious post-pumping stream depletion.

DEC 04 2002

5. A determination utilizing aquifer parameters different than those of the Denver Basin Rules should be subject to the Court's retained jurisdiction pursuant to C.R.S. 37-92-305 (11) (1985). In addition, any such determination should be governed by the Denver Basin Rules and the Statewide Nontributary Ground Water Rules as provided in C.R.S. 37-90-137(9)(a).
6. For the nontributary ground water in these aquifers, the applicants must limit the consumption to no more than 98% of the water determined to be available in that aquifer, Denver Basin Rule 8.
7. Any decree entered in this case should contain provisions that allow banking and contain a reference that the State Engineer must issue well permits in accordance with C.R.S. 37-90-137(4) and/or (10) as well as any decree entered in this case.
8. Each well should be equipped with a properly installed and maintained totalizing flow meter, and the applicant may be required to submit diversion records to the Division Engineer or his representative on an annual basis or as otherwise requested by the Division Engineer.
9. Provide the Court with proof of sole ownership or notice to every person who has any interest in the overlying land of this application within ten (10) days of filing this application as required by C.R.S. 37-92-302(2) and 37-92-305(6). Augmentation should be equal to actual depletions both during pumping and after pumping has ceased (C.R.S. 37-90-137(9)(c)). The applicant should not be granted a finding that the post-pumping depletions from pumping the not-nontributary Dawson aquifer water are non-injurious.
10. Should the applicant's actual pumping period vary from the 300 years modeled above, the applicant should be required to re-model the stream depletions so as to determine what the actual depletions and replacement requirements are.
11. Because return flows from the uses of the water are estimated rather than measured, the decree should contain a condition that such return flows may be used only to replace depletions under this plan for augmentation, and may not be sold, traded, or assigned in whole or in part for any other purpose.
12. Ground water modeling shows that withdrawal from the Dawson aquifer of up to 3.0 acre-feet per year for 300 years would result in post-pumping stream depletions of 791 acre-feet. The proposed source of augmentation water to cover stream depletions after pumping has ceased is reservation of all of the applicant's nontributary Laramie-Fox Hills aquifer water being concurrently decreed in this case. As estimated in the State Engineers Determinations of Fact report the applicant has 816 acre-feet of water available in the Laramie-Fox Hills aquifer. Because pursuant to C.R.S. 37-90-137(9)(b) and the Denver Basin Rules, no more than 98% of this nontributary ground water withdrawn annually shall be consumed, only 800 acre-feet may be considered as available augmentation credit. The decree should include a provision for a covenant running with the land that would require construction of a well and pumping of the nontributary water to replace injurious post-pumping stream depletions.
13. The amounts of water allowed to be withdrawn pursuant to this plan should be limited by both an allowed average annual amount of withdrawal (3 acre-feet per year) and an absolute total amount (900 acre-feet). Jurisdiction should be regained by the court for the adjustment of the total allowed withdrawals until site specific data has been obtained ensuring that the estimated 816 acre-feet of Laramie-Fox Hills nontributary post-pumping period augmentation water exists beneath the applicant's property.
14. Language consistent with C.R.S. 37-92-305(8) should be included in the decree stating that the State Engineer shall curtail all out-of-priority diversions, the depletions from which are not replaced so as to prevent injury to vested water rights.

SECTION 37-92-302(4), C.R.S. (1973), SIGNED INTO LAW MAY 17, 1988, PROVIDES THAT THE APPLICANT OR THE APPLICANT'S ATTORNEY SHALL MAIL OR DELIVER A COPY OF THIS CONSULTATION TO ALL PARTIES OF RECORD WHO FILED A STATEMENT OF OPPOSITION TO THIS APPLICATION, IF ANY. THE STATUTE ALSO REQUIRES THAT THE APPLICANT OR HIS ATTORNEY SHALL FILE A CERTIFICATE OF MAILING WITH THE WATER CLERK OF DIVISION 1 IF THIS SUMMARY OF CONSULTATION IS MAILED TO OPPOSING PARTIES.


James R. Hall, P.E.
Acting Division One Engineer

JRH:SCC/scc

xc: Hal D. Simpson, State Engineer
Denise Miller, Water Commissioner

STATE OF COLORADO

**WATER DIVISION ONE
OFFICE OF THE STATE ENGINEER**

Division of Water Resources
Department of Natural Resources

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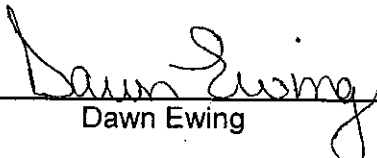
CERTIFICATE OF MAILING

Case No. 02CW184

I hereby certify that on this 3rd day of December, 2002 I mailed a true and correct copy of the foregoing consultation letter by depositing it into the United States mail, postage prepaid, to the applicant or their attorney listed below:

Hal Simpson, State Engineer
Division of Water Resources
1313 Sherman Street, Room 818
Denver, Colorado 80203

MacCougall, Woldridge & Worley, P.C.
Mr. Henry D. Worley
Attorney
530 Communication Circle, Suite 204
Colorado Springs, CO 80905-1743


Dawn Ewing

OFFICE OF THE STATE ENGINEER
DETERMINATION OF FACTS

IN THE MATTER OF AN APPLICATION FOR UNDERGROUND WATER RIGHTS IN WATER
DIVISION NO. 2, EL PASO COUNTY, COLORADO

CASE NO.: 02CW119, WATER DIVISION 2
02CW184, WATER DIVISION 1

APPLICANT: DELROY L. JOHNSON & JANET M. JOHNSON

AQUIFER : DENVER

In compliance with C.R.S. 37-92-302(2), Delroy L. Johnson & Janet M. Johnson, (hereinafter "applicant") submitted an application to the Water Court for a determination of the amount of water available pursuant to C.R.S. 37-90-137(4). Based on information provided to the Court by the applicant and records of the Division of Water Resources, the State Engineer finds as follows:

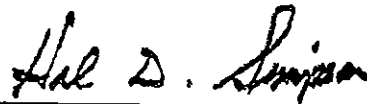
1. The application was received by the Water Court on August 28, 2002.
2. According to the application, the applicant owns, or has consent to withdraw ground water underlying 28.62 acres of land as further described in said application.
3. The quantity of water in the Denver Aquifer (hereinafter "aquifer"), exclusive of artificial recharge, underlying the 28.62 acres of land claimed in the application is 2,530 acre-feet. This determination was based on the following as specified in the Denver Basin Rules:
 - a. The average specific yield of the saturated aquifer materials underlying the land claimed in the application is 17 percent.
 - b. The average thickness of the saturated aquifer materials underlying the land claimed in the application is 520 feet.
4. Withdrawal of ground water from the aquifer underlying the land claimed in the application will, within one hundred years, deplete the flow of a natural stream at an annual rate greater than one-tenth of one percent of the annual rate of withdrawal and therefore the ground water is not nontributary ground water as defined in C.R.S. 37-90-103(10.5). The land is more than one mile from any point of contact between any natural surface stream, including its alluvium, and the aquifer. C.R.S. 37-90-137(9)(c) states that judicial approval of a plan for augmentation shall be required prior to the use of ground water of the type sought in this application. In the case of the subject application, such augmentation plan shall provide for the replacement to affected stream systems or system of a total amount of water equal to four (4) percent of the amount of water withdrawn on an annual basis and such additional amounts that may be required pursuant to Section 37-90-137(9)(c), C.R.S. (1986 Supp).
5. In determining the amount of ground water available for withdrawal annually from this aquifer, the provisions of C.R.S. 37-90-137(4) must be applied, and pursuant to C.R.S. 37-90-137(4)(b)(I) annual withdrawals shall be allowed on the basis of an aquifer life of 100 years.

Case No.: 02CW119 (Div. 2), 02CW184 (Div. 1)
Applicant: Delroy L. & Janet M. Johnson
Aquifer: Denver

Page 2

6. A review of the records in the State Engineer's office has not disclosed that there are any existing wells or other water rights claiming or diverting ground water from the aquifer underlying the land claimed by the applicant.
7. The allowed average annual amount of water available for withdrawal from the aquifer underlying the lands claimed in the application is 25.3 acre-feet (the quantity of water which is considered available divided by the 100 year aquifer life). It is recommended that the water court retain jurisdiction necessary to provide for adjustment (increase or decrease) of this amount.
8. Underlying the land claimed in the application, the aquifer is, as specified in the Denver Basin Rules, located approximately 650 feet to 1,420 feet below land surface.

Dated this 22nd day of October, 2002.



Hal D. Simpson
State Engineer,

By: 

Keith Vander Horst
Water Resources Engineer

OFFICE OF THE STATE ENGINEER
DETERMINATION OF FACTS

IN THE MATTER OF AN APPLICATION FOR UNDERGROUND WATER RIGHTS IN WATER
DIVISION NO. 2, EL PASO COUNTY, COLORADO

CASE NO.: 02CW119, WATER DIVISION 2
02CW184, WATER DIVISION 1

APPLICANT: DELROY L. JOHNSON & JANET M. JOHNSON

AQUIFER : DAWSON

In compliance with C.R.S. 37-92-302(2), Delroy L. Johnson & Janet M. Johnson, (hereinafter "applicant") submitted an application to the Water Court for a determination of the amount of water available pursuant to C.R.S. 37-90-137(4). Based on information provided to the Court by the applicant and records of the Division of Water Resources, the State Engineer finds as follows:

1. The application was received by the Water Court on August 28, 2002.
2. According to the application, the applicant owns, or has consent to withdraw ground water underlying 28.62 acres of land as further described in said application.
3. The quantity of water in the Dawson Aquifer (hereinafter "aquifer"), exclusive of artificial recharge, underlying the 28.62 acres of land claimed in the application is 1,570 acre-feet. This determination was based on the following as specified in the Denver Basin Rules:
 - a. The average specific yield of the saturated aquifer materials underlying the land claimed in the application is 20 percent.
 - b. The average thickness of the saturated aquifer materials underlying the land claimed in the application is 275 feet.
4. Withdrawal of ground water from the aquifer underlying the land claimed in the application will within one hundred years, deplete the flow of a natural stream at an annual rate greater than one-tenth of one percent of the annual rate of withdrawal and therefore the ground water is not nontributary ground water as defined in C.R.S. 37-90-103(10.5). C.R.S. 37-90-137(9)(c) states that judicial approval of a plan for augmentation shall be required prior to use of ground water of the type sought in this application. In the case of the Dawson aquifer such augmentation plans shall provide for the replacement of actual stream depletions to the extent necessary to prevent any injurious effect, based on actual aquifer conditions in existence at the time of the decree.
5. In determining the amount of ground water available for withdrawal annually from this aquifer, the provisions of C.R.S. 37-90-137(4) must be applied, and pursuant to C.R.S. 37-90-137(4)(b)(i) annual withdrawals shall be allowed on the basis of an aquifer life of 100 years.

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Case No.: 02CW119 (Div. 2), 02CW184 (Div. 1)
Applicant: Delroy L. & Janet M. Johnson
Aquifer: Dawson

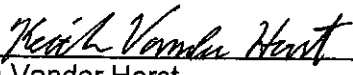
Page 2

6. A review of the records in the State Engineer's office has disclosed that there is an existing well, permit no. 179281, withdrawing ground water from the aquifer underlying the land claimed by the applicant. This well is permitted for in-house uses only in one single family dwelling. The applicant's intent is to replace permit no. 179281 with a new non-exempt permit to allow the well to withdraw the water decreed in this case. Should permit no. 179281 be cancelled, the full 1,570 acre-feet of water beneath the applicant's property would be available in this case. Should permit no. 179281 not be cancelled, 300 acre-feet of water beneath the property should be reserved for that well and the water available in this case should be reduced to 1,270 acre-feet.
7. The allowed average annual amount of water available for withdrawal from the aquifer underlying the lands claimed in the application is 15.7 acre-feet if permit no. 179281 is cancelled, and 12.7 acre-feet if that permit is not cancelled (the quantity of water which is considered available divided by the 100 year aquifer life). It is recommended that the water court retain jurisdiction necessary to provide for adjustment (increase or decrease) of this amount.
8. Underlying the land claimed in the application, the aquifer is, as specified in the Denver Basin Rules, located to a depth of approximately 630 feet below land surface.

Dated this 22nd day of October, 2002.



Hal D. Simpson
State Engineer

By: 

Keith Vander Horst
Water Resources Engineer

Prepared by: kvh
02cw119-quantification.doc

OFFICE OF THE STATE ENGINEER
DETERMINATION OF FACTS

IN THE MATTER OF AN APPLICATION FOR UNDERGROUND WATER RIGHTS IN WATER
DIVISION NO. 2, EL PASO COUNTY, COLORADO

CASE NO.: 02CW119, WATER DIVISION 2
02CW184, WATER DIVISION 1

APPLICANT: DELROY L. JOHNSON & JANET M. JOHNSON


AQUIFER : ARAPAHOE

In compliance with C.R.S. 37-92-302(2), Delroy L. Johnson & Janet M. Johnson, (hereinafter "applicant") submitted an application to the Water Court for a determination of the amount of water available pursuant to C.R.S. 37-90-137(4). Based on information provided to the Court by the applicant and records of the Division of Water Resources, the State Engineer finds as follows:


1. The application was received by the Water Court on August 28, 2002.
2. According to the application, the applicant owns, or has consent to withdraw ground water underlying 28.62 acres of land as further described in said application.
3. The quantity of water in the Arapahoe Aquifer (hereinafter "aquifer"), exclusive of artificial recharge, underlying the 28.62 acres of land claimed in the application is 1,100 acre-feet. This determination was based on the following as specified in the Denver Basin Rules:
 - a. The average specific yield of the saturated aquifer materials underlying the land claimed in the application is 17 percent.
 - b. The average thickness of the saturated aquifer materials underlying the land claimed in the application is 225 feet.
4. Withdrawal of ground water from the aquifer underlying the land claimed in the application will, within one hundred years, deplete the flow of a natural stream at an annual rate greater than one-tenth of one percent of the annual rate of withdrawal and therefore the ground water is not nontributary ground water as defined in C.R.S. 37-90-103(10.5). The land is more than one mile from any point of contact between any natural surface stream, including its alluvium, and the aquifer. C.R.S. 37-90-137(9)(c) states that judicial approval of a plan for augmentation shall be required prior to the use of ground water of the type sought in this application. In the case of the subject application, such augmentation plan shall provide for the replacement to affected stream systems or system of a total amount of water equal to four (4) percent of the amount of water withdrawn on an annual basis and such additional amounts that may be required pursuant to Section 37-90-137(9)(c), C.R.S. (1986 Supp).
5. In determining the amount of ground water available for withdrawal annually from this aquifer, the provisions of C.R.S. 37-90-137(4) must be applied, and pursuant to C.R.S. 37-90-137(4)(b)(I) annual withdrawals shall be allowed on the basis of an aquifer life of 100 years.

6. A review of the records in the State Engineer's office has not disclosed that there are any existing wells or other water rights claiming or diverting ground water from the aquifer underlying the land claimed by the applicant.
7. The allowed average annual amount of water available for withdrawal from the aquifer underlying the lands claimed in the application is 11.0 acre-feet (the quantity of water which is considered available divided by the 100 year aquifer life). It is recommended that the water court retain jurisdiction necessary to provide for adjustment (increase or decrease) of this amount.
8. Underlying the land claimed in the application, the aquifer is, as specified in the Denver Basin Rules, located approximately 1,490 feet to 1,980 feet below land surface.

Dated this 22nd day of October, 2002.



Hal D. Simpson
State Engineer

By: 

Keith Vander Horst
Water Resources Engineer

OFFICE OF THE STATE ENGINEER
DETERMINATION OF FACTS

IN THE MATTER OF AN APPLICATION FOR UNDERGROUND WATER RIGHTS IN WATER
DIVISION NO. 2, EL PASO COUNTY, COLORADO

CASE NO.: 02CW119, WATER DIVISION 2
02CW184, WATER DIVISION 1

APPLICANT: DELROY L. JOHNSON & JANET M. JOHNSON

AQUIFER : LARAMIE-FOX HILLS

In compliance with C.R.S. 37-92-302(2), Delroy L. Johnson & Janet M. Johnson, (hereinafter "applicant") submitted an application to the Water Court for a determination of the amount of water available pursuant to C.R.S. 37-90-137(4). Based on information provided to the Court by the applicant and records of the Division of Water Resources, the State Engineer finds as follows:

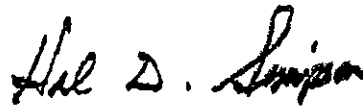
1. The application was received by the Water Court on August 28, 2002.
2. According to the application, the applicant owns, or has consent to withdraw ground water underlying 28.62 acres of land as further described in said application.
3. The quantity of water in the Laramie-Fox Hills Aquifer (hereinafter "aquifer"), exclusive of artificial recharge, underlying the 28.62 acres of land claimed in the application is 816 acre-feet. This determination was based on the following as specified in the Denver Basin Rules:
 - a. The average specific yield of the saturated aquifer materials underlying the land claimed in the application is 15 percent.
 - b. The average thickness of the saturated aquifer materials underlying the land claimed in the application is 190 feet.
4. Withdrawal of ground water from the aquifer underlying the land claimed in the application will not, within one hundred years, deplete the flow of a natural stream at an annual rate greater than one-tenth of one percent of the annual rate of withdrawal and therefore the ground water is nontributary ground water as defined in C.R.S. 37-90-103(10.5). Pursuant to C.R.S. 37-90-137(9)(b) and the Denver Basin Rules, no more than 98% of the nontributary ground water withdrawn annually shall be consumed and the applicant shall demonstrate to the reasonable satisfaction of the State Engineer that no more than 98% of the water withdrawn will be consumed prior to the issuance of a well permit.
5. In determining the amount of ground water available for withdrawal annually from this aquifer, the provisions of C.R.S. 37-90-137(4) must be applied, and pursuant to C.R.S. 37-90-137(4)(b)(I) annual withdrawals shall be allowed on the basis of an aquifer life of 100 years.

Case No.: 02CW119 (Div. 2), 02CW184 (Div. 1)
Applicant: Delroy L. & Janet M. Johnson
Aquifer: Laramie-Fox Hills


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6. A review of the records in the State Engineer's office has not disclosed that there are any existing wells or other water rights claiming or diverting ground water from the aquifer underlying the land claimed by the applicant.
7. The allowed average annual amount of water available for withdrawal from the aquifer underlying the lands claimed in the application is 8.16 acre-feet (the quantity of water which is considered available divided by the 100 year aquifer life). It is recommended that the water court retain jurisdiction necessary to provide for adjustment (increase or decrease) of this amount.
8. Underlying the land claimed in the application, the aquifer is, as specified in the Denver Basin Rules, located approximately 2,440 feet to 2,760 feet below land surface.

Dated this 22nd day of October, 2002.



Hal D. Simpson
State Engineer

By: 
Keith Vander Horst
Water Resources Engineer

203163100



DISTRICT COURT, WATER DIVISION 2 PUEBLO COUNTY, COLORADO Pueblo County Judicial Bldg., 320 W. 10 th Street, Pueblo, Colorado 81003	FILED IN THE OFFICE OF THE CLERK, DISTRICT COURT WATER DIV. NO. 2 STATE OF COLORADO MAY 05 2003 CLERK
Concerning the Application for Water Rights of: DELROY L. JOHNSON and JANET M. JOHNSON	
In El Paso County	▲ COURT USE ONLY ▲
	Case No. 02CW119 (Water Div. 2) Case No. 02CW184 (Water Div. 1)
FINDINGS OF FACT, CONCLUSIONS OF LAW, JUDGMENT AND DECREE	

FINDINGS OF FACT

I. Jurisdictional Facts.

1. The applicants for adjudication of the water in the Dawson, Denver, Arapahoe and Laramie-Fox Hills aquifers underlying certain land in El Paso County, and for approval of a plan for augmentation, are Delroy L. Johnson and Janet M. Johnson, whose address is 14502 Colo. Hwy. 83, Colorado Springs, CO 80921. Their telephone number is 719-495-3692.

2. The applications in this case were filed on August 28, 2002 in Water Division 2 and on August 30, 2002 in Water Division 1.

3. The application was published in the resumes for Water Divisions 1 and 2 and in a newspaper of general circulation in El Paso County, as required by law. The publication costs have been paid.

4. A statement of opposition was timely filed by the City of Colorado Springs, which has

consented to entry of this decree. No other statements of opposition were filed, and the time for filing of statements of opposition has expired. No motions to intervene have been filed.

5. Pursuant to Applicant's Motion, these cases were consolidated in Water Division 2 by order of the Chief Justice of the Colorado Supreme Court dated December 10, 2002.

6. The land and water involved herein are not within the boundaries of a designated ground water basin.

II. Denver Basin Water Rights.

7. The property beneath which the water is sought to be adjudicated ("Property") consists of 28.62 acres owned by Applicants in the S1/2 SW1/4 Section 34, T. 11 S., R. 66 W., 6th P.M., El Paso County, Colorado. The legal description of the Property is attached as Exhibit A to this decree. The Property is located in the Monument Creek drainage, as shown on Figure 1 attached hereto.

8. Pursuant to the notice provisions of C.R.S. §37-90-137(4)(b.5)(I), Applicants gave notice of the application to the Bank of America, the only entity having a lien on the Property.

9. The amount of water underlying the Property and which is available for appropriation is set forth on Table A. The figures on Table A are based on the State Engineer's Determination of Facts dated October 22, 2002. Pursuant to §37-92-305(11), the Court will retain jurisdiction to finally determine the amount of water available for appropriation, based on site-specific data when it becomes available, and to adjust upward or downward as appropriate the amount available for withdrawal from each aquifer. The Applicant need not refile, republish, or otherwise amend this decree to request or obtain such adjustment.

Table I

Aquifer	Acreage	Specific Yield	Saturated Thickness (feet)	Total Storage (AF)	Annual Diversion (AF)
Dawson	28.62	.20	275	1,570	15.70
Denver	28.62	.17	520	2,530	25.30
Arapahoe	28.62	.17	225	1,100	11.00
Laramie-Fox Hills	28.62	.15	190	816	8.16

10. Water in the Dawson aquifer in this location is not nontributary. The Dawson aquifer in this location is less than one mile from any point of contact with any natural surface stream, including its alluvium; accordingly, a decreed plan for augmentation replacing all actual injurious stream depletions is a prerequisite to pumping water from this aquifer. The water in the Denver and Arapahoe aquifers in this location is also not nontributary. The Denver and Arapahoe aquifers are located more than one mile from any point of contact with any natural surface stream, including its alluvium; accordingly, a decreed plan for augmentation replacing four percent of the water pumped on an annual basis, and replacing actual, injurious post-pumping depletions, is a prerequisite to pumping water from these aquifers. The Laramie-Fox Hills aquifer is nontributary in this location; two percent of the water pumped therefrom must be relinquished to the stream system.

11. The above water will be withdrawn through the following structures: water in the Dawson aquifer will be withdrawn through the well currently bearing permit no. 179281, Well DA-2, Well DA-3, Well DA-4 and Well DA-5; water in the Denver aquifer will be withdrawn through Well DEN-1, water in the Arapahoe aquifer will be withdrawn through Well A-1, and water in the

Laramie-Fox Hills aquifer will be withdrawn through Well LFH-1, and any replacements and additional wells which may be necessary to withdraw the entire decreed amount from each aquifer. Within four weeks of the date of entry of this decree, the Applicant will cancel permit No. 179281 and re-permit the well pursuant to the terms and conditions of this plan for augmentation. Applicant waives the 600 foot spacing requirement for well permit no. 179281, Well DA-2, Well DA-3, Well DA-4 and Well DA-5. The five Dawson aquifer wells shall be limited to 15 gpm each and not more than 15.7 acre feet annually, in combination with one another, absolute. Well DEN-1 shall be limited to 100 gpm and 25.3 acre feet annually, absolute. Well A-1 shall be limited to 100 gpm and 11.0 acre feet annually, absolute. Well LFH-1 shall be limited to 150 gpm and 8.16 acre feet, absolute. Decreed uses are all beneficial uses, including augmentation and exchange.

III. Plan for Augmentation.

12. Water Demand. Applicant may subdivide the Property into as many as five residential lots. Applicant anticipates that residential lots would use water for indoor uses, for landscape irrigation and for livestock water. Applicant projects that water for indoor uses will be 0.27 acre feet annually for each house, landscape irrigation will require application of 0.046 acre feet annually per 1,000 square feet (2.0 acre feet per acre), and livestock watering will require 0.011 acre feet per horse per year (10 gallons per horse per day). By way of example only, 1.0 acre foot annually would be adequate for one single-family dwelling, 15,000 square feet of landscape irrigation, and three horses.

13. Amount of water per Dawson aquifer well. There shall be one Dawson aquifer well per lot, and each well must provide water to a house on the same lot. The number of acre feet of water each Dawson aquifer well shall be allowed to divert on an annual basis shall be calculated by dividing the number of lots into the number 3.0, but in no event to exceed 1.0 acre feet per well

per year. Unless and until the Property is subdivided, the existing Dawson aquifer well, permit no. 179281, shall be allowed to pump 1.0 acre foot annually. However, if subdivision of the Property occurs more than fifteen years after entry of this decree, and if five lots are sought to be obtained, the maximum amount of allowable withdrawal for each Dawson aquifer well shall be calculated by subtracting the existing Dawson aquifer well's cumulative withdrawals, in acre feet, from the number 900, and dividing the resulting number by 1500. For example, if at the time of subdivision, 50 acre feet had been pumped from the existing Dawson aquifer well, the maximum annual amount for withdrawal would be $[(900 - 50) / 1500 =] 0.567$ acre feet per well.

14. Water Consumption. Disposal of water used indoors for the single family dwellings shall be by nonevaporative septic tanks and leach fields ("septic systems"). Consumption of water used for indoor uses and so disposed of is stipulated to be no more than 10 percent of diversions in this case. Water used by livestock is considered to be totally consumed. Water applied for landscape irrigation is stipulated to be no more than 85 percent consumptive in this case.

15. Replacement of depletions during pumping. Applicant does not have the physical ability to replace stream depletions to the South Platte River, but shall instead replace all depletions, regardless where they occur, to the Black Squirrel Creek drainage, which is tributary to Monument Creek, Fountain Creek and the Arkansas River. The State Engineer's "DA02" computer model indicates that during pumping total depletions to the South Platte and Arkansas Rivers and their tributaries will increase to a maximum of 22.94 percent of pumping in the 300th year. Based on pumping of 3.0 acre feet annually, maximum stream depletions during the pumping period would be 0.69 acre feet annually. Septic system return flows from even only three single family homes will equal 0.73 acre feet annually, and will be used to replace such depletions. If fewer than three lots are created, the lower total pumping amounts contained in ¶ 13 (one acre foot

annually per well for each of one or two wells) will ensure that septic system return flows are adequate to replace stream depletions.

16. Replacement of post-pumping depletions.

A. Applicant agrees to replace depletions which occur after the cessation of pumping for the shortest of the following periods: the period provided by the Colorado Legislature, should it eventually specify one and if the Applicant obtains water court approval for such modification; the period determined by the State Engineer, should the State Engineer lawfully establish such a period; the period established through rulings of the Colorado Supreme Court on relevant cases; or until Applicant petitions the water court and after notice to parties in the case proves that it has complied with all statutory requirements. The Court finds that the provisions of this paragraph are adequate to comply with existing law and to prevent injury to others.

B. Based on assumed pumping of 3.0 acre feet annually, the State Engineer's "DA02" computer model predicts that combined post-pumping depletions in the South Platte and Arkansas Rivers will reach a maximum of 23.03 percent of pumping in the 310th year after pumping begins, and will decline gradually thereafter. Applicant's post-pumping replacement obligation will be determined by multiplying the average annual Dawson pumping by the appropriate stream depletion factor according to the total depletion percentages shown on Table III. Annually, that amount of water shall then be pumped from the Laramie-Fox Hills aquifer decreed herein, or from such other source of water as receives judicial approval after notice, into Black Squirrel Creek, Monument Creek or another of Monument Creek's tributaries. Applicant's successors in interest shall be required to construct a Laramie-Fox Hills aquifer well pursuant to this plan for augmentation unless a

different source of water is approved by the Court for replacement of post-pumping depletions, or unless the obligation is terminated pursuant to ¶ 16.A. above.

C. Reservation of Laramie-Fox Hills aquifer water. Applicant shall reserve and dedicate to this plan for augmentation all 816 acre feet of its Laramie-Fox Hills aquifer water decreed herein for the purpose of replacing to Black Squirrel Creek, Monument Creek or another of Monument Creek's tributaries all post-pumping depletions, including post-pumping depletions to streams other than Black Squirrel Creek, Monument Creek or another of Monument Creek's tributaries. If at some time replacement of post-pumping depletions is no longer required pursuant to ¶ 16.A. above, or if Applicant receives judicial approval to use a different water source for augmentation purposes, said reservation will become null and void at such time as the obligation to use the Laramie-Fox Hills aquifer water to replace post-pumping depletions terminates.

17. Prior to implementation of this decree, Applicant shall create and record restrictive covenants requiring Applicant to limit annual pumping from the Dawson aquifer to 3.0 acre feet annually, to use nonevaporative septic systems for wastewater disposal, and which inform subsequent purchasers of the possible requirement to replace post-pumping depletions. Said covenants shall indicate clearly that failure of the property owners to comply with the terms of this decree, including the possible obligation to construct a Laramie-Fox Hills aquifer well in the future to replace post-pumping stream depletions, may result in an order of the Division Engineer's office to curtail or eliminate pumping of the Dawson aquifer wells. This decree and the restrictive covenants shall be recorded in the El Paso County records, so that a title examination of the Property, or any part thereof, shall reveal to all future purchasers of the lots to be created the existence of the decree and restrictive covenants. Said covenants shall be amended as necessary

to conform to the provisions of any amendment to this augmentation plan. Any proposed change in the method of wastewater treatment and disposal shall require notice in the water resume and publication in a newspaper of general circulation in El Paso County.

18. As previously indicated, the amount of water each Dawson aquifer well shall be allowed to divert on an annual basis shall be calculated by dividing the number of lots into the number 3.0, but in no event to exceed 1.0 acre feet per well per year. Each well shall be the source of supply for a residence on the same lot. This requirement ensures that during pumping, return flows from septic systems alone will always equal or exceed stream depletions in the same year. It is not necessary to otherwise restrict the type of use to which the Dawson aquifer water pumped pursuant to this plan for augmentation is put.

19. As reasonably required by the Division Engineer, but no less than annually, Applicant shall complete and submit an accounting form which shows groundwater withdrawals, stream depletions, return flows, and net stream depletions. The accounting form must be acceptable to the Division Engineer, and may be changed from time to time if necessary. An accounting form which is acceptable to the Division Engineer at the present time is attached to this Ruling as Exhibit B.

20. The Court finds that under the terms and conditions herein the requirements of C.R.S. §37-90-137(9)(c) have been met, and that no injury will be caused to the owner of or anyone entitled to use water under a vested water right or decreed conditional water right.

CONCLUSIONS OF LAW

21. The Court has jurisdiction over the subject matter of this action and over all persons who could have appeared herein, whether or not they did so appear.

22. All conditions precedent to the granting of this decree have been complied with,

including but not limited to the notice requirement of C.R.S. §37-90-137(4)(b.5)(I).

23. The plan for augmenting depletions caused by pumping the not nontributary Dawson aquifer is required by C.R.S. §37-90-137(9), and is subject to the requirement of C.R.S. §37-92-305(3) and 305(8) that no injury will occur to the owners of or persons entitled to use water under an absolute water right or decreed conditional water right as a result of implementing such plan for augmentation. Applicant has proved that no such injury will occur.

JUDGMENT AND DECREE

24. The forgoing findings of fact and conclusions of law are hereby incorporated into this judgment and decree.

25. The application for adjudication of water rights from the Dawson, Denver, Arapahoe and Laramie-Fox Hills aquifers underlying the Property is approved as set forth above. The Court retains jurisdiction over this decree to finally adjudicate the amount of water available for withdrawal from each aquifer, based on site specific information from well logs when it becomes available.

26. In any year, Applicant may withdraw the subject water in any given aquifer from any combination of the wells applied for in the same aquifer as long as the total amount of water withdrawn in that year does not exceed the product of the total number of years after the date of determination of the right to ground water by the Court, multiplied by the allowed average annual amount of withdrawals for that aquifer.

27. The wells must be constructed pursuant to applicable regulations of the Division of Water Resources. Each well must be equipped with a totalizing flow meter and Applicant must submit diversion records to the Division Engineer or his representative on an annual basis or as otherwise requested by the Division Engineer. All wells shall be cased so as to prevent withdrawal of water from more than one aquifer. All wells decreed herein shall be geophysically logged, and

a copy of such log shall be submitted to the State Engineer pursuant to 2 CCR 402-7, Rule 9.

28. Prior to construction of any well on the Property, Applicant shall apply for a well permit, accompanied by the requisite fee, and the State Engineer shall issue such well permit, pursuant to C.R.S. 37-90-137(4) and the terms and conditions of this decree. Should Applicant fail to construct and/or file a statement of beneficial use for any well prior to the expiration of the well permit, Applicant may reapply to the State Engineer for a new well permit and the State Engineer shall issue a new well permit upon terms and conditions no more burdensome than those contained in the expired permit.

29. Within four weeks of entry of a decree in this case, Applicant shall submit to the State Engineer the applicable fee and an application for a new well permit for existing well permit no. 179281, consistent with the terms and conditions of this decree and applicable statutes and regulations.

30. The water rights so decreed are absolute water rights, and no applications for findings of diligence are required.

31. Absent approval of an amendment to this plan for augmentation or approval of a new plan for augmentation replacing injurious depletions, annual pumping from the Dawson aquifer shall be limited to a maximum of 3.0 acre feet annually; per well limits shall be determined pursuant to the provisions of ¶ 13. Applicant shall not consume more than 98% of the water diverted from the nontributary Laramie-Fox Hills aquifer.

32. The application for approval of a plan for augmentation to replace depletions caused by pumping the not nontributary Dawson aquifer is approved as set forth above in the findings of fact in this decree. The State or Division Engineer shall curtail the pumping of more water than is provided for in ¶ 13 without prior modification of this plan for augmentation or approval of an

additional plan for augmentation which replaces depletions attributable to such pumping. The State Engineer shall also curtail all out-of-priority diversions, the depletions from which are not replaced as to prevent injury to vested water rights or decreed conditional water rights.

33. Cumulative pumping from the Dawson aquifer pursuant to this plan for augmentation shall not exceed 900 acre feet. Nothing herein is intended to preclude Applicant from utilizing the remaining water in the Dawson aquifer underlying the Property in any way permitted by law.

34. The Court shall retain jurisdiction for so long as Applicant is required to replace depletions to the Monument Creek system, to determine whether the replacement of depletions to the Arkansas River system instead of the South Platte River system is causing material injury to water rights tributary to the South Platte River. Any person may invoke the Court's retained jurisdiction at any time Applicant is causing depletions (including ongoing post-pumping depletions) to the South Platte River system, and is instead replacing such depletions to the Arkansas River system. The person invoking the Court's retained jurisdiction shall have the burden of establishing a *prima facie* case that Applicant's failure to replace depletions to the South Platte River system is causing injury to water rights owned by the person invoking the Court's retained jurisdiction, except that the State and Division Engineers may invoke the Court's retained jurisdiction by establishing a *prima facie* case that injury is occurring to any vested or conditionally decreed water rights. Applicant shall retain the ultimate burden of proving that no injury is occurring, or shall propose terms and conditions which prevent such injury. Among any other remedies it may impose, the Court may require that Applicant replace depletions to the South Platte River system.

35. Pursuant to C.R.S. § 37-92-304(6), the Court also retains 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 the vested water rights of others. The

Court also retains jurisdiction for the purposes of determining compliance with the terms of the augmentation plan. Any person seeking to invoke the retained jurisdiction of the Court pursuant to this paragraph shall file a verified petition with the Court. The petition to invoke retained jurisdiction or to modify the decree shall set forth with particularity the factual basis upon which the requested reconsideration is premised, together with proposed decretal language to effect the petition. The person 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 the person filing the petition is not required to avoid injury to other appropriators, or (3) that any term or condition proposed by Applicant in response to the petition does avoid injury to other appropriators.

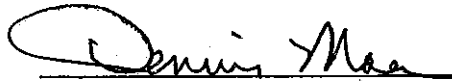
Dated this 9th day of April, 2003.



Mardell R. Cline
Water Referee
Water Division 2

**NO PROTEST WAS FILED IN THE THIS MATTER. THE FOREGOING RULING IS CONFIRMED
AND APPROVED, AND IS MADE THE JUDGMENT AND DECREE OF THIS COURT.**

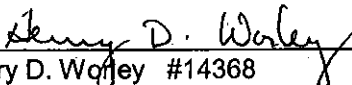
Dated this 5th day of May, 2003.



Dennis Maes
Water Judge
Water Division 2

APPROVED AS TO FORM:

MacDougall, Woldridge & Worley, P.C.



Henry D. Worley #14368
530 Communication Circle, Suite 204
Colorado Springs, CO 80905

Attorneys for Applicant,
Delroy L. Johnson and Janet M. Johnson

Anderson, Dude & Lebel, P.C.



William Kelly Dude #13208
P.O. Box 240
Colorado Springs, CO 80901-0240

Attorneys for Opposer,
the City of Colorado Springs

**DISTRICT COURT
WATER DIVISION NO. 2
STATE OF COLORADO**

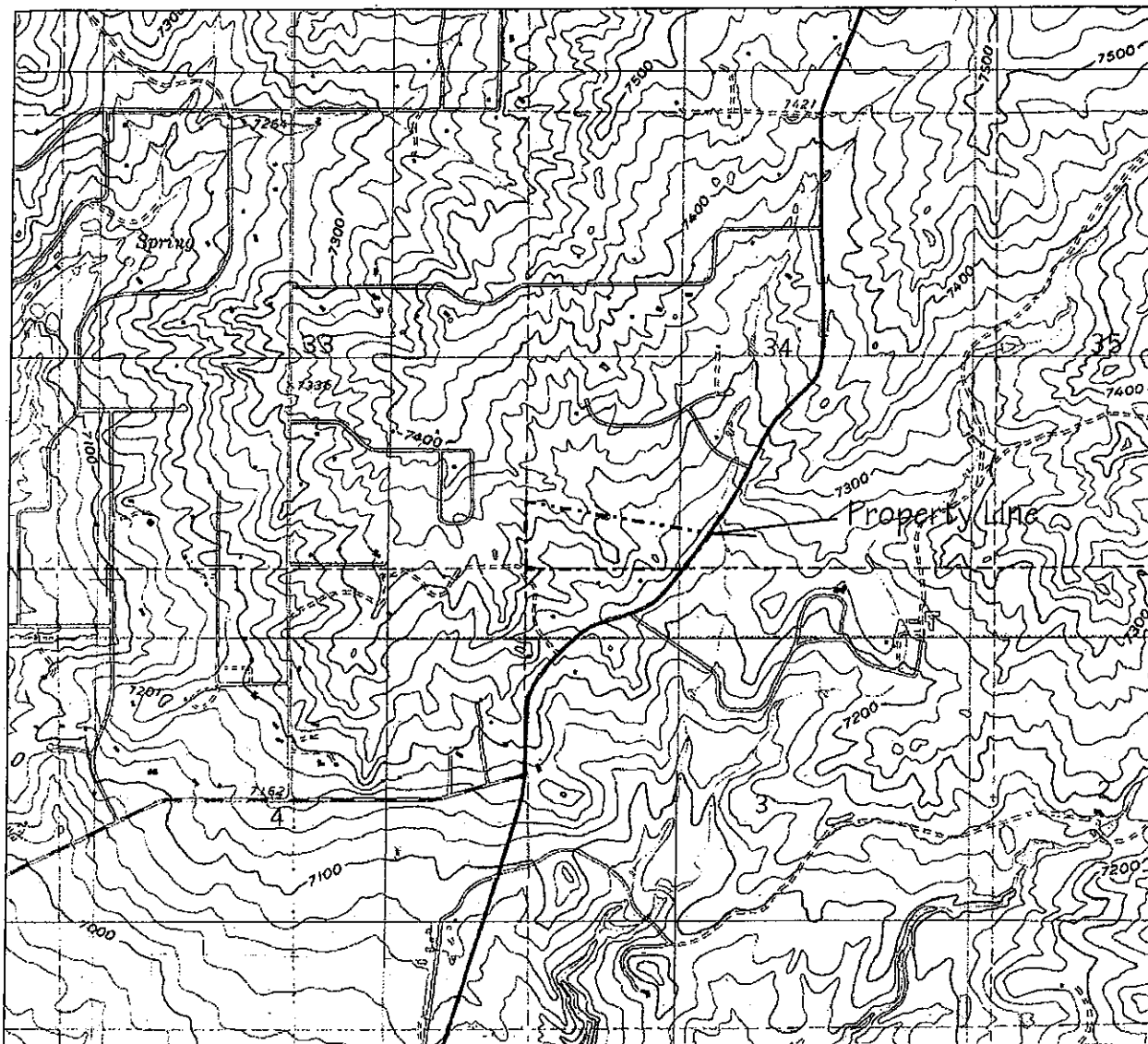
Certified to be a full and
correct copy of original on file

Dated: May 9, 2003
MARDELL R. CLENE, CLERK

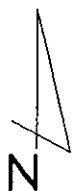
By: M. R. Cleene
Deputy Clerk

R 66 W

T 11 S
T 12 S



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Scale 1" = 2000'

Location Map

Wm Curtis Wells & Co.
consulting ground water geologists

Figure 1

EXHIBIT A
Legal Description

That portion of the South Half of the Southwest Quarter of Section 34 in Township 11 South, Range 66 West of the 6th P.M., described as follows: Beginning at the Southwest corner of said Section 34; thence North on the Westerly line of said Section 34 a distance of 794.00 feet; thence South 81 degrees 31 minutes 54 seconds East 2097.57 feet to intersect the Westerly right of way line of Highway No. 83 as described in deed recorded in Book 2031 at Page 369 under Reception No. 364427; thence Southwesterly on said Westerly right of way line 594.50 feet, more or less, to intersect the South line of said Section 34; thence West on said South line 1736.96 feet, more or less, to the point of beginning, County of El Paso, State of Colorado.

TABLE III

Dawson Stream Depletion Factors
Johnson Property
(as % of pumping)

YRS	Arkansas River	South Platte River	YRS	Arkansas River	South Platte River
10	0.50	0.09	310	12.34	10.69
20	1.05	0.28	320	12.08	10.88
30	1.60	0.54	330	11.80	11.01
40	2.13	0.84	340	11.54	11.09
50	2.65	1.18	350	11.29	11.12
60	3.17	1.52	360	11.03	11.15
70	3.67	1.88	370	10.78	11.16
80	4.16	2.25	380	10.53	11.17
90	4.65	2.61	390	10.31	11.15
100	5.11	3.00	400	10.08	11.15
110	5.57	3.38	410	9.86	11.14
120	6.02	3.77	420	9.65	11.12
130	6.47	4.14	430	9.43	11.11
140	6.88	4.55	440	9.22	11.09
150	7.31	4.93	450	9.02	11.06
160	7.74	5.27	460	8.82	11.03
170	8.12	5.65	470	8.63	11.00
180	8.51	6.01	480	8.45	10.95
190	8.91	6.36	490	8.25	10.92
200	9.29	6.72	500	8.08	10.86
210	9.63	7.11	510	7.90	10.82
220	9.99	7.47	520	7.75	10.75
230	10.33	7.84	530	7.56	10.71
240	10.67	8.21	540	7.40	10.66
250	11.01	8.57	550	7.24	10.60
260	11.33	8.94	560	7.09	10.53
270	11.65	9.30	570	6.94	10.47
280	11.93	9.69	580	6.78	10.41
290	12.26	10.03	590	6.64	10.34
300	12.55	10.39	600	6.51	10.27

Appendix D

***El Paso County Land Development Code
Water Quality Requirements and Results
Dawson Confined Aquifer
for Delroy Johnson Subdivision
Sampled December 28, 2020***

Compound	Units	MCL/SMCL	Result
Antimony	mg/l	0.006	<0.0012
Arsenic	mg/l	0.01	<0.0006
Barium	mg/l	2	0.0165
Beryllium	mg/l	0.004	<0.0001
Cadmium	mg/l	0.005	<0.0001
Chromium	mg/l	0.1	<0.0015
Cyanide (Total)	mg/l	0	<0.005
Fluoride	mg/l	4	<0.09
Mercury	mg/l	0.002	<0.0001
Nitrate as N	mg/l	10	0.4
Nitrite as N	mg/l	1	<0.03
Selenium	mg/l	0.05	0.0019
Thallium	mg/l	0.002	<0.0002
Aluminum	mg/l	0.05	0.02
Chloride	mg/l	250	1.9
Langlier Index			-2.48
Iron	mg/l	0.3	0.024
Manganese	mg/l	0.05	0.0008
pH		6.5 - 8.5	6.43
Silver	mg/l	0.1	<0.0005
Sulfate	mg/l	250	4.1
TDS	mg/l	500	81
Zinc	mg/l	5	0.035
Gross Alpha/Beta	pCi/l	15	6.5
Combined Radium 226+228	pCi/l	5	1.48
Total Coliform	#/100 ml	Absent	Absent

Green = Result below MCL - Acceptable Water Quality

STANDARD BACTERIOLOGICAL WATER TEST METHOD:SM-9223B
El Paso County Public Health Laboratory EPA ID# CO00025
1675 West Garden of the Gods Road, Suite 2044, Colorado Springs, CO 80907 - (719) 578-3120

PWSID

Sample Point ID:

Sample Taken Date: 01/04/2021 Time: 1135

Name of Supply:

Address where sample was taken: 14502 State Hwy 83

Sample site location: Mechanical Room

Sampler: Shelby Gatlin

Chlorine: mg/L

☐ Community Supply

☐ Private

☐ Well

☐ City

☐ Non-Community

☐ EHS

☐ Surface/Spring

☐ Cistern

Results to: Shelby Gatlin, Ryan Mangino

Phone: (719) 227-0072

Mailing address: 5540 Tech Center Dr

City/State/Zip: COLORADO SPRINGS, CO. 80919

Fax/Email: sgatlin@jdshydro.com;rmangino@jdshydro.com

Comments:

- ☐ Raw
☐ Finished
☐ LT2
☐ Quantitative

Date 01/04/2021 Time 1449 Rc'd EE0000743

Date 01/04/2021 Time 1621 Tested EE0000728

Date 01/05/2021 Time 1035 Comp EE0000742

Lab Sample #25074

Colliert Results Per 100ml

☒ Absence: Absence of coliform bacteria

☐ Presence: Presence of coliform bacteria & non-compliance with drinking water standards.

MPN/100 ml:

☒ Absence: E. Coli: Escherichia coli bacteria

☐ Presence:

MPN/100 ml:

Analytical Results

TASK NO: 201230001

Report To: Stephanie Schwenke

Company: JDS Hydro Consultants
5540 Tech Center Dr.
Suite 100
Colorado Springs CO 80919

Bill To: Stephanie Schwenke

Company: JDS Hydro Consultants
5540 Tech Center Dr.
Suite 100
Colorado Springs CO 80919

Task No.: 201230001

Client PO:

Client Project: Delroy Johnson Subdivision

Date Received: 12/30/20

Date Reported: 1/13/21

Matrix: Water - Drinking

Customer Sample ID #1

Sample Date/Time: 12/28/20 11:20 AM

Lab Number: 201230001-01

Test	Result	Method	ML	Date Analyzed	Analyzed By
Bicarbonate	36.9 mg/L as CaCO ₃	SM 2320-B	4	12/31/20	ECM
Calcium as CaCO ₃	19.7 mg/L	EPA 200.7	0.1	1/5/21	MBN
Carbonate	< 4 mg/L as CaCO ₃	SM 2320-B	4	12/31/20	ECM
Hydroxide	< 4 mg/L as CaCO ₃	SM 2320-B	4	12/31/20	ECM
Langelier Index	-2.48 units	SM 2330-B		1/13/21	SAN
pH	6.43 units	SM 4500-H-B	0.01	12/28/20	Sampler
Temperature	16 °C	SM 4500-H-B	1	12/28/20	Sampler
Total Alkalinity	36.9 mg/L as CaCO ₃	SM 2320-B	4	12/31/20	ECM
Total Dissolved Solids	81 mg/L	SM 2540-C	5	12/31/20	ISG

Abbreviations/ References:

ML = Minimum Level = LRL = RL
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



DATA APPROVED FOR RELEASE BY

Analytical Results

TASK NO: 201230001

Report To: Stephanie Schwenke
Company: JDS Hydro Consultants
5540 Tech Center Dr.
Suite 100
Colorado Springs CO 80919

Bill To: Stephanie Schwenke
Company: JDS Hydro Consultants
5540 Tech Center Dr.
Suite 100
Colorado Springs CO 80919

Task No.: 201230001
Client PO:
Client Project: Delroy Johnson Subdivision

Date Received: 12/30/20
Date Reported: 1/13/21
Matrix: Water - Drinking

Customer Sample ID #1

Sample Date/Time: 12/28/20 11:20 AM

Lab Number: 201230001-01

Test	Result	Method	ML	Date Analyzed	Analyzed By	MCL
Chloride	1.9 mg/L	EPA 300.0	0.1 mg/L	12/30/20	MAT	
Fluoride	< 0.09 mg/L	EPA 300.0	0.09 mg/L	12/30/20	MAT	4
Nitrate Nitrogen	0.40 mg/L	EPA 300.0	0.05 mg/L	12/30/20	MAT	10
Nitrite Nitrogen	< 0.03 mg/L	EPA 300.0	0.03 mg/L	12/30/20	MAT	1
Sulfate	4.1 mg/L	EPA 300.0	0.1 mg/L	12/30/20	MAT	

Abbreviations/ References:

ML = Minimum Level = LRL = RL

MCL = Maximum Contaminant Level per The EPA

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



DATA APPROVED FOR RELEASE BY

10411 Heinz Way / Commerce City, CO 80640 / 303-659-2313
Mailing Address: P.O. Box 507 / Brighton, CO 80601-0507

Analytical Results

TASK NO: 201230001

Report To: Stephanie Schwenke
Company: JDS Hydro Consultants
5540 Tech Center Dr.
Suite 100
Colorado Springs CO 80919

Bill To: Stephanie Schwenke
Company: JDS Hydro Consultants
5540 Tech Center Dr.
Suite 100
Colorado Springs CO 80919

Task No.: 201230001
Client PO:
Client Project: Delroy Johnson Subdivision

Date Received: 12/30/20
Date Reported: 1/13/21
Matrix: Water - Drinking

Customer Sample ID #2

Sample Date/Time: 12/28/20 11:17 AM

Lab Number: 201230001-02

Test	Result	Method	ML	Date Analyzed	Analyzed By	MCL
<u>Total</u>						
Iron	0.024 mg/L	EPA 200.7	0.005 mg/L	1/5/21	MBN	0.3
Aluminum	0.020 mg/L	EPA 200.8	0.001 mg/L	12/31/20	IPC	0.05
Antimony	< 0.0012 mg/L	EPA 200.8	0.0012 mg/L	12/31/20	IPC	0.006
Arsenic	< 0.0006 mg/L	EPA 200.8	0.0006 mg/L	12/31/20	IPC	0.01
Barium	0.0165 mg/L	EPA 200.8	0.0007 mg/L	12/31/20	IPC	2
Beryllium	< 0.0001 mg/L	EPA 200.8	0.0001 mg/L	12/31/20	IPC	0.004
Cadmium	< 0.0001 mg/L	EPA 200.8	0.0001 mg/L	12/31/20	IPC	0.005
Chromium	< 0.0015 mg/L	EPA 200.8	0.0015 mg/L	12/31/20	IPC	0.1
Manganese	0.0008 mg/L	EPA 200.8	0.0008 mg/L	12/31/20	IPC	0.05
Mercury	< 0.0001 mg/L	EPA 200.8	0.0001 mg/L	12/31/20	IPC	0.002
Selenium	0.0019 mg/L	EPA 200.8	0.0008 mg/L	12/31/20	IPC	0.05
Silver	< 0.0005 mg/L	EPA 200.8	0.0005 mg/L	12/31/20	IPC	
Thallium	< 0.0002 mg/L	EPA 200.8	0.0002 mg/L	12/31/20	IPC	0.002
Zinc	0.035 mg/L	EPA 200.8	0.001 mg/L	12/31/20	IPC	5

Abbreviations/ References:

ML = Minimum Level = LRL = RL

MCL = Maximum Contaminant Level per The EPA

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



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10411 Heinz Way / Commerce City, CO 80640 / 303-659-2313
Mailing Address: P.O. Box 507 / Brighton, CO 80601-0507

Analytical Results

TASK NO: 201230001

Report To: Stephanie Schwenke
Company: JDS Hydro Consultants
5540 Tech Center Dr.
Suite 100
Colorado Springs CO 80919

Bill To: Stephanie Schwenke
Company: JDS Hydro Consultants
5540 Tech Center Dr.
Suite 100
Colorado Springs CO 80919

Task No.: 201230001
Client PO:
Client Project: Delroy Johnson Subdivision

Date Received: 12/30/20
Date Reported: 1/13/21
Matrix: Water - Drinking

Customer Sample ID #3

Sample Date/Time: 12/28/20 11:23 AM

Lab Number: 201230001-03

Test	Result	Method	ML	Date Analyzed	Analyzed By	MCL
Cyanide-Total	< 0.005 mg/L	EPA 335.4	0.005 mg/L	1/5/21	CES	0.02

Abbreviations/ References:

ML = Minimum Level = LRL = RL

MCL = Maximum Contaminant Level per The EPA

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



DATA APPROVED FOR RELEASE BY

10411 Heinz Way / Commerce City, CO 80640 / 303-659-2313
Mailing Address: P.O. Box 507 / Brighton, CO 80601-0507

JDS Hydro Consultants, Inc.

Project ID:

Sample ID: #1 #2

Locator:

ACZ Sample ID: **L63558-01**

Date Sampled: 12/28/20 11:30

Date Received: 12/30/20

Sample Matrix: *Drinking Water*

Gross Alpha & Beta, total

Prep Method:

M900.0

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Gross Alpha	01/22/21 0:04		1.8	1.3	1.2	pCi/L		cer
Gross Beta	01/22/21 0:04		4.7	1.9	1.7	pCi/L		cer

Radium 226, total

Prep Method:

M903.1

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Radium 226, total	01/19/21 0:11		0.59	0.15	0.12	pCi/L	*	djc

Radium 228, total

Prep Method:

M904.0

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Radium 228, total	01/14/21 13:49		0.89	0.45	0.43	pCi/L	*	amk

**Report Header Explanations**

<i>Batch</i>	A distinct set of samples analyzed at a specific time
<i>Error(+/-)</i>	Calculated sample specific uncertainty
<i>Found</i>	Value of the QC Type of interest
<i>Limit</i>	Upper limit for RPD, in %.
<i>LCL</i>	Lower Control Limit, in % (except for LCSS, mg/Kg)
<i>LLD</i>	Calculated sample specific Lower Limit of Detection
<i>PCN/SCN</i>	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
<i>PQL</i>	Practical Quantitation Limit
<i>QC</i>	True Value of the Control Sample or the amount added to the Spike
<i>Rec</i>	Amount of the true value or spike added recovered, in % (except for LCSS, mg/Kg)
<i>RER</i>	Relative Error Ratio, calculation used for Dup. QC taking into account the error factor.
<i>RPD</i>	Relative Percent Difference, calculation used for Duplicate QC Types
<i>UCL</i>	Upper Control Limit, in % (except for LCSS, mg/Kg)
<i>Sample</i>	Value of the Sample of interest

QC Sample Types

<i>DUP</i>	Sample Duplicate	<i>MS/MSD</i>	Matrix Spike/Matrix Spike Duplicate
<i>LCSS</i>	Laboratory Control Sample - Soil	<i>PBS</i>	Prep Blank - Soil
<i>LCSW</i>	Laboratory Control Sample - Water	<i>PBW</i>	Prep Blank - Water

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Matrix Spikes	Determines sample matrix interferences, if any.

ACZ Qualifiers (Qual)

H	Analysis exceeded method hold time.
---	-------------------------------------

Method Prefix Reference

M	EPA methodology, including those under SDWA, CWA, and RCRA
SM	Standard Methods for the Examination of Water and Wastewater.
D	ASTM
RP	DOE
ESM	DOE/ESM

Comments

- (1) Solid matrices are reported on a dry weight basis.
- (2) Preparation method: "Method" indicates preparation defined in analytical method.
- (3) QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
- (4) An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.

For a complete list of ACZ's Extended Qualifiers, please click:

<https://aczk.com/wp-content/uploads/2019/04/Ext-Qual-List.pdf>

JDS Hydro Consultants, Inc.

ACZ Project ID: **L63558**

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Alpha

M900.0

Units: pCi/L

WG512839

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Error	LLD	Found	Error	LLD	Rec%	Lower	Upper	RPD/RER	Limit	Qual
WG512839PBW	PBW	01/22/21						-37	0.54	0.96			1.92			
WG512839LCSWA	LCSW	01/22/21	PCN62436	66.67				60	5.4	1	90	67	144			
L63558-01DUP	DUP-RPD	01/22/21			1.8	1.3	1.2	1.6	1.1	0.97				12	20	
L63594-01MSA	MS	01/22/21	PCN62436	66.67	3	1.6	1.2	72	6.4	1.1	104	67	144			
L63635-07DUP	DUP-RPD	01/22/21			0.82	1.7	6.7	1.5	2.1	13				59	20	RG
L63635-07DUP	DUP-RER	01/22/21			0.82	1.7	6.7	1.5	2.1	13				0.25	2	

Beta

M900.0

Units: pCi/L

WG512839

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Error	LLD	Found	Error	LLD	Rec%	Lower	Upper	RPD/RER	Limit	Qual
WG512839PBW	PBW	01/22/21						.9	1.8	1.8			3.6			
WG512839LCSWB	LCSW	01/22/21	RC200602-10	66.6				69	4.2	1.6	104	82	122			
L63558-01DUP	DUP-RPD	01/22/21			4.7	1.9	1.7	5	2	1.9				6	20	
L63635-06MSB	MS	01/22/21	RC200602-10	99.9	3.4	2.5	6.8	100	6.4	5.1	97	82	122			
L63635-07DUP	DUP-RER	01/22/21			6	3	9.1	3.7	2.8	12				0.56	2	
L63635-07DUP	DUP-RPD	01/22/21			6	3	9.1	3.7	2.8	12				47	20	RG

Radium 226, total

M903.1

Units: pCi/L

WG512653

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Error	LLD	Found	Error	LLD	Rec%	Lower	Upper	RPD/RER	Limit	Qual
WG512653PBW	PBW	01/19/21						.14	0.11	0.1			0.2			
WG512653LCSW	LCSW	01/19/21	PCN61539	20				21	0.64	0.13	105	43	148			
L63454-01DUP	DUP-RER	01/19/21			0.06	0.08	0.12	0	0.07	0.13				0.56	2	
L63454-01DUP	DUP-RPD	01/19/21			0.06	0.08	0.12	0	0.07	0.13				200	20	RG
L63594-01DUP	DUP-RPD	01/19/21			0.89	0.13	0.06	.96	0.14	0.08				8	20	
L63569-02MS	MS	01/19/21	PCN61539	20	0.13	0.11	0.19	18	0.51	0.13	89	43	148			

JDS Hydro Consultants, Inc.

ACZ Project ID: L63558

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Radium 228, total

M904.0

Units: pCi/L

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Error	LLD	Found	Error	LLD	Rec%	Lower	Upper	RPD/RER	Limit	Qual
WG512375																
L63330-01DUP	DUP-RPD	01/13/21			1.1	0.75	1.7	1.3	0.81	1.8				17	20	
L63330-02MS	MS	01/13/21	PCN61541	9.31	1.9	0.82	1.7	12	1.2	1.8	108	47	123			
WG512375LCSW	LCSW	01/13/21	PCN61541	9.31				11	1.1	0.7	118	47	123			
WG512375PBW	PBW	01/13/21						-.28	0.43	0.46			0.92			
L63570-01DUP	DUP-RPD	01/14/21			-0.08	0.8	1.9	.27	0.7	1.8				368	20	RG
L63570-01DUP	DUP-RER	01/14/21			-0.08	0.8	1.9	.27	0.7	1.8				0.33	2	

JDS Hydro Consultants, Inc.

ACZ Project ID: **L63558**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L63558-01	WG512653	Radium 226, total	M903.1	RG	Sample concentration is less than 5x LLD; RPD was not used for data validation. Replicate Error Ratio (RER) is less than 2. Precision judged to be in control.
	WG512375	Radium 228, total	M904.0	RG	Sample concentration is less than 5x LLD; RPD was not used for data validation. Replicate Error Ratio (RER) is less than 2. Precision judged to be in control.