STERLING RANCH FILING 5

FIRE PROTECTION REPORT

AUGUST 2023

OWNER/APPLICANT:
Classic SRJ Land, LLC
2138 Flying Horse Club Dr.
Colorado Springs, CO 80921

CONSULTANT:
N.E.S. Inc.
619 North Cascade Avenue
Colorado Springs, Colorado 80903

Sterling Ranch Filing 5 is within the Black Forest Fire Rescue Protection District (BFFR). The proposed subdivision lies approximately 4 miles from Station No. 1 at 11445 Teachout Road.

BFFR is made up entirely of unincorporated areas of El Paso County and covers approximately 54 square miles and provides service to about 40,000 residents. Black Forest Fire Rescue (BFFR) provides structural firefighting, wildland firefighting, technical rescue, and EMA transport among many other services. BFFR is a mutual and automatic aide partner for agencies within El Paso County, Douglas County and the State of Colorado. The department responds to about 1200 calls a year in Black Forest, and also provides Advanced Life Support transport of the sick and injured to area hospitals. All alarm responses are made within an eight-minute average for the district.

Sterling Ranch Filing 5 is supportive of the El Paso County Land Development Code (LDC), Engineering Criteria Manual (ECM), International Building Code (IBC 2021), Pikes Peak Regional Building and International Fire Code 2021(IFC).

2021 IFC Compliance:

Section 503: ire Apparatus Access Roads

- The site is accessed by Hazlett Drive (urban residential collector) and Manor House Way (urban local). Both roads serve as fire apparatus access roads.

- All internal roadways within Sterling Ranch Filing 5 are classified as urban local built to El Paso County (EPC) standards and dually serve as Fire apparatus access roads. Roads will be built to ECM 2.2.4 standards, which will provide a 50FT ROW with an attached 5FT concrete sidewalk on both sides of the road. Parking is allowed on both sides of the street. A fire exhibit showing access to all lots and turning radii has been included with this report.

- All angles of roadway connections are in compliance with ECM 2.3.3.B which stipulates all new roadways must intersect at or nearly at right angles. Roads are constructed in accordance with ECM 2.3.1 Table 2-7. All roadways will be surfaced with asphalt and maintained by El Paso County. A Traffic Impact Study completed by LSC in July of 2023 has been included with this report.

503.2.5 Dead Ends

Sterling Ranch Filing 5 includes a PUD modification for LDC 4.2.6.F.2.g to allow for 3 residential lots to be accessed by a shared drive. The shared drive is a 24FT wide concrete mat and 116FT long. Per 503.2.5 of the IFC 2021, 116FT is below the dead-end fire apparatus threshold of 150FT. The shared private drive extents from lots 54-56 and directly connects to School House Drive. All 3 lots are within a 150FT hose lay and within 400FT of a fire hydrant. The attached Fire Exhibit illustrates both fire hydrant distance and hose length for the entire development and demonstrates compliance with the IFC 2021. All other lots within the development exceed LDC 8.4.3.B.2.e with an average lot frontage of 40FT.

Section 505/506:

All structures will be addressed and adequately marked per PPRBD and IFC 2021 standards before a certification of occupancy will be issued. All street signs will be in compliance with PPRBD, EL Paso County standards, IBC 2021 and IFC 2021 standards. All structures are designed as single family and two-family homes.

Section 507:

Per LDC, 8.4.7. a 300-year water sufficiency finding must be found by the County Attorney's Office, El Paso County Public Health and Board of County Commissioners for the plat to be recorded. An analysis of water supply and sufficiency showing compliance with LDC 8.4.7.B.6.g.c and demonstrating proof of water demands needed to satisfy fire demand, replacement of supplies reduced due to flooding, damaged or otherwise incapacitated systems is included in the attached water resources report created by JDS Hydro in April of 2023.

In this development, all fire hydrants are spaced within 400FT of each other and connected to a public water system with sufficient pressure. The water resources report completed by JDS Hyrdo in April of 2023 found Sterling Ranch Filing 5 to have a more than sufficient water supply with a net excess of 1029.40AF a year for 300 years. Water demand is determined to be 24.26AF. All water and wastewater be supplied and maintained by FAWWA. A FAWWA water and waste water commitment letter has been included in the Sterling Ranch Filing 5 submittals.

All fire hydrants will be maintained and periodically tested by the BFFRD as required. A minimum 3FT clearance is provided for all fire hydrants. A fire exhibit showing all fire hydrants within the development is included with this report.

Section 504;601-607;701-708;801-808;901-917;1001-1032;1101-1106:

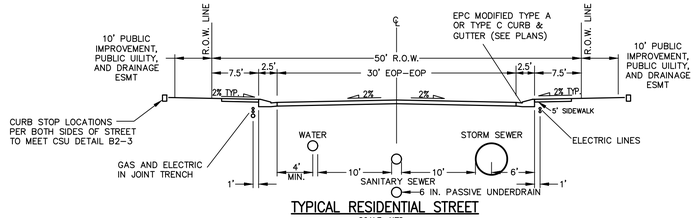
The development is comprised of single family detached and attached dwelling units. All structures will be constructed to IBC 2021, IFC 2021 and PPRBD standards. All structures are required to demonstrate full compliance with all standards before a certificate of occupancy can be issued.

Section 1200-4000:

Not applicable. The development is proposed as a single family detached and attached housing development served by public water, sewer and roadways.

STERLING RANCH FILING 5

FIRE EXHIBIT



TYPICAL RESIDENTIAL STREET

SCALE: NTS

DESIGN SPEED: 25 MPH POSTED SPEED: 25 MPH

LEGEND

- FIRE HYDRANT
- 225' DRIVE DISTANCE
- 150' HOSE LAY

N

50 25 0 50 100

ORIGINAL SCALE: 1" = 50'

FIRE EXHIBIT
STERLING RANCH FILING 5
PROJ. NO. 25188.16
7/17/2023
SHEET 1 OF 1

J·R ENGINEERING
A Westrian Company

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Sterling Ranch Filing No. 5
Traffic Impact Study
(LSC #S224610)
July 17, 2023

Traffic Engineer's Statement

This traffic report and supporting information were prepared under my responsible charge and they comport with the standard of care. So far as is consistent with the standard of care, said report was prepared in general conformance with the criteria established by the County for traffic reports.

COLORADO LICENSED
JEFFREY C. HODSDON
31684
7-17-23
PROFESSIONAL ENGINEER

Developer's Statement

I, the Developer, have read and will comply with all commitments made on my behalf within this report.

7/17/2023
Date

Sterling Ranch Filing No. 5

Traffic Impact Study

Prepared for:

SR Land LLC
Jim Morley
20 Boulder Crescent, 1st Floor
Colorado Springs, CO 80903

JULY 17, 2023

LSC Transportation Consultants
Prepared by: Kirstin D. Ferrin, P.E.
Reviewed by: Jeffrey C. Hodsdon, P.E.

LSC #S224610

CONTENTS

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July 17, 2023

SR Land LLC
Jim Morley
20 Boulder Crescent, 1st Floor
Colorado Springs, CO 80903

RE: Sterling Ranch Filing No. 5
El Paso County, CO
Traffic Impact Study
PUDSP-22-002
LSC #S224610

Dear Mr. Morley:

LSC Transportation Consultants, Inc. has prepared this traffic impact study (TIS) for the proposed Sterling Ranch Filing No. 5 residential development. As shown in Figure 1, the site is located east of Vollmer Road and north of the future extension of Marksheffel Road currently under construction in El Paso County, Colorado.

REPORT CONTENTS

This report presents:

- A list of previous Sterling Ranch traffic reports and the context of this project;
- The existing roadway and traffic conditions in the site's vicinity including the roadway widths, surface conditions, lane geometries, traffic controls, and posted speed limits;
- A summary of the proposed land use and access plan;
- The projected average weekday and peak-hour vehicle trips to be generated by the proposed future development;
- The assignment of the projected site-generated traffic volumes to the area roadways;
- Estimates of projected short-term and long-term background traffic volumes;
- The projected short-term and long-term total traffic volumes on the area roadways;
- The projected levels of service at the key intersections within the study area;
- Signal-warrant threshold analysis;
- The recommended street classifications;
- A list of deviation requests;

- Findings and recommendations for study-area roadways and intersections, including number of lanes, auxiliary turn lanes, intersection traffic control, etc.; and
- The project's obligation to the County roadway improvement fee program.

REPORT SCENARIOS

Short-Term Scenario

The short-term scenario includes the roadway segments to be added in the short term only, as shown in Figure 2. This scenario includes traffic to be generated by the currently-proposed Copper Chase at Sterling Ranch and traffic to be generated in the short term by buildout of Homestead at Sterling Ranch, Branding Iron at Sterling Ranch, Sterling Ranch Filings 2-4, Homestead North at Sterling Ranch Filings 1-3, the Retreat at TimberRidge Filings 1-3, Sterling Ranch East Filings 1 and 2, FourSquare at Sterling Ranch East, and Copper Chase at Sterling Ranch. Trips projected from these other short-term developments outside of the currently-proposed Sterling Ranch Filing No. 5 are included as short-term "background traffic" in this report.

Long-Term Scenario

The long-term scenario is essentially the same as the 2043 long-term scenario contained in the LSC February 10, 2023 Master TIS with additional detail added for this application – including the analysis of minor intersections and street segments that are part of the currently-proposed development. The study area of this report is more focused than the Sketch Plan.

RECENT TRAFFIC REPORTS

- LSC completed an updated master traffic study (MTIS) for the entire Sterling Ranch development, dated March 17, 2023. Appendix Table 1 includes a link to the El Paso County Electronic Development Application Review Program (EDARP) page where a copy of the latest version of that MTIS can be obtained.
- A list of other traffic studies within Sterling Ranch and in the vicinity of the area of study completed within the past five years (that LSC is aware of) is attached for reference (Appendix Table 1).
- El Paso County is currently studying the Briargate Stapleton Corridor as part of a Pikes Peak Rural Transportation Authority (PPRTA) study. A draft version of the *Briargate-Stapleton Corridor Study* by Wilson & Company was published December 9, 2021.

EXISTING ROAD AND TRAFFIC CONDITIONS

The adjacent streets are shown in Figures 1 and 2 and are described below. Copies of the *2016 El Paso County Major Transportation Corridors Plan* (*MTCP*), *2040 Roadway Plan*, and *2016 MTCP*

2060 Corridor Preservation Plan with the site location identified on them have been attached to this report.

Vollmer Road is currently a five-lane urban street within the City of Colorado Springs limits between Black Forest Road and Cowpoke Road and a two-lane, rural, paved roadway north of Cowpoke Road extending to north of Hodgen Road. Improvements to a section of Vollmer Road in the vicinity of the future Marksheffel Road are currently under construction. In the southbound direction, Vollmer Road has a posted speed limit of 45 mph. South of Cowpoke Road, Vollmer Road has a 40-mph posted speed limit. The 2040 El Paso County *Major Transportation Corridors Plan* (*MTCP*) and the 2023 Sterling Ranch master traffic study show Vollmer Road as a four-lane Urban Minor Arterial in the vicinity of the site. Note: The new Connect COS City of Colorado Springs transportation plan shows Vollmer as a Principal Arterial.

Marksheffel Road is a Principal Arterial extending north from the City of Fountain to Woodmen Road. Marksheffel Road is planned to ultimately be widened to six lanes and extended north and west from Woodmen Road to connect to Research Parkway at Black Forest Road. Marksheffel Road is shown as a four-lane Principal Arterial through the site on the El Paso County *MTCP*. The City of Colorado Springs intends to take ownership and maintenance of Marksheffel Road when it is constructed from Vollmer to the east and south to where it will connect to the segment constructed north of Woodmen Road in the City.

The section of Marksheffel Road adjacent to Sterling Ranch is currently under construction on 107 feet of right-of-way to the City's required cross section(s) and criteria. It is anticipated that Marksheffel Road will be connected between Vollmer Road and Woodmen Road by the end of 2023.

Briargate Parkway is a six-lane, Principal Arterial that extends east from Interstate (I)-25 to Grand Lawn Circle (about one-half mile east of Powers Boulevard). Briargate Parkway is planned ultimately to extend to Towner Drive. The segment of Briargate Parkway between Vollmer Road and Sterling Ranch Road is planned to be constructed in the short term with the Sterling Ranch East Preliminary Plan.

Sterling Ranch Road is a planned Non-Residential Collector shown extending through the Sterling Ranch development between Marksheffel Road and the north end of the Sketch Plan area (Arroya Road). The segment between Marksheffel Road and Dines Boulevard has been constructed and the segment between Dines Boulevard and Briargate Parkway will be constructed in the short term with the Sterling Ranch East Preliminary Plan.

LAND USE AND ACCESS

The area planned for Sterling Ranch Filing No. 5 was included in the Sterling Ranch Master TIS as Traffic Analysis Zone (TAZ) 16. The Sterling Ranch Master TIS assumed TAZ 16 would be developed with 82 single-family homes. The currently-proposed Sterling Ranch Filing No. 5 is

planned to include 72 residential dwelling units, including 37 duplexes and 35 single-family homes.

A full-movement access point (Manor House Way) is proposed to Dines Boulevard about 518 feet north of Sterling Ranch Road. A second access is proposed to form the northeast leg of the intersection of School House Drive/Hazlett Drive which was approved as part of Sterling Ranch Filing No. 2. Figure 3 shows the proposed site plan.

Intersection Sight Distance

Figure 4 shows a sight-distance analysis at the proposed intersection to Dines Boulevard. Based on a design speed of 40 miles per hour (mph) and the criteria contained in Table 2-21 of the *Engineering Criteria Manual* (*ECM*), the required intersection sight distance at the future intersection is 445 feet. Based on the criteria contained in Table 2-17 of the *ECM*, the required stopping sight distance approaching this intersection is 305 feet. As shown in Figure 4, the proposed intersection of Dines/Manor House will meet the criteria.

Pedestrian and Bicycle Analysis

Figure 3 shows the location of all planned trails and sidewalks in the vicinity of the site. Connections are also proposed to the planned future Sand Creek Regional Trail (west of Dines Boulevard).

A detached sidewalk will be provided along the west side of Sterling Ranch Road. The multi-use paved shoulder on Sterling Ranch Road will accommodate bicycles.

There are no existing schools within two miles of the site. However, multiple school sites are planned within Sterling Ranch northeast of the intersection of Sterling Ranch Road/Dines Boulevard. School pedestrians would travel to/from the intersection of Sterling Ranch/Dines on the sidewalks and trails identified in Figure 3. The need for additional pedestrian facilities and/or school crossings should be identified when the school site(s) are developed.

Safety Analysis

Most of the roadways in the vicinity of the site have not yet been constructed. The Colorado State Patrol (CSP) provided LSC with crash history data for Vollmer Road between Tahiti Drive and Burgess Road from September 2019 through September 2022. During the reported time period, there were twelve reported crashes. Of the twelve reports, ten were single-vehicle non-intersection-related crashes on Vollmer Road. One crash involved a southbound vehicle that turned right onto Poco Road and crashed into several cars parked on Poco Road partially in the lane. The only intersection related crash occurred in June 2022. A vehicle heading northbound on Vollmer Road was slowing to turn left at Lochwinnoch Road and the vehicle behind them attempted to pass on the left side. The crash history data has been attached.

TRIP GENERATION

Sterling Ranch Filing No. 5 site-generated vehicle trips have been estimated using the nationally-published trip-generation rates from *Trip Generation, 11th Edition*, 2021 by the Institute of Transportation Engineers (ITE). Table 1 shows the trip-generation estimate. Table 1 also shows the trip-generation estimate for the same parcel assumed in the *Sterling Ranch Master TIS* for comparison.

Sterling Ranch Filing No. 5 is expected to generate 596 vehicle trips on the average weekday, with about half entering and half exiting the site during a 24-hour period. During the morning peak hour, which generally occurs for one hour between 6:30 and 8:30 a.m., about 11 vehicles would enter and 32 vehicles would exit the site. During the afternoon peak hour, which generally occurs for one hour between 4:15 and 6:15 p.m., about 33 vehicles would enter and 21 vehicles would exit the site.

TRIP DISTRIBUTION AND ASSIGNMENT

The directional distribution of the site-generated traffic volumes on the street and roadway system serving the site is an important factor in determining the site's traffic impacts. The distribution estimates for short-term and long-term residential-related traffic are shown in Figure 5. The short-term directional-distribution estimate assumes the short-term roadway network shown in Figure 2 only and the long-term directional-distribution estimate assumes buildout of the roadway network. The directional-distribution estimates are based, in part, on the estimates contained in the sketch plan TIS report. Factors include: the location of the site with respect to the Colorado Springs metropolitan area, the planned access system for the site, the street and roadway system serving the site, and the land uses proposed for the site.

When the distribution percentages (from Figure 5) are applied to the new, external trip-generation estimates (from Table 1), the resulting site-generated traffic volumes can be determined. Figures 6 and 7 show the short-term and long-term site-generated traffic volumes, respectively. The short-term site-generated traffic volumes assume only the street network shown in Figure 2 and the long-term site-generated traffic volumes assume buildout of the area roadway network.

BACKGROUND TRAFFIC VOLUMES

Background traffic is the traffic estimated to be on the adjacent roadways and at adjacent intersections without the proposed development's trip generation of site-generated traffic volumes. Background traffic (for a specified horizon year) includes the through traffic and the traffic generated by nearby developments (existing and planned, including traffic generated by existing and planned developments within the greater Sterling Ranch overall development) but assumes zero traffic generated by land uses within Sterling Ranch Filing No. 5.

Short-Term Scenario Background Conditions

Figure 8 shows the projected volumes for the short-term background scenario. This scenario includes traffic to be generated in the short term by buildout of Homestead at Sterling Ranch, Branding Iron at Sterling Ranch, Sterling Ranch Filings 2-4, Homestead North at Sterling Ranch Filings 1-3, the Retreat at TimberRidge Filings 1-3, Sterling Ranch East Filings 1 and 2, FourSquare at Sterling Ranch, and Copper Chase at Sterling Ranch.

Long-Term Scenario Background Conditions

Figure 9 shows the projected 2043 background daily traffic volumes on key street segments at the key area intersections. These volumes assume buildout of the area street network, including the completion of Marksheffel Road between Vollmer Road and Black Forest Road, Briargate Parkway between Meridian Road and Black Forest Road, and Sterling Ranch Road between Marksheffel Road and Briargate Parkway.

The 2043 background traffic volumes are estimates by LSC, based on the traffic projections in the LSC February 10, 2023 Master TIS report. The 2043 background daily traffic volumes assume buildout of all other land uses within the Sterling Ranch Master Plan.

TOTAL TRAFFIC VOLUMES

Short-Term Scenario Total Conditions

Figure 10 shows the projected volumes for the short-term total scenario. These volumes are the sum of the short-term background scenario (from Figure 8) plus the short-term site-generated traffic volumes (from Figure 6).

Long-Term Scenario Total Conditions

Figure 11 shows the projected volumes for the 2043 total scenario. These volumes are the sum of the 2043 background scenario (from Figure 9) plus the long-term site-generated traffic volumes (from Figure 7).

LEVELS OF SERVICE

Level of service (LOS) is a quantitative measure of the level of congestion or delay at an intersection. Level of service is indicated on a scale from “A” to “F.” LOS A represents control delay of less than 10 seconds for unsignalized intersections. LOS F represents control delay of more than 50 seconds for unsignalized intersections. Table 1 shows the level of service delay ranges.

Table 2: Intersection Levels of Service Delay Ranges

Level of Service	Signalized Intersections Average Control Delay (seconds per vehicle)	Unsignalized Intersections Average Control Delay (seconds per vehicle)[(1)]
A	10.0 sec or less	10.0 sec or less
B	10.1-20.0 sec	10.1-15.0 sec
C	20.1-35.0 sec	15.1-25.0 sec
D	35.1-55.0 sec	25.1-35.0 sec
E	55.1-80.0 sec	35.1-50.0 sec
F	80.1 sec or more	50.1 sec or more

(1) For unsignalized intersections, if V/C ratio is greater than 1.0 the level of service is LOS F, regardless of the projected average control delay per vehicle.

The study-area stop-sign-controlled intersections have been analyzed based on the unsignalized-intersection analysis procedures from the *Highway Capacity Manual, 6th Edition* by the Transportation Research Board. The future signalized intersections of Vollmer Road/Marksheffel Road and Sterling Ranch Road /Marksheffel Road have been analyzed using Synchro.

Vollmer Road /Marksheffel Road

Marksheffel Road is planned to be constructed between Vollmer Road and Sterling Ranch Road in the short-term future. The intersection of Marksheffel/Vollmer is initially planned to be stop-sign controlled. Based on the projected short-term total traffic volumes, the westbound left-turn movement is projected to operate at LOS E during the morning peak hour and LOS F during the afternoon peak hour. This intersection is planned as a future signalized intersection. However, traffic-signal warrant(s) may not be met in the short-term. It is not uncommon for the minor movements at a stop-sign-controlled intersection to operate at LOS E or F as the traffic volumes approach the levels needed to meet vehicular-volume traffic-signal warrants.

By 2043, it was assumed that Marksheffel Road would be constructed west to Briargate Parkway and that the intersection of Vollmer/Marksheffel will be converted to traffic-signal control. The intersection of Vollmer/Marksheffel is projected to operate at an overall LOS C or better during the peak hours as a signalized intersection, based on the projected 2043 total traffic volumes.

Sterling Ranch Road /Marksheffel Road

Marksheffel Road is planned to be constructed between Vollmer Road and Sterling Ranch Road in the short-term future. The intersection of Marksheffel/Sterling Ranch is initially planned to be stop-sign controlled. Based on the projected short-term total traffic volumes, the southbound left-turn movement is projected to operate at LOS C during the morning peak hour and LOS E

during the afternoon peak hour. This intersection is planned as a future signalized intersection. However, traffic-signal warrant(s) may not be met in the short-term. It is not uncommon for the minor-street movements at a stop-sign-controlled intersection to operate at LOS E or F as the traffic volumes approach the levels needed to meet vehicular-volume traffic-signal warrants.

By 2043, it was assumed that Sterling Ranch would be constructed south of Marksheffel Road and that the intersection of Sterling Ranch/Marksheffel will be converted to traffic-signal control. The intersection of Sterling Ranch/Marksheffel is projected to operate at an overall LOS C or better during the peak hours as a signalized intersection, based on the projected 2043 total traffic volumes.

Sterling Ranch Road /Hazlett Drive

All movements at the stop-sign-controlled intersection of Sterling Ranch Road/Hazlett Drive are projected to operate at LOS C or better during the peak hours, based on the projected short-term total traffic volumes. By 2043, the northbound approach of this intersection is projected to operate at LOS E during the afternoon peak hour, based on both the background and total traffic volumes. A vehicular-volume traffic-signal warrant is unlikely to be met at this intersection. Although this movement is projected to operate at LOS E, the V/C ratio is well below 1.0.

Sterling Ranch Road /Dines Boulevard

All movements at the stop-sign-controlled intersection of Sterling Ranch Road/Dines Boulevard are projected to operate at LOS D or better during the peak hours, based on the projected short-term and 2043 total traffic volumes.

Dines Boulevard/Manor House Drive

All movements at the stop-sign-controlled intersection of Dines/Manor House are projected to operate at LOS A during the peak hours, based on the projected short-term and 2043 total traffic volumes.

SIGNAL WARRANT THRESHOLD ANALYSIS – AM AND PM PEAK HOURS

The intersections of Marksheffel/Vollmer and Marksheffel/Sterling Ranch were analyzed to determine if the thresholds for Four-Hour and/or Eight-Hour Vehicular-Volume Traffic-Signal Warrant thresholds would be reached or exceeded, based on the projected short-term traffic volumes.

The off-peak-hour volumes are estimates by LSC, based on the peak-hour traffic volumes, 72-hour machine counts conducted by LSC on Vollmer Road in November 2020, and vehicle time-of-day distribution data for single-family homes published by the Institute of Transportation Engineers.

Marksheffel/Vollmer

Table 3 shows the results of the analysis for the intersection of Marksheffel/Vollmer. As shown in Table 3, in the short-term, only three of the hours analyzed are projected to meet the thresholds for an Eight-Hour Vehicular-Volume Traffic-Signal Warrant and none of the hours analyzed are projected to meet the thresholds for a Four-Hour Vehicular-Volume Traffic-Signal Warrant. This analysis indicates that traffic-signal warrant(s) will likely **not** be met at the intersection of Marksheffel/Vollmer in the short-term.

Marksheffel/Sterling Ranch

Table 4 shows the results of the analysis for the intersection of Marksheffel/Sterling Ranch. As shown in Table 4, in the short-term, only four of the hours analyzed are projected to meet the thresholds for an Eight-Hour Vehicular-Volume Traffic-Signal and only one of the hours analyzed are projected to meet the thresholds for a Four-Hour Vehicular-Volume Traffic-Signal Warrant. This analysis indicates that traffic-signal warrant(s) will likely **not** be met at the intersection of Marksheffel/Sterling Ranch in the short-term.

SUBDIVISION STREET CLASSIFICATIONS

All of the internal streets within Sterling Ranch Filing No. 5 should be classified as Urban Local. Figure 12 shows the recommended street classifications for the internal streets and the streets in the vicinity of the site.

DEVIATION REQUESTS

A PUD modification for driveway frontage has been included with this submittal.

ROADWAY IMPROVEMENTS

Table 4 from the *Sterling Ranch Sketch Plan Amendment Master TIS* contained a summary of needed area improvements. Appendix Table 2 is a copy of this table with the improvements needed either prior to or with Sterling Ranch Filing No. 5 highlighted. Please see Figure 13 for a map of the key street-segment locations. These recommendations are consistent with the LSC Sketch Plan TIS report.

The following auxiliary lanes shown will be required with Sterling Ranch Filing No. 5 if not completed with Sterling Ranch Filing No. 2. Note: These are shown on the construction plans by JR Engineering for these adjacent roadways and construction is underway:

- Marksheffel/Vollmer
    - 155-foot northbound right-turn deceleration lane on Vollmer approaching Marksheffel, plus a160-foot taper.
    - 310-foot southbound left-turn lane on Vollmer approaching Marksheffel, plus a 160-foot taper.
    - 425-foot westbound left-turn lane on Marksheffel approaching Vollmer, plus a 200-foot taper.
    - 235-foot westbound right-turn deceleration lane on Marksheffel approaching Vollmer, plus a 200-foot taper.
- Sterling Ranch/Marksheffel
    - 470-foot eastbound left-turn lane on Marksheffel approaching Sterling Ranch, plus a 200-foot taper.
    - A 285-foot southbound left-turn lane on Sterling Ranch approaching Marksheffel, plus a 90-foot reverse-curve taper.
    - A 155-foot southbound right-turn lane on Sterling Ranch approaching Marksheffel, plus a 160-foot taper.
- Sterling Ranch/Hazlett
    - A 305-foot northeast-bound left-turn lane on Sterling Ranch Road approaching Hazlett, plus a 90-foot reverse-curve taper.
- Sterling Ranch/Dines
    - A 305-foot northeast-bound left-turn lane on Sterling Ranch Road approaching Hazlett, plus a 90-foot reverse-curve taper.
    - A 155-foot southeast-bound right-turn deceleration lane on Dines Boulevard approaching Sterling Ranch Road.
- Dines/Manor House
    - Based on the projected short-term and 2043 total traffic volumes and the criteria contained in the *ECM*, no auxiliary turn lanes would be required at the intersection of Dines/Manor House.

ROADWAY IMPROVEMENT FEE PROGRAM

This project will be required to participate in the El Paso County Road Improvement Fee Program. Sterling Ranch Filing No. 5 will join the ten-mil PID. The 2019 ten-mil PID building permit fee portion associated with this option is $1,221 per single-family dwelling unit. Based on 72 lots, the total building permit fee would be $87,912. Note: program fees are subject to change.

* * * * *

Please contact me if you have any questions regarding this report.

Respectfully Submitted,

LSC TRANSPORTATION CONSULTANTS, INC.

By: Jeffrey C. Hodsdon, P.E.
Principal

JCH/KDF:jas

Enclosures: Tables 1, 3, and 4
Figures 1-13
Level of Service Reports
MTCP Maps
Appendix Tables 1-2

Tables1, 3, and 4

TRANSPORTATION
CONSULTANTS, INC.

Table 1
Trip Generation Estimate
Sterling Ranch Filing No. 5

Sketch Plan TAZ	ITE Code	ITE Land Use	Quantity	Unit	Trip Generation Rates[1] Daily	AM Peak Hour In	AM Peak Hour Out	PM Peak Hour In	PM Peak Hour Out	Total Trip Generated Daily	AM Peak Hour In	AM Peak Hour Out	PM Peak Hour In	PM Peak Hour Out
Trip Generation Estimate Based on the Currently Proposed Land Use														
16	215	Single Family Attached Housing	37	DU[2]	7.20	0.12	0.36	0.34	0.23	266	4	13	12	9
	210	Single-Family Detached Housing	35	DU	9.43	0.18	0.53	0.59	0.35	330	6	18	21	12
			72	**DU**						**596**	**11**	**32**	**33**	**21**
Trip Generation Estimate From the *Sterling Ranch Sketch Plan Amendment Master Traffic Impact Study*, March 17, 2023														
16	210	Single-Family Detached Housing	82	DU	9.43	0.18	0.52	0.59	0.35	773	15	42	49	29
					Change (Decrease) in Trip Generation Estimate for TAZ 16					**-177**	**-4**	**-11**	**-15**	**-8**

Notes:

(1) Source: "Trip Generation, 11th Edition, 2021" by the Institute of Transportation Engineers (ITE)

(2) DU = Dwelling Unit

Source: LSC Transportation Consultants, Inc. *May-23*

Table 3
Traffic Signal Warrant Analysis
Marksheffel Road/Vollmer Road

Warrant Analysis[1]

Hour	Short-Term Background Traffic		Sterling Ranch Fil 5 Generated Traffic		Short-Term Total Traffic		Warrant 1: Eight Hour Vehicular Volume Evaluation								Warrant 2: Four Hour Vehicular Volume Evaluation			
							Warrant Thresholds				Warrant Threshold Met?				Short-Term Background		Short-Term Total	
											Short-Term Background		Short-Term Total					
	Major[2] Vollmer	Minor[3] Marksheffel	Major Vollmer	Minor Marksheffel	Major Vollmer	Minor Marksheffel	Condition A		Condition B		Condition A	Condition B	Condition A	Condition B	Warrant Threshold Minor Minimum	Warrant Threshold Met? WB	Warrant Threshold Minor Minimum	Warrant Threshold Met? WB
							Major	Minor	Major	Minor								
Short-Term Total Traffic[4]																		
12-1 AM	48	3	1	0	49	3	600	150	900	75	No	No	No	No	Low Volume	No	Low Volume	No
1-2 AM	23	3	0	0	23	3	600	150	900	75	No	No	No	No	Low Volume	No	Low Volume	No
2-3 AM	16	0	0	0	16	0	600	150	900	75	No	No	No	No	Low Volume	No	Low Volume	No
3-4 AM	25	3	0	0	25	3	600	150	900	75	No	No	No	No	Low Volume	No	Low Volume	No
4-5 AM	41	10	0	1	41	11	600	150	900	75	No	No	No	No	Low Volume	No	Low Volume	No
5-6 AM	109	25	1	3	110	28	600	150	900	75	No	No	No	No	Low Volume	No	Low Volume	No
6-7 AM	323	75	3	9	326	84	600	150	900	75	No	No	No	No	Low Volume	No	Low Volume	No
7-8 AM	777	129	5	16	782	145	600	150	900	75	No	No	No	No	212	No	209	No
8-9 AM	868	109	6	13	874	122	600	150	900	75	No	No	No	No	183	No	182	No
9-10 AM	750	68	5	8	755	76	600	150	900	75	No	No	No	No	225	No	223	No
10-11 AM	869	68	7	8	876	76	600	150	900	75	No	No	No	No	183	No	181	No
11-12 PM	981	65	8	8	989	73	600	150	900	75	No	No	No	No	155	No	153	No
12-1 PM	829	64	9	8	838	72	600	150	900	75	No	No	No	No	193	No	191	No
1-2 PM	822	68	10	9	832	77	600	150	900	75	No	No	No	No	195	No	192	No
2-3 PM	945	71	11	9	956	80	600	150	900	75	No	No	No	Yes	164	No	161	No
3-4 PM	1003	69	14	9	1017	78	600	150	900	75	No	No	No	Yes	149	No	145	No
4-5 PM	1042	86	17	11	1059	97	600	150	900	75	No	Yes	No	Yes	137	No	132	No
5-6 PM	872	85	17	11	889	96	600	150	900	75	No	No	No	No	182	No	178	No
6-7 PM	595	68	14	9	609	77	600	150	900	75	No	No	No	No	293	No	286	No
7-8 PM	374	49	10	6	384	55	600	150	900	75	No	No	No	No	Low Volume	No	Low Volume	No
8-9 PM	304	36	10	5	314	41	600	150	900	75	No	No	No	No	Low Volume	No	Low Volume	No
9-10 PM	194	28	7	4	201	32	600	150	900	75	No	No	No	No	Low Volume	No	Low Volume	No
10-11 PM	110	13	4	2	114	15	600	150	900	75	No	No	No	No	Low Volume	No	Low Volume	No
11-12 AM	59	8	2	1	61	9	600	150	900	75	No	No	No	No	Low Volume	No	Low Volume	No
Numbers of Hours the Warrant Thresholds Are Met											0	1	0	3		0		0
Warrant Met?											No		No			No		No

Notes:
(1) Thresholds are based on 2 or more lanes on the major approach and 1 lane on the minor approach (Warrant evaluation assuming the westbound left turn only for the minor street)
(2) The major street traffic includes all movements (left, through, and right)
(3) The minor street traffic includes only the left turns from the minor street
(5) Off peak hour traffic volumes are based on the projected peak hour traffic volumes, 72-hour machine counts conducted on Vollmer Road in November 2020 and vehicle time-of-day distribution data for single-family residential published by the Institute of Transportation Engineers

Source: LSC Transportation Consultants, Inc. *Jun-23*

Table 4
Traffic Signal Warrant Analysis
Marksheffel Road/Sterling Ranch Road

Hour	Short-Term Background Traffic: Major[2] Marksheffel	Short-Term Background Traffic: Minor[3] Sterling Ranch	Sterling Ranch Filing No. 5 Generated Traffic: Major Marksheffel	Sterling Ranch Filing No. 5 Generated Traffic: Minor Sterling Ranch	Short-Term Total Traffic: Major Marksheffel	Short-Term Total Traffic: Minor Sterling Ranch	Warrant Analysis[1] — Warrant 1: Eight Hour Vehicular Volume Evaluation — Warrant Thresholds: Condition A Major	Condition A Minor	Condition B Major	Condition B Minor	Warrant Threshold Met? — Short-Term Background: Condition A	Short-Term Background: Condition B	Short-Term Total: Condition A	Short-Term Total: Condition B	Warrant 2: Four Hour Vehicular Volume Evaluation — Short-Term Background: Warrant Threshold Minor Minimum	Short-Term Background: Warrant Threshold Met? WB	Short-Term Total: Warrant Threshold Minor Minimum	Short-Term Total: Warrant Threshold Met? WB
Short-Term Total Traffic[4]																		
12-1 AM	30	7	2	0	32	7	600	150	900	75	No	No	No	No	Low Volume	No	Low Volume	No
1-2 AM	14	7	0	0	14	7	600	150	900	75	No	No	No	No	Low Volume	No	Low Volume	No
2-3 AM	11	0	0	0	11	0	600	150	900	75	No	No	No	No	Low Volume	No	Low Volume	No
3-4 AM	14	7	0	0	14	7	600	150	900	75	No	No	No	No	Low Volume	No	Low Volume	No
4-5 AM	22	27	0	1	22	28	600	150	900	75	No	No	No	No	Low Volume	No	Low Volume	No
5-6 AM	52	67	2	3	54	70	600	150	900	75	No	No	No	No	Low Volume	No	Low Volume	No
6-7 AM	157	197	5	8	162	205	600	150	900	75	No	No	No	No	Low Volume	No	Low Volume	No
7-8 AM	358	341	9	13	367	354	600	150	900	75	No	No	No	No	Low Volume	No	Low Volume	No
8-9 AM	403	288	11	11	414	299	600	150	900	75	No	No	No	No	Low Volume	No	Low Volume	No
9-10 AM	349	181	9	7	358	188	600	150	900	75	No	No	No	No	Low Volume	No	Low Volume	No
10-11 AM	416	181	12	7	428	188	600	150	900	75	No	No	No	No	Low Volume	No	376	No
11-12 PM	489	171	15	7	504	178	600	150	900	75	No	No	No	No	346	No	338	No
12-1 PM	507	169	0	0	507	169	600	150	900	75	No	No	No	No	337	No	337	No
1-2 PM	523	178	16	7	539	185	600	150	900	75	No	No	No	No	Low Volume	No	321	No
2-3 PM	606	187	17	7	623	194	600	150	900	75	Yes	No	Yes	No	288	No	281	No
3-4 PM	686	181	20	7	706	188	600	150	900	75	Yes	No	Yes	No	256	No	247	No
4-5 PM	779	226	25	7	804	233	600	150	900	75	Yes	No	Yes	No	211	Yes	199	Yes
5-6 PM	712	223	30	9	742	232	600	150	900	75	Yes	No	Yes	No	244	No	229	Yes
6-7 PM	547	178	30	9	577	187	600	150	900	75	No	No	No	No	Low Volume	No	302	No
7-8 PM	376	130	25	7	401	137	600	150	900	75	No	No	No	No	Low Volume	No	Low Volume	No
8-9 PM	356	93	18	5	374	98	600	150	900	75	No	No	No	No	Low Volume	No	Low Volume	No
9-10 PM	246	72	18	4	264	76	600	150	900	75	No	No	No	No	Low Volume	No	Low Volume	No
10-11 PM	126	33	13	3	139	36	600	150	900	75	No	No	No	No	Low Volume	No	Low Volume	No
11-12 AM	72	21	7	1	79	22	600	150	900	75	No	No	No	No	Low Volume	No	Low Volume	No
Numbers of Hours the Warrant Thresholds Are Met											4	0	4	0		1		2
Warrant Met?											No		No			No		No

Notes:

(1) Thresholds are based on 2 or more lanes on the major approach and 1 lane on the minor approach (Warrant evaluation assuming the southbound left turn only for the minor street)

(2) The major street traffic includes all movements (left, through, and right)

(3) The minor street traffic includes only the left turns from the minor street

(4) Off peak hour traffic volumes are based on the projected peak hour traffic volumes, 72-hour machine counts conducted on Vollmer Road in November 2020 and vehicle time-of-day distribution data for single-family residential published by the Institute of Transportation Engineers

Source: LSC Transportation Consultants, Inc. *Jun-23*

Figures 1-14

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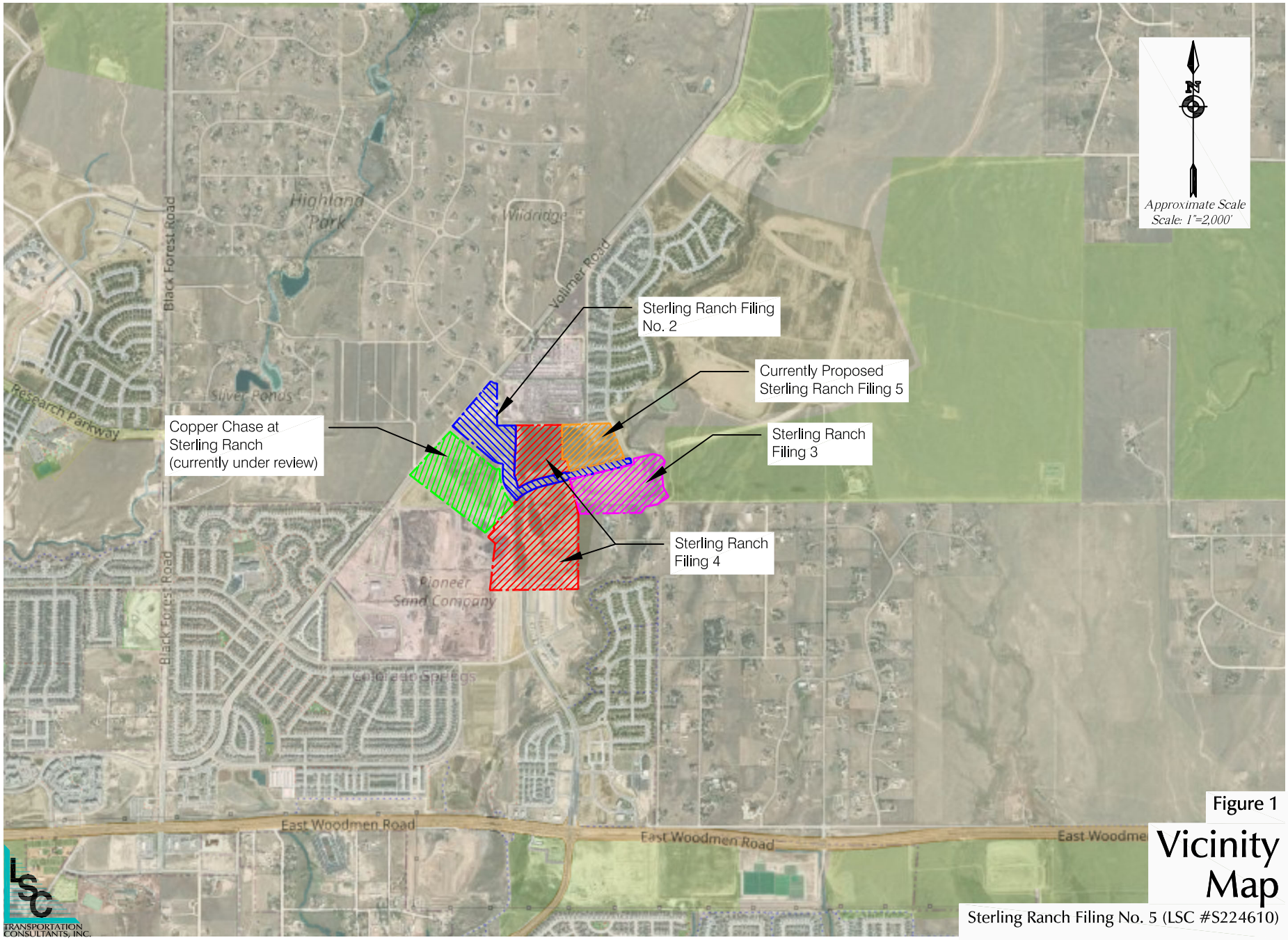
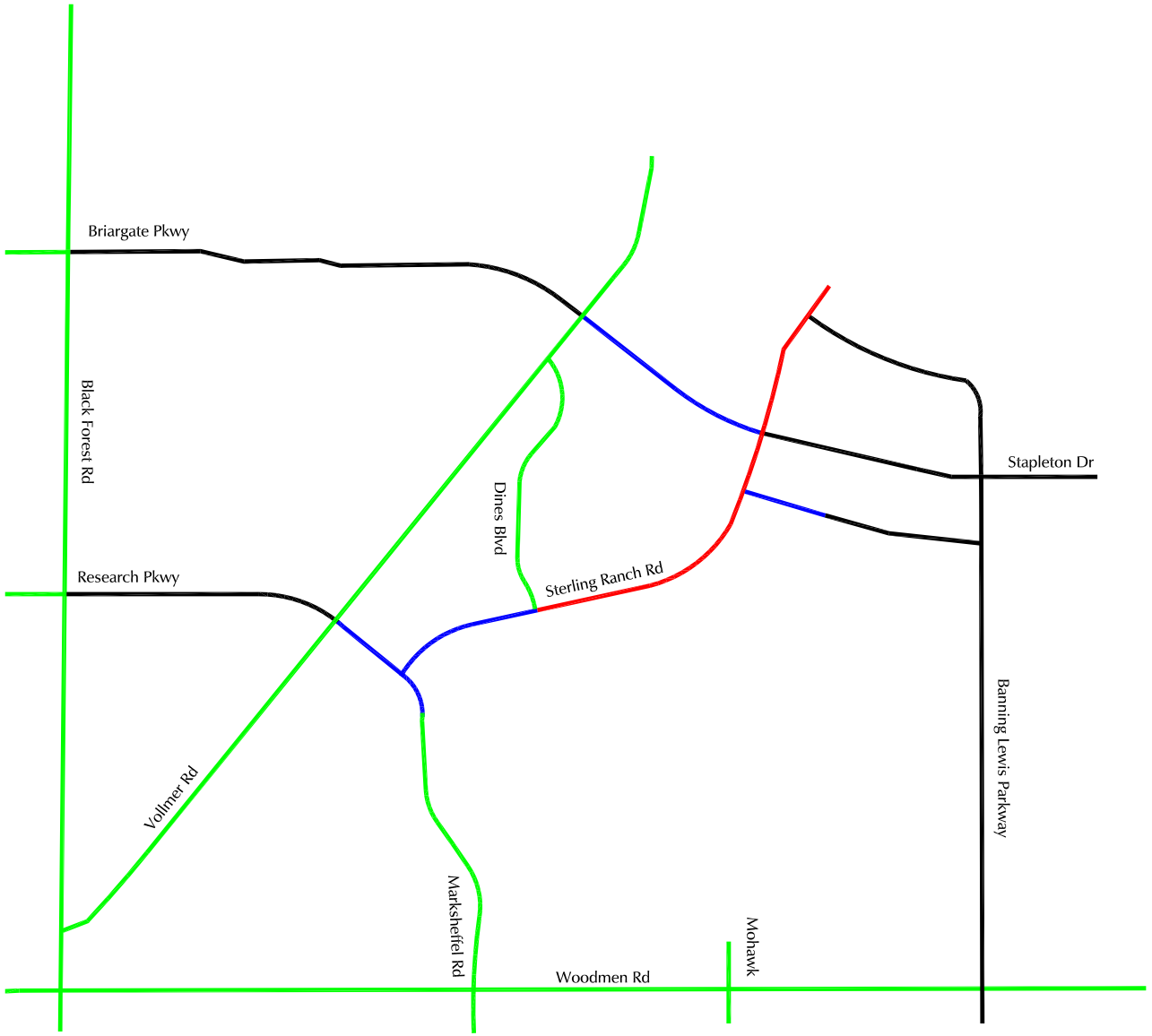


Figure 1

Vicinity Map

Sterling Ranch Filing No. 5 (LSC #S224610)



N

Approximate Scale
NTS

LEGEND:

- Roadway connection planned with Sterling Ranch East Preliminary Plan 1
- Roadway connection planned to be completed by the end of 2023
- Existing Roadway
- Future Roadway

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Figure 2

Short-Term Roadway Connections

Sterling Ranch Filing No. 5 (LSC #S224610)

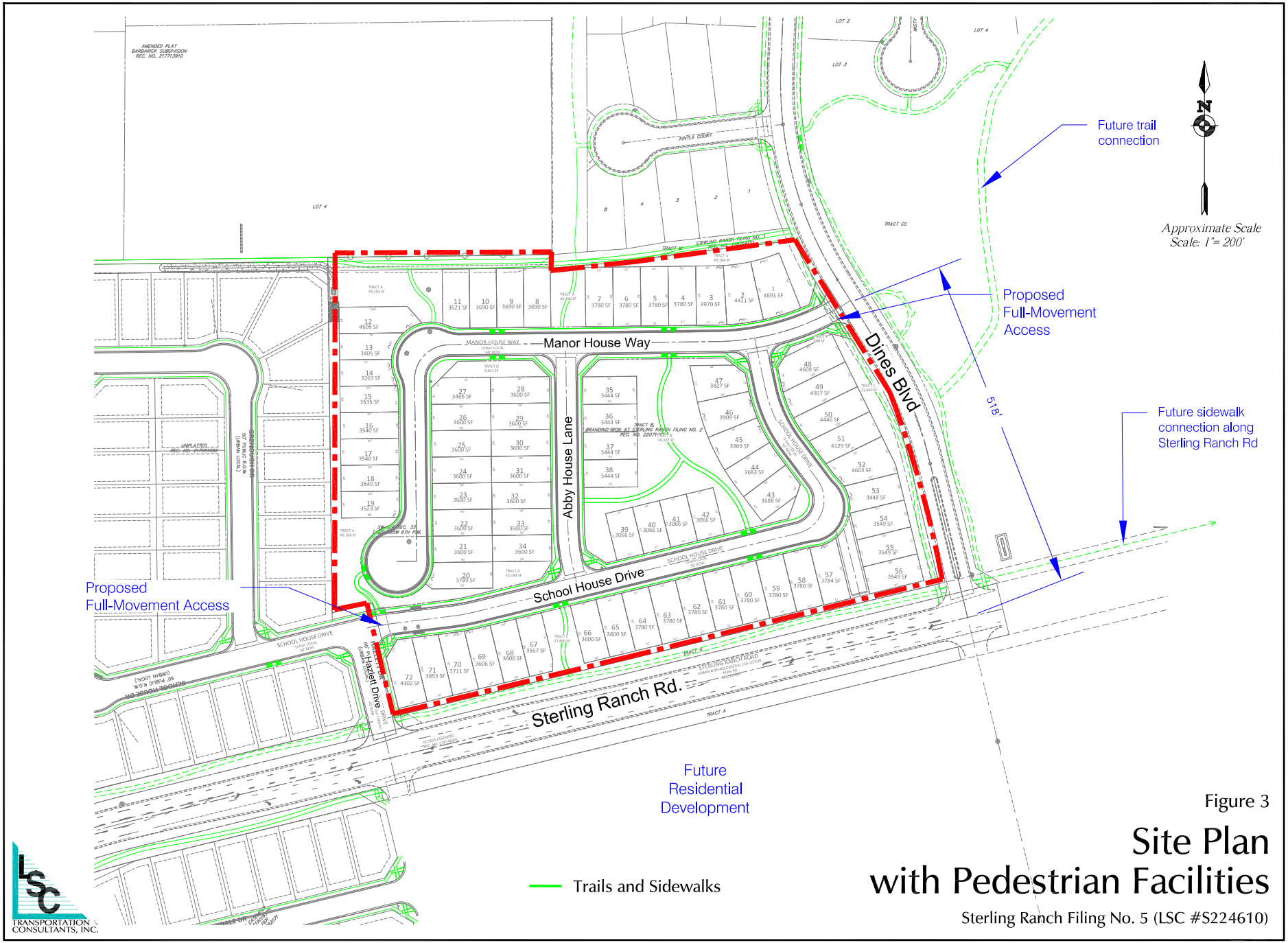

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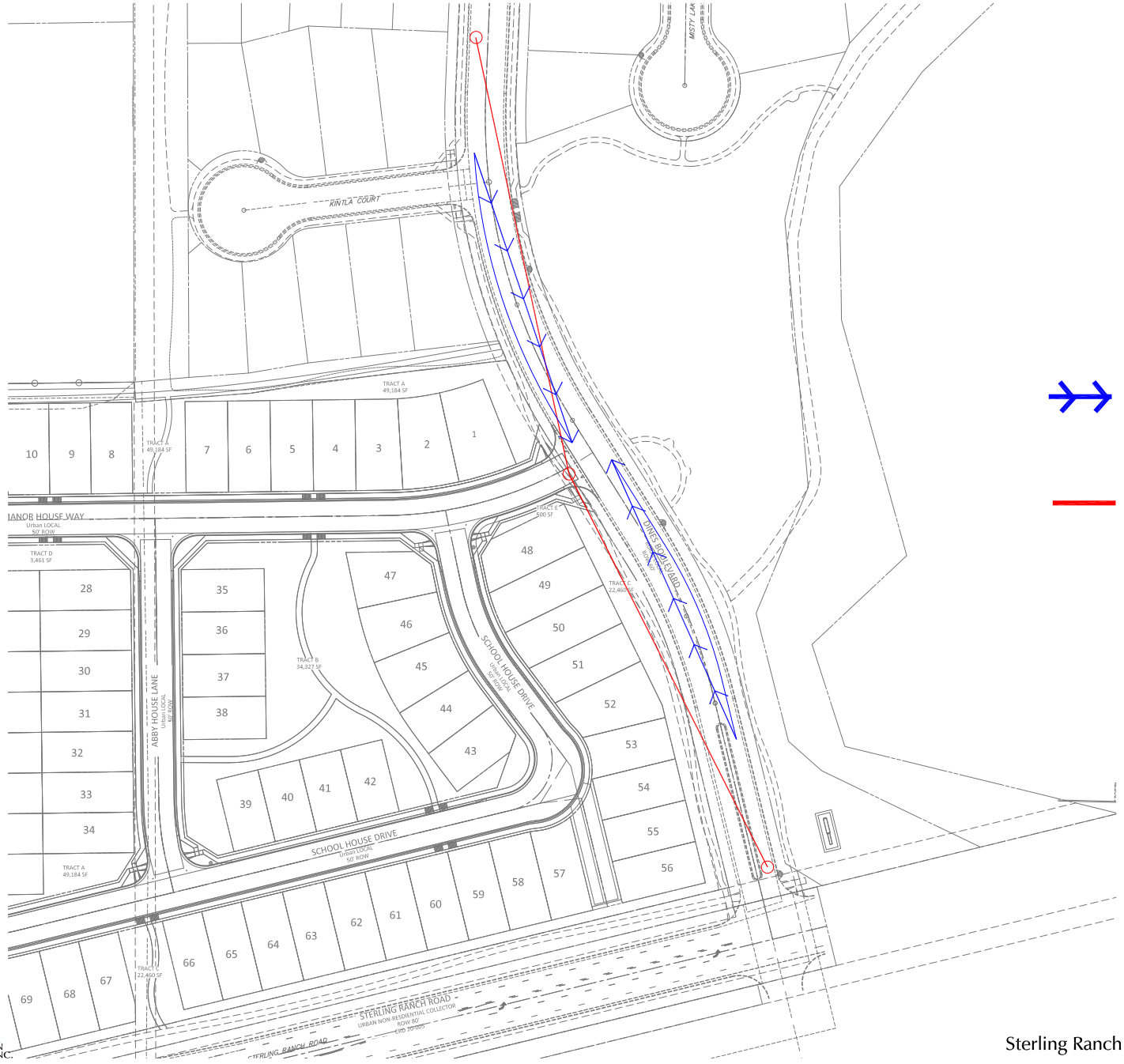
Figure 3

Site Plan with Pedestrian Facilities

Sterling Ranch Filing No. 5 (LSC #S224610)



N

Approximate Scale
Scale: 1"= 150'

ECM Required Stopping Sight Distance (305' from Table 2-17 based on a design speed of 40 mph.

ECM Required Intersection Sight Distance (445' from Table 2-21 based on a design speed of 40 mph.

Figure 4

Sight Distance

Sterling Ranch Filing No. 5 (LSC #S224610)

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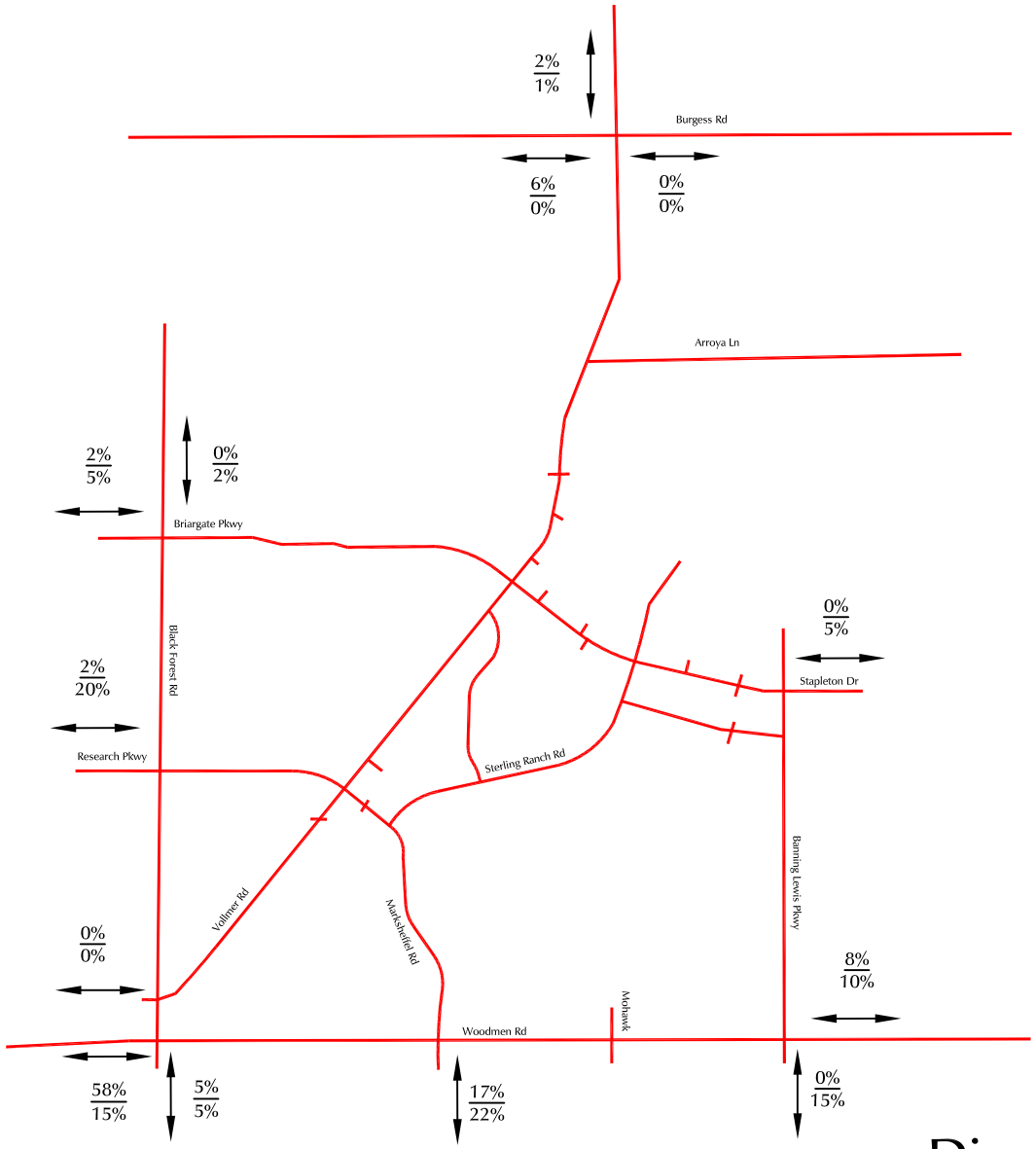


N

Approximate Scale
NTS

LEGEND:

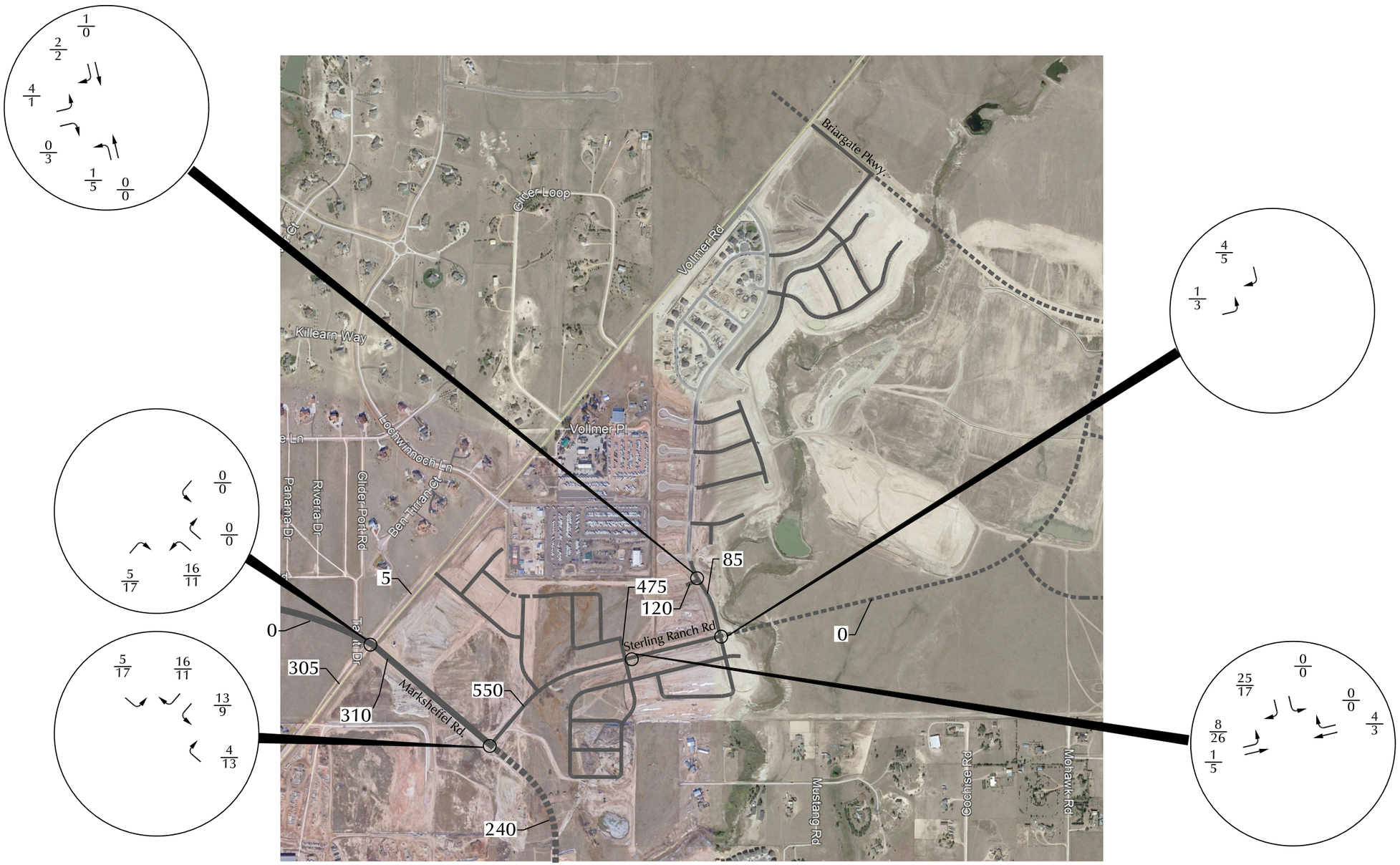
$\frac{XX\%}{XX\%}$ = Short-Term Percent Directional Distribution / Long-Term Percent Directional Distribution

TRANSPORTATION CONSULTANTS, INC.

Figure 5

Directional Distribution of Site-Generated Traffic

Sterling Ranch Filing No. 5 (LSC #S224610)



Approximate Scale
Scale: 1"= 1,000'

LEGEND:

XX/XX = AM Weekday Peak-Hour Traffic (vehicles per hour) / PM Weekday Peak-Hour Traffic (vehicles per hour)

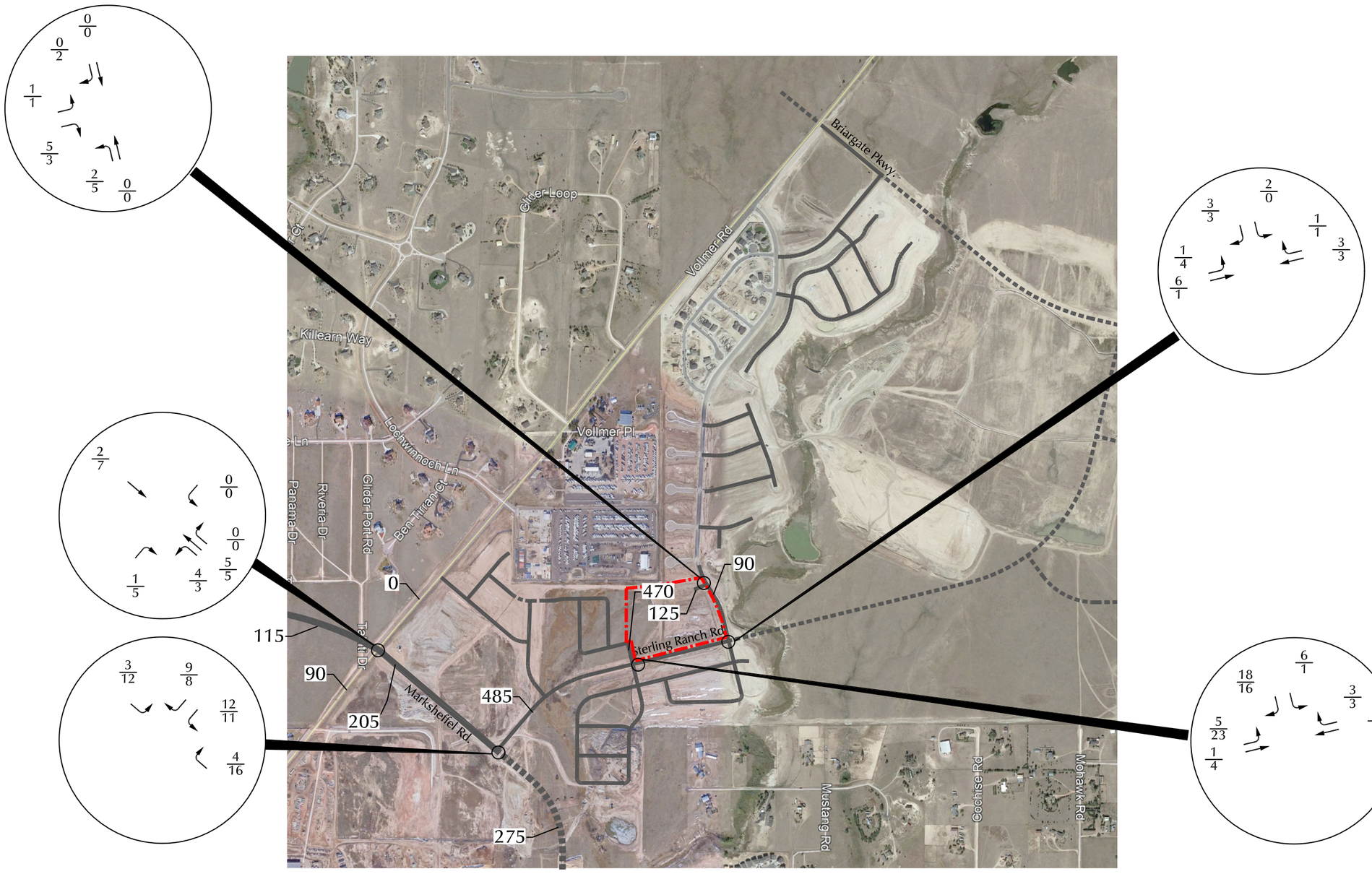
X,XXX= Average Daily Traffic (vehicles per day)

TRANSPORTATION CONSULTANTS, INC.

Figure 6

Short-Term Assignment of Site-Generated Traffic

Sterling Ranch Filing No. 5 (LSC #S224610)



Approximate Scale
Scale: 1"= 1,000'

LEGEND:

XX/XX = AM Weekday Peak-Hour Traffic (vehicles per hour) / PM Weekday Peak-Hour Traffic (vehicles per hour)

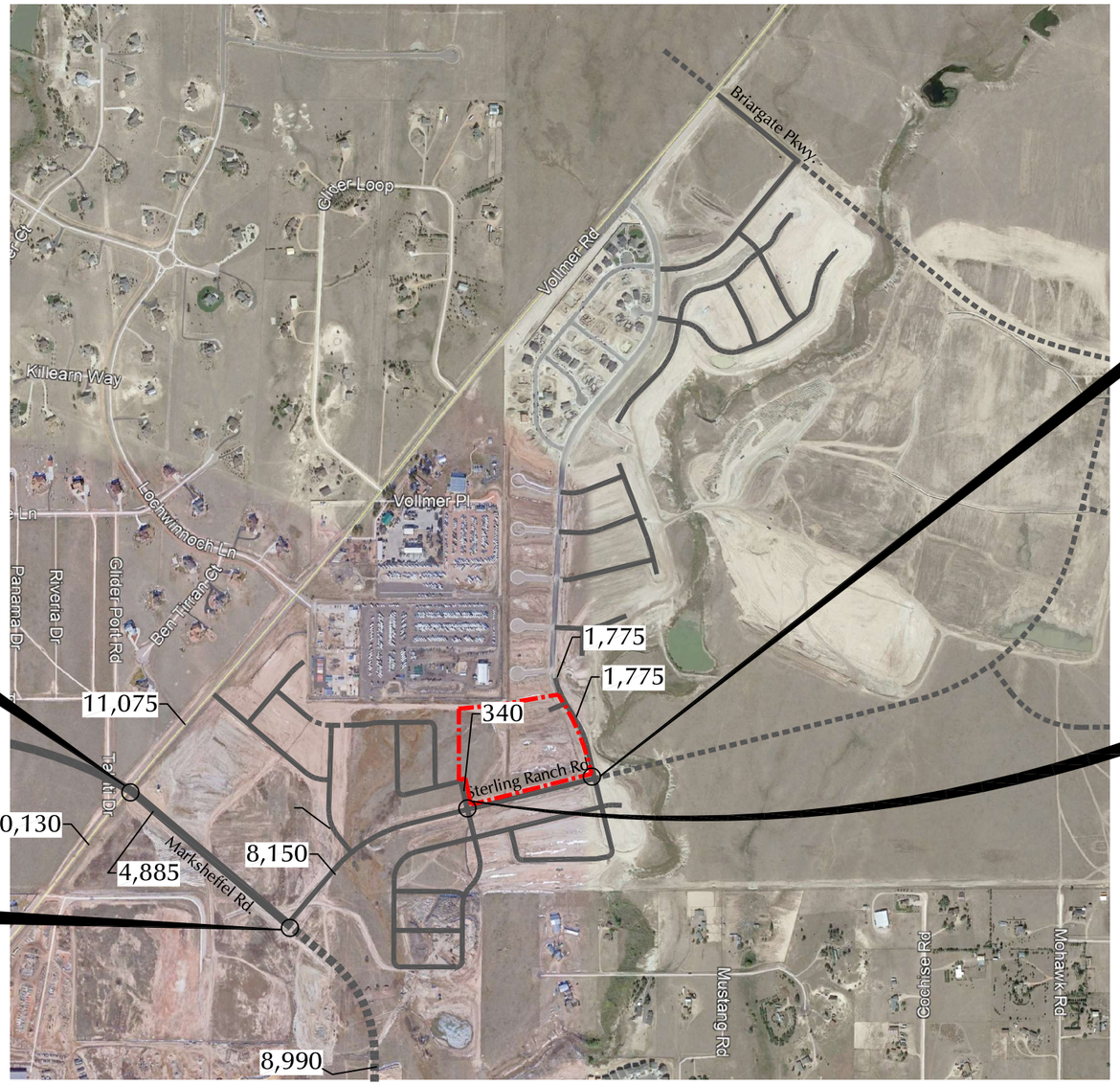
X,XXX= Average Daily Traffic (vehicles per day)

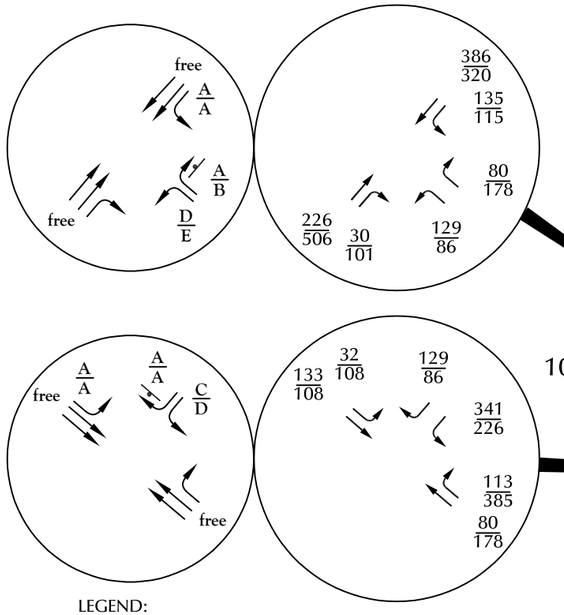
TRANSPORTATION CONSULTANTS, INC.

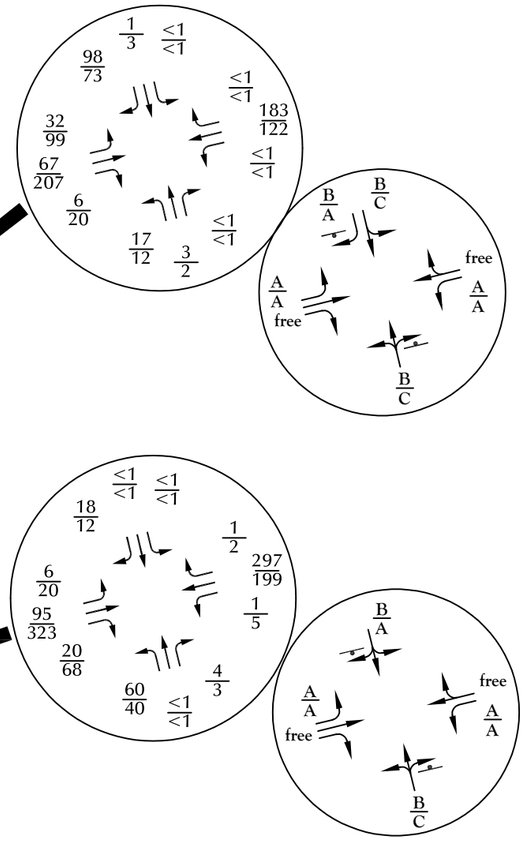
Figure 7

Long-Term Assignment of Site-Generated Traffic

Sterling Ranch Filing No. 5 (LSC #S224610)







LEGEND:

= Stop Sign

= Traffic Signal

XX/XX = AM Weekday Peak-Hour Traffic (vehicles per hour) / PM Weekday Peak-Hour Traffic (vehicles per hour)

A/B = AM Individual Movement Peak-Hour Level of Service / PM Individual Movement Peak-Hour Level of Service

C/C = AM Entire Intersection Peak-Hour Level of Service / PM Entire Intersection Peak-Hour Level of Service

X,XXX= Average Daily Traffic (vehicles per day)

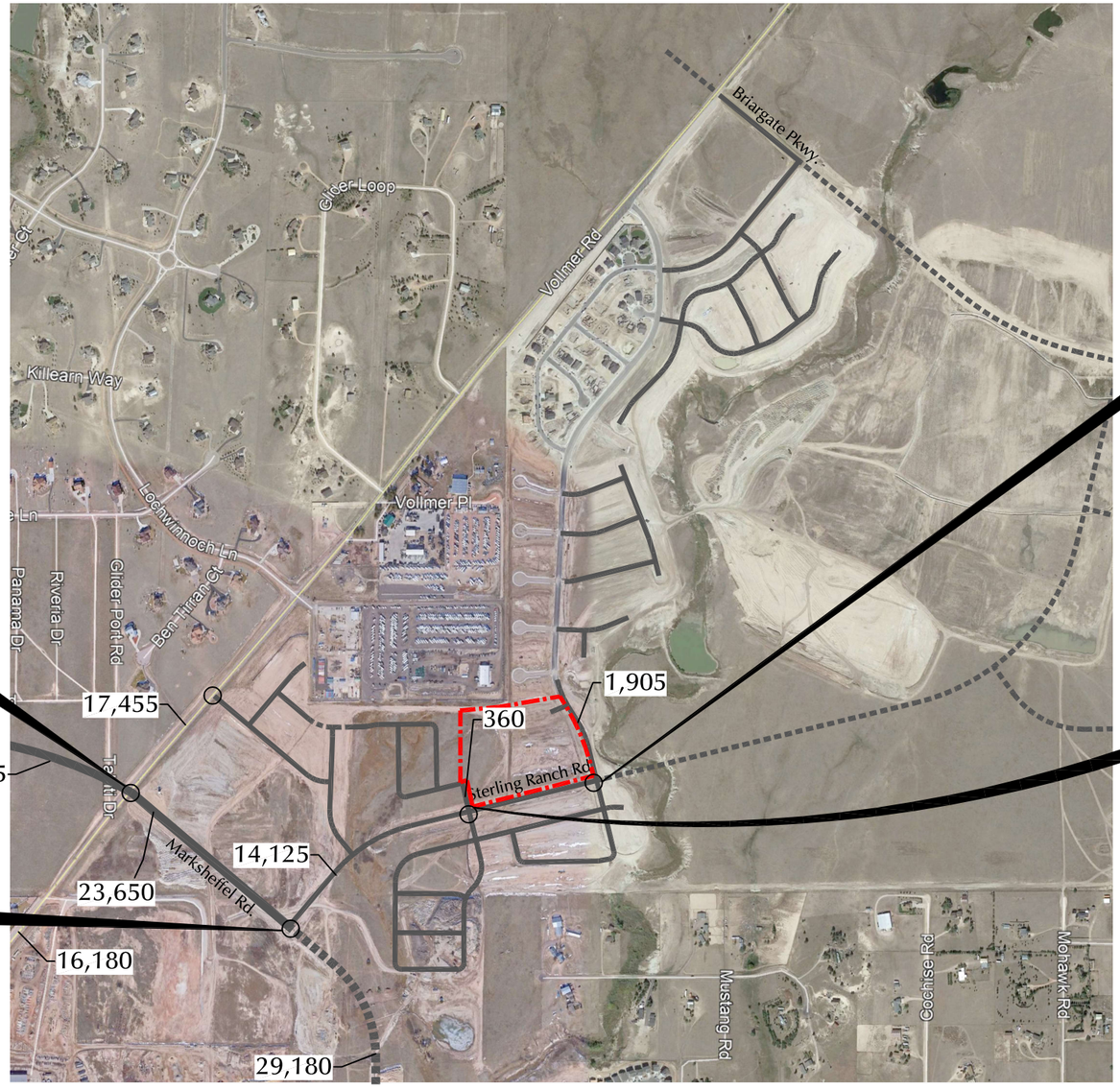
TRANSPORTATION CONSULTANTS, INC.

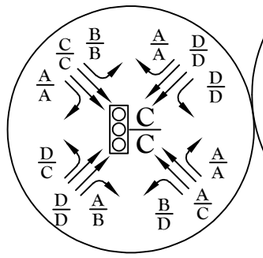
Approximate Scale
Scale: 1"= 1,000'

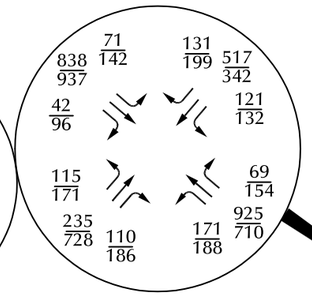
Figure 8

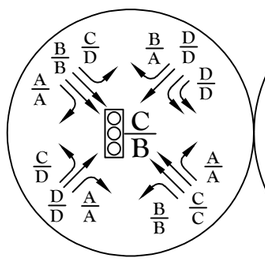
Short-Term Background Traffic, Lane Geometry, Traffic Control and Level of Service

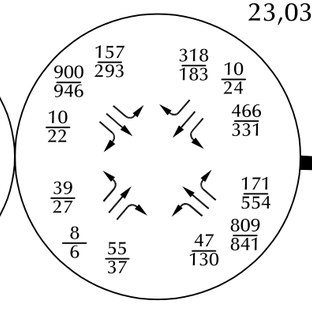
Sterling Ranch Filing No. 5 (LSC #S224610)

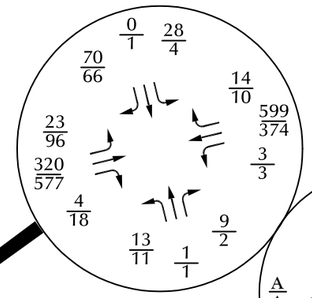


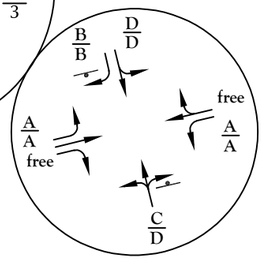


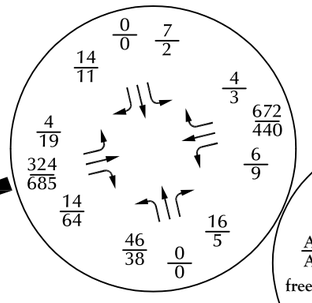


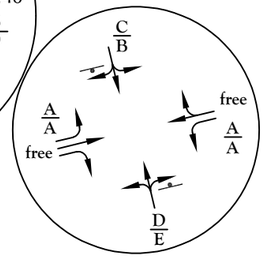












LEGEND:

= Stop Sign

= Traffic Signal

$\frac{XX}{XX}$ = $\frac{\text{AM Weekday Peak-Hour Traffic (vehicles per hour)}}{\text{PM Weekday Peak-Hour Traffic (vehicles per hour)}}$

$\frac{A}{B}$ = $\frac{\text{AM Individual Movement Peak-Hour Level of Service}}{\text{PM Individual Movement Peak-Hour Level of Service}}$

$\frac{C}{C}$ = $\frac{\text{AM Entire Intersection Peak-Hour Level of Service}}{\text{PM Entire Intersection Peak-Hour Level of Service}}$

X,XXX= Average Daily Traffic (vehicles per day)

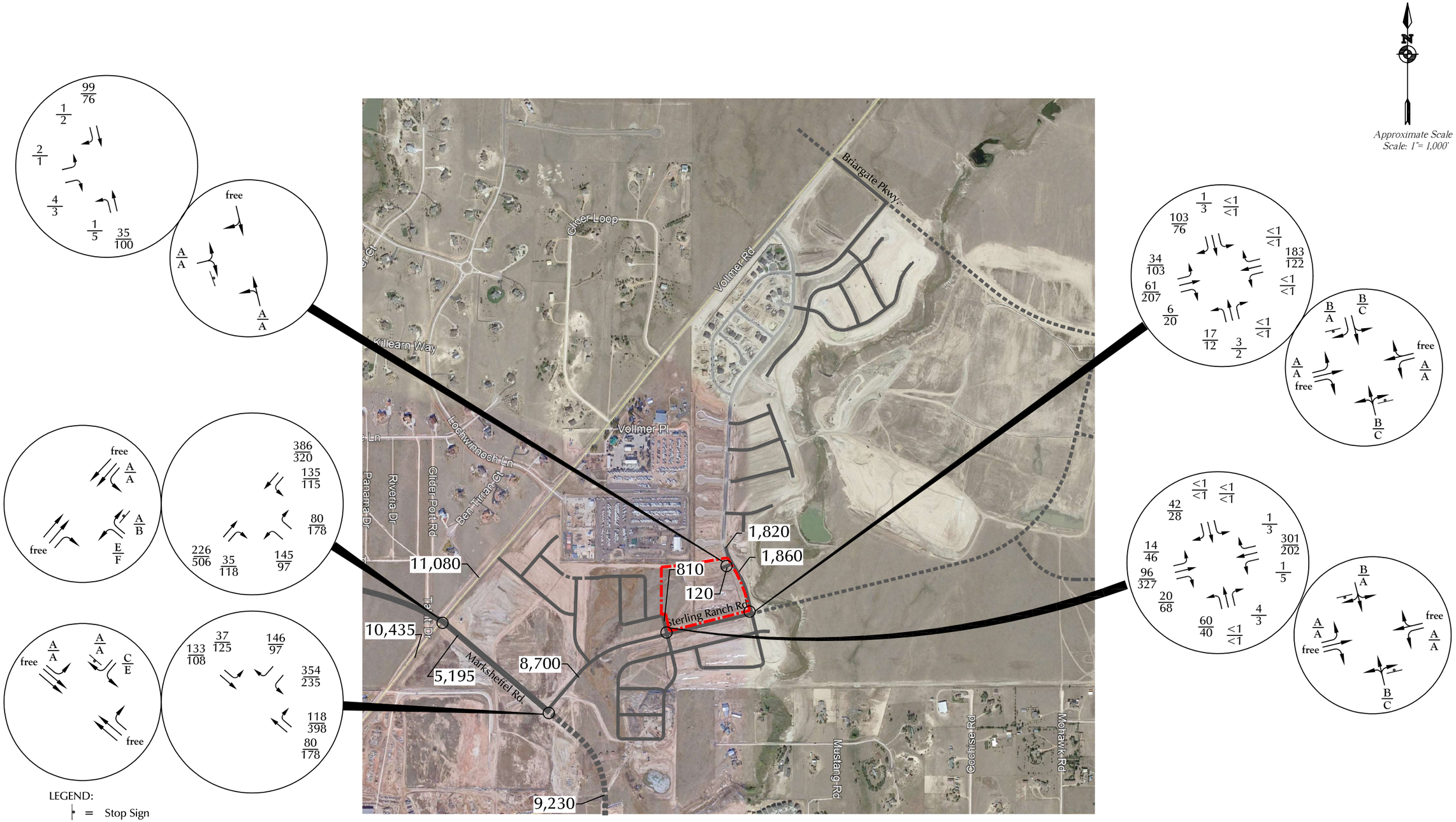
TRANSPORTATION CONSULTANTS, INC.

Approximate Scale
Scale: 1"= 1,000'

Figure 9

2043 Background Traffic, Lane Geometry, Traffic Control and Level of Service

Sterling Ranch Filing No. 5 (LSC #S224610)



LEGEND:

= Stop Sign

= Traffic Signal

XX/XX = AM Weekday Peak-Hour Traffic (vehicles per hour) / PM Weekday Peak-Hour Traffic (vehicles per hour)

A/B = AM Individual Movement Peak-Hour Level of Service / PM Individual Movement Peak-Hour Level of Service

C/C = AM Entire Intersection Peak-Hour Level of Service / PM Entire Intersection Peak-Hour Level of Service

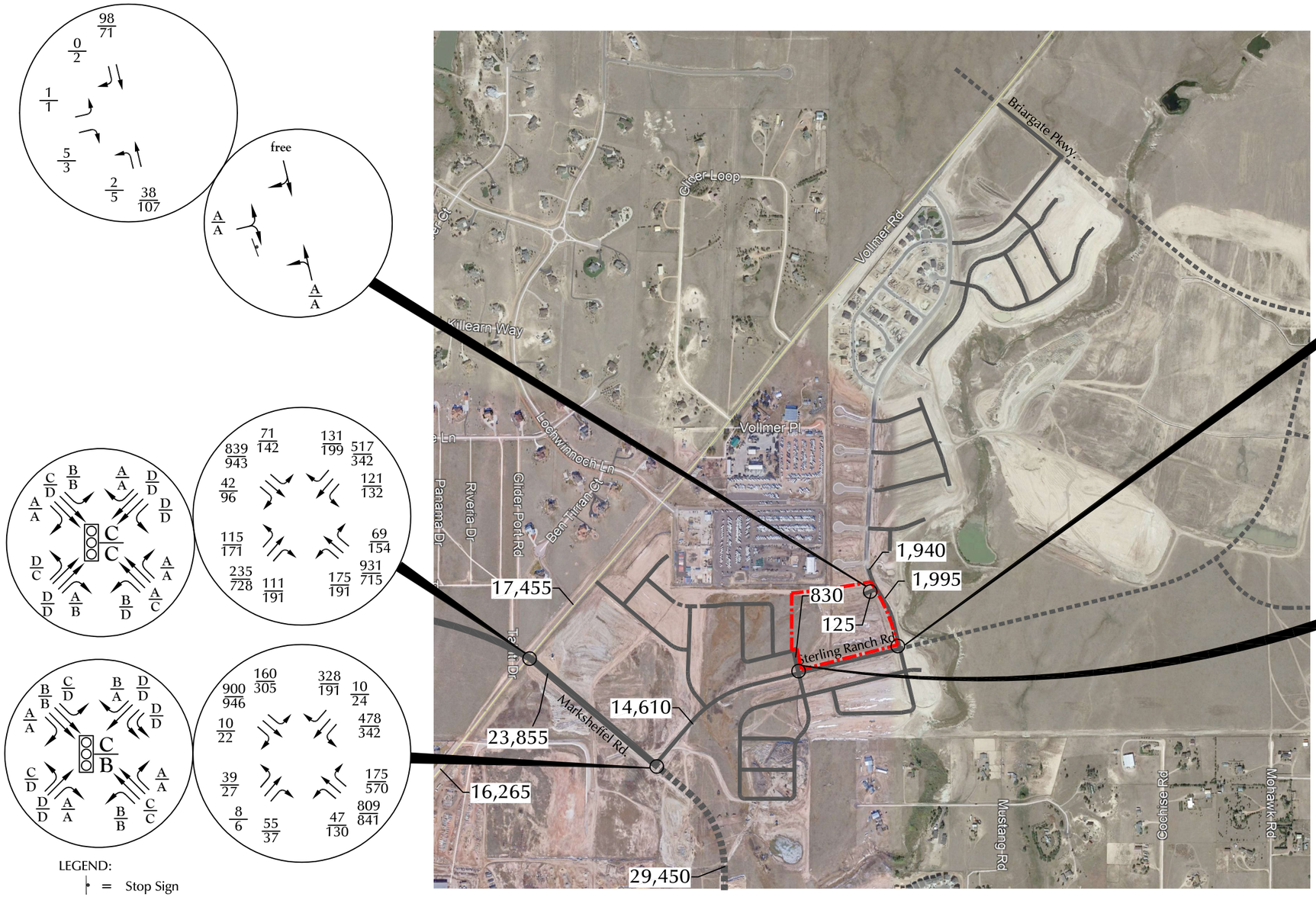
X,XXX= Average Daily Traffic (vehicles per day)

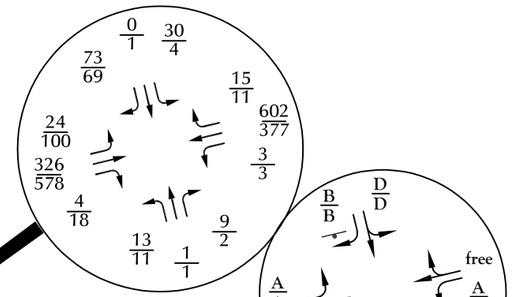
TRANSPORTATION CONSULTANTS, INC.

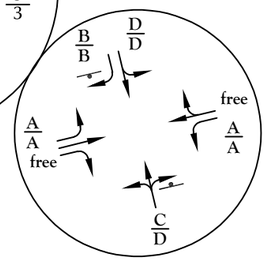
Figure 10

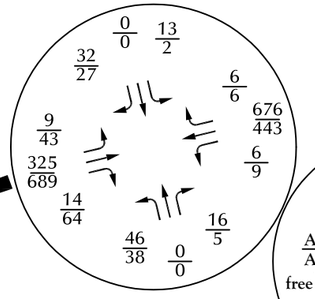
Short-Term Total Traffic, Lane Geometry, Traffic Control and Level of Service

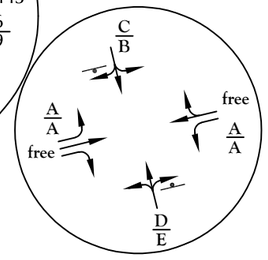
Sterling Ranch Filing No. 5 (LSC #S224610)











LEGEND:

= Stop Sign

= Traffic Signal

$\frac{XX}{XX}$ = $\frac{\text{AM Weekday Peak-Hour Traffic (vehicles per hour)}}{\text{PM Weekday Peak-Hour Traffic (vehicles per hour)}}$

$\frac{A}{B}$ = $\frac{\text{AM Individual Movement Peak-Hour Level of Service}}{\text{PM Individual Movement Peak-Hour Level of Service}}$

$\frac{C}{C}$ = $\frac{\text{AM Entire Intersection Peak-Hour Level of Service}}{\text{PM Entire Intersection Peak-Hour Level of Service}}$

X,XXX= Average Daily Traffic (vehicles per day)

TRANSPORTATION CONSULTANTS, INC.

Approximate Scale
Scale: 1"= 1,000'

Figure 11

2043 Total Traffic, Lane Geometry, Traffic Control and Level of Service

Sterling Ranch Filing No. 5 (LSC #S224610)

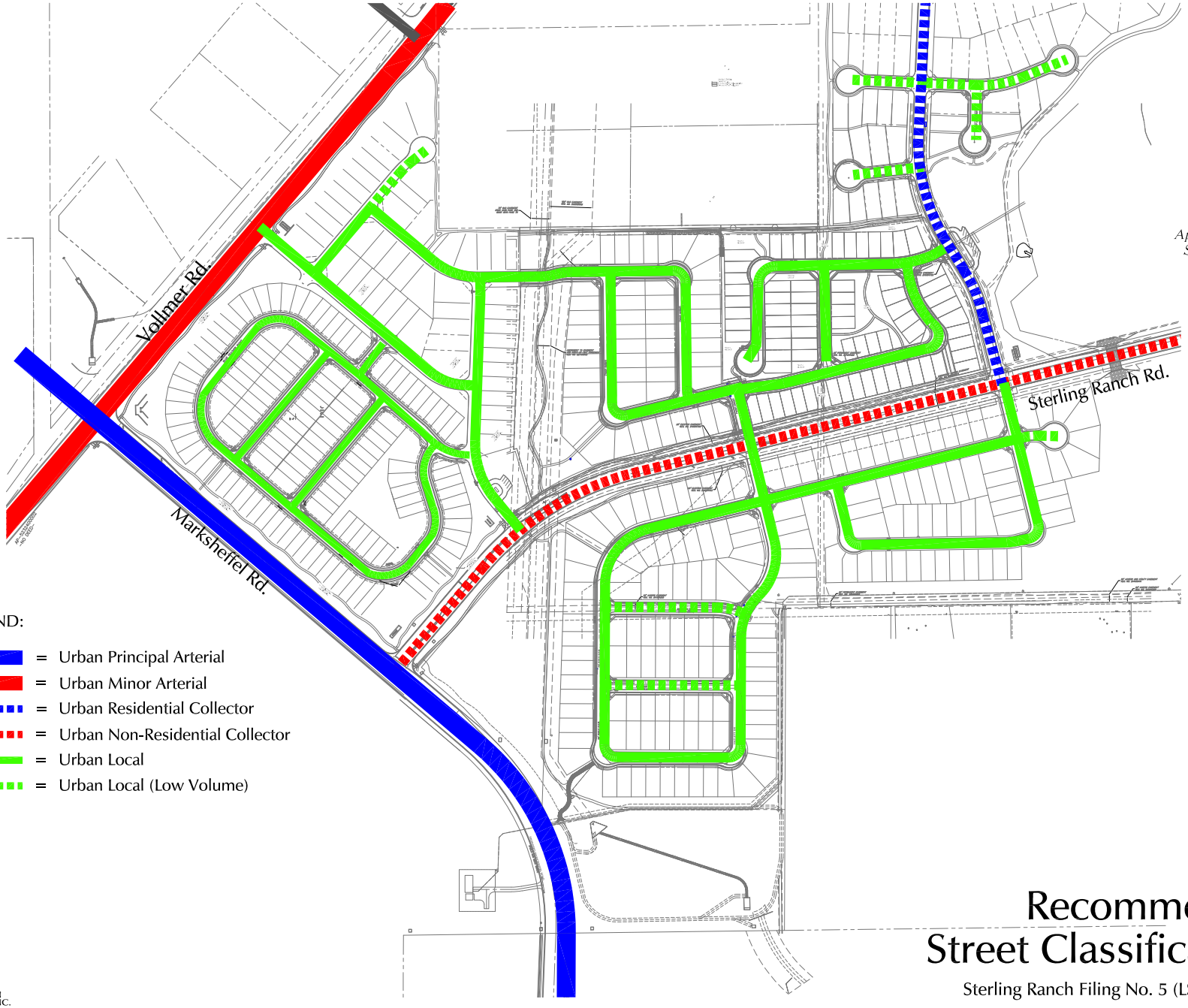
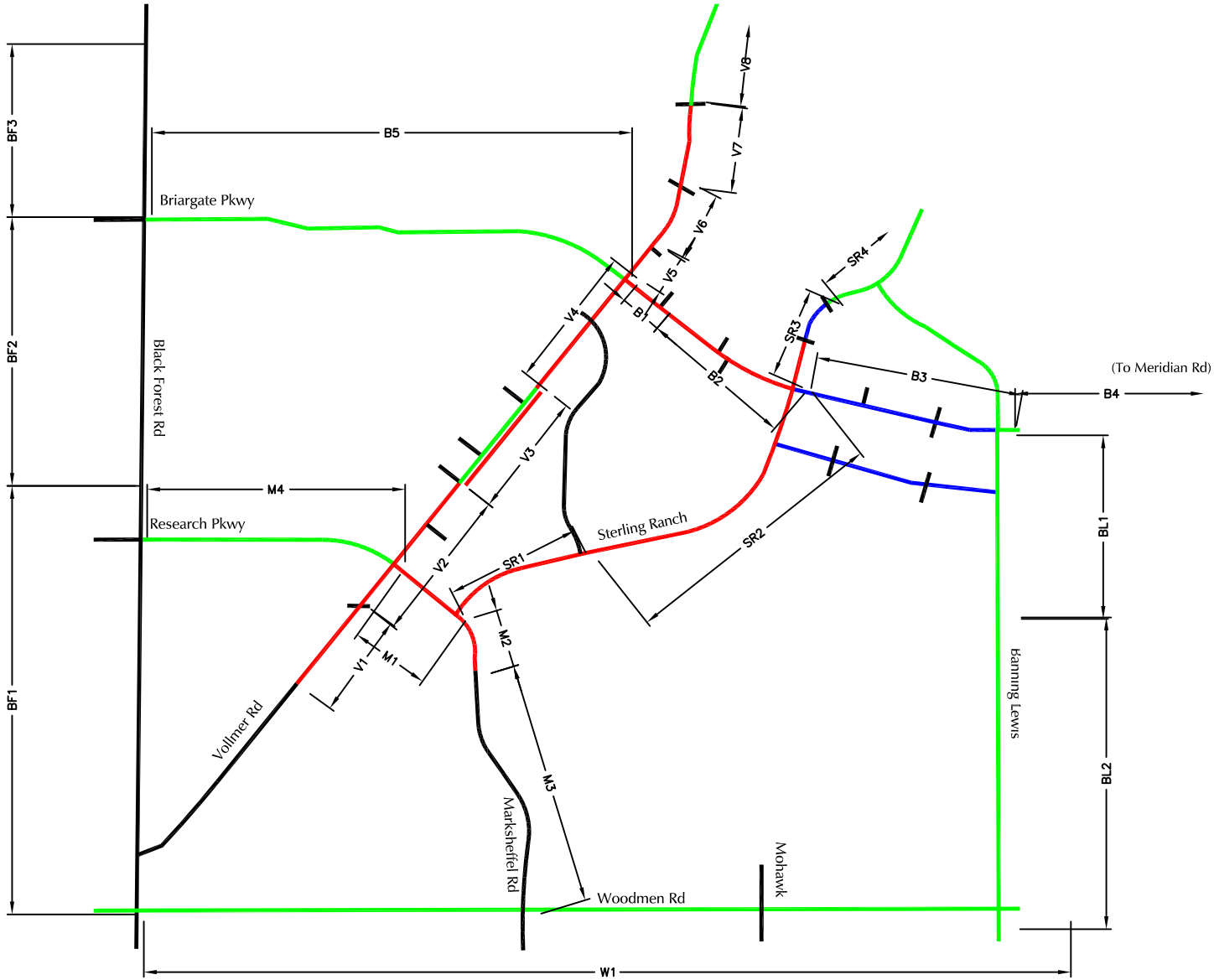


Figure 12

Recommended Street Classifications

Sterling Ranch Filing No. 5 (LSC #S224610)

LSC TRANSPORTATION CONSULTANTS, INC.



LEGEND: V1, B4, SR3, etc - Segment Identifier (See Appendix Table 2 for recommended roadway segment improvements for each segment)

- Short-Term
- Intermediate-Term
- Long-Term

*Source: *Sterling Ranch Sketch Plan Amendment Master Traffic Impact Study* by LSC Transportation Consultants, Inc March 17, 2023

Figure 13

Roadway Improvement Segments*

Sterling Ranch Filing No. 5 (LSC #S224610)

Levels of Service

TRANSPORTATION
CONSULTANTS, INC.

Intersection	
Int Delay, s/veh	3.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	32	61	6	0	183	0	17	3	0	0	1	98
Future Vol, veh/h	32	61	6	0	183	0	17	3	0	0	1	98
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	205	-	155	205	-	-	-	-	-	-	-	155
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	38	72	7	0	215	0	20	4	0	0	1	115

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	215	0	0	79	0	0	421	363	72	369	370	215
Stage 1	-	-	-	-	-	-	148	148	-	215	215	-
Stage 2	-	-	-	-	-	-	273	215	-	154	155	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1355	-	-	1519	-	-	543	565	990	588	560	825
Stage 1	-	-	-	-	-	-	855	775	-	787	725	-
Stage 2	-	-	-	-	-	-	733	725	-	848	769	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1355	-	-	1519	-	-	456	549	990	573	544	825
Mov Cap-2 Maneuver	-	-	-	-	-	-	456	549	-	573	544	-
Stage 1	-	-	-	-	-	-	831	753	-	765	725	-
Stage 2	-	-	-	-	-	-	630	725	-	820	747	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.5	0	13.1	10.1
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	468	1355	-	-	1519	-	-	544	825
HCM Lane V/C Ratio	0.05	0.028	-	-	-	-	-	0.002	0.14
HCM Control Delay (s)	13.1	7.7	-	-	0	-	-	11.6	10.1
HCM Lane LOS	B	A	-	-	A	-	-	B	B
HCM 95th %tile Q(veh)	0.2	0.1	-	-	0	-	-	0	0.5

Intersection	
Int Delay, s/veh	6.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	129	80	226	30	135	386
Future Vol, veh/h	129	80	226	30	135	386
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	300	-	-	155	300	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	152	94	266	35	159	454

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	811	133	0	0	301	0
Stage 1	266	-	-	-	-	-
Stage 2	545	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	317	892	-	-	1257	-
Stage 1	754	-	-	-	-	-
Stage 2	545	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	277	892	-	-	1257	-
Mov Cap-2 Maneuver	277	-	-	-	-	-
Stage 1	754	-	-	-	-	-
Stage 2	476	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	23.8	0	2.1
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	277	892	1257	-
HCM Lane V/C Ratio	-	-	0.548	0.106	0.126	-
HCM Control Delay (s)	-	-	32.7	9.5	8.3	-
HCM Lane LOS	-	-	D	A	A	-
HCM 95th %tile Q(veh)	-	-	3	0.4	0.4	-

Intersection	
Int Delay, s/veh	8.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	32	133	80	113	341	129
Future Vol, veh/h	32	133	80	113	341	129
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	300	-	-	205	155	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	38	156	94	133	401	152

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	227	0	-	0	248	47
Stage 1	-	-	-	-	94	-
Stage 2	-	-	-	-	154	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	1339	-	-	-	719	1012
Stage 1	-	-	-	-	919	-
Stage 2	-	-	-	-	858	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1339	-	-	-	699	1012
Mov Cap-2 Maneuver	-	-	-	-	699	-
Stage 1	-	-	-	-	893	-
Stage 2	-	-	-	-	858	-

Approach	EB	WB	SB
HCM Control Delay, s	1.5	0	14.8
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1339	-	-	-	699	1012
HCM Lane V/C Ratio	0.028	-	-	-	0.574	0.15
HCM Control Delay (s)	7.8	-	-	-	16.9	9.2
HCM Lane LOS	A	-	-	-	C	A
HCM 95th %tile Q(veh)	0.1	-	-	-	3.7	0.5

Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	6	95	20	1	297	1	60	0	4	0	0	18
Future Vol, veh/h	6	95	20	1	297	1	60	0	4	0	0	18
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	155	-	155	155	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	112	24	1	349	1	71	0	5	0	0	21

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	350	0	0	136	0	0	488	478	112	493	502	350
Stage 1	-	-	-	-	-	-	126	126	-	352	352	-
Stage 2	-	-	-	-	-	-	362	352	-	141	150	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1209	-	-	1448	-	-	490	486	941	486	471	693
Stage 1	-	-	-	-	-	-	878	792	-	665	632	-
Stage 2	-	-	-	-	-	-	657	632	-	862	773	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1209	-	-	1448	-	-	473	483	941	481	468	693
Mov Cap-2 Maneuver	-	-	-	-	-	-	473	483	-	481	468	-
Stage 1	-	-	-	-	-	-	873	787	-	661	631	-
Stage 2	-	-	-	-	-	-	636	631	-	853	768	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0	13.7	10.4
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	488	1209	-	-	1448	-	-	693
HCM Lane V/C Ratio	0.154	0.006	-	-	0.001	-	-	0.031
HCM Control Delay (s)	13.7	8	-	-	7.5	-	-	10.4
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.5	0	-	-	0	-	-	0.1

Intersection	
Int Delay, s/veh	3.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	99	207	20	0	122	0	12	2	0	0	3	73
Future Vol, veh/h	99	207	20	0	122	0	12	2	0	0	3	73
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	205	-	155	205	-	-	-	-	-	-	-	155
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	116	244	24	0	144	0	14	2	0	0	4	86

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	144	0	0	268	0	0	665	620	244	633	644	144
Stage 1	-	-	-	-	-	-	476	476	-	144	144	-
Stage 2	-	-	-	-	-	-	189	144	-	489	500	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1438	-	-	1296	-	-	374	404	795	392	391	903
Stage 1	-	-	-	-	-	-	570	557	-	859	778	-
Stage 2	-	-	-	-	-	-	813	778	-	561	543	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1438	-	-	1296	-	-	315	371	795	366	359	903
Mov Cap-2 Maneuver	-	-	-	-	-	-	315	371	-	366	359	-
Stage 1	-	-	-	-	-	-	524	512	-	789	778	-
Stage 2	-	-	-	-	-	-	732	778	-	513	499	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.3	0	16.8	9.6
HCM LOS			C	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	322	1438	-	-	1296	-	-	359	903
HCM Lane V/C Ratio	0.051	0.081	-	-	-	-	-	0.01	0.095
HCM Control Delay (s)	16.8	7.7	-	-	0	-	-	15.1	9.4
HCM Lane LOS	C	A	-	-	A	-	-	C	A
HCM 95th %tile Q(veh)	0.2	0.3	-	-	0	-	-	0	0.3

Intersection	
Int Delay, s/veh	5.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	86	178	506	101	115	320
Future Vol, veh/h	86	178	506	101	115	320
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	300	-	-	155	300	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	101	209	595	119	135	376

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1053	298	0	0	714	0
Stage 1	595	-	-	-	-	-
Stage 2	458	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	222	698	-	-	882	-
Stage 1	514	-	-	-	-	-
Stage 2	604	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	188	698	-	-	882	-
Mov Cap-2 Maneuver	188	-	-	-	-	-
Stage 1	514	-	-	-	-	-
Stage 2	512	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	22.9	0	2.6
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	188	698	882	-
HCM Lane V/C Ratio	-	-	0.538	0.3	0.153	-
HCM Control Delay (s)	-	-	44.5	12.4	9.8	-
HCM Lane LOS	-	-	E	B	A	-
HCM 95th %tile Q(veh)	-	-	2.8	1.3	0.5	-

Intersection	
Int Delay, s/veh	7.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	108	108	178	385	226	86
Future Vol, veh/h	108	108	178	385	226	86
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	300	-	-	205	155	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	127	127	209	453	266	101

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	662	0	-	0	527	105
Stage 1	-	-	-	-	209	-
Stage 2	-	-	-	-	318	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	922	-	-	-	481	929
Stage 1	-	-	-	-	806	-
Stage 2	-	-	-	-	710	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	922	-	-	-	415	929
Mov Cap-2 Maneuver	-	-	-	-	415	-
Stage 1	-	-	-	-	695	-
Stage 2	-	-	-	-	710	-

Approach	EB	WB	SB
HCM Control Delay, s	4.8	0	22.8
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	922	-	-	-	415	929
HCM Lane V/C Ratio	0.138	-	-	-	0.641	0.109
HCM Control Delay (s)	9.5	-	-	-	27.9	9.3
HCM Lane LOS	A	-	-	-	D	A
HCM 95th %tile Q(veh)	0.5	-	-	-	4.3	0.4

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	20	323	68	5	199	2	40	0	3	0	0	12
Future Vol, veh/h	20	323	68	5	199	2	40	0	3	0	0	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	155	-	155	155	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	24	380	80	6	234	2	47	0	4	0	0	14

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	236	0	0	460	0	0	682	676	380	717	755	235
Stage 1	-	-	-	-	-	-	428	428	-	247	247	-
Stage 2	-	-	-	-	-	-	254	248	-	470	508	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1331	-	-	1101	-	-	364	375	667	345	338	804
Stage 1	-	-	-	-	-	-	605	585	-	757	702	-
Stage 2	-	-	-	-	-	-	750	701	-	574	539	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1331	-	-	1101	-	-	351	366	667	337	330	804
Mov Cap-2 Maneuver	-	-	-	-	-	-	351	366	-	337	330	-
Stage 1	-	-	-	-	-	-	594	574	-	743	698	-
Stage 2	-	-	-	-	-	-	733	697	-	561	529	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0.2	16.5	9.6
HCM LOS			C	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	363	1331	-	-	1101	-	-	804
HCM Lane V/C Ratio	0.139	0.018	-	-	0.005	-	-	0.018
HCM Control Delay (s)	16.5	7.8	-	-	8.3	-	-	9.6
HCM Lane LOS	C	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	0.5	0.1	-	-	0	-	-	0.1

Intersection	
Int Delay, s/veh	3.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	34	61	6	0	183	0	17	3	0	0	1	103
Future Vol, veh/h	34	61	6	0	183	0	17	3	0	0	1	103
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	205	-	155	205	-	-	-	-	-	-	-	155
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	40	72	7	0	215	0	20	4	0	0	1	121

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	215	0	0	79	0	0	428	367	72	373	374	215
Stage 1	-	-	-	-	-	-	152	152	-	215	215	-
Stage 2	-	-	-	-	-	-	276	215	-	158	159	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1355	-	-	1519	-	-	537	562	990	584	557	825
Stage 1	-	-	-	-	-	-	850	772	-	787	725	-
Stage 2	-	-	-	-	-	-	730	725	-	844	766	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1355	-	-	1519	-	-	447	545	990	568	540	825
Mov Cap-2 Maneuver	-	-	-	-	-	-	447	545	-	568	540	-
Stage 1	-	-	-	-	-	-	825	749	-	763	725	-
Stage 2	-	-	-	-	-	-	622	725	-	815	743	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.6	0	13.3	10.1
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	459	1355	-	-	1519	-	-	540	825
HCM Lane V/C Ratio	0.051	0.03	-	-	-	-	-	0.002	0.147
HCM Control Delay (s)	13.3	7.7	-	-	0	-	-	11.7	10.1
HCM Lane LOS	B	A	-	-	A	-	-	B	B
HCM 95th %tile Q(veh)	0.2	0.1	-	-	0	-	-	0	0.5

Intersection	
Int Delay, s/veh	7.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	145	80	226	35	135	386
Future Vol, veh/h	145	80	226	35	135	386
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	300	-	-	155	300	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	171	94	266	41	159	454

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	811	133	0	0	307	0
Stage 1	266	-	-	-	-	-
Stage 2	545	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	317	892	-	-	1250	-
Stage 1	754	-	-	-	-	-
Stage 2	545	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	277	892	-	-	1250	-
Mov Cap-2 Maneuver	277	-	-	-	-	-
Stage 1	754	-	-	-	-	-
Stage 2	476	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	27.1	0	2.2
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	277	892	1250	-
HCM Lane V/C Ratio	-	-	0.616	0.106	0.127	-
HCM Control Delay (s)	-	-	36.8	9.5	8.3	-
HCM Lane LOS	-	-	E	A	A	-
HCM 95th %tile Q(veh)	-	-	3.8	0.4	0.4	-

Intersection	
Int Delay, s/veh	9.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	37	133	80	118	354	146
Future Vol, veh/h	37	133	80	118	354	146
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	300	-	-	205	155	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	44	156	94	139	416	172

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	233	0	-	0	260	47
Stage 1	-	-	-	-	94	-
Stage 2	-	-	-	-	166	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	1332	-	-	-	707	1012
Stage 1	-	-	-	-	919	-
Stage 2	-	-	-	-	846	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1332	-	-	-	684	1012
Mov Cap-2 Maneuver	-	-	-	-	684	-
Stage 1	-	-	-	-	889	-
Stage 2	-	-	-	-	846	-

Approach	EB	WB	SB
HCM Control Delay, s	1.7	0	15.5
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1332	-	-	-	684	1012
HCM Lane V/C Ratio	0.033	-	-	-	0.609	0.17
HCM Control Delay (s)	7.8	-	-	-	18.1	9.3
HCM Lane LOS	A	-	-	-	C	A
HCM 95th %tile Q(veh)	0.1	-	-	-	4.2	0.6

Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	14	96	20	1	301	1	60	0	4	0	0	42
Future Vol, veh/h	14	96	20	1	301	1	60	0	4	0	0	42
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	155	-	155	155	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	16	113	24	1	354	1	71	0	5	0	0	49

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	355	0	0	137	0	0	526	502	113	517	526	355
Stage 1	-	-	-	-	-	-	145	145	-	357	357	-
Stage 2	-	-	-	-	-	-	381	357	-	160	169	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1204	-	-	1447	-	-	462	471	940	469	457	689
Stage 1	-	-	-	-	-	-	858	777	-	661	628	-
Stage 2	-	-	-	-	-	-	641	628	-	842	759	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1204	-	-	1447	-	-	424	464	940	461	451	689
Mov Cap-2 Maneuver	-	-	-	-	-	-	424	464	-	461	451	-
Stage 1	-	-	-	-	-	-	847	767	-	652	627	-
Stage 2	-	-	-	-	-	-	595	627	-	827	749	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.9	0	14.9	10.6
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	439	1204	-	-	1447	-	-	689
HCM Lane V/C Ratio	0.172	0.014	-	-	0.001	-	-	0.072
HCM Control Delay (s)	14.9	8	-	-	7.5	-	-	10.6
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.6	0	-	-	0	-	-	0.2

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	2	4	1	35	99	1
Future Vol, veh/h	2	4	1	35	99	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	5	1	41	116	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	160	117	117	0	-	0
Stage 1	117	-	-	-	-	-
Stage 2	43	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	831	935	1471	-	-	-
Stage 1	908	-	-	-	-	-
Stage 2	979	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	830	935	1471	-	-	-
Mov Cap-2 Maneuver	830	-	-	-	-	-
Stage 1	907	-	-	-	-	-
Stage 2	979	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9	0.2	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1471	-	897	-	-
HCM Lane V/C Ratio	0.001	-	0.008	-	-
HCM Control Delay (s)	7.4	0	9	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection	
Int Delay, s/veh	3.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	103	207	20	0	122	0	12	2	0	0	3	76
Future Vol, veh/h	103	207	20	0	122	0	12	2	0	0	3	76
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	205	-	155	205	-	-	-	-	-	-	-	155
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	121	244	24	0	144	0	14	2	0	0	4	89

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	144	0	0	268	0	0	677	630	244	643	654	144
Stage 1	-	-	-	-	-	-	486	486	-	144	144	-
Stage 2	-	-	-	-	-	-	191	144	-	499	510	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1438	-	-	1296	-	-	367	399	795	386	386	903
Stage 1	-	-	-	-	-	-	563	551	-	859	778	-
Stage 2	-	-	-	-	-	-	811	778	-	554	538	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1438	-	-	1296	-	-	307	365	795	359	354	903
Mov Cap-2 Maneuver	-	-	-	-	-	-	307	365	-	359	354	-
Stage 1	-	-	-	-	-	-	516	505	-	787	778	-
Stage 2	-	-	-	-	-	-	727	778	-	505	493	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.4	0	17.1	9.6
HCM LOS			C	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	314	1438	-	-	1296	-	-	354	903
HCM Lane V/C Ratio	0.052	0.084	-	-	-	-	-	0.01	0.099
HCM Control Delay (s)	17.1	7.7	-	-	0	-	-	15.3	9.4
HCM Lane LOS	C	A	-	-	A	-	-	C	A
HCM 95th %tile Q(veh)	0.2	0.3	-	-	0	-	-	0	0.3

Intersection	
Int Delay, s/veh	6.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	97	178	506	118	115	320
Future Vol, veh/h	97	178	506	118	115	320
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	300	-	-	155	300	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	114	209	595	139	135	376

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1053	298	0	0	734	0
Stage 1	595	-	-	-	-	-
Stage 2	458	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	222	698	-	-	867	-
Stage 1	514	-	-	-	-	-
Stage 2	604	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	187	698	-	-	867	-
Mov Cap-2 Maneuver	187	-	-	-	-	-
Stage 1	514	-	-	-	-	-
Stage 2	510	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	25.8	0	2.6
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	187	698	867	-
HCM Lane V/C Ratio	-	-	0.61	0.3	0.156	-
HCM Control Delay (s)	-	-	50.5	12.4	9.9	-
HCM Lane LOS	-	-	F	B	A	-
HCM 95th %tile Q(veh)	-	-	3.4	1.3	0.6	-

Intersection	
Int Delay, s/veh	9.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	125	108	178	398	235	97
Future Vol, veh/h	125	108	178	398	235	97
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	300	-	-	205	155	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	147	127	209	468	276	114

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	677	0	-	0	567	105
Stage 1	-	-	-	-	209	-
Stage 2	-	-	-	-	358	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	911	-	-	-	454	929
Stage 1	-	-	-	-	806	-
Stage 2	-	-	-	-	678	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	911	-	-	-	381	929
Mov Cap-2 Maneuver	-	-	-	-	381	-
Stage 1	-	-	-	-	676	-
Stage 2	-	-	-	-	678	-

Approach	EB	WB	SB
HCM Control Delay, s	5.2	0	28.1
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	911	-	-	-	381	929
HCM Lane V/C Ratio	0.161	-	-	-	0.726	0.123
HCM Control Delay (s)	9.7	-	-	-	35.8	9.4
HCM Lane LOS	A	-	-	-	E	A
HCM 95th %tile Q(veh)	0.6	-	-	-	5.6	0.4

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	46	327	68	5	202	3	40	0	3	0	0	28
Future Vol, veh/h	46	327	68	5	202	3	40	0	3	0	0	28
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	155	-	155	155	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	54	385	80	6	238	4	47	0	4	0	0	33

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	242	0	0	465	0	0	762	747	385	787	825	240
Stage 1	-	-	-	-	-	-	493	493	-	252	252	-
Stage 2	-	-	-	-	-	-	269	254	-	535	573	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1324	-	-	1096	-	-	322	341	663	309	308	799
Stage 1	-	-	-	-	-	-	558	547	-	752	698	-
Stage 2	-	-	-	-	-	-	737	697	-	529	504	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1324	-	-	1096	-	-	298	325	663	297	294	799
Mov Cap-2 Maneuver	-	-	-	-	-	-	298	325	-	297	294	-
Stage 1	-	-	-	-	-	-	535	525	-	721	695	-
Stage 2	-	-	-	-	-	-	703	694	-	505	483	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.8	0.2	18.9	9.7
HCM LOS			C	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	310	1324	-	-	1096	-	-	799
HCM Lane V/C Ratio	0.163	0.041	-	-	0.005	-	-	0.041
HCM Control Delay (s)	18.9	7.8	-	-	8.3	-	-	9.7
HCM Lane LOS	C	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	0.6	0.1	-	-	0	-	-	0.1

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	3	5	100	76	2
Future Vol, veh/h	1	3	5	100	76	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	4	6	118	89	2

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	220	90	91	0	-	0
Stage 1	90	-	-	-	-	-
Stage 2	130	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	768	968	1504	-	-	-
Stage 1	934	-	-	-	-	-
Stage 2	896	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	765	968	1504	-	-	-
Mov Cap-2 Maneuver	765	-	-	-	-	-
Stage 1	930	-	-	-	-	-
Stage 2	896	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9	0.4	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1504	-	908	-	-
HCM Lane V/C Ratio	0.004	-	0.005	-	-
HCM Control Delay (s)	7.4	0	9	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	23	320	4	3	599	14	13	1	9	28	0	70
Future Vol, veh/h	23	320	4	3	599	14	13	1	9	28	0	70
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	205	-	155	205	-	-	-	-	-	-	-	155
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	24	337	4	3	631	15	14	1	9	29	0	74

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	646	0	0	341	0	0	1067	1037	337	1037	1034	639
Stage 1	-	-	-	-	-	-	385	385	-	645	645	-
Stage 2	-	-	-	-	-	-	682	652	-	392	389	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	939	-	-	1218	-	-	200	231	705	209	232	476
Stage 1	-	-	-	-	-	-	638	611	-	461	467	-
Stage 2	-	-	-	-	-	-	440	464	-	633	608	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	939	-	-	1218	-	-	165	225	705	201	226	476
Mov Cap-2 Maneuver	-	-	-	-	-	-	165	225	-	201	226	-
Stage 1	-	-	-	-	-	-	621	595	-	449	466	-
Stage 2	-	-	-	-	-	-	371	463	-	607	592	-

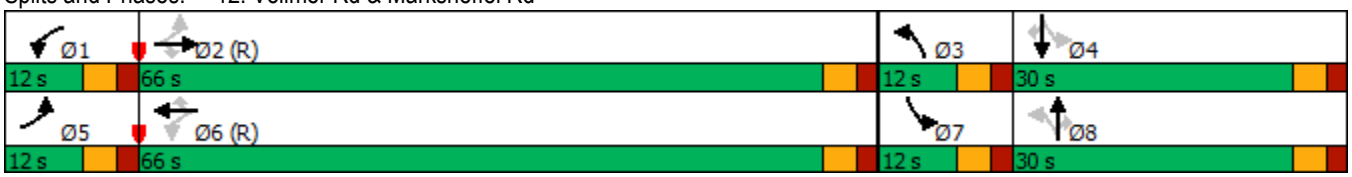
Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	0	21.7	17.4
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	240	939	-	-	1218	-	-	201	476
HCM Lane V/C Ratio	0.101	0.026	-	-	0.003	-	-	0.147	0.155
HCM Control Delay (s)	21.7	8.9	-	-	8	-	-	26	13.9
HCM Lane LOS	C	A	-	-	A	-	-	D	B
HCM 95th %tile Q(veh)	0.3	0.1	-	-	0	-	-	0.5	0.5

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	71	838	42	171	925	69	115	235	110	121	517	131
Future Volume (vph)	71	838	42	171	925	69	115	235	110	121	517	131
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		8	4		4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	10.0	23.0	23.0	10.0	23.0	23.0	10.0	23.0	23.0	10.0	23.0	23.0
Total Split (s)	12.0	66.0	66.0	12.0	66.0	66.0	12.0	30.0	30.0	12.0	30.0	30.0
Total Split (%)	10.0%	55.0%	55.0%	10.0%	55.0%	55.0%	10.0%	25.0%	25.0%	10.0%	25.0%	25.0%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	Max	Max	None	Max	Max
Act Effct Green (s)	67.7	61.0	61.0	69.0	63.4	63.4	32.0	25.0	25.0	32.0	25.0	25.0
Actuated g/C Ratio	0.56	0.51	0.51	0.58	0.53	0.53	0.27	0.21	0.21	0.27	0.21	0.21
v/c Ratio	0.25	0.49	0.05	0.55	0.52	0.08	0.65	0.34	0.28	0.41	0.74	0.32
Control Delay	11.8	20.5	0.1	17.0	9.8	0.2	49.2	41.9	8.9	36.2	51.3	9.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.8	20.5	0.1	17.0	9.8	0.2	49.2	41.9	8.9	36.2	51.3	9.6
LOS	B	C	A	B	A	A	D	D	A	D	D	A
Approach Delay		18.9			10.3			35.8			41.8	
Approach LOS		B			B			D			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.74	
Intersection Signal Delay: 23.5	Intersection LOS: C
Intersection Capacity Utilization 70.0%	ICU Level of Service C
Analysis Period (min) 15	

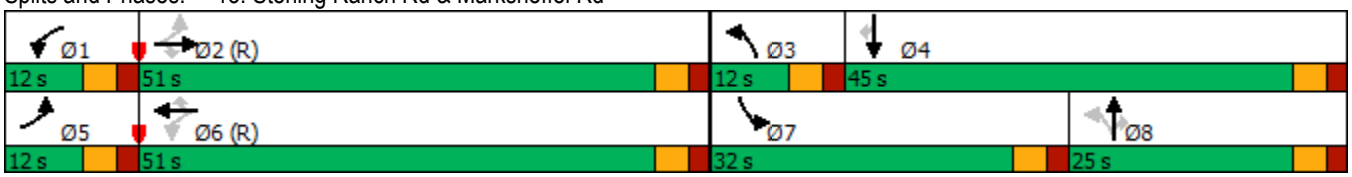
Splits and Phases: 12: Vollmer Rd & Marksheffel Rd



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	157	900	10	47	809	171	39	8	55	466	10	318
Future Volume (vph)	157	900	10	47	809	171	39	8	55	466	10	318
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		8			4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	5.0	15.0	15.0	5.0	15.0	15.0	5.0	10.0	10.0	20.0	10.0	10.0
Minimum Split (s)	10.0	20.0	20.0	10.0	20.0	20.0	10.0	15.0	15.0	25.0	20.0	20.0
Total Split (s)	12.0	51.0	51.0	12.0	51.0	51.0	12.0	25.0	25.0	32.0	45.0	45.0
Total Split (%)	10.0%	42.5%	42.5%	10.0%	42.5%	42.5%	10.0%	20.8%	20.8%	26.7%	37.5%	37.5%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	None
Act Effct Green (s)	74.5	65.4	65.4	66.5	59.6	59.6	14.6	10.0	10.0	22.8	25.2	25.2
Actuated g/C Ratio	0.62	0.54	0.54	0.55	0.50	0.50	0.12	0.08	0.08	0.19	0.21	0.21
v/c Ratio	0.43	0.49	0.01	0.15	0.48	0.21	0.22	0.05	0.21	0.75	0.03	0.62
Control Delay	20.2	15.4	0.0	12.1	23.0	3.7	32.7	51.6	1.8	53.7	35.6	14.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.2	15.4	0.0	12.1	23.0	3.7	32.7	51.6	1.8	53.7	35.6	14.6
LOS	C	B	A	B	C	A	C	D	A	D	D	B
Approach Delay		15.9			19.3			17.4			37.8	
Approach LOS		B			B			B			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	
Natural Cycle: 75	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.75	
Intersection Signal Delay: 23.0	Intersection LOS: C
Intersection Capacity Utilization 63.5%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 13: Sterling Ranch Rd & Marksheffel Rd



Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	324	14	6	672	4	46	0	16	7	0	14
Future Vol, veh/h	4	324	14	6	672	4	46	0	16	7	0	14
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	155	-	155	155	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	341	15	6	707	4	48	0	17	7	0	15

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	711	0	0	356	0	0	1078	1072	341	1086	1085	709
Stage 1	-	-	-	-	-	-	349	349	-	721	721	-
Stage 2	-	-	-	-	-	-	729	723	-	365	364	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	888	-	-	1203	-	-	196	220	701	194	217	434
Stage 1	-	-	-	-	-	-	667	633	-	419	432	-
Stage 2	-	-	-	-	-	-	414	431	-	654	624	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	888	-	-	1203	-	-	188	218	701	188	215	434
Mov Cap-2 Maneuver	-	-	-	-	-	-	188	218	-	188	215	-
Stage 1	-	-	-	-	-	-	664	630	-	417	430	-
Stage 2	-	-	-	-	-	-	398	429	-	635	621	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.1	26.5	17.9
HCM LOS			D	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	232	888	-	-	1203	-	-	302
HCM Lane V/C Ratio	0.281	0.005	-	-	0.005	-	-	0.073
HCM Control Delay (s)	26.5	9.1	-	-	8	-	-	17.9
HCM Lane LOS	D	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	1.1	0	-	-	0	-	-	0.2

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	96	577	18	3	374	10	11	1	2	4	1	66
Future Vol, veh/h	96	577	18	3	374	10	11	1	2	4	1	66
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	205	-	155	205	-	-	-	-	-	-	-	155
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	101	607	19	3	394	11	12	1	2	4	1	69

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	405	0	0	626	0	0	1250	1220	607	1226	1234	400
Stage 1	-	-	-	-	-	-	809	809	-	406	406	-
Stage 2	-	-	-	-	-	-	441	411	-	820	828	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1154	-	-	956	-	-	150	180	496	155	177	650
Stage 1	-	-	-	-	-	-	374	394	-	622	598	-
Stage 2	-	-	-	-	-	-	595	595	-	369	386	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1154	-	-	956	-	-	124	164	496	143	161	650
Mov Cap-2 Maneuver	-	-	-	-	-	-	124	164	-	143	161	-
Stage 1	-	-	-	-	-	-	341	359	-	567	596	-
Stage 2	-	-	-	-	-	-	529	593	-	334	352	-

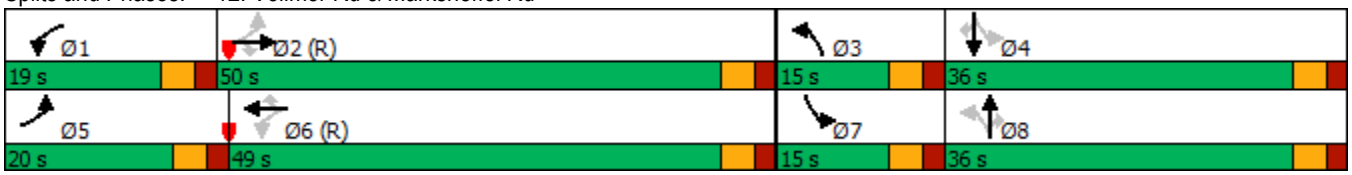
Approach	EB	WB	NB	SB
HCM Control Delay, s	1.2	0.1	33.3	12.6
HCM LOS			D	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	142	1154	-	-	956	-	-	146	650
HCM Lane V/C Ratio	0.104	0.088	-	-	0.003	-	-	0.036	0.107
HCM Control Delay (s)	33.3	8.4	-	-	8.8	-	-	30.6	11.2
HCM Lane LOS	D	A	-	-	A	-	-	D	B
HCM 95th %tile Q(veh)	0.3	0.3	-	-	0	-	-	0.1	0.4

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	142	937	96	188	710	154	171	728	186	132	342	199
Future Volume (vph)	142	937	96	188	710	154	171	728	186	132	342	199
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		8	4		4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	10.0	23.0	23.0	10.0	23.0	23.0	10.0	23.0	23.0	10.0	23.0	23.0
Total Split (s)	20.0	50.0	50.0	19.0	49.0	49.0	15.0	36.0	36.0	15.0	36.0	36.0
Total Split (%)	16.7%	41.7%	41.7%	15.8%	40.8%	40.8%	12.5%	30.0%	30.0%	12.5%	30.0%	30.0%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	Max	Max	None	Max	Max
Act Effct Green (s)	57.6	46.9	46.9	60.4	48.3	48.3	41.2	31.4	31.4	40.8	31.2	31.2
Actuated g/C Ratio	0.48	0.39	0.39	0.50	0.40	0.40	0.34	0.26	0.26	0.34	0.26	0.26
v/c Ratio	0.43	0.71	0.15	0.71	0.52	0.22	0.50	0.83	0.38	0.68	0.39	0.37
Control Delay	18.6	34.7	4.5	51.0	22.4	5.3	31.4	50.7	13.6	43.5	38.2	6.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.6	34.7	4.5	51.0	22.4	5.3	31.4	50.7	13.6	43.5	38.2	6.7
LOS	B	C	A	D	C	A	C	D	B	D	D	A
Approach Delay		30.3			25.0			41.3			29.9	
Approach LOS		C			C			D			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.83	
Intersection Signal Delay: 31.8	Intersection LOS: C
Intersection Capacity Utilization 80.4%	ICU Level of Service D
Analysis Period (min) 15	

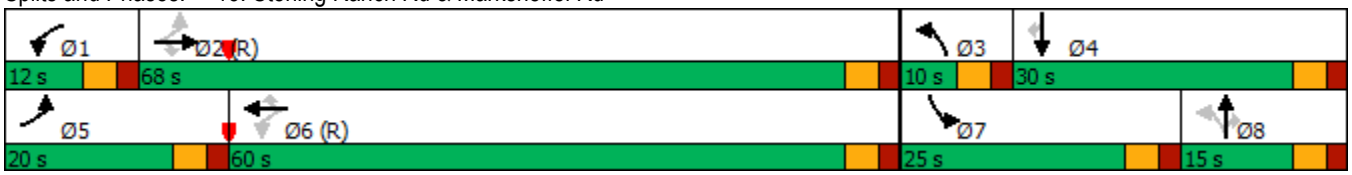
Splits and Phases: 12: Vollmer Rd & Marksheffel Rd



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	293	946	22	130	841	554	27	6	37	331	24	183
Future Volume (vph)	293	946	22	130	841	554	27	6	37	331	24	183
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		8			4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	5.0	15.0	15.0	5.0	15.0	15.0	5.0	10.0	10.0	20.0	10.0	10.0
Minimum Split (s)	10.0	20.0	20.0	10.0	20.0	20.0	10.0	15.0	15.0	25.0	20.0	20.0
Total Split (s)	20.0	68.0	68.0	12.0	60.0	60.0	10.0	15.0	15.0	25.0	30.0	30.0
Total Split (%)	16.7%	56.7%	56.7%	10.0%	50.0%	50.0%	8.3%	12.5%	12.5%	20.8%	25.0%	25.0%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	None
Act Effct Green (s)	80.3	69.1	69.1	69.9	62.9	62.9	11.0	10.0	10.0	20.0	23.0	23.0
Actuated g/C Ratio	0.67	0.58	0.58	0.58	0.52	0.52	0.09	0.08	0.08	0.17	0.19	0.19
v/c Ratio	0.73	0.49	0.02	0.41	0.48	0.53	0.20	0.04	0.12	0.61	0.07	0.42
Control Delay	37.4	10.4	0.0	12.8	20.8	3.5	37.8	51.3	0.8	51.5	39.2	8.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.4	10.4	0.0	12.8	20.8	3.5	37.8	51.3	0.8	51.5	39.2	8.5
LOS	D	B	A	B	C	A	D	D	A	D	D	A
Approach Delay		16.5			13.8			19.1			36.3	
Approach LOS		B			B			B			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.73	
Intersection Signal Delay: 18.5	Intersection LOS: B
Intersection Capacity Utilization 71.4%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 13: Sterling Ranch Rd & Marksheffel Rd



Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	19	685	64	9	440	3	38	0	5	2	0	11
Future Vol, veh/h	19	685	64	9	440	3	38	0	5	2	0	11
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	155	-	155	155	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	20	721	67	9	463	3	40	0	5	2	0	12

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	466	0	0	788	0	0	1250	1245	721	1280	1311	465
Stage 1	-	-	-	-	-	-	761	761	-	483	483	-
Stage 2	-	-	-	-	-	-	489	484	-	797	828	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1095	-	-	831	-	-	150	174	427	143	159	597
Stage 1	-	-	-	-	-	-	398	414	-	565	553	-
Stage 2	-	-	-	-	-	-	561	552	-	380	386	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1095	-	-	831	-	-	144	169	427	138	154	597
Mov Cap-2 Maneuver	-	-	-	-	-	-	144	169	-	138	154	-
Stage 1	-	-	-	-	-	-	391	407	-	555	547	-
Stage 2	-	-	-	-	-	-	544	546	-	368	379	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.2	37.2	14.4
HCM LOS			E	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	156	1095	-	-	831	-	-	395
HCM Lane V/C Ratio	0.29	0.018	-	-	0.011	-	-	0.035
HCM Control Delay (s)	37.2	8.3	-	-	9.4	-	-	14.4
HCM Lane LOS	E	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	1.1	0.1	-	-	0	-	-	0.1

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	24	326	4	3	602	15	13	1	9	30	0	73
Future Vol, veh/h	24	326	4	3	602	15	13	1	9	30	0	73
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	205	-	155	205	-	-	-	-	-	-	-	155
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	25	343	4	3	634	16	14	1	9	32	0	77

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	650	0	0	347	0	0	1080	1049	343	1048	1045	642
Stage 1	-	-	-	-	-	-	393	393	-	648	648	-
Stage 2	-	-	-	-	-	-	687	656	-	400	397	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	936	-	-	1212	-	-	196	227	700	206	229	474
Stage 1	-	-	-	-	-	-	632	606	-	459	466	-
Stage 2	-	-	-	-	-	-	437	462	-	626	603	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	936	-	-	1212	-	-	161	220	700	198	222	474
Mov Cap-2 Maneuver	-	-	-	-	-	-	161	220	-	198	222	-
Stage 1	-	-	-	-	-	-	615	590	-	447	465	-
Stage 2	-	-	-	-	-	-	365	461	-	600	587	-

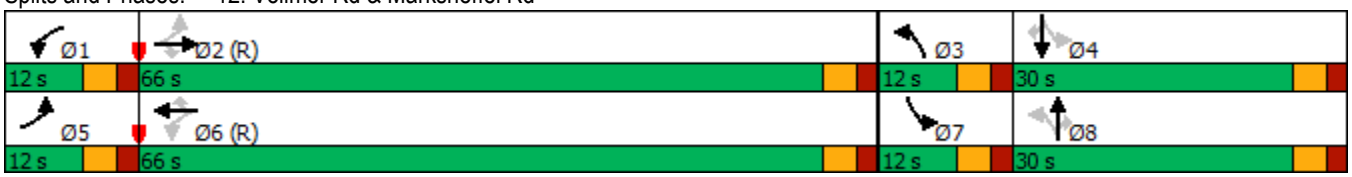
Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	0	22.2	17.7
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	234	936	-	-	1212	-	-	198	474
HCM Lane V/C Ratio	0.103	0.027	-	-	0.003	-	-	0.159	0.162
HCM Control Delay (s)	22.2	9	-	-	8	-	-	26.6	14.1
HCM Lane LOS	C	A	-	-	A	-	-	D	B
HCM 95th %tile Q(veh)	0.3	0.1	-	-	0	-	-	0.6	0.6

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	71	839	42	175	931	69	115	235	111	121	517	131
Future Volume (vph)	71	839	42	175	931	69	115	235	111	121	517	131
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		8	4		4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	10.0	23.0	23.0	10.0	23.0	23.0	10.0	23.0	23.0	10.0	23.0	23.0
Total Split (s)	12.0	66.0	66.0	12.0	66.0	66.0	12.0	30.0	30.0	12.0	30.0	30.0
Total Split (%)	10.0%	55.0%	55.0%	10.0%	55.0%	55.0%	10.0%	25.0%	25.0%	10.0%	25.0%	25.0%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	Max	Max	None	Max	Max
Act Effct Green (s)	67.7	61.0	61.0	69.0	63.4	63.4	32.0	25.0	25.0	32.0	25.0	25.0
Actuated g/C Ratio	0.56	0.51	0.51	0.58	0.53	0.53	0.27	0.21	0.21	0.27	0.21	0.21
v/c Ratio	0.25	0.49	0.05	0.56	0.52	0.08	0.65	0.34	0.28	0.41	0.74	0.32
Control Delay	11.9	20.5	0.1	17.6	9.9	0.2	49.2	41.9	8.8	36.2	51.3	9.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.9	20.5	0.1	17.6	9.9	0.2	49.2	41.9	8.8	36.2	51.3	9.6
LOS	B	C	A	B	A	A	D	D	A	D	D	A
Approach Delay		19.0			10.5			35.8			41.8	
Approach LOS		B			B			D			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.74	
Intersection Signal Delay: 23.5	Intersection LOS: C
Intersection Capacity Utilization 70.2%	ICU Level of Service C
Analysis Period (min) 15	

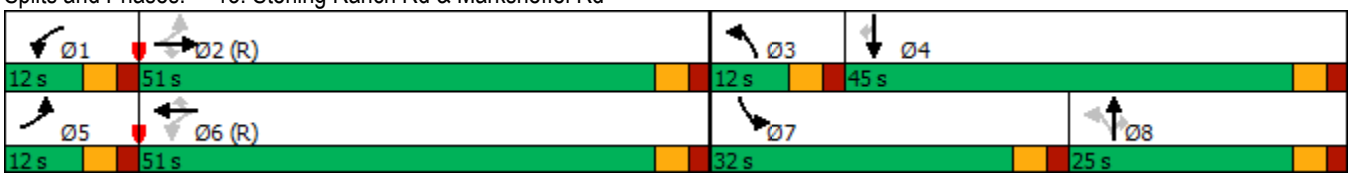
Splits and Phases: 12: Vollmer Rd & Marksheffel Rd



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	160	900	10	47	809	175	39	8	55	478	10	328
Future Volume (vph)	160	900	10	47	809	175	39	8	55	478	10	328
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		8			4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	5.0	15.0	15.0	5.0	15.0	15.0	5.0	10.0	10.0	20.0	10.0	10.0
Minimum Split (s)	10.0	20.0	20.0	10.0	20.0	20.0	10.0	15.0	15.0	25.0	20.0	20.0
Total Split (s)	12.0	51.0	51.0	12.0	51.0	51.0	12.0	25.0	25.0	32.0	45.0	45.0
Total Split (%)	10.0%	42.5%	42.5%	10.0%	42.5%	42.5%	10.0%	20.8%	20.8%	26.7%	37.5%	37.5%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	None
Act Effct Green (s)	74.4	65.2	65.2	66.0	59.1	59.1	14.6	10.0	10.0	23.0	25.5	25.5
Actuated g/C Ratio	0.62	0.54	0.54	0.55	0.49	0.49	0.12	0.08	0.08	0.19	0.21	0.21
v/c Ratio	0.44	0.49	0.01	0.15	0.49	0.21	0.22	0.05	0.21	0.76	0.03	0.63
Control Delay	21.0	15.5	0.0	12.3	23.4	3.7	32.6	51.6	1.8	54.0	35.4	15.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.0	15.5	0.0	12.3	23.4	3.7	32.6	51.6	1.8	54.0	35.4	15.6
LOS	C	B	A	B	C	A	C	D	A	D	D	B
Approach Delay		16.2			19.6			17.3			38.3	
Approach LOS		B			B			B			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	
Natural Cycle: 75	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.76	
Intersection Signal Delay: 23.4	Intersection LOS: C
Intersection Capacity Utilization 64.0%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 13: Sterling Ranch Rd & Marksheffel Rd



Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	9	325	14	6	676	6	46	0	16	13	0	32
Future Vol, veh/h	9	325	14	6	676	6	46	0	16	13	0	32
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	155	-	155	155	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	9	342	15	6	712	6	48	0	17	14	0	34

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	718	0	0	357	0	0	1104	1090	342	1103	1102	715
Stage 1	-	-	-	-	-	-	360	360	-	727	727	-
Stage 2	-	-	-	-	-	-	744	730	-	376	375	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	883	-	-	1202	-	-	188	215	701	189	212	431
Stage 1	-	-	-	-	-	-	658	626	-	415	429	-
Stage 2	-	-	-	-	-	-	407	428	-	645	617	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	883	-	-	1202	-	-	171	212	701	182	209	431
Mov Cap-2 Maneuver	-	-	-	-	-	-	171	212	-	182	209	-
Stage 1	-	-	-	-	-	-	651	620	-	411	427	-
Stage 2	-	-	-	-	-	-	373	426	-	623	611	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.1	29.4	18.7
HCM LOS			D	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	212	883	-	-	1202	-	-	309
HCM Lane V/C Ratio	0.308	0.011	-	-	0.005	-	-	0.153
HCM Control Delay (s)	29.4	9.1	-	-	8	-	-	18.7
HCM Lane LOS	D	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	1.2	0	-	-	0	-	-	0.5

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	5	2	38	98	0
Future Vol, veh/h	1	5	2	38	98	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	6	2	45	115	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	164	115	115	0	-	0
Stage 1	115	-	-	-	-	-
Stage 2	49	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	827	937	1474	-	-	-
Stage 1	910	-	-	-	-	-
Stage 2	973	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	826	937	1474	-	-	-
Mov Cap-2 Maneuver	826	-	-	-	-	-
Stage 1	909	-	-	-	-	-
Stage 2	973	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9	0.4	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1474	-	916	-	-
HCM Lane V/C Ratio	0.002	-	0.008	-	-
HCM Control Delay (s)	7.4	0	9	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	100	578	18	3	377	11	11	1	2	4	1	69
Future Vol, veh/h	100	578	18	3	377	11	11	1	2	4	1	69
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	205	-	155	205	-	-	-	-	-	-	-	155
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	105	608	19	3	397	12	12	1	2	4	1	73

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	409	0	0	627	0	0	1264	1233	608	1238	1246	403
Stage 1	-	-	-	-	-	-	818	818	-	409	409	-
Stage 2	-	-	-	-	-	-	446	415	-	829	837	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1150	-	-	955	-	-	146	177	496	152	174	647
Stage 1	-	-	-	-	-	-	370	390	-	619	596	-
Stage 2	-	-	-	-	-	-	591	592	-	365	382	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1150	-	-	955	-	-	120	160	496	140	158	647
Mov Cap-2 Maneuver	-	-	-	-	-	-	120	160	-	140	158	-
Stage 1	-	-	-	-	-	-	336	355	-	563	594	-
Stage 2	-	-	-	-	-	-	522	590	-	329	347	-

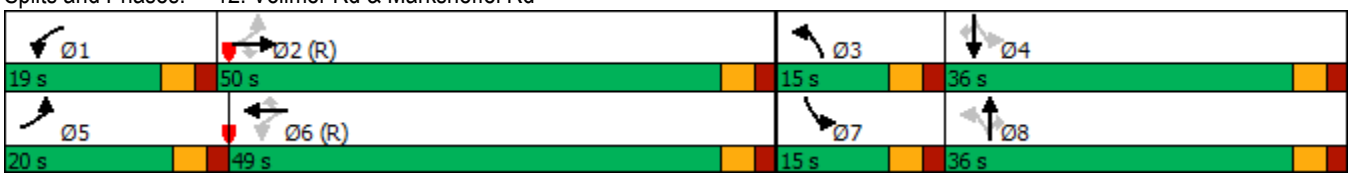
Approach	EB	WB	NB	SB
HCM Control Delay, s	1.2	0.1	34.4	12.6
HCM LOS			D	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	137	1150	-	-	955	-	-	143	647
HCM Lane V/C Ratio	0.108	0.092	-	-	0.003	-	-	0.037	0.112
HCM Control Delay (s)	34.4	8.4	-	-	8.8	-	-	31.1	11.3
HCM Lane LOS	D	A	-	-	A	-	-	D	B
HCM 95th %tile Q(veh)	0.4	0.3	-	-	0	-	-	0.1	0.4

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	142	943	96	191	715	154	171	728	191	132	342	199
Future Volume (vph)	142	943	96	191	715	154	171	728	191	132	342	199
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		8	4		4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	10.0	23.0	23.0	10.0	23.0	23.0	10.0	23.0	23.0	10.0	23.0	23.0
Total Split (s)	20.0	50.0	50.0	19.0	49.0	49.0	15.0	36.0	36.0	15.0	36.0	36.0
Total Split (%)	16.7%	41.7%	41.7%	15.8%	40.8%	40.8%	12.5%	30.0%	30.0%	12.5%	30.0%	30.0%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	Max	Max	None	Max	Max
Act Effct Green (s)	57.4	46.8	46.8	60.6	48.3	48.3	41.2	31.4	31.4	40.8	31.2	31.2
Actuated g/C Ratio	0.48	0.39	0.39	0.50	0.40	0.40	0.34	0.26	0.26	0.34	0.26	0.26
v/c Ratio	0.43	0.72	0.15	0.72	0.53	0.22	0.50	0.83	0.39	0.68	0.39	0.37
Control Delay	18.7	35.1	4.5	52.2	22.5	5.4	31.4	50.7	13.7	43.5	38.2	6.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.7	35.1	4.5	52.2	22.5	5.4	31.4	50.7	13.7	43.5	38.2	6.7
LOS	B	D	A	D	C	A	C	D	B	D	D	A
Approach Delay		30.6			25.3			41.2			29.9	
Approach LOS		C			C			D			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.83	
Intersection Signal Delay: 32.0	Intersection LOS: C
Intersection Capacity Utilization 80.8%	ICU Level of Service D
Analysis Period (min) 15	

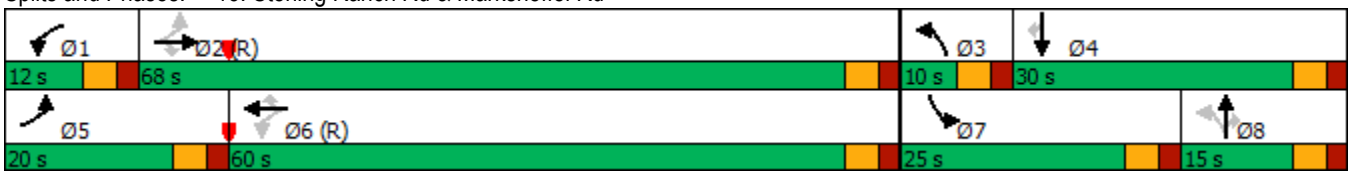
Splits and Phases: 12: Vollmer Rd & Marksheffel Rd



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	305	946	22	130	841	570	27	6	37	342	24	191
Future Volume (vph)	305	946	22	130	841	570	27	6	37	342	24	191
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		8			4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	5.0	15.0	15.0	5.0	15.0	15.0	5.0	10.0	10.0	20.0	10.0	10.0
Minimum Split (s)	10.0	20.0	20.0	10.0	20.0	20.0	10.0	15.0	15.0	25.0	20.0	20.0
Total Split (s)	20.0	68.0	68.0	12.0	60.0	60.0	10.0	15.0	15.0	25.0	30.0	30.0
Total Split (%)	16.7%	56.7%	56.7%	10.0%	50.0%	50.0%	8.3%	12.5%	12.5%	20.8%	25.0%	25.0%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	None
Act Effct Green (s)	80.6	69.1	69.1	69.6	62.7	62.7	11.0	10.0	10.0	20.0	23.0	23.0
Actuated g/C Ratio	0.67	0.58	0.58	0.58	0.52	0.52	0.09	0.08	0.08	0.17	0.19	0.19
v/c Ratio	0.75	0.49	0.02	0.41	0.48	0.54	0.20	0.04	0.12	0.63	0.07	0.43
Control Delay	39.5	10.5	0.0	12.9	20.9	3.5	37.8	51.3	0.8	52.1	39.2	8.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.5	10.5	0.0	12.9	20.9	3.5	37.8	51.3	0.8	52.1	39.2	8.5
LOS	D	B	A	B	C	A	D	D	A	D	D	A
Approach Delay		17.3			13.8			19.1			36.6	
Approach LOS		B			B			B			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.75	
Intersection Signal Delay: 18.9	Intersection LOS: B
Intersection Capacity Utilization 73.0%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 13: Sterling Ranch Rd & Marksheffel Rd



Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	43	689	64	9	443	6	38	0	5	2	0	27
Future Vol, veh/h	43	689	64	9	443	6	38	0	5	2	0	27
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	155	-	155	155	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	45	725	67	9	466	6	40	0	5	2	0	28

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	472	0	0	792	0	0	1316	1305	725	1338	1369	469
Stage 1	-	-	-	-	-	-	815	815	-	487	487	-
Stage 2	-	-	-	-	-	-	501	490	-	851	882	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1090	-	-	829	-	-	135	160	425	130	146	594
Stage 1	-	-	-	-	-	-	371	391	-	562	550	-
Stage 2	-	-	-	-	-	-	552	549	-	355	364	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1090	-	-	829	-	-	124	152	425	123	138	594
Mov Cap-2 Maneuver	-	-	-	-	-	-	124	152	-	123	138	-
Stage 1	-	-	-	-	-	-	356	375	-	539	544	-
Stage 2	-	-	-	-	-	-	520	543	-	336	349	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0.2	44.6	13.2
HCM LOS			E	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	135	1090	-	-	829	-	-	470
HCM Lane V/C Ratio	0.335	0.042	-	-	0.011	-	-	0.065
HCM Control Delay (s)	44.6	8.4	-	-	9.4	-	-	13.2
HCM Lane LOS	E	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	1.4	0.1	-	-	0	-	-	0.2

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	3	5	107	71	2
Future Vol, veh/h	1	3	5	107	71	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	4	6	126	84	2

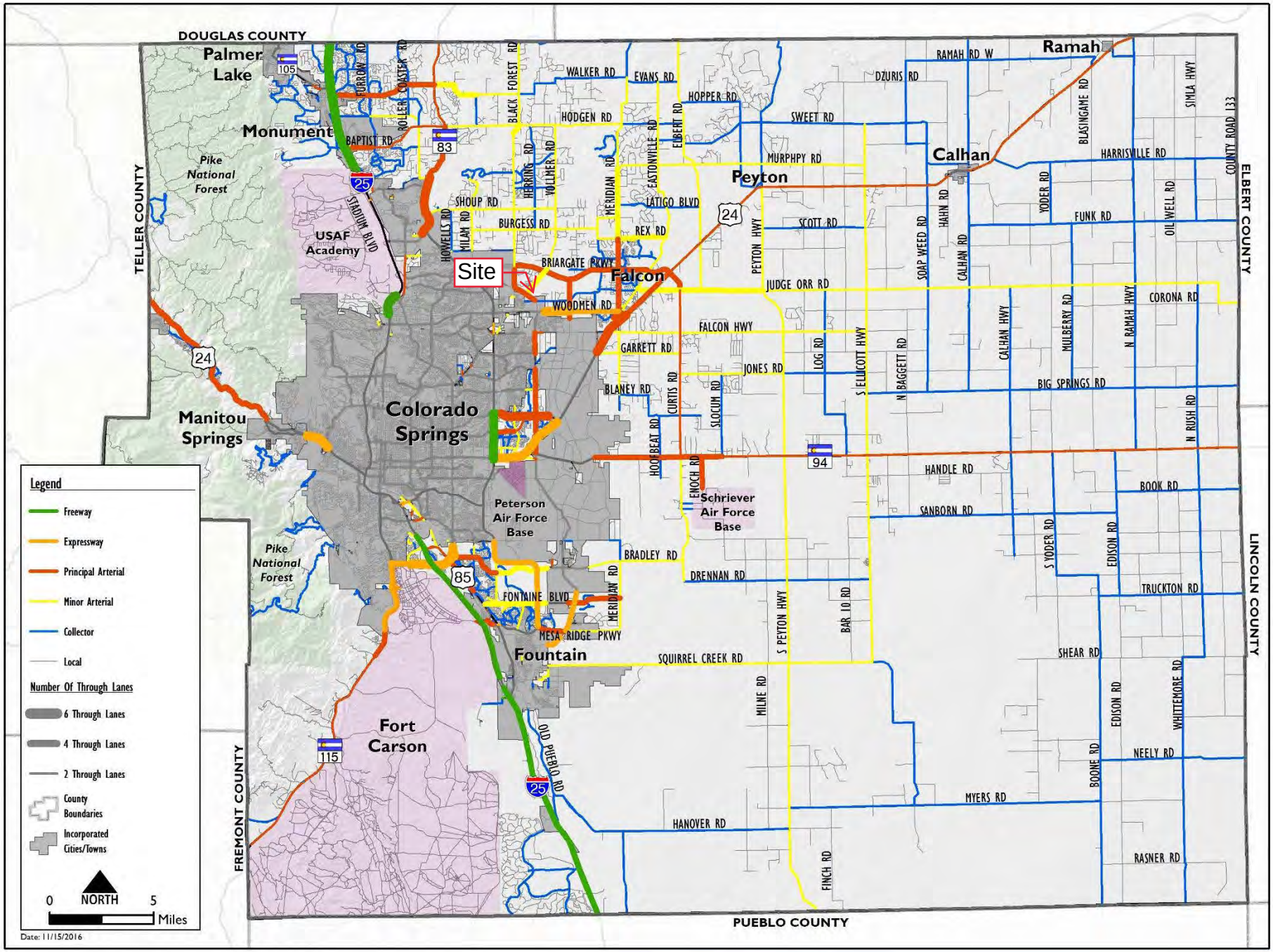
Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	223	85	86	0	-	0
Stage 1	85	-	-	-	-	-
Stage 2	138	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	765	974	1510	-	-	-
Stage 1	938	-	-	-	-	-
Stage 2	889	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	762	974	1510	-	-	-
Mov Cap-2 Maneuver	762	-	-	-	-	-
Stage 1	934	-	-	-	-	-
Stage 2	889	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9	0.3	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1510	-	911	-	-
HCM Lane V/C Ratio	0.004	-	0.005	-	-
HCM Control Delay (s)	7.4	0	9	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

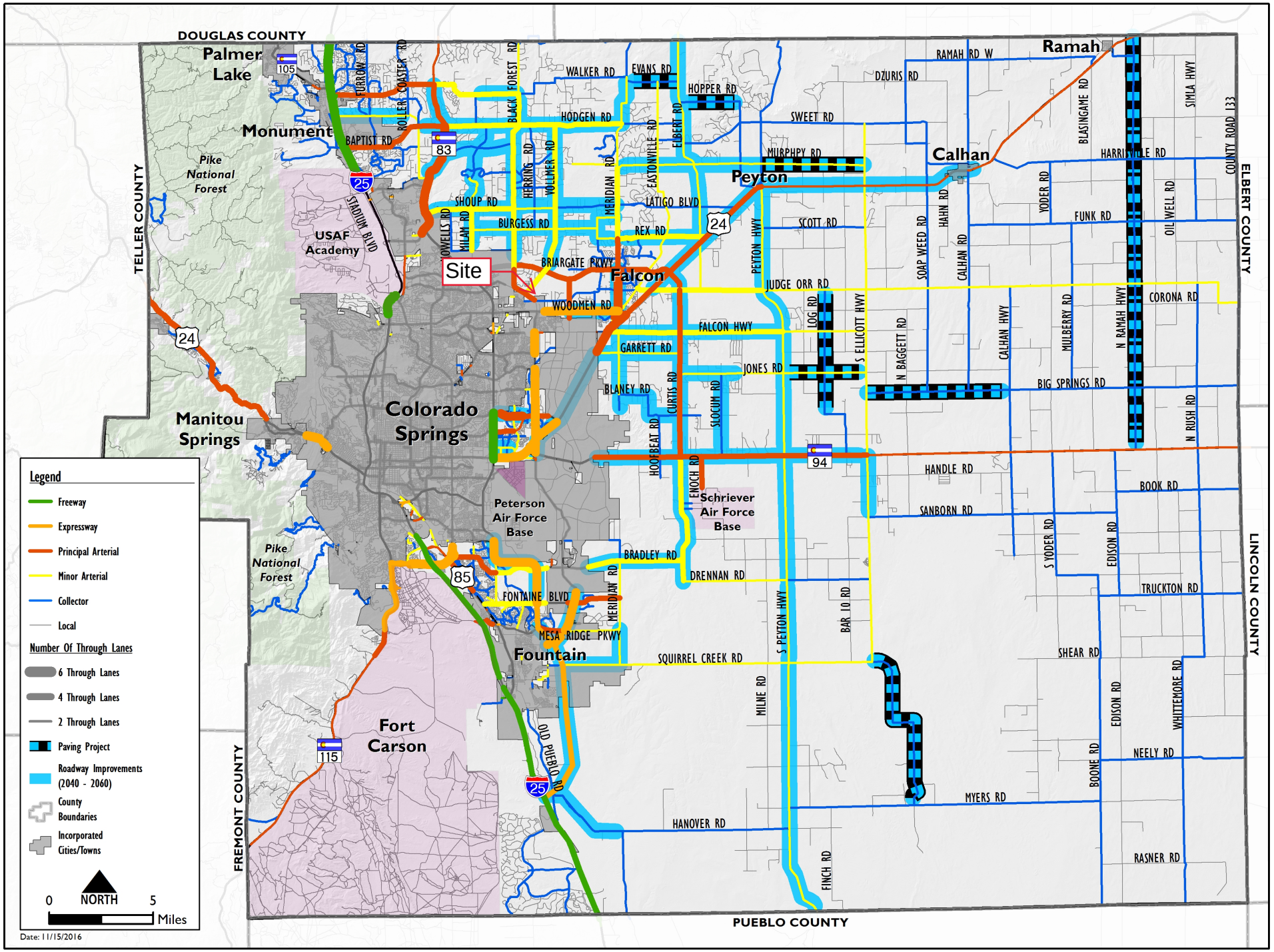
MTCP Maps

TRANSPORTATION
CONSULTANTS, INC.



Map 14: 2040 Roadway Plan (Classification and Lanes)

Map 17: 2060 Corridor Preservation



Appendix Tables 1-2

TRANSPORTATION
CONSULTANTS, INC.

Appendix Table 1
Area Traffic Impact Studies
Sterling Ranch Filing No. 5

Study	PCD File No[(1)]	Consultant	Date
Sterling Ranch Reports			
Sterling Ranch Updated Traffic Impact Analysis	SKP07007	LSC Transportation Consultants, Inc	June 5, 2008
Sterling Ranch Phase 1 Traffic Impact Study	P151	LSC Transportation Consultants, Inc	March 16, 2015
Sterling Ranch Phases 1-3 Transportation Memorandum	SP1415	LSC Transportation Consultants, Inc	October 2, 2017
Branding Iron at Sterling Ranch Filing No. 1 and Homestead at Sterling Ranch Filing No. 1 Transportation	SF1724 SF1725	LSC Transportation Consultants, Inc	December 19, 2017
Sterling Ranch Filing No. 2 Transportation Memorandum	SF1820	LSC Transportation Consultants, Inc	April 3, 2018
Sterling Ranch Phase 2 Preliminary Plan Traffic Impact Study	SP203	LSC Transportation Consultants, Inc	December 20, 2018
Homestead at Sterling Ranch Filing No. 2 Transportation Memorandum	SF194	LSC Transportation Consultants, Inc	March 3, 2020
Branding Iron at Sterling Ranch Filing No. 2 Transportation Memorandum	SF1918	LSC Transportation Consultants, Inc	May 6, 2020
Sterling Ranch Filing No. 2 and Phase 2 Traffic Impact Study	SF2015 SP191	LSC Transportation Consultants, Inc	June 23, 2021
Sterling Ranch Filing No. 3 Transportation Memorandum	SF2132	LSC Transportation Consultants, Inc	April 19, 2022
Homestead North Phase 1 Updated Transportation Memorandum	SP208	LSC Transportation Consultants, Inc	January 11, 2022
Homestead North Filing No. 1 Traffic Technical Memorandum	SF2213	LSC Transportation Consultants, Inc	February 2, 2022
Homestead North Filing No. 2 Traffic Technical Memorandum	SF2218	LSC Transportation Consultants, Inc	April 15, 2022
Homestead North Filing 3 Traffic Impact Study	SF2229	LSC Transportation Consultants, Inc	June 17, 2022
The Villages at Sterling Ranch East Preliminary Plan/Traffic Generation Analysis	PUDSP226	SM Rocha, LLC	July 1, 2022
Sterling Ranch Sketch Plan Amendment Master Traffic Impact Study	SKP224	LSC Transportation Consultants, Inc	March 17, 2023
Sterling Ranch East - Rezoning & Preliminary Plan Traffic Impact Study	SP-22-004, P-22-012, P-22-013	LSC Transportation Consultants, Inc	March 17, 2023[(2)]
Sterling Ranch East Filing Nos 1 & 2 Traffic Technical Memorandum	SF2235 SF2237	LSC Transportation Consultants, Inc	February 10, 2023
Sterling Ranch Filing No. 4 Transportation Memorandum	SF2230	LSC Transportation Consultants, Inc	February 21, 2023
Foursquare at Sterling Ranch East Transportation Memorandum	SF2236	LSC Transportation Consultants, Inc	April 20, 2023
Copper Chase at Sterling Ranch Traffic Impact Study	PUDSP222	LSC Transportation Consultants, Inc	April 28, 2023
Retreat at TimberRidge Reports			
The Retreat at TimberRidge Traffic Impact Analysis	PUD173	LSC Transportation Consultants, Inc	January 25, 2018
The Retreat at TimberRidge Preliminary Plan Traffic Technical Memorandum	SP182	LSC Transportation Consultants, Inc	June 29, 2018
The Retreat at TimberRidge Filing No. 1 Traffic Technical Memorandum	SF199	LSC Transportation Consultants, Inc	April 3, 2020
The Retreat at TimberRidge Filing No. 2 Updated Traffic Technical Memorandum	SF2121	LSC Transportation Consultants, Inc	October 4, 2021
The Retreat at TimberRidge Filing No. 3 Traffic Technical Memorandum	SF2241	LSC Transportation Consultants, Inc	July 1, 2022
Other Area Reports			
Wolf Ranch School Site Traffic Impact Study	OAR1720	Matrix Design Group, Inc.	5-May-17
The Ranch Sketch Plan Traffic Impact Analysis	SKP186	LSC Transportation Consultants, Inc	July 9, 2019
Lodge III Traffic Impact Study	OAR	LSC Transportation Consultants, Inc	December 13, 2019
Continental 613 Traffic Impact Study	OAR2177	LSC Transportation Consultants, Inc	July 16, 2021
Solace at Black Forest Traffic Impact and Access Analysis	OAR2134	LSC Transportation Consultants, Inc	August 13, 2021
Traffic Impact Study Addendum for Percheron	OAR2173	SM Rocha, LLC	October, 2021
Woodmen East Commercial Center Traffic Impact Analysis	OAR2191	LSC Transportation Consultants, Inc	December 8, 2021
Traffic Impact Study for Jaynes Property	SKP225	SM Rocha, LLC	May, 2022
Traffic Impact Study for Rhetoric Site	P2216	SM Rocha, LLC	June, 2022
Briargate-Stapleton Corridor Study (DRAFT)	briargate-stapleton.com	Wilson & Company	December 9, 2021

Notes:
(1) Follow the links listed below to obtain the most recent version of each listed study. To obtain a copy of the version of each study used in preparing this report please contact LSC Transportation Consultants, Inc.
(2) With minor revision 4/3/2023
Source: LSC Transportation Consultants, Inc. *May-23*

Appendix Table 2[1]

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Sterling Ranch

Roadway Segment Improvements

Segment ID[2] (See Figure 14 for map)	Improvement Description	Timing	Design ADT (vpd)	Projected 2042 ADT (vpd)	Responsibility
V1 northbound	Per the City of Colorado Springs, an outside paved shoulder will need to be added along the east side of Vollmer Road from Dry Needle Place up to the south end of segment V2 improvements.	With Sterling Ranch Filing No. 4 but potentially complete concurrently with the construction of the right-turn lane at Pioneer Landscape Center access for the Sterling Ranch Recycling Facility (PCD No. PPR2241)	5,500 (Directional northbound)	16,275	Sterling Ranch
V1 southbound			10,000 (Directional southbound)		
V1	Improve Vollmer Road between Dry Needle Place and the Sterling Ranch south boundary to a standard 4-Lane Urban Minor Arterial Cross Section (add a second northbound through lane and painted center median). [3]	The need driven by anticipated traffic from each development impacting this section of Vollmer Road.	20,000		Sterling Ranch, if necessary, prior to construction by others.
V2	Improve Vollmer Road between the Sterling Ranch south boundary to Lochwinnoch Lane/Sterling property boundary to a standard 4-Lane Urban Minor Arterial Cross Section. [3]	Short-Term Future (With Sterling Ranch Fil No. 2 Or Sterling Ranch Phase 2)	20,000 (Note: Existing Capacity 8,000[3])	17,475	Sterling Ranch
V3	**Short Term:** Improve Vollmer Road from Lochwinnoch Lane to Sterling Ranch boundary (northeast of Glider Loop) to provide 36' of pavement (existing pavement 1 approx. 23.38') and stripe for one through lane plus a 6' paved, striped outside shoulder in each direction. [3]	Short-Term Future (With Homestead North)	11,000 (Note: Existing Capacity 8,000)	17,380	Sterling Ranch
	Long Term: Improve Vollmer Road from Lochwinnoch Lane to Sterling Ranch boundary (northeast of Glider Loop) to a standard 4-Lane Urban Minor Arterial Cross Section. [3]	Long-Term Future	20,000		Sterling Ranch with potential County assistance with ROW acquisition - pursuant to the recent development agreement between Sterling Ranch and EPC.
V4	Improve Vollmer Road from Sterling Ranch boundary (northeast of Glider Loop) to Briargate Parkway to a standard 4-Lane Urban Minor Arterial Cross Section. [3]	**Short-Term Future-– May 2024**Updated 10/15/2022 - Sections V4, V5, V6 to be constructed by **May 2024** (prior note: With Homestead North Filing 1)	20,000	16,445	Sterling Ranch
V5	Improve Vollmer Road from Briargate Parkway to Jane Kirkham Drive to a standard 4-Lane Urban Minor Arterial Cross Section. [3]	**Short-Term Future– May 2024** Updated 10/15/2022 - Sections V4, V5, V6 to be constructed by **May 2024** (prior note: prior note: With Homestead North Filing 1)	20,000	11,690	Sterling Ranch
V6	Improve Vollmer Road from Jane Kirkham Drive to Sam Bass Drive to a standard 4-Lane Urban Minor Arterial Cross Section. [3]	**Short-Term Future– May 2024** Updated 10/15/2022 - Sections V4, V5, V6 to be constructed by **May 2024** (prior note: prior note: With Homestead North Filing 2)	20,000	11,425	Sterling Ranch
V7	Improve Vollmer Road between Sam Bass Drive and Poco Road to a 4-lane Urban Minor Arterial but with necessary lane transitions, redirect tapers, etc. south of Poco to adequately transition between the 4-Lane Urban Minor Arterial Cross Section and the 2-Lane Rural Arterial Cross Section north of Poco Road.	**Short-Term Future – May 2024** Updated 10/15/2022 - Sections V4, V5, V6 to be constructed by **May 2024** (prior note: With Homestead North Filing 3)	20,000	10,030	Sterling Ranch
V8	Improve Vollmer Road from Poco Road to Shoup Road to a Rural 2-Lane Arterial Cross Section. [3]	Long-Term Future	10,000	11,790	El Paso County Project ID U-12

Part 1/2 of this table (see Part 2 on next page)

Notes:

(1) Source: This Appendix Table 2 is a copy of Table 6 from the Sterling Ranch East Phase 1 Rezoning and Preliminary Plan TIS, March 17, 2023 (with minor revisions April 3, 2023) with LSC notes regarding this Copper Chase project. Improvements needed prior to Copper Chase at Sterling Ranch have been highlighted in green.

(2) See Figure 14

(3) Adequate transition/redirect tapers would be needed between the various cross sections on Vollmer Road. Based on the criteria contained in Table 2-29 of the *El Paso Engineering Criteria Manual*, an appropriate taper ratio for a roadway with a design speed of 40 miles per hour is 20:1

(4) Source: Table 20 *Road Impact Fee Study Updated* November 16, 2016

Source: LSC Transportation Consultants, Inc. (April 26, 2023)

Appendix Table 2[1]

(Page 2 of 2)

Sterling Ranch

Roadway Segment Improvements

Segment ID[2] (See Figure 14 for map)	Improvement Description	Timing	Design ADT (vpd)	Projected 2042 ADT (vpd)	Responsibility
SR1	Construct Sterling Ranch Road as an Urban Non-Residential Collector from Marksheffel Road to Dines Boulevard.	Short Term - with Sterling Ranch Fil No. 2	20,000	14,840	Sterling Ranch
SR2	Construct Sterling Ranch Road as an Urban Non-Residential Collector from Dines Boulevard to Briargate Parkway.	Short-Term	20,000	10,275	Sterling Ranch
SR3	Construct Sterling Ranch Road as an Urban Collector from Briargate Parkway to Vancouver Street.	Short Term	10,000	9,300	Sterling Ranch
SR4	Construct Sterling Ranch Road from Vancouver Street north to Arroya (or ultimate north terminus).	Long-Term Future	10,000	4,260	Sterling Ranch
M1	Construct Marksheffel Road as an Urban Principal Arterial to City of Colorado Springs standards in 107' of right-of-way between Vollmer Road and Sterling Ranch Road.	Updated 10/15/2022: to be completed **by the end of 2022** (prior note: With Sterling Ranch Fil No. 2	40,000	23,370	Sterling Ranch
M2	Construct Marksheffel Road as an Urban Principal Arterial to City of Colorado Springs standards in 107' of right-of-way between Sterling Ranch Road and the south boundary of the Sterling Ranch Master Plan Area. **10/16/2022 NOTE: With the completion of M2 in 2023, the connection between Vollmer and Woodmen Road (via M3) will be completed.**	Short Term Updated 10/15/2022: to be completed **in 2023** (prior note: With Sterling Ranch Phase 2)	40,000	29,600	Sterling Ranch
M3	Construct Marksheffel Road between the south boundary of the Sterling Ranch Master Plan Area and Woodmen Road. (Note this segment is located within the City of Colorado Springs). **10/16/2022 NOTE: With the completion of M2 in 2023, the connection between Vollmer and Woodmen Road (via M3) will be completed.**	Updated 10/15/2022**: <u>Completed</u>** (by Others)	40,000	24,525	Others (Completed)
M4	Construct Marksheffel Road between Black Forest Road and Vollmer Road.	Long-Term Future	40,000	27,910	Others
B1	Construct the south half section of Briargate Pkwy (4-Lane Principal Arterial) between Vollmer Road and Wheatland Drive **[now full section by 2023]**.	Short-Term Future Updated 10/15/2022: **Full section** to be completed **in 2023** with Homestead at Sterling Ranch Filing No. 1 (prior note: With Homestead at Sterling Ranch Fil 2)	20,000	24,745	Sterling Ranch
	Construct the north half section of Briargate Pkwy (4-Lane Principal Arterial) between Vollmer Road and Wheatland Drive **[now full section by 2023]**.	Short-Term Future Updated 10/15/2022: **Full section** to be completed **in 2023** with Homestead at Sterling Ranch Filing No. 1 (prior note: Long-Term Future)	40,000		Sterling Ranch
B2	Construct Briargate Pkwy **(full section)** as a 4-Lane Principal Arterial between Wheatland Dr and Sterling Ranch Road.	Short-Term Future Updated 10/15/2022: **Full section** to be completed **in 2023 or Spring 2024** (prior note: Long-Term Future)	40,000	26,375	Sterling Ranch
B3	Construct Briargate Pkwy as a 4-Lane Principal Arterial between Sterling Ranch Road and Banning Lewis Parkway.	Intermediate Term	40,000	22.365	Sterling Ranch
B4	Construct Stapleton Road as a 4-Lane Principal Arterial between Banning Lewis Parkway and Meridian Road (including upgrade of existing rural two-lane segment between Towner and Meridian).	Long-Term Future	40,000	17,945	Others
B5	Construct Briargate Pkwy as a 4-Lane Principal Arterial between Black Forest Road and Vollmer Road.	Long-Term Future	40,000	24,340	Others; PPRTA A List Project
BL1	Construct Banning Lewis Parkway as a 4-Lane Principal Arterial between the south Sterling Ranch boundary and Briargate Pkwy.	Long-Term Future	40,000	20,320	Financial assurances for half-section, Sterling Ranch half-section or full-section w/ cost recovery
BL2	Construct Banning Lewis Parkway as a 4-Lane Principal Arterial between Woodmen Road and the south Sterling Ranch boundary. (Note this segment will be located within the City of Colorado Springs)	Long-Term Future	40,000	28,480	Others
W1	Widen Woodmen Road from 4-lane to 6-lane section from Powers Boulevard to US 24.	Long-Term Future	72,000	66,690	PPRTA A-List Project; City of Colorado Springs ConnectCOS Index No.476
B1	Widen Black Forest Road between Woodmen Road to just north of Research Road to two northbound and southbound through lanes.	Black Forest Widening Project	40,000	28,420	City of Colorado Springs
B2	Widen Black Forest Road from just north of Research Road to Briargate Parkway.	Long-Term Future	40,000	25,145	Others/City of Colorado Springs
B3	Widen Black Forest Rd from Briargate Pkwy to Old Ranch Rd as a 4-lane Principal Arterial with bike and pedestrian facilities.	Long-Term Future	40,000	19,135	PPRTA B List Project ConnectCOS Index No. 479

Part 2/2 of this table

Notes:

(1) Source: This Appendix Table 2 is a copy of Table 6 from the Sterling Ranch East Phase 1 Rezoning and Preliminary Plan TIS, March 17, 2023 (with minor revisions April 3, 2023) with LSC notes regarding this Copper Chase project. Improvements needed prior to Copper Chase at Sterling Ranch have been highlighted in green.

(2) See Figure 14

Source: LSC Transportation Consultants, Inc. (April 26, 2023)

WATER RESOURCES REPORT –STERLING RANCH FILING 5 PUD AND PRELIMINARY PLAN

TOPICAL REPORT RSI-3232 B

PREPARED BY
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PREPARED FOR
Falcon Area Water and Wastewater Authority

APRIL 2023

Project Number W0242.22001

JDS-HYDRO CONSULTANTS, INC.
A Division of RESPEC Company, LLC

RESPEC

EXECUTIVE SUMMARY

This report is a submittal for Sterling Ranch Filing No 5 PUD and Preliminary Plan, also known as parcel 16 in the Sterling Ranch overall planning map. The land is to be provided central water and sewer services through the Falcon Area Water and Wastewater Authority (FAWWA), which will become the overall service entity for, not only Sterling Ranch, but also the Retreat and the future Ranch.

It is expected that an urban residential home in Sterling Ranch will require an average of 0.353 annual acre-feet, which is the adopted user characteristic for FAWWA. This is consistent with historic needs for nearby developments. Note that for the very small high-density lots, FAWWA has adopted an SFE equivalency ratio to account for substantially reduced water needs, although this is partially offset by estimation of common area irrigation needs.

Sterling Ranch Filing 5 PUD and Preliminary Plan includes 72 lots which fall into high-density development ratios for small lots, and roughly 0.93 acres of irrigated landscaping. **The resulting water demand is 24.26 acre-feet.**

Appendix F is an accounting of active water commitments, which total 900.76 acre-feet including all subdivisions committed through March 31, 2023.

This leaves a net excess of currently available water of 1029.40 $AF_{300\ year}$ and therefore there is more than sufficient water supply to meet the needs of Sterling Ranch Filing 5 PUD and Preliminary Plan on the 300-year basis.

TABLE OF CONTENTS

1.0 INTRODUCTION

The purpose of this study is to provide a preliminary outline of the water resources and wastewater needs that would be necessary for the Sterling Ranch Filing 5 PUD and Preliminary Plan development.

1.1 NEW DEVELOPMENT DESCRIPTION

The Sterling Ranch Filing 5 PUD and Preliminary Plan development is located east of Vollmer Road and north of Woodmen Road. This 11.66 acre area was formerly platted as Tract B of Branding Iron at Sterling Ranch Filing No 2. The previous plat use was intended to be for an elementary school which was moved to another location within Sterling Ranch. Since the water for Branding Iron at Sterling Ranch Filing No 2 was formally dedicated, we moved the dedicated water with the school and are dedicating new water for this subdivision. This way the water accounting will remain correct.

Appendix A contains the *Overall Service Area Map* for FAWWA, which includes SRMD.

Appendix B contains the proposed Sterling Ranch Filing 5 PUD and Preliminary Plan

2.0 PROJECTION OF WATER NEEDS

2.1 ANALYSIS OF WATER NEEDS

It is expected that the residential lots on central water will be developed with single-family housing with anticipated turf grass landscaping.

For the last five years, there has been a trend in land use that provides for much smaller lots and much denser development in certain areas. Lots smaller than 7,000 square feet are anticipated in certain areas. This is resulting in much lower water needs for these types of developments. The standard SFE adopted in Sterling Ranch has been 0.353 annual acre-feet. However, this is for the formerly typical household anticipating 1500 square feet or more of landscaping. In order to adjust for such increases in density, we are adopting a scaled down equivalency to meet the changes in lot sizes. For instance, lot areas less than 3500 sf have reduced water use that roughly is equivalent to apartments or townhomes where water use is indoor only.

Based on data from other areas, we have established a SFE equivalency factor scale as follows for these smaller lot sizes;

Table 1. SFE Equivalency for High Density Lots

Lot Size	SFE Ratio	Effective Annual Demand
Lots < 2000 SF	0.65	0.23
Lots < 3500 SF	0.75	0.265

Lots < 7000 SF	0.90	0.318
Lots > 7000 SF	1.0	0.353

Sterling Ranch Filing 5 Preliminary Plan/PUD has irrigated areas within the common areas or tracts that total roughly 0.93 acres. The landscaping plan specifies 40,522 SF of active or permanent irrigated landscaping.

Using the above criteria, there are 60 lots in the <7000 SF category and 12 lots in the <3500 SF category. The expected water demands are shown in Table 2 following:

Table 2. Projected Water Demands for **Sterling Ranch East Preliminary Plan 2**

# of Units	Land Use	Water Use Per Unit (AF/Unit)	Annual Demand (AF)	Average Daily Flow (ADF) (GPD)	Maximum Daily Flow (MDF) (@2.45 x ADF) (GPD)	Peak-Hour Flow (@ 1.5 x MDF) (GPM)
0	Residential < 2000 SF	0.23	0	0	0	0
12	Residential < 3500 SF	0.265	3.18	2,839	6,955	7
60	Residential < 7000 SF	0.318	19.08	17,033	41,732	43
0	Residential > 7000 SF	0.353	0	0	0	0
0.93	Acres-Active Net Irrigation	2.5	2.326	2,076	5,086	5
Total			**24.59**	**21,949**	**53,774**	**56**

The total annual demand is 24.59 AF.

3.0 WATER RIGHTS AND SYSTEM FACILITIES

3.1 WATER RIGHTS

Water rights adjudications have been decreed by the State of Colorado, Water Division 2 District Court, Water Division 1 District Court, and the Colorado Groundwater Commission. The comprehensive rights for the FAWWA service include both decrees and determinations. Local groundwater rights are associated with the service area components, Sterling, and the Retreat. Each of these sites has existing decrees and/or determinations outlining the rights associated with the development lands.

The most recent water rights added to the Sterling Ranch Inventory are three acquisitions noted in Table 3. Both the water decrees and determinations are included in **Appendix C** as well as the deeds for the water.

The three acquisitions are;

- McCune BD-1689, BD-1690, BD-1691 391.33 acre-feet $_{300\ year}$
- Bar-X Ranch 85CW-445 and 93 CW-018 592.78 acre-feet $_{300\ year}$
- Shamrock West 85 CW 131 220.10 acre-feet $_{300\ year}$

Table 3 on the following page details all of the water rights currently available for the FAWWA service area which now total 1930.16 acre-feet $_{300\ year}$

Update March 31, 2023

Table 3
Falcon Area Water and Wastewater Authority
Comprehensive Water Supply Inventory
Current Legal Supply

Land Formation/Aquifer	Reference Finding/ Determination/ Decree	Tributary Status	Volume	Annual Allocation 100 Year	Annual Allocation 300 Year	Reference Deed	Notes	Saturated Sand Thickness	Specific Yield
			Acre-Feet	A-F/Year	A-F/Year				
On-Site Sterling Water Legal Sources									
Laramie Fox Hills	86-CW-19	NT	53,900	539.00	179.67	FAWWA Assignment from SR Water	Under 1410 acres	255	15%
	08CW113	NT	40	0.40	0.13		Under 41.44 acres, reduced to 1.44 acres		
Arapahoe	86-CW-18	NT	57500	575.00	191.67		Under 1410 acres	240	17%
Laramie Fox Hills	91 CW 35	NT	3623	36.00	12.00	Quit Claim	Raygor Water	183	15%
Arapahoe	91 CW 35	NT	4936	49.00	16.33	Quit Claim	Raygor Water	220	15%
					399.80				
On-Site Augmented Sterling Water Legal Sources									
Laramie Fox Hills	20CW 3059	NT	2780	27.80	9.27	FAWWA Assignment from SR Water	97.54 acres SR Quarry (Note 5)	190	
Arapahoe	20CW 3059	NNT	4320	43.20	14.40		97.54 acres SR Quarry (Note 5)	260.5	
Denver	20CW 3059	NNT	4895	48.95	16.32		97.54 acres SR Quarry (Note 5)	295.2	
Denver	08CW113 Aug 20CW 3059	NNT	72893	728.93	242.98		Sterling Ranch 1410 acres		
Arapahoe	08CW113 Aug 20CW 3059	NNT	60	0.60	0.20		Sterling Ranch 41.44 reduced to 1.44 acres		
					283.16				
Off site Bar-X Ground Water Sources (Note 4)									
Laramie Fox Hills	93-CW-018 85 CW 445	NT				Special Warranty Deed Bar-X Shamrock West	All water already Sold (427 -100 yr)	200	15%
Arapahoe	93-CW-018 85 CW 445	NT	74250	742.50	247.50		Shamrock/Bar-x Rights	260	17%
Denver	93-CW-018 85 CW 445	NT	119900	1199.00	399.67		Shamrock/Bar-x Rights	435	17%
		NT	-16317	-163.17	-54.39		Net Set Aside for Sterling Ranch Post Pumping Depletions (20 CW 3059)		
Dawson	93-CW-018	NNT	128800	1288.00	0.00		Need Augmentation Plan	490	20%
Total Net Supply Bar-X (without augmentation)					**592.78**				
Shamrock West Ground Water Sources									
Dawson	85 CW131	NNT	49,800	498	0.00	Special Warranty Deed Bar-X Shamrock West	Needs Augmentation		
Denver NNT	85 CW131	NNT	105,700	1057	0.00		Needs Augmentation		
Denver NT	85 CW131	NT	18,700	187	62.33				
Arapahoe NNT	85 CW131	NNT	2,500	25	0.00		Needs Augmentation		
Arapahoe NT	85 CW131	NT	47,400	474	158.00				
Total Additional Contingent Supply (without augmentation)				661.00	**220.3**				
Off site McCune Ground Water Sources (Note 5)									
Laramie Fox Hills	1689-BD	NT	26,300	263.00	87.67	Special Warranty Deed McCune	900.52 acres		
Arapahoe	1690-BD	NT	39800	398.00	132.67		900.52 acres		
Denver	1691-BD	NT	51300	513.00	171.00		900.52 acres 1500 AF Retained		
Total Net Supply McCune (without augmentation)					**391.33**				
On-Site Retreat Water Legal Sources (Note 1)									
Laramie Fox Hills	17CW3002	NT	6,440				Under 225.97 acres	190	15%
in title)		NT	-612						
LFH (Relinquishment)	18CW3002	NT	-2,796				PPD Augmenting 29 wells		
Arapahoe	17CW3002	NT	9,796	97.96	32.65		Under 225.97 acres	255	17%
Legal Supply: Phase 3, Phase 4 (excluding Lots 39-41) and Phase 6			12,828	128.28	**42.76**				
Augmentation (Dawson NNT)	18CW3002	Aug	2,796	27.96	9.32	29 Single Family Wells (Phase 2 (excluding Lots 11-12), Lots 39, 40 & 41 of Phase 4, & 5)	Replace a min of 4% of pumping		
Legal Supply: Phase 2 (excluding Lots 11-12), Lots 39-41 of Phase 4,					9.32				
Augmentation (Dawson NNT)	18CW3008	Aug	1567.5	15.68	5.23		Replace actual depletions		
Legal Supply Phase 1					5.25	20 Single Family Wells (Phase 1)			
Currently Available Off-Site Ground Water Legal Sources									
Augmentation (Dawson NNT)	18CW3008	Aug	240.0	2.40	0.80	(Phase 2 - Lots 11 &12)	Replace a min of 34% of pumping		
Legal Supply Lots 11 & 12 (Phase 2)			240.0	2.4	0.8				

Note 1. The water listed in the shaded area will be used to serve single family wells and is not included in the Total Available for the Central System

Note 2. In February, 2022: removed the existing Bar-X holdings from the supply sheet as the LFH water is dedicated to post-pumping depletions for Augmentation Case 20 CW 3059 and added the water yield from Case 20 CW 3059

Total Current 300-Year Water Supply (AF)	**1930.16**	**Acre-Feet :Legal Water Supply For Falcon Area Water and Wastewater Authority Central System**

3.2 ADEQUACY OF WATER RIGHTS CURRENT SUPPLY

The current water rights inventory by area is as follows:

/	Sterling original on-site non-tributary (NT) water rights		399.80 $AF_{300\ year}$
/	02 CW 3059		283.16 $AF_{300\ year}$
/	Retreat at Timber Ridge on-site rights –		42.76 $AF_{300\ year}$
/	McCune	BD-1689, BD-1690, BD-1691	391.33 acre-feet $_{300\ year}$
/	Bar-X Ranch	85CW-445 and 93 CW-018	592.78 acre-feet $_{300\ year}$
/	Shamrock West	85 CW 131	220.10 acre-feet $_{300\ year}$

Sterling-owned and currently available on-site NT and adjudicated not non-tributary (NNT) water totals are 1930.16 $AF_{300\ year}$, which would be adequate supply to meet the needs of 5,468 SFE.

As of this report March 31, 2023, the total water commitment within SRMD requires 900.76 $AF_{300\ year}$. See Appendix F – FAWWA Water Supply vs Current Water Commitments.

This leaves a net excess of currently available water of 1029.40 $AF_{300\ year}$ and therefore there is more than sufficient water supply to meet the needs of Sterling Ranch East Phase One on the 300-year basis.

3.3 MASTER PLANNING AND LONG-TERM AND FUTURE SOURCES OF SUPPLY

The FAWWA water system has only been in operation for three years, so little-to-no usable historic information would be reliable for unique, long-term planning. However, substantial nearby data from the Falcon area is available for use. As of the end of 2022, the system had approximately only 350 active users. Therefore, initial projections have been based on area-wide water user characteristics and a linear buildout rate. This rate is considered to be an average annual rate that might be reasonably maintainable over a 10-year period. The average growth rate is projected as 180 units added per year.

- **2040 Scenario:** Based on the above factors, the FAWWA system might conservatively anticipate serving 3,710 SFEs in the year 2040. This number is a service area projection and includes the Retreat and The Ranch, as well as the main Sterling Ranch residents. This would require no additional water.
- **2060 Scenario:** Based on the same factors, the Sterling system might be expected to serve 7,310 SFEs within its expanded service area, which includes the Retreat and The Ranch. This would be substantially greater than the actual Sterling Ranch. The annual acre-foot requirement might be 679 annual AF, but supply would include water from The Ranch which has not yet been added to inventory.

In addition to adding off-site sources, potential, additional supplies include renewable resources and/or regional projects bringing new water to the area

Long-Term Planning: Future water supply has already been contracted for and plans for implementation are underway. The first project recently completed provides augmentation for certain on-site NNT water, so that that water may be used in existing and expanded well fields on-site.

1. **Regionalization Opportunities:** FAWWA's main supply source is centralized at a point that both Cherokee Metropolitan District and Woodmen Hills Metropolitan District have adjacent major storage and delivery facilities. There are currently no arrangements in place to make connections, but in the future, SRMD may seek to have interconnections and possibly share supply.

   The second element is a much broader regionalization: conducting cooperative actions with Colorado Springs Utilities (CSU), which SRMD has been open to. CSU is potentially also open to shared physical facility utilization, which would enable Sterling to expand its scope in seeking water rights. While it is not expected that Sterling will provide actual water, the access to facilities opens greater doors for SRMD.

2. **Indirect, Reuse, Lawn Irrigation Return Flows (LIRF) Credits, Aquifer Storage/Recharge, and Direct Reuse:** Regarding return flows, initial development is being planned around sourcing available physical supplies. These supplies are all fully-consumable and ultimately result in potential return-flow capabilities. Since SRMD wastewater is discharged to the Meridian system, which in turn has the potential to convert some reusable flows to available physical supplies, those options will be available and considered by Sterling. With regard to LIRF credits, Sterling has already initiated a case that will make augmentation use of its potential LIRF credits.

3.4 SYSTEM INTERCONNECTS

FAWWA currently has no system interconnections. However, as discussed previously, FAWWA's main supply source is centralized at a point that both Cherokee Metropolitan District and Woodmen Hills Metropolitan District have adjacent major storage and delivery facilities. It is possible that future agreements could be made.

3.5 SOURCE OF PHYSICAL SUPPLY

Municipal water demand would be met using primarily Arapahoe and Laramie-Fox Hills formation wells in the SRMD area. The first well site will be drilled with an Arapahoe Well (A-1) and Laramie-Fox Hills Well (LFH-1); well site #1 includes both an Arapahoe and a Laramie-Fox Hills well. Additional permits will be obtained as needed to ultimately continue to add to the system as needed. Existing well permits are included in **Appendix D**.

FAWWA has begun the process of filing to drill the second set of wells on the Retreat site which will possibly be needed in 2024.

Off-site water to the north of the SRMD service area is generally in the Denver and Arapahoe formations.

3.6 WATER QUALITY AND TREATMENT

Appendix E contains the water quality reports for the initial wells drilled at Sterling Ranch. The quality is generally consistent with Denver Basin water typically encountered in the Falcon area. The quality of water in these aquifers in this area has typically been suitable for potable use with the addition of iron and manganese treatment.

3.7 WATER STORAGE, DISTRIBUTION, AND TRANSMISSION LINES

An initial 1.0-million-gallon tank has already been constructed at the SRMD site.

For the purpose of fire protection, we recommend eight-inch lines throughout the residential subdivision. The lines should be looped wherever the street layout allows. A transmission line of 24-inches in diameter has been extended south-southwesterly along one of the major roadways from the storage tank into Phase One of the development.

3.8 PUMPING FOR SERVICE PRESSURES

Ground elevations within the development service area range from approximately 6,970 feet to 7,320 feet. Adequate service pressures are generally considered 60 psi for residential service. The tank site is on the Sterling property at a base elevation of approximately 7,310 feet, which would be capable of supplying acceptable service pressures to ground elevations of approximately 7,190 feet. Initial development is anticipated to be at elevations below 7,190 feet, so the tank site will be able to provide adequate pressure.

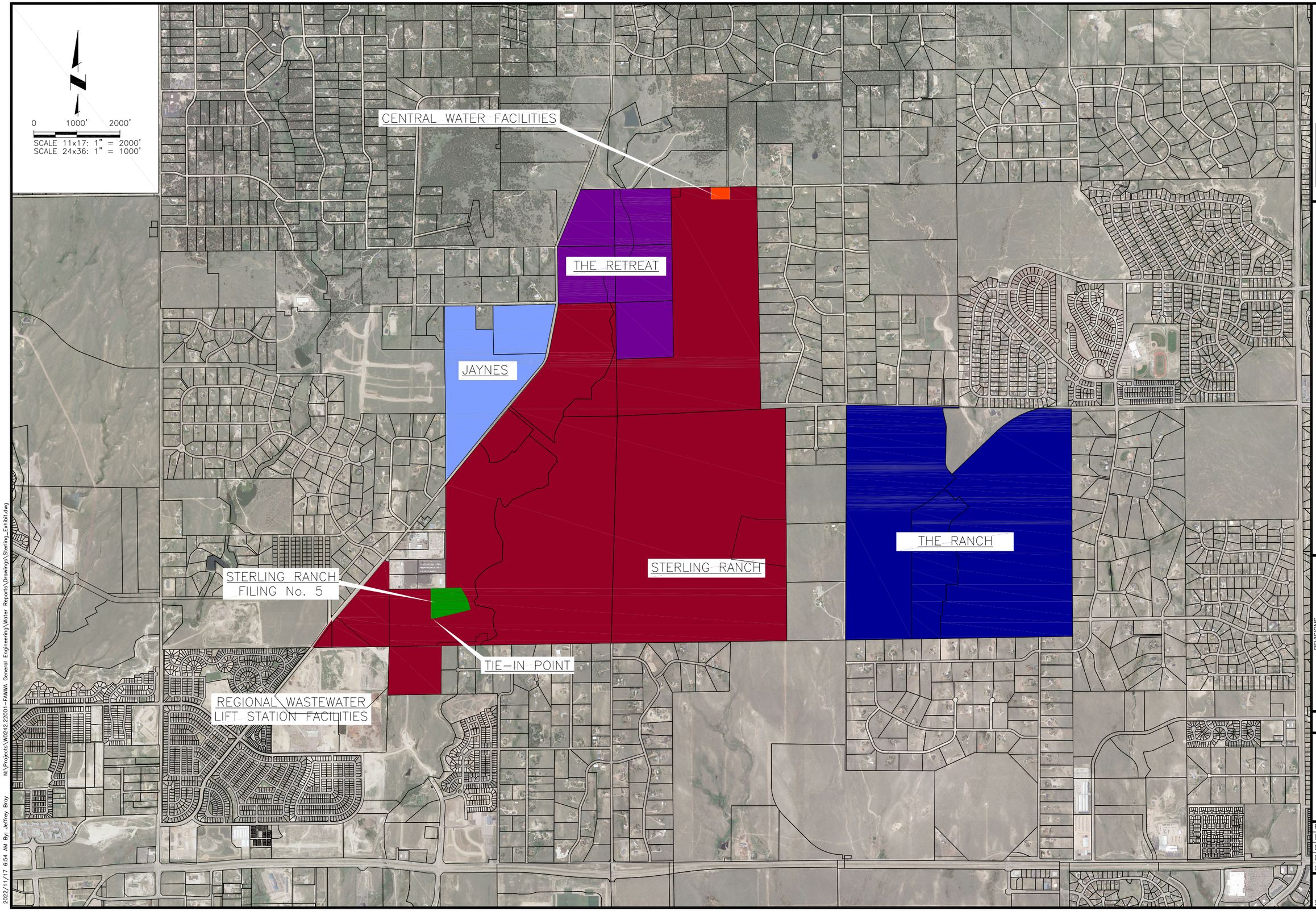
Development construction has progressed such that the pressure system is likely to be needed sometime in 2023, FAWWA is currently constructing the pressure pump station so that it will be ready when needed next year.

APPENDIX A

WATER SERVICE AREAS

JDS-HYDRO
CONSULTANTS, INC.
A Division of RESPEC Company, LLC

RESPEC



JDS-HYDRO a Division of RESPEC
5540 TECH CENTER DR., SUITE 100
COLORADO SPRINGS, COLORADO 80919
(719) 227-0072

APPENDIX A

WATER AND WASTEWATER AUTHORITY SERVICE AREA

FALCON AREA WATER AND WASTEWATER AUTHORITY

REVISIONS

NO.	DESCRIPTION	BY	APP.	DATE
1				
2				
3				
4				
5				
6				
7				

EXHIBIT

Project No.:	161.04
Date:	10/11/22
Design:	JPM
Drawn:	JLB
Check:	JPM

PLAN

SHEET 1 OF 1

2022/11/17 6:54 AM By: Jeffrey Bray N:\Projects\W0242.22001-FAWWA General Engineering\Water Reports\Drawings\Sterling_Exhibit.dwg

APPENDIX B

STERLING RANCH EAST PHASE ONE PRELIMINARY

JDS-HYDRO CONSULTANTS, INC.
A Division of RESPEC Company, LLC

RESPEC

STERLING RANCH FILING 5

TRACT B, BRANDING IRON AT STERLING RANCH FILING NO. 2 RECORDED UNDER RECEPTION NO. 220714654 IN THE RECORDS OF THE EL PASO COUNTY CLERK AND RECORDER

PUD/PRELIMINARY/DEVELOPMENT PLAN

P:\Classic2\Sterling Ranch Fil 5\Drawings\Planning\DP\SR Fil 5 PUD Preliminary Plan (Rev 1).dwg [SITE PLAN] 3/31/2023 8:54:14 AM Jennifer Shapin

NORTH

0 20 40 80

SCALE: 1" = 40'

N.E.S. Inc.
619 N. Cascade Avenue, Suite 200
Colorado Springs, CO 80903

Tel. 719.471.0073
Fax 719.471.0267

www.nescolorado.com

PLANNER / LANDSCAPE ARCHITECT

IN ASSOCIATION WITH

STERLING RANCH FILING 5

Development / PUD /Preliminary Plan

PROJECT ADDRESS

OTHER INFO

PROJECT INFO

DATE: 04/05/23
PROJECT MGR: A BARLOW
PREPARED BY: A LANGHANS

STAMP

ENTITLEMENT

ISSUE INFO

DATE:	BY:	DESCRIPTION:

ISSUE / REVISION

SITE PLAN

SHEET TITLE

SHEET NUMBER

2

2 OF 7

PLAN FILE #

APPENDIX C

WATER RIGHTS DECREES

JDS-HYDRO
CONSULTANTS, INC.
A Division of RESPEC Company, LLC

RESPEC

Appendix C

Listing of Decrees/Determinations/Deeds in Appendix

Decrees/Determinations	Deeds
08 CW 113	FAWWA Assignment
86 CW 18	FAWWA Assignment
86 CW 19	FAWWA Assignment
17 CW 3002	
18 CW 3002	
20 CW 3059	FAWWA Assignment
91 CW 35	Classic SRJ Deed
93 CW 018	Special Warranty Deed Bar-X Shamrock West
85 CW 445	Special Warranty Deed Bar-X Shamrock West
85 CW 131	Special Warranty Deed Bar-X Shamrock West
1689 BD	Special Warranty Deed McCune
1690 BD	Special Warranty Deed McCune
1691 BD	Special Warranty Deed McCune

ASSIGNMENT AND ASSUMPTION

THIS ASSIGNMENT AND ASSUMPTION (the "**Assignment**") is entered into on July 19, 2022, effective as of February 1, 2022, by and between SR WATER, LLC, a Colorado limited liability company (the "Assignor"), and FALCON AREA WATER AND WASTEWATER AUTHORITY, a public corporation and political subdivision of the State of Colorado (the "Assignee"), with reference to the facts set forth below.

RECITALS

A. Sterling Ranch Metropolitan District No. 1, Sterling Ranch Metropolitan District No. 2, and Sterling Ranch Metropolitan District No. 3 (collectively, the "Districts") and the Assignee have been cooperatively transitioning operations of water and sanitary sewer services since February 1, 2022.

B. The Assignor has entered into various contracts and agreements relating to water and sanitary sewer services that are or will be provided by the Authority, which contracts and agreements are identified in **Exhibit A**, attached hereto and incorporated herein (the "Agreements").

C. The Assignor and Assignee desire to contract with each other for Assignor to assign all of its rights, responsibilities, Agreements, accounts receivable, payment obligations and general obligations related to the provision of water and sanitary services by the Districts and/or the Authority, as identified in Exhibit A, to Assignee and Assignee desires to accept such assignment.

D. Assignee finds that it is in the best interest of its constituents to enter into this Assignment.

NOW, THEREFORE, in consideration of good and valuable consideration, the receipt and adequacy of which are hereby acknowledged, Assignor and Assignee agree as follows:

AGREEMENT

1. **Assignment**. Assignor hereby conveys, transfers and assigns to Assignee all of its rights, responsibilities, Agreements, accounts receivable, payment obligations and general obligations to the Authority related to the provision of water and sanitary sewer service by the Districts and/or the Authority, as identified in Exhibit A.

2. **Assumption**. Assignee hereby accepts the assignment of the Agreements and assumes and covenants and shall perform and fulfill all of the obligations, terms and conditions of Assignor occurring on and after the effective date of this Assignment. Assignee also agrees to, as applicable, assume and accept all rights, responsibilities, accounts receivable, payment obligations and general obligations of Assignor, as identified in Exhibit A.

3. **Effect of Assignment**. Except as amended herein the Agreements remain in full force and effect.

4. **Governing Law**. This Assignment shall be governed by and construed in accordance with the laws of the State of Colorado, without giving effect to the principles of conflicts of laws of that state.

5. **Further Assurances**. Each party to this Assignment shall execute all instruments and documents and take all actions as may be reasonably required to effectuate this Assignment.

6. **Prevailing Party**. If a party hereto brings any action or suit against the other party hereto by reason of any breach of any of the covenants, conditions, agreements or provisions on the part of the other party arising out of this Assignment, then the prevailing party shall have and recover from the other party all costs and expenses of the action or suit including reasonable attorney's fees.

7. **Counterparts/Facsimile**. Any number of counterparts of this Assignment may be executed. Each counterpart will be deemed to be an original instrument and all counterparts taken together will constitute one agreement. Executed copies of this Assignment may be delivered by facsimile, PDF, or email and, upon receipt, shall be deemed originals and binding upon the parties hereto. Without limiting or otherwise affecting the validity of executed copies hereof that have been delivered by facsimile, PDF, or email, the parties will use their commercially reasonable efforts to deliver originals as promptly as possible after execution.

8. **Certain Interpretive Matters**. The headings contained in this Assignment are provided for convenience only and will not affect its construction or interpretation.

[REST OF PAGE LEFT BLANK INTENTIONALLY]

The parties hereto have executed this Assignment as of the day and year first set forth above.

ASSIGNOR:

SR WATER, LLC, a Colorado limited liability company

By: _____

Name: James F. Morley

Its: Manager

ASSIGNEE:

FALCON AREA WATER AND WASTERWATER AUTHORITY, a public corporation and political subdivision of the State of Colorado

_____

President

ATTEST:

_____

Secretary

EXHIBIT A

(To be assigned by SR WATER, LLC to Falcon Area Water and Wastewater Authority)

1. All improvements identified in the attached RESPEC engineering reports.
2. Purchase Contract between McCune Ranch, LLC and SR Water, LLC, attached hereto.
3. Contract for the Purchase and Sale of Water Rights between Shamrock Water, LLC and SR Water, LLC, attached hereto.

OVERALL WATER DEVELOPMENT MODEL

To: Doug Stimple
Classic Homes
2138 Flying Horse Club Drive
Colorado Springs, CO 80921

Falcon Area Water and Wastewater Authority
C/O Russ Dykstra
Spencer Fane LLP
1700 Lincoln Street, Suite 2000
Denver, CO 80203

cc: Project Central File W0242.22002 — Category A

From: John McGinn, P.E.
Principal Consultant
RESPEC
5540 Tech Center Drive, Suite 100
Colorado Springs, CO 80919

Date: July 19, 2022

Subject: Overall FAWWA (SR Water) Water System Planning

PURPOSE

The purpose of this report is to outline the phased development of the anticipated Falcon Area Water and Wastewater Authority Overall Water Delivery System (FAWWA). FAWWA is in the process of acquisition of SR Water so the term FAWWA and/or SR Water are used interchangeably here. The report contains the breakdown of phasing and development of treatment, source of supply and off-site delivery systems along with the anticipated costs. Figure 3 of this report is an outline of the costs and probably timing of these costs. Of particular note, is that early stages of infrastructure development costs cover the major backbone system associated with developing of more than 4,000 SFEs. With the initial Phase One of the Bar-X Delivery System, initial off-site well field, and the initial Central Water Treatment Plant, further infrastructure costs are incremental, simply building on the backbone system.

UNIT WATER NEEDS AND DEMAND

Water usage has been trending downward across the front range for nearly 20 years. This has been due to conservation awareness, inverted block rates for water, and increasingly smaller lot sizes. The trend is expected to continue downward at maybe a slower pace than in the last two decades, but increasing rate pressure and lot size are expected to continue the trend. If the trend is stable and downward, the capacity of systems proposed herein might be extended.

5540 TECH CENTER DRIVE
SUITE 100
COLORADO SPRINGS, CO 80919
719.227.0072

The use factors used here are current from nearby development in the Falcon area. Current factors for the Sterling area do not have adequate time or history to be considered representative. If/when the FAWWA service area has roughly 1,000 units and at least three accurate years of history, user characteristics should be established for FAWWA.

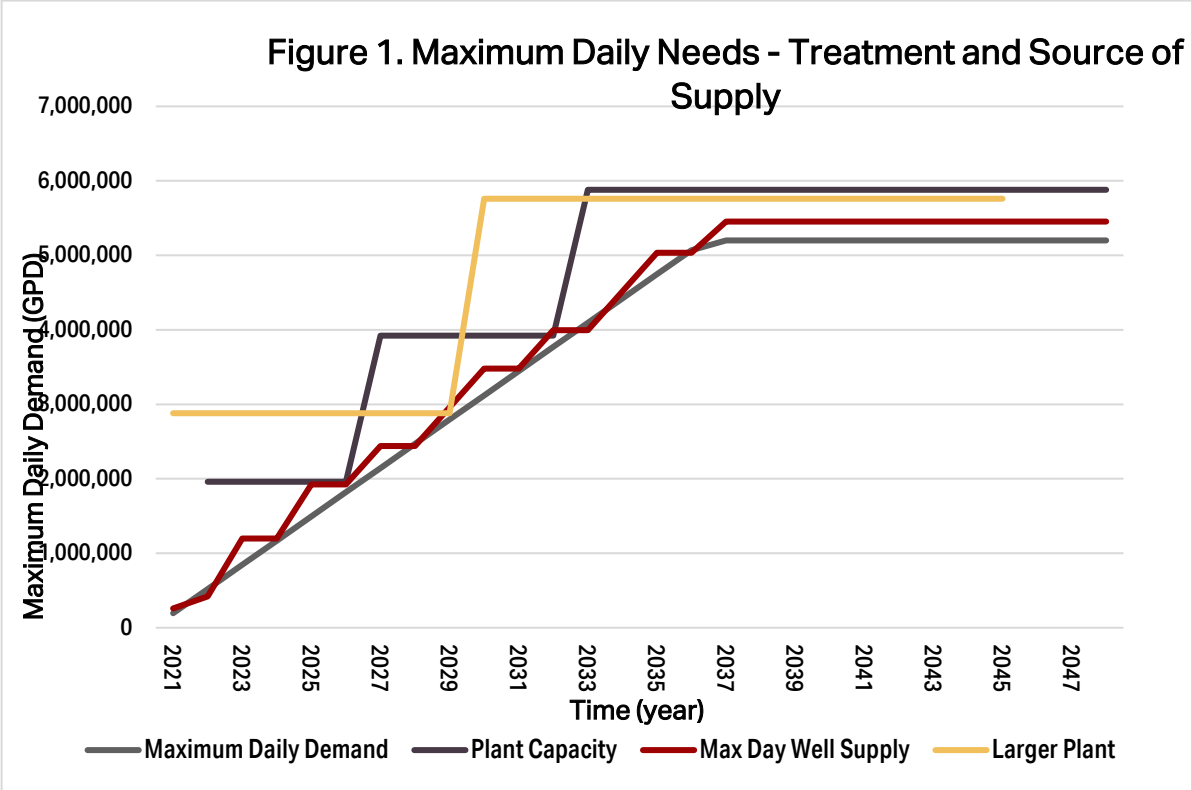
- Water Rights Supply – The planning factor established for the Sterling and surrounding area was established at 0.353 acre-feet per year based on similar historic use from Districts in the area. This allows for average daily flow plus a small reserve. This will be used for physical and legal supply calculations for internal and El Paso County planning. In May, the unit user characteristic was modified to account for high density lots that would require less water per unit. While the overall factor of 0.353 AF/SFE was maintained, the modification allows for lower use trends for very small lots. This is in response to a general trend in El Paso County to reduce lot size.
- Potable Water Demand Figures – With little history in the FAWWA system, we are using established historical numbers from the Falcon area:
  - Average Daily Flow Factor – 275 GPD/SFE
  - Maximum Daily Flow Factor – 650 GPD/SFE
  - Peak-Hour Demand Factor – 0.75 GPM/SFE

GROWTH NEEDS

It is estimated that ultimately as many as 8,000 SFEs may be supplied by the FAWWA system. This is an ultimate number which could take up to 30 years or more to develop. While slightly conservative, we are starting with a current user load of 300 units.

We developed a growth model to project when certain facilities might be needed at what time. While we expect a buildout rate over time to be roughly equivalent to 300 units/year, we are showing an aggressive approach of 500 units per year. Using a buildout rate of 500 SFE/year over the buildout period, does not affect the overall expenditures, it simply hastens the expenditures in later years. Because 2,600 additional SFEs might be achieved by roughly the year 2026. It should be noted that any change in growth rate doesn't much affect initial 3-5 year expenditures, but simply hastens the speed at which future facility development must occur. It is also our understanding that initial funding is based on an additional 4000 SFE, which would be associated with a Maximum Daily Need of 2.73 Million Gallons per Day, and an Average Daily Need of 1.16 Million Gallons per Day. The projected growth curve is projected based on projected Maximum Daily Water Needs. Maximum daily demands are the primary criteria necessary in sizing water treatment, raw water transmission lines, source of supply, and primary storage, and therefore it is key to sizing and timing central facilities.

Figure 1 below shows the projected maximum daily demand over the next 25 years assuming a long term buildout rate of 500 units/year. While this graph suggests a planned buildout in the year 2037, it is likely that "down-market-years" will yield buildout in more likely 2048; empty lots and a few other elements might extend actual buildout further, but this provides an aggressive planning scenario.



SOURCE OF SUPPLY

Source of Supply is defined as the rights and facilities needed to deliver un-treated water to the central water treatment site. In the case of FAWWA (SR Water) this is expected to consist of three elements;

- Water Rights
- Off Site Raw Water Delivery System
- On and Off Site Wells

WATER RIGHTS

FAWWA (SR Water) currently has 697 annual acre-feet $_{300\ year}$ of legally and physically available water rights supply. This supply will provide legal and physical supply for 1,975 developed SFEs which is roughly projected to occur by about the year 2027. It is very important to note that the actual water rights necessary to physically provide service to the FAWWA service area is based on the number of developed homes /SFEs that are requiring demand. This can be substantially different than that required in water holdings or legal supply due to the El Paso County 300-year rule. It is expected that FAWWA will find it necessary to have substantially greater legal supplies than that actually being used in current supply. This is because water is required to support planning, platting, and development processes in El Paso County.

From the anticipated growth curve above, it is obvious that FAWWA ultimately may be serving as many as 8000 SFE. In order to accommodate increased water rights needs, FAWWA (upon acquisition of SR Water) also has several contractual arrangements to purchase substantial additional rights. Those are the McCune water, Bar-X water, and Shamrock West water. A summary of those additional supplies is as follows;

- McCune Water 391.33 annual acre-feet $_{300\ year}$

- Bar-X Water 596.95 annual acre-feet $_{300\ year}$
- Shamrock West Water 220.33 annual acre-feet $_{300\ year}$

Some Bar-X water has already been purchased and is being used for augmentation for certain portions of the on-site water. The amount represented above only includes water not yet purchased. The total of all of these supplies will be 1,886 annual acre-feet $_{300\ year}$ which would serve roughly 5,343 SFEs, which represents a large majority of possible development, before needing to acquire additional sources of supply.

OFF-SITE RAW WATER DELIVERY SYSTEM

The water rights listed above are all off of the Sterling Ranch site. When needed, these water rights will require being physically transported from Hodgen Road southerly roughly 6 miles to Sterling Ranch. The pipeline length is closer to 8 miles. The pipeline has been called the Bar-X pipeline and has already been approved for development via the El Paso County 1041 planning process.

The Phase One of the Bar-X raw water pipeline is proposed to be extended from the central treatment site to the southwest corner of the McCune well field. The need for the initial Bar-X system may be triggered by having to be able to demonstrate physical access to McCune water. While possibly not needed for physical supply, the El Paso County 300-year rule may trigger this event as either the McCune or Bar-X water may be necessary to allow for continued planning of development.

The Bar-X pipeline would be further extended to the Bar-X well field when the first Bar-X well might be needed. This would be Phase Two pipeline. Phase Three of the pipeline can be further extended along Hodgen Road Westerly to Shamrock Ranch supplies. The 1041 anticipates the probable extension to the Shamrock West well-field, but this extension if/when needed is decades away. The Bar-X pipeline is proposed as a 24-inch pipeline to at least the southeast corner of the Bar-X well field. This pipeline would ultimately have the capacity to serve more than the 8000 SFE.

An equalizing/surge vessel is required at the high point of the Bar-X pipeline. This would be located in an area known as the Sanctuary. Depending on the final alignment of the pipeline, this tank requirement could allow for the existing un-used Sanctuary tank to be employed. The existing tank is 430,000 gallons and would operationally be superior to the alternative which would depend on a sub-surface facility with more complicated valving.

The raw water collection system from the corners of each of the major well-fields will be sized and constructed as needed to serve the anticipated well field layouts.

ON AND OFFSITE WELLS

The system currently has two wells on-site. A producing Arapahoe well and a drilled Laramie Fox Hills well, that is not yet in production. The LFH well has a water quality limitation, in that it must be used in conjunction with the Arapahoe well for management of Total Dissolved Solids. Nevertheless, it can produce substantial amounts of water over time. The next on-site well will be a Denver formation well which will physically access certain newly available augmented Not Non-tributary water

Well sites in the Sterling Ranch area are anticipated to include Denver, Arapahoe, and Laramie Fox Hills wells at each site developed.

Two more on-site well sites are planned within the next four years. These wells would be within the Sterling Ranch development area. A lead time of 18 months should be considered when adding a well site. Wells might also be needed specifically in order to access water rights.

Additionally, when extension of the Bar-X pipeline is started, additional off-site wells will be required. These northerly well sites are expected to only have Arapahoe and Denver wells, but the actual instantaneous yield of the northerly well sites is greater than that expected on-site in Sterling Ranch.

In the future, FAWWA will need to be adding a well site about every two to three years during system growth periods. The overall rate and trajectory of well drilling and addition is likely to be re-considered and modified over time, but a rough timeline might look as follows in Table 1:

Table 1, Well and Well Field Expansions Over Time

Year	Description
2022	Equip on-site Laramie-Fox Hills
2023	Drill Denver and additional on-site Arapahoe (Retreat area)
2025	Sterling On-Site Well Site #3 and 1st McCune Well
	Phase One Bar-X Pipeline
2030	Second McCune well site (Arapahoe and Denver)
2032	1st Bar X well and Phase Two Bar-X Pipeline
2035	2nd Bar-X Well Site

CENTRAL POTABLE WATER FACILITIES

The central potable facilities will be constructed at the existing central site and will consist of treatment and potable storage. Current treatment consists of only chlorination but needs to be improved in the near term for control of iron and manganese. Current storage includes a 1.0 MG concrete storage tank which should be sufficient for a significant amount of time.

TREATMENT

We are suggesting a central site layout that accommodates all anticipated future needs. Facilities would be phased in a manner that is cost-effective. All site and yard piping will be sized for ultimate future needs (8000 SFE) as it cannot be easily added to. Treatment housing will be sized for 4.0 MGD which anticipates roughly a 20-year period and nearly 4000 SFE. This approach is strongly suggested and is employed very often in similar situations. Changes in treatment regulation, water quality, and other external forces do not suggest planning for any greater period. Initial treatment equipment would be constructed for a 10-year outlook. When needed, the structure will easily accommodate a doubling of capacity to roughly 4.0 MGD at half the cost of the original plant. While subject to evaluation over time, we would project this to be about the year 2032/2033

If/when needed, the site is laid out such that a second facility can be added directly adjacent to the east. There is a significant potential that continued trends in water use and conservation may negate the need for a second facility.

POTABLE STORAGE

The existing tank will provide for about ten years' worth of growth. The long-term need is for about 4.0 MG of storage, so the second tank when needed is estimated to be about 3.0 MG. Depending on the trajectory of specific user characteristics, the second tank will likely be desired between 2032 and 2033. For very rough financial planning purposes, we place its need to occur simultaneously with the plant expansion.

In order to properly plan for land uses at the Central Site, Figure 2 is a layout that allows for phased expansion and defines the long-term land needs.

COST OF SOURCE OF SUPPLY AND CENTRAL FACILITIES

All costs presented herein, are in 2022 dollars. Financial models should anticipate increases in cost due to materials and installation inflation. Certain factors were normalized in estimating costs;

- Construction estimates are based on anticipated routing, location, and preliminary design consideration but not on final design. Cost estimating level of accuracy is Class V. A 5% Construction Contingency is added to each construction estimate.
- Two major infrastructure projects--Phase One of the Bar-X Delivery System and the initial Central Water Treatment Plant, are the two key components for long-term expansion of the FAWWA system and long-term development of Sterling Ranch. Additional future extensions of the Raw Water system, additional wells, and a treatment plant expansion are incremental expenses that are heavily supported by base improvements supported in early years by the bond funds.
- Well sites at either McCune, Bar-X or Shamrock West would include an Arapahoe and Denver well plus certain joint metering/electrical/SCADA systems. While there will be some variation in well depth and site layout from site to site, we have adopted a typical value for each well site as determined by our breakdown. Associated raw water collection lines will vary dramatically, so those were estimated separately for each well site.
- Soft Cost Estimates are based on a normalized value of 14% to account for permitting, surveying, soils, design, and construction related engineering costs. Soft costs are added to each construction element.
- The unit Bar-X pipeline cost was consulted with Kempton Inc., a local excavator.
- A possible timeline for expenditures is shown in Figure 3. Timing of each improvement assumes that 14% of the project cost will be expended each year with the remainder spent in the ensuing year. The exception is Phase One of the Bar-X Pipeline, which is separately estimated over three years.
- The initial costs for development of near-term infrastructure needs which would be supported by bond funds are estimated at $33.62 Million dollars in 2022 dollars.
- Because some of the biggest cost factors are built into the initial infrastructure, development of the ensuing 4000 units is far less in unitized costs in 2022 dollars than the initial infrastructure costs.

ATTACHMENTS

Figure 2 Central System Layout
Figure 3 Cost Timetable

ATTICUS LAND, LLC
(#5222000023)

EXISTING 12" TO TIMBER RIDGE

EXISTING ACCESS LOCATION

BAR-X PIPELINE

EXISTING 15 FT EASEMENT

90'

ELECTRIC SERVICE TO PUMP STATION

20'

PROPERTY LINE

ELECTRIC SERVICE TO PLANT

EXISTING 16" TANK OUTLET

EXISTING SRMD
1.0 MG TANK
84' DIA.
25' SWD
FF: 7304.0
OF: 7329.0

POSSIBLE FUTURE EXPANSION

EXISTING WHMD UTILITY PARCEL

EXISTING 3.0 MG
WOODMEN HILLS TANK
132FT DIA.
30FT SWD
FF: 7299.0
OF: 7329.0

PROPOSED TREATMENT FACILITY

EXISTING 8" TANK DRAIN

EXISTING 12" TANK INLET

EXISTING ARAPAHOE

FUTURE PROPOSED TANK
135' DIA.

EXISTING PIPING

EXISTING LARAMIE-FOX HILLS

POSSIBLE DENVER

EXISTING 30
WOODMEN HILLS METROPOLITAN
DISTRICT UTILITY EASEMENT

ADDITIONAL LANDS

LEGEND	
CHEROKEE METRO DISTRICT SERVICE	
WOODMEN HILLS METRO DISTRICT SERVICE	
EXISTING TREATED WATER	
FUTURE TREATED WATER	
EXISTING RAW WATER	
FUTURE TREATED WATER	
ELECTRIC SERVICE	
BACKWASH TANK LINES	
TANK DRAIN LINE	
WELL	

0' 20' 40'
SCALE 11x17: 1" = 40'
SCALE 24x36: 1" = 20'

NOTES:
1. AERIAL IMAGERY IS NOT ACCURATELY SCALED AND SHOULD BE UTILIZED FOR CONCEPTUAL PURPOSES ONLY (SOURCE: GOOGLE MAPS 2020).
2. PROJECT SITE OWNED BY STERLING RANCH METROPOLITAN DISTRICT (SRMD)
3. FUTURE SITE EFFORTS INCLUDE CONSTRUCTION OF SECOND SRMD FINISHED WATER STORAGE TANK, WATER TREATMENT FACILITIES, AND A SECOND BOOSTER PUMP STATION.
4. ACCESS ROAD WIDTH TO BE A MIN 20FT WIDE UNLESS OTHERWISE NOTED

JDS-HYDRO CONSULTANTS, INC.
5540 TECH CENTER DR., SUITE 100
COLORADO SPRINGS, COLORADO 80919
(719) 227-0072

FALCON AREA WATER & WASTEWATER AUTHORITY

CENTRAL FACILITY SITE PLAN

FIGURE 2

REVISIONS				
NO.	DESCRIPTION	BY	APP.	DATE
1				
2				
3				
4				
5				
6				
7				

EXHIBIT

Project No.: W0242.22002
Date: 02/09/22
Design: JPM
Drawn: SKG
Check: JPM

SHEET 1 OF 1

Figure 3 **Preliminary Cost Estimate**
Project: ***FAWWA Central Water Delivery System***
Owner: ***FAWWA***
Engineer: ***JDS-Hydro a Division of Respec***

Year	SFE (end of year)	AF * (end of year)	Source of Supply										Central Potable System						Total Cost (2022 dollars)	
			On-Site Well Facility (inc collection)	Cost	On-Site Well Facility (inc collection)	Cost	Main Bar-X Raw Water Pipeline	Cost	Well Facility	Cost	Raw water Collection Facility	Cost	Treatment Facility	Cost	Potable Storage Facility	Cost	Facility	Cost	Cost/Year	Cost/ Cumulative
2021	300	92																		
2022	600	185	LFH Complete	$315,689	On-site Arap/Denver Retreat	$491,127							Phase One	$725,078					$1,531,893	$1,531,893
2023	1100	339				$3,508,050		$414,805					Treatment	$5,179,125					$9,101,980	$10,633,873
2024	1600	493			Sterling On-Site #3	$371,127	Bar-X Phase One	$8,888,670.0	1st McCune	$371,127	Sterling #3	$ 141,000							$9,771,924	$20,405,797
2025	2100	647				$2,650,909		$7,584,998		$2,650,909	1st McCune RW	$ 329,000							$13,215,816	$33,621,613
2026	2600	801																	$0	$33,621,613
2027	3100	955							2nd McCune	$371,127	2nd McCune Raw	$ 53,200							$424,327	$34,045,940
2028	3600	1109								$2,650,909	Water	$ 380,000							$3,030,909	$37,076,849
2029	4100	1263					Bar-X Phase Two	$724,328	1st Bar-X	$371,127	1st Bar-x Raw	$ 15,680	Phase Two	$291,942	3.0 MG Tank	$491,127			$1,894,204	$38,971,053
2030	4600	1417						$5,173,770		$2,650,909	Water	$ 112,000	Treatment	$2,085,300		$3,508,050			$13,530,029	$52,501,082
2031	5100	1571							2nd Bar-X	$371,127	2nd Bar-x Raw	$ 91,840							$462,967	$52,964,049
2032	5600	1725								$2,650,909	Water	$ 656,000							$3,306,909	$56,270,958
	Totals			**$315,689**		**$7,021,213**		**$22,786,571**		**$12,088,144**		**$1,308,720**		**$8,281,445**	**$0**	**$3,999,177**		**$0**		

* Note that the number of Acre-feet required to meet actual demand, will likely be substantially less than the required acre-feet to meet the 300 year rule, given that active land use planning, platting will substantially lead actual development

Except for the Bar-X Phase One Pipeline, all improvements allocate 14% in a given year and the remainder of project costs in the suceeding year
All costs are presented in 2022 dollars
The costs for Well Site development in McCune and Bar-X are normalized, but separate raw water collection lines are allocated

WATER AND WASTEWATER SYSTEM VALUATION

To: Falcon Area Water and Wastewater Authority
1700 Lincoln Street, Suite 2000
Denver, CO 80203

cc: Project Central File W0242.22001 — Category A

From: John McGinn, P.E.
Principal Consultant
RESPEC
5540 Tech Center Drive, Suite 100
Colorado Springs, CO 80919

Date: June 14, 2022

Subject: FAWWA Water and Wastewater System Valuation

1.0 BACKGROUND AND APPROACH

The purpose of this valuation is to estimate the value of the book or depreciated replacement value of the water and wastewater system and the associated service assets, for the transfer of assets into the Falcon Area Water and Wastewater Authority (FAWWA) from SR Water and SR Wastewater. FAWWA is a water authority currently comprised of Sterling Ranch Metropolitan District (SRMD, Sterling) Nos. 1, 2, 3, and the Retreat Metropolitan Districts 1 and 2; and is anticipated to have additional municipal and quasi-municipal membership in the future.

The water system is in working condition and serves roughly 300 customers. The wastewater collection system is in working order and is serving the same number of units. While the current system discharges to Colorado Springs Utilities, a lift station and force main system are nearing completion which will divert all wastewater flows to the Meridian Service Metropolitan District.

This valuation was completed with the following documentation:

1. Design drawings for facilities (No 'as-builts')
2. Site visits
3. Water decrees/water contracts
4. Wastewater tap agreement
5. Land easements

The valuation is based on a depreciated replacement value approach which in our opinion best represents a "snapshot" valuation of the current system. In this particular case, the actual expenditures for installing the system and materials are incomplete or unavailable. The

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depreciated replacement valuation is typically more conservative but adequately addresses the value. In order to determine the replacement value, we used the previously mentioned documents, site visits, and finally, we have also relied on engineering judgment and recently-valued unit costs for facilities.

Obviously, the actual marketable value of any asset is dependent on what a buyer is willing to pay for the asset which typically varies from a "book value" which is more descriptive of the methodology employed herein. This valuation does not consider any potential "blue-sky value"; any future value of the assets; certain intangible assets; any opportunities for future revenues over expenses and reserves; and/or any opportunity value represented by the existing oversizing of assets.

2.0 DESCRIPTION AND EVALUATION OF WATER SYSTEM

2.1 WATER RIGHTS

The water rights supporting the existing, as well as some of the future, water system are non-tributary or adjudicated not non-tributary water in the Denver Basin. A summary of the SR water rights is included in **Appendix A**. This table is used in filing water supply reports on behalf of FAWWA and is an excellent summary of SR Water holdings and contingent supplies.

Current Legal Supply. The currently available legal water supply on a 300-year basis is 697.39 annual acre-feet $_{300}$ (AF_{300}). The term *300-year supply* is applicable to the land development code of El Paso County and represents the amount of water that can be considered as "adequate supply" for the purpose of determining the level of development that can be based on said supply.

Water, generally, is more appropriately valued in terms of 100-year supply when being considered for actual monetary value. Therefore, for the purposes of valuation, legal water rights are presented here in terms of annual acre-feet$_{100}$ (AF_{100}). Therefore, the current and contracted for holdings are presented as 2092.16 annual AF_{100} and valued at $ 4,000 per AF_{100}.

Contingent Water Supply. Although not formally held in title, FAWWA will acquire the sole rights to purchase additional Denver Basin supplies under existing contracts with Bar-X and Shamrock West (SWR) Ranches and the owners of the "McCune Water." The Shamrock West water is not currently under contract by SR Water, but is owned by Bar-X Ranch and identified in the Bar-X purchase agreement. SR Water is in negotiations to enter into a contract to purchase the Shamrock West water prior to FAWWA transfer. Since water rights are a finite supply, the sole right to purchase water at a set cost has a certain value, which we term "contract-hold." The contingent supplies are contained in the same **Appendix A**, in the table on the right-hand side. There are four contingent supplies noted in this table, three of which have certain supplies that could be legally used within the system without additional court cases, being:

- Bar-X non-tributary water, 1730.85 annual acre-feet $_{100}$
- Shamrock West non-tributary water, 661.00 annual acre-feet $_{100}$
- McCune non-tributary water, 1173.99 annual acre-feet $_{100}$

The resulting total is 3,565.86 annual AF_{100}.

The value of the *contract-hold* is assigned at 20% and could go up if water valuation continues to rise and additional supplies become scarcer.

Return Flows. All of the water rights mentioned above have the potential of being "used to extinction," which means that the owner has the right to reuse water after successive uses. As an example, the water that is delivered to homes is only partially consumed (a portion of unconsumed water is discharged to sanitary sewers and untimely treated and returned to the stream). A second portion is known as *lawn irrigation return flows* (LIRFs), being the portion of irrigation that percolates through the

soils beyond evaporation and transpiration and are returned to the alluvium. Most of the LIRF credits are designated for current depletions or other augmentation. However, the sewered returned flows usually measure about 50% of the water delivered to residential uses and, therefore, remain the potential property of FAWWA. If this 50% was returned to residential use, that 50% would, in turn, create 50% wastewater, which could also be reused to extinction. Thereby, one could run the water through a number of cycles. In the past, we have roughly estimated the potential as 75% of the original delivered volume. For example, if 100 acre-feet were initially delivered to residential users and "used to extinction," it would roughly equate to 175 total acre-foot delivery in a very efficient return system.

Obviously, a replacement plan, direct reuse, or other legal mechanism accompanied by physical return and/or treatment components would be necessary to take advantage of such ownership. FAWWA wastewater is discharged to the Cherokee Metropolitan Wastewater Reclamation Plant, which currently has no system for reuse and/or return. However, Cherokee Metropolitan District (CMD) and its partner Meridian Service Metropolitan District (MSMD) have been in the process of obtaining a *replacement plan* for some time and continue to get closer to having the legal authority to do so.

Value. Appendix C-1 contains the value of water rights, being $13,746,618. The breakdown of said value is also enclosed in **Appendix C-1** Please note that water rights are valued as non-depreciable assets.

2.2. SOURCE OF SUPPLY

FAWWA owns two current wells: the Arapahoe well (A-1), which has been producing water for almost 4 years, and the Laramie-Fox Hills well (LFH-1), which has only recently been partially equipped. These wells are located on what we term the *central facilities site* at Sterling Ranch. Table 1 herein summarizes the features of these two wells.

Table 1, FAWWA Well Summary

Well	Permit / Date	Depth (ft.)	Casing (Dia.-in.)	Equipment	Yield (GPM) Actual / Permitted
A-1	81846-F / 2018	2040	8" SS	230 HP	200 / 300
LFH-1	85050-F / 2018	2660	8" SS		100 / 300

The wells are powered by an on-site generator which is rather old. However, line power is currently under construction and the site should have line power by the summer of 2022. Because of relatively low system use, the Arapahoe well is run sparingly and is manually started, along with the generator, when source of supply is being accessed.

The wells have a split depreciation period. The actual well structure, which includes the hole, casing, gravel pack, screens, etc., is assigned a 50-year life, whereas the well equipment has a much shorter depreciation period of 15 years.

2.3. TREATMENT AND STORAGE

The current level of treatment consists of chlorination, which is accomplished using injection of liquid sodium hypochlorite prior to entry into the tank. This method will be maintained, but the existing system will be replaced with much more extensive treatment. The chlorination system is dated from 2018 and is depreciated over a 15-year period.

Storage consists of a D-110 concrete tank holding 1.0 million gallons (MG) of water. We do not have any construction notes, construction photos, or construction test validation for this tank, but an

external observation indicates that it is currently in working condition. The tank was constructed in 2018, and the depreciation period for a concrete tank is 50 years.

The tank has a 16-inch outlet, 12-inch inlet, drain, and overflow. The location of the drain outlet appears to be just off-site; the drain outlet itself could not be located. There are no level sensors nor other devices necessary to determine the actual level present.

With few users, the source of supply and treatment of which are operated only every few days to top off the tank, but a lack of level control causes occasional overflows. An overall Water Development Model by JDS-Respec anticipates the cost of providing adequate instrumentation and control which will resolve potential operational problems.

2.4. WATER TRANSMISSION AND DISTRIBUTION

The FAWWA system consists of 6-inch through 24-inch water lines. Pipelines have all been being installed since 2017 and construction is continuing today. Materials for 12-inch diameters and below are all PVC. Lines greater than 12 inches in diameter are either of PVC or ductile iron pipe (DIP). There are gate valves, butterfly valves, fire hydrants, and services located throughout the system.

One large master pressure reducing valve (PRV) and vault are placed on a transmission line separating the upper gravity zone from the lower gravity zone.

In order to estimate the current replacement value of the transmission and distribution system, we are relying on a unit-value cost for water lines and other utilities, which is the current model being used for, not only FAWWA areas, but also other utility extension work by one of the larger, local contractors who performs this type of work. A list detailing the current pricing, which Classic Communities pays during the year 2022 for such construction work, is enclosed in **Appendix B**. We have reviewed the pricing list and compared it to other recent work, and find that the unit costs are both reasonable and fair.

Lines have been constructed from 2017 through present day. Since lines are rather recent (especially, those installed this year) and no more than 5 years old, we are proposing to depreciate the entire system at 3 years. Lines are depreciated over a 50-year period due to their expected length of duty.

3.0 DESCRIPTION AND EVALUATION OF WASTEWATER SYSTEM

3.1 WASTEWATER TREATMENT

Wastewater treatment will be accomplished through an intergovernmental agreement (IGA) with MSMD to provide transmission, pumping, and treatment for wastewater through the Cherokee treatment plant. This contract allows for the purchase of wastewater treatment capacity in the form of taps or single-family equivalents (SFEs). The contract allows for the purchase of up to 5,849 SFEs, which equates to roughly 1.006 million gallons of capacity per day.

The IGA required SR Sewer to construct a lift station and force main to the existing MSMD system, located approximately at the intersection of Woodmen Road and Meridian Road. The IGA specifies the requirements for said lift station and force main.

A first amendment to the IGA was made in 2020 which modified the location of Sterling's tie-in point in exchange for purchasing/leasing an existing MSMD-owned, unused line.

A second amendment requires SR Sewer to charge a surcharge to its sewer customers to help offset additional MSMD payments to Cherokee for treatment plant improvements that were completed subsequent to the IGA.

Because the IGA requires payment of tap fees at the time of takedown and does not require future capital investment, we are valuing this particular treatment capacity as a non-depreciable asset. The cost of future investment and improvements in the system would be paid for by actual ratepayer fees.

3.2 WASTEWATER LIFT STATION AND FORCE MAIN

The lift station and force main required by the IGA discussed above are substantially complete as evidenced by the letter from MMI Water Engineers dated June 2, 2022. A couple remaining items of construction and equipping are required before being presented to MSMD for acceptance, all as outlined in the MMI letter. All incremental materials have been ordered and delivery is anticipated by the end of June 2022. This work is anticipated to be complete, and the system accepted by MSMD by August 2022. Wastewater is currently being sent to Colorado Springs Utilities and will be diverted to the MSMD system upon their acceptance.

We have estimated the cost of the lift station and force main as if they were complete but have then reduced that value based on completion requirements likely needed to bring the facilities to the level required for MSMD acceptance.

We have estimated the completed value of the lift station at $3,334,000, but estimate SCADA systems, finish work, endpoint devices, final completion, and final site improvements at $190,000, according to the MMI letter.

While the force main has a few punch-list items, it is near enough to completion to be afforded full value.

3.3 WASTEWATER COLLECTION SYSTEM

The FAWWA system consists of 8-inch through 15-inch sewer lines. Pipelines have all been and are being installed from 2017 through present day. All sewer lines are of PVC. Manholes consist of both 48- and 60-inch manholes, depending on the associated pipe size.

In order to estimate the current replacement value of the transmission and distribution system, we are relying on a unit-value cost for water lines and other utilities, which is the current model being used for, not only FAWWA areas, but also other utility extension work by one of the larger, local contractors who performs this type of work. A list detailing the current pricing, which Classic Communities pays during the year 2022 for such construction work, is enclosed in **Appendix B**. We have reviewed the pricing list and compared it to other recent work, and find that the unit costs are both reasonable and fair.

Since lines are rather recent (especially, those installed this year) and no more than 5 years old, we are proposing to depreciate the entire system at 3 years. Lines are depreciated over a 50-year period due to their expected length of duty.

4.0 LAND EASEMENTS AND RIGHTS OF WAY

Lands owned outright or being subject to substantial surface use include the central water system site and the lift station site. Based on current land values, we have estimated the value of these types of land uses at $120,000 per acre.

The central water system site is 3.34 acres in size.

Easements and non-surface land uses, such as pipeline easements, are valued at $1.00 per square foot, which is roughly 36% of the surface value. This value considers any associated temporary easements, access rights, and soft costs of acquisition.

There are 20 permanent easements that have been acquired by SR Water for the purpose of developing the Bar-X pipeline. The permanent portion of these easements totals 20.036 acres. Additionally, there are 11 well sites that are included in the decree for the Bar-X water under contract and there are an additional 4 well site easements dedicated via plat on the McCune property. For well sites, we are estimating an average size of 15,000 square feet.

The Lift Station exists on a site that is 5.0 acres. The site is currently in process of being platted and will be Tract G of Sterling Ranch Filing #4.

According to James Morley, the force main includes permanent easements that total 11.4 acres.

Intangible Assets;

There are several intangible assets associated with the system which are not valued in this report, but hold substantial unstated value:

- Potential Un-augmented Not non-tributary water that might be augmented in the future
- 1041 Approved Permit and Concept Design *(The value of this asset is substantial but somewhat intangible and should be considered in any transfer of value)*

5.0 CONCLUSION

Appendices C-1 and **C-2** outline a complete summary of the replacement value of each system element, as well as account for the depreciated value of each component. It is our opinion that the system valuations in their current condition are reasonably represented by the following:

- **Water System** **$ 23,148,704**
- Wastewater System **$ 21,549,468**

These values include not only the physical systems, but also lands and rights-of-way, as well as water rights.

ATTACHMENTS

Appendix A	Water Rights Summary
Appendix B	Basis of unit pipe pricing (Kempton)
Appendix C-1	Water Valuation Worksheet
Appendix C-2	Wastewater Valuation Worksheet
Appendix D	Bar-X Pipeline Easements acquired by SR Water

APPENDIX A

WATER RIGHTS SUMMARY

JDS-HYDRO
CONSULTANTS, INC.
A Division of RESPEC Company, LLC

RESPEC

Update May, 2022

Table 3
Falcon Area Water and Wastewater Authority
Comprehensive Water Supply Inventory
Current Legal Supply

Land Formation/Aquifer	Reference Finding/ Determination/ Decree	Tributary Status	Volume	Annual Allocation 100 Year	Annual Allocation 300 Year	Approved Well Locations	Notes	Saturated Sand Thickness	Saturated Specific Yield
			Acre-Feet	A-F/Year	A-F/Year				
Currently Available On-Site Sterling Water Legal Sources									
Laramie Fox Hills	86-CW-19	NT	53,900	539.00	179.67	KLF-1 - KLF-4	Under 1410 acres	255	15%
	08CW113	NT	40	0.40	0.13		Under 41.44 acres, reduced to 1.44 acres		
Arapahoe	86-CW-18	NT	57500	575.00	191.67	KA-1 - KA-4	Under 1410 acres	240	17%
					371.47				
Available On-Site Augmented Sterling Water Legal Sources (Note 2)									
Laramie Fox Hills	20CW 3059	NT	2780	27.80	9.27		97.54 acres SR Quarry (Note 5)	190	
Arapahoe	20CW 3059	NNT	4320	43.20	14.40	**Augmented via Same Case**	97.54 acres SR Quarry (Note 5)	260.5	
Denver	20CW 3059	NNT	4895	48.95	16.32	**Augmented via Same Case**	97.54 acres SR Quarry (Note 5)	295.2	
Denver	08CW113 Aug 20CW 3059	NNT	72893	728.93	242.98	**Augmented via Pending Case**	Sterling Ranch 1410 acres		
Arapahoe	08CW113 Aug 20CW 3059	NNT	60	0.60	0.20	**Augmented via Pending Case**	Sterling Ranch 41.44 reduced to 1.44 acres		
					283.16				
Currently Available On-Site Retreat Water Legal Sources (Note 1)									
Laramie Fox Hills	17CW3002	NT	6,440				Under 225.97 acres	190	15%
LFH (Retained Water by predescer in title)		NT	-612						
LFH (Relinquishment)	18CW3002	NT	-2,796				PPD Augmenting 29 wells		
			3,032	30.32	10.11				
Arapahoe	17CW3002	NT	9,796	97.96	32.65		Under 225.97 acres	255	17%
Legal Supply: Phase 3, Phase 4 (excluding Lots 39-41) and Phase 6			**12,828**	**128.28**	**42.76**				
Augmentation (Dawson NNT)	18CW3002	Aug	2,796	27.96	9.32		Replace a min of 4% of pumping		
Legal Supply: Phase 2 (excluding Lots 11-12), Lots 39-41 of Phase 4, and Phase 5					**9.32**	29 Single Family Wells [Phase 2 (excluding Lots 11-12); Lots 39, 40 & 41 of Phase 4; & 5]			
Augmentation (Dawson NNT)	16CW3095	Aug	1567.5	15.68	5.23		Replace actual depletions		
Legal Supply Phase 1					**5.23**	10 Single Family Wells (Phase 1)			
Currently Available Off-Site Ground Water Legal Sources									
Augmentation (Dawson NNT)	18CW3005	Aug	240.0	2.40	0.80	(Phase 2 - Lots 11 &12)	pumping		
2)			**240.0**	**2.4**	**0.8**				

Note 1. **The water listed in the shaded area will be used to serve single family wells and is not included in the Total Available for the Central System**

Note 2. **In February, 2022: removed the existing Bar-X holdings from the supply sheet as the LFH water is dedicated to post-pumping depletions for Augmentation Case 20 CW 3059 and added the water yield from Case 20 CW 3059**

Total Current Available 300-Year Water Supply (AF)	**697.39**	**Acre-Feet :Legal Water Supply For Falcon Area Water and Wastewater Authority Central System**
	Sterling Current Supplies	

Table 3 Continued
Falcon Area Water and Wastewater Authority
Comprehensive Water Supply Inventory
Contingent Supplies under Contract to FAWWA

Land Formation/Aquifer	Finding/ Determination/ Decree	Tributary Status	Volume	Annual Allocation 100 Year	Annual Allocation 300 Year	Approved Well Locaions	Notes	Saturated Sand Thickness	Saturated Specific Yield
			Acre-Feet	A-F/Year	A-F/Year				
Contingent Shamrock West Ground Water Sources									
Dawson	85 CW131	NNT	49,800	498	0.00		Needs Augmentation		
Denver NNT	85 CW131		105,700	1057	0.00		Needs Augmentation		
Denver NT	85 CW131		**18,700**	**187**	**62.33**	**62.33**			
Arapahoe NNT	85 CW131		2,500	25	0.00		Needs Augmentation		
Arapahoe NT	85 CW131		**47,400**	**474**	**158.00**	**158.00**			
LFH NT	85 CW131		0	0	0.00				
Total Additional Contingent Supply (without augmentation)				**661.00**		**220.33**			
Off site Bar-X Ground Water Sources (Note 4)									
Currently Owned Off-Site Sterling Water Legal Sources (Bar-X)									
Portion remaining under contract									
Laramie Fox Hills	**93-CW-018**	**NT**	**12,500**	**125.00**	**41.67**		Shamrock/Bar-x Rights	200	15%
			-12,500	**-125.00**	**-41.67**	**Set aside for augmentation at Bar-X**			
Arapahoe	**93-CW-018**	**NT**	**74250**	**738.00**	**246.00**		Shamrock/Bar-x Rights	260	17%
Denver	**93-CW-018**	**NT**	**119900**	**1306.33**	**435.44**		Shamrock/Bar-x Rights	435	17%
						681.44			
						104.49	Net Set Aside for Sterling Ranch Post Pumping Depletions (20 CW 3059)		
Dawson	93-CW-018	NNT	149499	1494.99	498.33		Need Augmentation Plan	490	20%
			194,150						
Total Additional Contingent Supply Bar-X (without augmentation)						**576.95**			
								968.29	2904.86
Contingent On-Site The Ranch (Elkhorn) Water Legal Sources WITHIN UBS BOUNDARIES									
Laramie Fox Hills NT	Determination under Section 37-90-107(7)	receipt 471559-D	17,000	170.00	56.67		646.029 acres		
Arapahoe NT		recepit 471559-C	23600	236.00	78.67		646.029 acres		
Denver NNT		recepit 471559-B	32900	329.00	109.67		646.029 acres		
					245.00				
Contingent Off site McCune Ground Water Sources (Note 5)									
Laramie Fox Hills	**1689-BD**	**NT**	**26,300**	**263.00**	**87.67**		900.52 acres		
Arapahoe	**1690-BD**	**NT**	**39800**	**398.00**	**132.67**		900.52 acres		
Denver	**1691-BD**	**NT**	**52800**	**528.00**	**176.00**		900.52 acres		
			-1500.00	**-15.00**	**-5.00**	Retained Denver Formation Water			
Lower Dawson	1662 BD	NNT	81950.00	819.50					
Total Contingent Supply McCune (without augmentation)					**391.33**				

Note 1 If/When the Shamrock West, Bar-X, and McCunewater are acquired, the purchases will result in an **additional 3565.86 Annual AF -100 year (1188.62 Annual AF 300 year Basis)**

Note 2 Pending Case 20 CW 3059 quantifies NT and NNT groundwater under what is known as the SR Quarry which has been acquired . Additionally, 20 CW 3059 provides an augmentation plan for the NNT Arapahoe and Denver formation water under Sterling Ranch. The post pumping depletions are satisfied by NT water off site from Bar - X Ranch. Current depletions for both the Sterling Rannch and SR Quarry are satisfied by on LIRF credits supportted by NT water applied at Sterling Ranch. Additionally, certain on-site ponds are augmented by excess LIRF credits.

Note 3 This water is NT water owned by Sterling Ranch and is available to be legally used on the Sterling Ranch Site. This water is projected to be dedicated as Augmentation Depletions for NNT Water under Pending case 20 CW 3059. If/when Pending Case 20 CW 3059 is approved in whole or part, this inventory will be adjusted to add any approved augmented NNT water and and any and/all augmentation supply, will be shown strictly as dedication to depletions. Until such a time, this water will be shown as legally availble for Sterling Ranch.

Note 4 The sources listed in this segment are under contract to Sterling Ranch. As the Contract "take-down" proceeds, these supplies will be become the property of Sterling and can be made available for direct use at Sterling Ranch or as additional augmentation water at Sterling Ranch.

Retreat Water Supplies

Retreat Wells private wells not included in Calculation

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Note 5 This water is also termed the McCune water. The sources listed in this table are under contract to Sterling.

Elkhorn or The Ranch

Shamrock West, Bar-X, and McCune under Contract

APPENDIX B

BASIS OF UNIT PIPE PRICING

JDS-HYDRO CONSULTANTS, INC.
A Division of RESPEC Company, LLC

RESPEC

APPENDIX B

UNIT VALUES FOR WATER DISTRIBUTION AND WASTEWATER COLLECTION SYSTEM

PROVIDED BY KEMPTON CONSTRUCTION

Unit Prices are for substantial quantities only. If estimating a project having limited quanitities, these should not apply.

Also, these unit prices are generally for construction in native and or disturbed areas, these do not apply for construction in existing streets

1	Tie to existing	1	ea	$ 430.00
2	Tie to existing 12" w/ ins. Dresser	1	ea	$ 630.00
3	6" DR14 with wire	1	lf	$ 28.75
4	8" DR14 with wire	1	lf	$ 48.80
5	12" DR14 with wire	1	lf	$ 78.75
6	6" G.V.B. w/mega lugs	1	ea	$ 1,318.00
7	8" G.V.B. w/mega lugs	1	ea	$ 1,890.00
8	12" G.V.B. w/mega lugs	1	ea	$ 3,782.00
9	6" Bends w/mega lugs	1	ea	$ 457.00
10	8" Bends w/ mega lugs	1	ea	$ 631.00
11	12" Bends w/mega lugs	1	ea	$ 1,480.00
12	6" Tee w/mega lugs	1	ea	$ 645.00
13	8" Tee w/mega lugs	1	ea	$ 991.00
14	12" Tee w/mega lugs	1	ea	$ 1,628.00
15	8" Water Lowering 18' long w/mega lugs	1	ea	$ 9,613.00
16	6.5' FH Assembly on 8" w/mega lugs w/Test Station	1	ea	$ 6,730.00
17	6.5' FH Assembly on 12" w/mega lugs w/ Test Station	1	ea	$ 7,245.00
18	Flushing Hydrant Assembly	1	ea	$ 5,395.00
19	6" Blow-off Assembly w/ mega lugs	1	ea	$ 2,007.00
20	8" Blow-off Assembly w/mega lugs	1	ea	$ 2,592.00
21	12" Blow-off Assembly w/mega lugs	1	ea	$ 3,232.00
22	3/4" Service (Average 32')	1	ea	$ 910.00
23	3/4" Service (Extra Length)	1	lf	$ 16.25
24	Remove 8" Phase Line Valves	1	ea	$ 900.00
25	Remove 12" Phase Line Valves	1	ea	$ 1,155.00
26	High Deflection Coupler 8"	1	ea	$ 151.00
27	12" High Deflection Coupler	1	ea	$ 299.00
28	2" Meter Pit (32LF Long Service)	1	ea	$ 9,616.00
29	1 1/2" Meter Pit (32 LF Long Service)	1	ea	$ 8,355.00
30	3/4" Meter Pit	1	ea	$ 3,830.00
31	12" Bell Restraint	1	ea	$ 304.00
32	8" Bell Restraint	1	ea	$ 228.00
33	6" Bell Restraint	1	ea	$ 177.00
34	Tracer Wire Connectors New CSU SPEC	1	ea	$ 14.00

RE: Sanitary Sewer- Unit Prices

1	Tie to Existing Manhole	1	ea	$ 350.00
2	8" SDR35 0'-12' Deep w/wire	1	lf	$ 29.05
3	8" SDR35 12'-14' Deep w/wire	1	lf	$ 32.00
4	8" SDR3514-16' Deep w/wire	1	lf	$ 37.05
5	8" SDR35 16-18' Deep w/wire	1	lf	$ 53.50
6	8" SDR35 18-20' Deep w/wire	1	lf	$ 72.50
7	8" SDR35 18-22' Deep w/wire	1	lf	$ 85.50
8	Over depth Protection on 8"	1	lf	$ 6.60
9	Plate Tamp (under 1.05% slope) 3/4" bedding SDR26	1	lf	$ 15.40
10	3 Degree Bend	1	ea	$ 85.00
11	48" ID MH 0'-12' Deep, Pre-cast	1	ea	$ 3,260.00
12	48" ID MH 12'-14' Deep, Pre-cast	1	ea	$ 3,600.00

13	48" ID MH 14'-16' Deep, Pre-cast	1 ea	$	3,888.00
14	60" ID MH 0'-12' Deep, Pre-cast	1 ea	$	4,120.00
15	60" ID MH 12'-14' Deep, Pre-cast	1 ea	$	4,638.00
16	60" ID MH 14'-16' Deep, Pre-cast	1 ea	$	5,210.00
17	Clean Out, Active UD, w/wall, Outside MH	l ea	$	815.00
18	4" PVC Service w/wire (Average 35' long)			
19	0'-12' Deep	1 ea	$	818.00
20	12'-15' Deep	1 ea	$	953.00
21	4" PVC Service w/wire (Extra Length)	1 lf	$	20.20
22	6" Passive Under drain	1 lf	$	6.90
23	6" Active Under drain	1 lf	$	12.50
24	3" Under drain Service	1 ea	$	243.00
25	3" Active@ Property 10LF	1 ea	$	180.00
26	3" Under drain Service (Extra Length)	1 lf	$	6.80
27	4" PVC 45 Degree up	1 ea	$	38.00
28	4" DIP 45 Degree up	1 ea	$	355.00
29	3" Under drain 45 Degree Up	1 ea	$	38.00
30	16" Encasement Sleeve	1 lf	$	147.00
31	16"x8" Skids and Restraints	1 ea	$	185.00
32	16"x8" End Seals	1 ea	$	180.00
33	8" Bell Restraint	1 ea	$	128.00
34	17 Lb. Anode	1 ea	$	185.00
35	Tracer Wire Connectors New CSU SPEC	1 ea	$	14.00
	RE: Storm Sewer- Unit Prices			
1	18" RCP 0'-9' Deep	1 lf	$	57.45
2	24" RCP 0'-9' Deep	1 lf	$	70.45
3	30" RCP 0'-9' Deep	1 lf	$	100.20
4	36" RCP 0'-9' Deep	1 lf	$	133.45
5	42" RCP 0'-12' Deep	1 lf	$	175.00
6	42" RCP 12'-14' Deep	1 lf	$	190.00
7	48" RCP 0'-1O' Deep	1 lf	$	224.50
8	48" RCP 12'-14' Deep	1 lf	$	234.50
9	48" RCP 14'-18' Deep	1 lf	$	258.50
10	18" FAB Bend/Reducer	1 ea	$	1,408.00
11	24" FAB Bend/Reducer	1 ea	$	1,609.00
12	30" FAB Bend/ Reducer	1 ea	$	1,981.00
13	36" FAB Bend/Reducer	1 ea	$	2,445.00
14	42" FAB Bend/Reducer	1 ea	$	2,694.50
15	48" FAB Bend/Reducer	1 ea	$	3,094.25
16	18" FAB Tee/Wye	1 ea	$	1,544.00
17	24" FAB Tee/Wye	1 ea	$	1,798.00
18	30" FAB Tee/Wye	1 ea	$	2,155.00
19	36" FAB Tee/Wye	1 ea	$	2,514.00
20	42" FAB Tee/Wye	1 ea	$	2,786.00
21	48" FAB Tee/Wye	1 ea	$	3,367.00
22	18" Plug	1 ea	$	172.00
23	24" Plug	1 ea	$	224.00
24	30" Plug	1 ea	$	260.00
25	36" Plug	1 ea	$	321.00
26	18" F.E.S.	1 ea	$	848.00
27	24" F.E.S.	1 ea	$	996.00
28	30" F.E.S.	1 ea	$	1,313.00
29	36" F.E.S.	1 ea	$	1,868.00
30	48" F.E.S.	1 ea	$	2,665.00
	Concrete Included, Aprons Excluded			
31	Type II MH 18" 0'-9' Deep	1 ea	$	3,050.00
32	Type 11 MH 24" 0'-9' Deep	1 ea	$	3,525.00

33	Type II MH 30" 0'-9' Deep	1 ea	$	3,945.00
34	Type I Box Base MH 30• 0'-9' Deep	1 ea	$	9,270.00
35	Type I Box Base MH 36" 0'-9' Deep	1 ea	$	10,462.00
36	4' D-10-R Less than 5' Deep	1 ea	$	4,800.00
37	5' D-10-R Less than 5' Deep	1 ea	$	4,915.00
38	6' D-10-R Less than 5' Deep	ea	$	5,416.00
39	8' D-10-R Less than 5' Deep	ea	$	6,038.00
40	10' D-10-R Less than 5' Deep	1 ea	$	6,895.00
41	12' D-10-R Less than 5' Deep	1 ea	$	7,990.00
42	14' D-10-R Less than 5' Deep	1 ea	$	8,708.00
43	16' D-10-R Less than 5' Deep	1 ea	$	9,670.00
44	18' D-10-R Less than 5' Deep	1 ea	$	10,506.00
45	20' D-10-R Less than 5' Deep	1 ea	$	11,127.00
46	4' Every Foot Over 5' Deep	, vf	$	284.00
47	6' Every Foot Over 5' Deep	1 vf	$	324.00
48	8' Every Foot Over 5' Deep	vf	$	387.00
49	10' Every Foot Over 5' Deep	1 vf	$	450.00
50	12' Every Foot Over 5' Deep	1 vf	$	472.00
51	14' Every Foot Over 5' Deep	vf	$	520.00
52	16' Every Foot Over 5' Deep	1 vf	$	560.00
53	18' Every Foot Over 5' Deep	1 vf	$	580.00
54	20' Every Foot Over 5' Deep	1 vf	$	615.00
55	Rip Rap w/Marafi- Native Bedding	1 cy	$	74.00
56	5' Type R Inlet 5' Deep	1 ea	$	5,324.00
57	10' Type R Inlet 5' Deep	1 ea	$	7,866.00
58	15' Type R Inlet 5' Deep	1 ea	$	10,250.00
59	20' Type R Inlet 5' Deep	1 ea	$	11,882.00
60	10 Gauge Tracer Wire	I lf	$	0.55
61	Concrete Test Box Pad	1 ea	$	200.00
62	1.5# Magnesium Ground Stake	1 ea	$	65.00
63	Test Station Access Box	1 ea	$	120.00
64	Tracer Wire Connector w/ Blue Housing	1 ea	$	14.00
65	Concrete Core Holes if Required	ea	$	50.00
66	Concrete Reinforced Collar City Spec	1 ea	$	1,075.00

RE: Miscellaneous

1	Remove and Replace Curb	1 lf	$	60.00
2	Remove and Replace Asphalt (4" Thick)	I sf	$	9.00
3	Stabilization Rock	1 tn	$	42.00
4	Fiber Crossing	1' ea	$	1,000.00
5	Small Job Mobilization under $30,000.00	1 ea	$	1,500.00
6	Compaction Testing By Owner			
7	CCTV	1 lf	$	2.10
8	Jet Main	1 lf	$	1.75
9	Relocation of conflicting utilities, hourly or by others			
10	Traffic Control	T&M		
11	Frost Removal	Negotiated		
12	Rock Excavation	$1.50/LFNF		
13	De-Watering	Hourly as Required		
14	Clear and Grub	Hourly as Required		

APPENDIX C

WATER/WASTEWATER VALUATION

JDS-HYDRO
CONSULTANTS, INC.
A Division of RESPEC Company, LLC

RESPEC

Appendix C-1
Valuation Worksheet--Water
Falcon Area Water and Wastewater Authority

Distribution/Transmission Description	Quantity	Unit		Value	Date	Depreciation Period (yrs)		Depreciated Replacement Value
8 Inch Line	11046	LF	$	773,236.10				
8 inch Valves	71	EA	$	106,500.00				
12 Inch Line	4791	LF	$	455,184.90				
12 Inch Valves	22	EA	$	55,000.00				
16 Inch Line	8380	LF	$	1,257,058.50				
16 Inch BFY Valves	7	EA	$	31,500.00				
24 Inch Line (DIP /PVC)	6849	LF	$	1,472,442.55				
24 Inch BFY Valves	9	EA	$	70,200.00				
Fire Hydrants	28	EA	$	188,440.00				
Services/Metering	378	EA	$	378,000.00				
ARVs		EA	$	-				
PRVs	1	EA	$	35,000.00				
Total Distribution/Transmission			**$**	**4,822,562.05**	**2019**	**50**	**$**	**4,533,208**
Water Tank	**1**	**1.0 MG Concrete**	**$**	**1,350,000.00**	**2018**	**50**	**$**	**1,242,000**
Arapahoe Well	1	EA	$	988,825.00				
LFH Well	1	EA	$	1,282,800.00				
Total Wells			**$**	**2,271,625.00**	**2018**	**35**	**$**	**2,012,011**
Chlorination Equipment	1		$	32,000.00				
LFH Equipment	1		$	373,950.00				
Arapahoe Equipment	1		$	457,050.00				
Total Well Equipment			**$**	**863,000.00**	**2018**	**15**	**$**	**632,867**
Pressure Booster Station	**1**	**Under Construction**	**$**	**982,000.00**	**2022**	**35**	**$**	**982,000**
Sub-Total Depreciable Assets			**$**	**10,289,187.05**			**$**	**9,402,086**

Non-depreciable Assets

Non-Depreciable Assets

Land	Acres		Unit Value		Value
Central System Site Easement	3.34	$	120,000	$	400,800
Easements					
	872768	$	1.00	$	872,768
20 Pipeline Easements See Appendix D					
15 Well Site Easements	225000	$	1.00	$	225,000

Water

Owned Water	Acre Feet $_{100}$	Description		Value
NT Water On-Site				
86CW19	1114	Main Site	$	4,456,000
08CW 113	0.4	Main Site	$	1,600
20CW3059	27.8	Janes	$	111,200
17CW3002	128.28	Retreat	$	513,120
Augmented NNT Water On-site				
20CW3059	821.7	Aug Main Site +	$	3,286,800
Contract-Hold NT Water				
1689-BD	263	McCune	$	263,000
1690-BD	398	McCune	$	398,000
1691-BD	513	McCune	$	513,000
93-CW-018 Arapahoe	738	Bar-X	$	738,000
93-CW-018 Denver	1306.33	Bar-X	$	1,306,330
85-CW-131	661	Shamrock West	$	661,000
Total Water			**$**	**13,746,618**			**$**	**13,746,618**
		Total Water System (Depreciated Replacement Value)					**$**	**23,148,704**

Appendix C-2

Valuation Worksheet--Wastewater

Falcon Area Water and Wastewater Authority

Collection System Description	Quantity	Unit		Value	Date	Depreciation Period (yrs)		Depreciated Replacement Value
8 Inch Line	6350	LF	$	203,200				
12 Inch Line	5865	LF	$	461,869				
15 Inch Line	8380	LF	$	796,137				
18 Inch Line	947	EA	$	108,905				
4 ft Manholes	26	LF	$	93,600				
5 ft Manholes	47	EA	$	217,986				
Services	378	EA	$	309,204				
Total Collection			**$**	**2,190,901**	**2019**	**50**	**$**	**2,059,447**
Lift Station	1	LS	$	3,115,000	2022	35	$	3,115,000
Force Main	22650	LF	$	1,783,688	2022	50	$	1,783,688
Cleanouts	7	EA	$	21,980	2022	50	$	21,980
Tie-In/Sampling/Metering	1	LS	$	125,000	2022	50	$	125,000
Asphalt	4860	LF	$	1,312,200	2022	50	$	1,312,200
Total Central System			**$**	**6,357,868**			**$**	**6,357,868**
Total Physical Wastewater System			**$**	**8,548,768**			**$**	**8,417,314**
Non-depreciable Assets								
Plant Capacity	**Taps**	**Unit Value**		**Value**				
Number of Purchased Taps	1550	$ 4,650.00	**$**	**7,207,500**			**$**	**7,207,500**
Connection Fee	1 time	$ 500,000.00	**$**	**500,000**			**$**	**500,000**
Meridian Line Purchase	3	$ 110,000.00	**$**	**330,000**			**$**	**330,000**
Under Contract	4299	$ 930.00	**$**	**3,998,070**			**$**	**3,998,070**
	Acres	**Unit Value**		**Value**				
Land (Lift Station Site)	5	**$ 120,000.00**	**$**	**600,000**			**$**	**600,000**
Force Main Easements	11.40	**$43,560**	**$**	**496,584**			**$**	**496,584**
Total Wastewater			**$**	**13,132,154**			**$**	**13,132,154**
				Total Wastewater System			***$***	***21,549,468***

APPENDIX D

EASEMENTS

JDS-HYDRO CONSULTANTS, INC.
A Division of RESPEC Company, LLC

RESPEC

Appendix D to FAWWA Valuation

Bar-X Pipeline Easements acquired by SR Water

FAWA Parcel No.	Owner Information	Easement Map Received	Parent legal	Comments	Permanent Easement Area (AC)	Temporary Easement Area (AC)	Acquired Permanent
Hodgen Road							
E22 E22-TC	National Audubon Society 225 Varick Street, Floor 7 New York, NY 10014 719.282.7877 (COS Audubon Chapter)		S26-T11S-R65W	Closed Rec. 219092828	**3.885**	**6.388**	**3.885**
E-21-1	*San Miguel Valley Corporation*		*Tract D Black Forest Reserve No.*	*Tract dedicated for public utilities*	**0.672**	**1.188**	**0.672**
E-21-2	~~**Black Forest Reserve HOA San Miguel Valley Corporation**~~		Tract B & E Black Forest Reserve No. 1	**no utility dedication language (Tract E) not yet acquired**	**0.566**	**0.966**	**0.000**
E20 *E20-TC*	*Black Forest Reserve Homeowners Association*		*Tracts A, C & I Black Forest Reserve No. 3*	*Tract dedicated for public utilities*	**1.148**	**1.358**	**1.148**
E19 *E19-TC*	~~*Black Forest Reserve HOA*~~ *San Miguel Valley Corporation*		*Tracta A, B & D Black Forest Reserve No. 2*	*Tract dedicated for public utilities*	**2.395**	**2.892**	**2.395**
E18 E18 TCE	**Black Forest Reserve Homeowners Association**		Tract F & L Black Forest Reserve No. 3	**Tract L, Wildlife Corridor no utility language not yet acquired**	**1.167**	**1.395**	**0.000**
E17 E17-TC	**El Paso County**	4/25/2018	Pineries Open Space E2 W2 Sec 1/SE4 NE4 Sec 1/NW4 Sec 12/T11S-R65W 6PM	**not yet acquired**	**7.312**	**12.187**	**0.000**
E16 E16-TC	~~*Black Forest Reserve HOA*~~ *San Miguel Valley Corporation*	4/25/2018	Tract in the SE4 NE4 S11-T12S-R65W	**not yet acquired**	**0.069**	**0.115**	**0.000**
E15 E15-TC	The Nor'Wood Foundation	4/25/2018	SE4 S11-T12S-R65W		**3.638**	**6.063**	**3.638**
E14 E14-TC	Development Management Co Inc.	4/25/2018	S14-T12S-R65W		**0.018**	**0.037**	**0.018**
E13 E13-TC	Matthew T. Russell & Joy M. Russell	55074283 1/31/19	Lots 10, 11, 14 Armonia Ranch Subd.		**0.820**	**1.394**	**0.820**
E12 E12-TC	Matthew T. Russell & Joy M. Russell	55074283 1/31/19	Lot 6 Armonia Ranch Subd.		**0.271**	**0.424**	**0.271**
E-11 E11-TC	Joseph Geraci & Amy J. Geraci	55074116 12/1/18	Lot 4 Armonia Ranch Subd.		**0.197**	**0.329**	**0.197**
E10 E-10TC	Colby Culp and Leisa Garcia-Culp	55066838-2 11/22/2017	Lot 3 Armonia Ranch Subd.		**0.255**	**0.426**	**0.255**
E9 E-9TC	William & Carol Lighty	55073717 11/3/2018	Lot 9 Armonia Ranch Subd.		**0.178**	**0.296**	**0.178**
E8 E8-TC	Roy W. Richard Jr.	55067102 12/30/2017	N2 NW4 NE4 23-T12S-R65W-6PM		**0.475**	**0.792**	**0.475**
E7 E7-TC	Robert and Ann Marie Bartlett	55067101 11/27/2017	E2 NE4 23-T12S-R65W-6PM		**1.343**	**2.238**	**1.343**
E6 E6-TC	Todd Gilbert & Lisa Munson	55066832 11/1/17	Lot 34 Paint Brush Hills Filing No. 2		**0.553**	**0.950**	**0.553**
E5 E5-TC	Clayton & Bridget Edgell		Lot 23 Paint Brush Hills Filing No. 3		**0.095**	**0.129**	**0.095**
E4 E4-TC	Mazany Ohana Trust dated October 13, 2017	55066834 11/14/17 2/6/19	Lot 33 Paint Brush Hills Filing No. 2		**0.224**	**0.373**	**0.224**
E3 E3-TC	Eric E. Rollman	55066833 11/14/17	Lot 34 Paint Brush Hills Filing No. 3		**0.262**	**0.436**	**0.262**
E2 E2-TC	Kenneth W. Rose and Pandora Rose	55066835 11/2/17	Lot 43 Paint Brush Hills Filing No. 3		**0.258**	**0.430**	**0.258**
E1 E1-TC	Rex A. and Laura Caraway	55066830 11/2/17	Lot 1 Paint Brush Hills Filing No. 3		**0.344**	**0.574**	**0.344**
A03 A03-TC	Jerry R. Landress	55077053 5/19/2019	N2 NW4 26-T12S-R65W-6PM		**1.397**	**2.238**	**1.397**
A04 *A04-TC*	*Aeroplaza Fountain LLC* *212 N Wahsatch Avenue, Suite 301* *Colorado Springs, CO 80903*	*4/2/2018*	*Tract E Paint Brush Hills No. 13 A*	*Tract dedicated for public utilities*	***1.608***	***2.773***	***1.608***
TOTAL					**29.150**	**46.391**	**20.036**

Document Provided by James Morley

PURCHASE CONTRACT

THIS PURCHASE CONTRACT (this "**Contract**") between MCCUNE RANCH, LLC, a Colorado limited liability company ("**Seller**"), and SR WATER, LLC ("**Purchaser**") is dated as of the day Seller and Purchaser have both signed it, as indicated by their signatures below (the latter of which shall be the "**Effective Date**").

RECITALS

A. Seller owns the water rights described on the attached Exhibit A (the "**McCune Ranch Water Rights**") underlying the property located in El Paso County, Colorado described more particularly on the attached Exhibit B (the "**McCune Ranch**").

B. Seller is establishing certain easement rights for use in connection with the withdrawal, development and transmission of the McCune Ranch Water Rights which easements are described more particularly on the attached **Water Wells and Pipeline Easement Agreement** Exhibit C (the "**Easement Agreement**").

C. Purchaser intends to develop certain real property located in El Paso County, Colorado and requires water rights in order to service such development.

D. Purchaser desires to purchase from Seller and Seller desires to sell to Purchaser that portion of the McCune Ranch Water Rights described on Exhibit D (the "**Water Rights**") under the terms set forth in this Contract. In connection with the purchase and sale of the McCune Ranch Water Rights, Purchaser desires to acquire from Seller and Seller desires to convey to Purchaser, the Easements subject to the terms, conditions and limitations of this Contract.

AGREEMENT

IN CONSIDERATION of the Recitals and the following valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the parties hereto agree as follows:

Section 1. THE PURCHASE.

1.1 Purchase and Sale. Purchaser hereby agrees to purchase ("**Purchase**") from Seller and Seller agrees to sell to Purchaser the Water Rights and Easements for the purchase price of $3,567,000.00 (the "**Purchase Price**"), which represents a price of $3,000 per determined nontributary acre foot. However, as provided in Paragraph 1.1(c), below, the ultimate total amount paid by Purchaser will be based upon a price of $3,000 per acre foot of "Transferable Yield" following completion of the Change in Place of Use proceeding, based upon the amount of water approved for Purchaser's use in places other than the McCune Ranch overlying land. The Closing Date shall be no later than thirty (30) days after approval by the Colorado Ground Water Commission of a requested "Change in Place of Use" application for the Water Rights ("**Closing Date**"), provided that such Closing Date shall not be later than October 1, 2018, unless otherwise agreed to by the Parties hereto.

(a) Definition of Transferable Yield. For purposes of this Agreement, "Transferable Yield" means the cumulative net amount of nontributary ground water in the combined Denver, Arapahoe and Laramie-Fox Hills aquifers, as measured in acre feet, which the Colorado Ground Water Commission allows, by final, unappealable ruling to be entered in the "Change of Place of Use" application to be filed by Purchaser and completed prior to closing, which may be utilized on properties other than the overlying McCune Ranch (hereinafter referred to as the "Commission Change"). For purposes of determining "Transferable Yield" and calculation of the purchase price to Seller, the following provisions shall apply: (1) The amount of Transferable Yield quantified for purposes of calculating the purchase price shall be a net number of acre feet of nontributary ground water approved for use on properties other than the overlying land in the Commission Change, including the 2% of such water rights which Purchaser is statutorily obligated to forego consumption of; and, (2) the final determination of Transferable Yield shall be after a final unappealable ruling of the Commission in the Commission Change has been obtained to the satisfaction of the Purchaser, and all deadlines in such ruling, if any, allowing potential reduction in the amount of Transferable Yield have expired.

(b) Initial Payment for the Water Rights. Within 15 days of mutual execution of this Contract, the Purchaser shall pay to Seller an Initial Payment of one hundred thousand dollars ($100,000.00), and said Initial Payment shall be nonrefundable, notwithstanding any other provision of this Agreement. No portion of the Initial Payment shall be refundable by Seller, even in the event that the Commission Change produces a ruling awarding less Transferable Yield than anticipated. The parties acknowledge and agree that in the event the final, unappealable Commission Change ruling quantifies less than 34 acre feet of Transferable Yield, there still shall be no rebate to Purchaser from Seller for any portion of the $100,000.00 Initial Payment.

(c) Payment for balance of Water Rights at Closing. Within forty-five (45) days of entry of the final, unappealable ruling in the Commission Change action, Purchaser shall pay to Seller an additional sum equal to the number of acre feet of Transferable Yield determined by the Commission Change ruling multiplied by the per acre foot price of $3,000.00 after credit is given to Purchaser for the Initial Payment paid to Seller as described in Paragraph 1.1(b), above. For example, if the Water Court determines that 100% of the previously determined nontributary Denver Basin ground water may be utilized by Purchaser on at the other places of use sought, rendering all of the previously determined water rights as "Transferable Yield", then Purchaser shall pay Seller the balance of the purchase price for all of the Transferable Yield in excess of the approximately 33.3 acre feet already paid for, a balance of $3,467,000, and this payment shall constitute payment in full for the Water Rights. Such payment shall be reduced by $3,000 per acre foot of water previously determined, but not included in the Transferable Yield as determined in the Commission Change.

1.2 Closing Procedure.

(a) Payment. At the time if Initial Payment , to occur at a time and place to be mutually agreed upon by the Parties not later than 15 days following mutual execution of this agreement, Purchaser shall pay Seller, in cash, certified funds, or by wire transfer an amount

equal to the Initial Payment, $100,000. At Closing, within forty-five (45) days of entry of the final, unappealable ruling in the Commission Change action, Purchaser shall pay the balance due, as calculated based upon Transferrable Yield, described in Paragraphs 1.1(b) and (c), above;

(b) Deed. At Closing, Seller shall convey by special warranty deed the McCune Ranch Water Rights, subject only to the Permitted Exceptions (defined in Section 2 below);

(c) Easements. At the Closing, the Seller shall execute and deliver to Purchaser the **"Water Wells and Pipelines Easement Agreement"**, attached as Exhibit C hereto, under which Seller grants Purchaser non-exclusive easements for use in connection with the withdrawal, development and transmission of the McCune Water Rights (the "Easements");

(d) Title. Seller shall provide Purchaser a title commitment with respect to the Easements issued by _____ (the "**Title Company**") within ten (10) days of the Effective Date.

(e) At each Closing, Seller/Optionor and Purchaser/Optionee shall each deliver such affidavits and agreements as the Title Company may require or request in order to consummate the transactions contemplated by this Contract; and

1.3 Activities Prior to Closing.

(a) Seller represents that there are no known liens or encumbrances affecting the Water Rights or Easements. Within ten (10) days of the Effective Date, Seller shall furnish to Purchaser copies of any and all water court decrees, groundwater determinations, well permits, agreements, engineering reports, or other documents in its possession relating to or concerning the yield and use of the Water Rights and the Easements.

(b) Purchaser, at its expense, shall retain a water resources engineer and/or water attorney to examine the Water Rights, including any documents received from Seller, and complete a good faith legal and engineering analysis of the use and physical yield of the Water Rights.

(c) Purchaser, at its expense, shall use its best efforts to timely obtain the approval of the Colorado Ground Water Commission of a Change in Place of Use of the Water Rights outside of the Kiowa Bijou Designated Ground Water Basin, and Seller expressly consents to Purchaser's actions in this regard prior to closing.

(d) Purchaser may perform such further due diligence investigations concerning the Water Rights, including title investigations as it deems appropriate. Seller shall cooperate with Purchaser in such investigations or negotiations, provided that Seller will not be obligated to incur any expense in such cooperation.

(e) Seller shall be free to enter into negotiations with third parties concerning the Water Rights prior to Initial Payment and to enter into back-up contracts or back-up options

on all or a part of the Water Rights, provided that such options or contracts expressly acknowledge and are subject to Purchaser's rights hereunder to purchase all of the Water Rights, and the Easements subject to the terms of the Exhibit C Easement Agreement..

1.4 Conditions to Closing.

(a) Purchaser's Conditions. Purchaser's obligations under this Contract to purchase the Water Rights and Easements are subject to the following conditions precedent, which must be satisfied or waived on or before Closing (unless otherwise provided):

i. Representations by Seller. The representations and warranties made by Seller in this Contract must be true and correct as of the Closing.

ii. Compliance by Seller. Seller shall have complied with the terms and conditions of this Contract in all material respects.

iii. No Material Change. Title to the Water Rights and Easements shall be subject to no matters other than the Permitted Exceptions.

iv. Change in Place of Use. Prior to Closing, The Colorado Ground Water Commission shall have satisfactorily approved a Change in Place of Use of the Water Rights outside the Kiowa Bijou Designated Ground Water Basin for use by Purchaser in the Falcon, Colorado, area. Purchaser will diligently prosecute such change at its sole expense, and with Seller's express consent and cooperation.

(b) Seller's Conditions. Seller's obligations under this Contract to sell the Water Rights and Easements are the subject to the following conditions precedent, which must be satisfied or waived on or before Closing:

i. Representations by Purchaser. The representations and warranties made by Purchaser in this Contract must be true and correct as of the Closing.

ii. Compliance by Purchaser. Purchaser shall have complied with the terms and conditions of this Contract in all material respects.

Section 2. TITLE.

2.1 Title to the Water Rights and Easements shall be marketable and shall be free and clear of all liens and encumbrances, subject in both instances only to:

(a) The lien for real property taxes for the year of Initial Closing and all subsequent years, if any.

(b) Any exceptions shown on a title commitment for the Easements that do not impair the use of the Water Rights or the Easements for their allowed uses; and

(c) Any defects or encumbrances created by Purchaser, at the instance of Seller, or with Seller's consent.

The foregoing title exceptions are hereinafter called the "**Permitted Exceptions**".

Section 3. REPRESENTATIONS AND WARRANTIES.

3.1 Representations, Warranties and Covenants of Seller. Seller hereby represents, warrants and covenants to Seller that, as of the date hereof and the date of each Closing:

(a) Authority. The execution and delivery by Seller of this Contract are within Seller's powers and have been duly authorized by all requisite organizational actions. The person executing this Contract on behalf of Seller has the authority to do so. This Contract is a legal, valid and binding obligation of Seller, enforceable in accordance with its terms.

(b) Title. Seller holds good and marketable title to the Water Rights and Easements free and clear of all liens and encumbrances except the Permitted Encumbrances. During the term of this Contract, Seller will not enter into any agreement or suffer any lien with respect to the Water Rights or Easements, excepting "back-up" agreements, as described in Paragraph 1.3(e), above.

(c) Litigation. To the knowledge of Seller, there is no pending or threatened litigation affecting the Water Rights or Easements.

(d) Governmental Notices. Seller has not received any notices or directives from any governmental entities with jurisdiction over the Water Rights or Easements claiming that any current use of or current condition with the Water Rights or Easements violates any federal, state, or local laws or regulations.

(e) No Other Warranties. Other than the foregoing representations, warranties and covenants, no representations and warranties have been made by Seller or anyone on its behalf to the Purchaser as to the condition of the Water or Easements.

3.2 Representations, Warranties and Covenants of Purchaser. Purchaser hereby represents, warrants and covenants to Seller that, as of the date hereof:

(a) Authority. The execution and delivery by Purchaser of this Contract are within Purchaser's powers and have been duly authorized by all requisite organizational actions. The person executing this Contract on behalf of Purchaser has the authority to do so. This Contract is a legal, valid and binding obligation of Purchaser, enforceable in accordance with its terms.

3.3 Seller's Disclaimers. Seller makes no warranty or representation regarding the physical yield and quality of the Water Rights or that the Water Rights are fit for the purposes for their int

Section 4. DEFAULT AND SPECIFIC PERFORMANCE.

4.1 Default by Seller. The parties agree that in view of the unique nature of the Water Rights and Purchaser's agreement to pursue the Change in Place of Use approval from the Colorado Ground Water Commission, in the case of default by Seller damages will not provide an adequate remedy for Purchaser. Therefore, in case of default by Seller, Purchaser shall have the right to specific performance and damages, in addition to any other remedies available in law or equity.

4.2 Default by Purchaser. In case of default by Purchaser, Seller shall be entitled to all remedies available in law or equity.

Section 5. MISCELLANEOUS.

5.1 Effect of Headings. The subject headings of paragraphs and subparagraphs of this Contract are included for purposes of convenience only, and shall not affect the construction or interpretation of any of its provisions.

5.2 Entire Contract; Survival of Contract; Construction. This Contract constitutes the entire agreement between the parties hereto and supersedes all prior and contemporaneous agreements, representations and understandings of the parties regarding the subject matter of this Contract. No supplement, modification or amendment of this Contract shall be binding unless executed in writing by the parties hereto. Both parties participated in the preparation of this Contract and consequently any rule of construction construing any provision against the drafter shall not be applicable.

5.3 Counterparts. This Contract may be executed in one or more counterparts, each of which shall be deemed an original, and all of which together shall constitute one and the same instrument.

5.4 Assignment. Purchaser may assign its interest in this Contract only with the express written approval of Optionor, which shall not be unreasonably withheld.

5.5 Notices. All notices and other communications under this Contract shall be in writing and shall be given either personally or by an overnight courier service (which obtains a receipt evidencing delivery) and shall be addressed as follows:

To Purchaser:
SR Water, LLC
20 Boulder Crescent, Suite 200
Colorado Springs, CO 80906

To Seller:
McCune Ranch, LLC
17480 Meridian Road North
Peyton, CO

5.6 Governing Law. This Contract shall be construed in accordance with the laws of the State of Colorado.

5.7 Brokers' Fees. Seller has employed the services of Remax Performance Group, Marty Chase, as broker, agent, and finder, and same is entitled to receive a commission, finder's fee, or other compensation in connection with this transaction, which commission, finder's fee or other compensation shall be Seller's sole responsibility to pay. Purchaser has not employed the services of any person as broker, agent, finder and no such broker, agent, finder or other person is entitled to receive a commission, finder's fee or other compensation in connection with this transaction. Each of the parties agrees to indemnify and hold harmless the other against any loss, liability, damage, cost, claim or expense incurred by reason of any brokerage commission or finder's fee alleged to be payable because of any act, omission or statement of the indemnifying party.

5.8 Prohibition Against Recording. This Contract shall not be recorded without the prior written consent of the Seller. If it is recorded without such prior written consent, this Contract shall terminate, and such recording shall constitute notice to all third parties that this Contract has been terminated and the Purchaser has no right, title, claim, or interest in the Water Rights or Easements.

5.9 Recovery of Litigation Costs. If any legal action or proceeding is brought for the enforcement of this Contract, or because of an alleged dispute, breach, default, or misrepresentation in connection with any of the provisions of this Contract, the successful or prevailing party shall be entitled to recover attorneys' fees and other costs incurred in that action or proceeding, in addition to any other relief to which it or they may be entitled. As used herein, "attorneys' fees" shall mean the full and actual costs of any legal services actually rendered in connection with the matters involved, calculated on the basis of the usual fee charged by the attorneys performing such services and shall not be limited to "reasonable fees" as defined by any statute, case law or rule of court. The parties intend that in addition to all other legal and equitable remedies available, injunctive relief and the remedy of specific performance may be utilized in the event of the breach or threatened breach of this Contract.

5.10 Further Assurances. Each of the parties hereto undertakes and agrees to execute and deliver such documents, writings, and further assurances as may be required to carry out the intent and purpose of this Contract.

5.11 Dates. If any date set forth in this Contract for the delivery of a document or occurrence of any event (such as closings and payment hereunder) should, under the terms hereof, fall on a weekend or holiday, then such date shall automatically be extended to the next succeeding weekday that is not a holiday.

IN WITNESS WHEREOF, the parties hereto have hereunto set their hands and seals the day and year first above written.

SELLER:

MCCUNE RANCH, LLC, a Colorado limited liability company

By: Mary Sue Liss
Name: Mary Sue Liss
Title: Trustee
Date: 9-10-2017

PURCHASER:

SR WATER, LLC, a Colorado limited liability

By:
Name: James F. Morley
Title: MANAGER
Date: 9/10/17

Exhibit A
McCune Ranch Water Rights

Determination # 1962BD 819.5 acre feet Lower Dawson
1961 BD 528 acre feet Denver
1962 BD 398 acre feet Arapahoe
1689 BD 263 acre feet Laramie Fox Hills

Exhibit B
McCune Ranch Land

The Southwest quarter of the Southwest quarter Section 18, the West half of the Northwest quarter and the West half of the Southwest quarter, Section 19, Township 11 South, Range 64 West of the 6th PM and the South half of the Southeast quarter, Section 13 and all of Section 24, Township 11 South, Range 65 West of the 6th Principal Meridian, in El Paso County, Colorado.

Exhibit C
McCune Ranch Easement Agreement

FIRST AMENDMENT TO CONTRACT FOR THE PURCHASE NONTRIBUTARY WATER RIGHTS

THIS First Amendment to Contract for the Purchase of McCune Ranch Nontributary Water Rights ("First Amendment") is dated as of the date of mutual execution by Buyer and Seller ("Effective Date"), and is by and between **McCune Ranch, LLC**, a Colorado limited liability company ("Seller"), and **SR Water, LLC**, a Colorado limited liability company ("Buyer").

RECITALS

A. On September 10, 2017, Seller and Buyer entered into that certain Contract for the Purchase of Nontributary Water Rights (the "Purchase Contract") concerning the water rights more particularly described therein (the "McCune Water Rights"). The Purchase Contract and this First Amendment shall collectively be termed the "Agreement".

B. Seller has requested that an addendum or amendment be made to the Purchase Contract allowing Seller to reserve from closing, at Seller's discretion, a portion of the nontributary groundwater contained in the Denver aquifer, for conveyance to the purchase of the surface of Seller's land, should such nontributary supplies be necessary for the development thereof.

C. A condition to closing under the Purchase Contract is the completion of certain "change in place of use" proceedings before the Colorado Ground Water Commission ("GWC") of the McCune Water Rights, though the Purchase Contract calls for closing to occur prior to October 1, 2018. The parties wish to extend the closing date to allow for completion of such change proceedings before the GWC, which have now been filed and are pending approval;

NOW THEREFORE, in consideration of the promises and mutual covenants set forth herein, and other good and valuable consideration the receipt and sufficiency of which is hereby acknowledged, the Parties agree as follows:

AGREEMENT

1. All foregoing recitals are incorporated herein by reference.

2. Section 1.1 of the Purchase Contract is hereby replaced in its entirety with the following language:

> Purchaser hereby agrees to purchase ("**Purchase**") from Seller and Seller agrees to sell to Purchaser the Water Rights and Easements for the purchase price of $3,567,000.00 (the "**Purchase Price**"), which represents a price of $3,000 per determined nontributary acre foot. However, as provided in Paragraph 1.1(c), the ultimate total amount paid by Purchaser will be based upon a price of $3,000 per acre foot of "Transferable Yield" following completion of the Change in Place of Use proceeding before the

GWC, based upon the amount of water approved for Purchaser's use in places other than the McCune Ranch overlying land. Further, the ultimate total amount paid by Purchaser may be further reduced should Buyer elect to reserve a portion of the Denver aquifer, as provided in Section 2, below, again on a $3,000 per annual acre foot basis as to the amount reserved. The Closing Date shall be no later than thirty (30) days after approval by the GWC of the pending "Change in Place of Use" applications for the Water Rights ("**Closing Date**"), provided that such Closing Date shall not be later than March 31, 2020, unless otherwise agreed to by the Parties hereto.

2. Seller may elect either prior to or at closing, to reserve from sale to Buyer a portion of the Denver aquifer, so as to instead convey such reserved portion to the purchaser of the overlying land for use in the development therefor. Seller may reserve a maximum of 178 annual acre feet from the Denver aquifer, and any such reservation shall be made in writing with notice to Buyer as provided in the Purchase Contract. The Purchase Price shall be reduced by $3,000 for each acre foot of water so reserved.

IN WITNESS WHEREOF, the parties hereto have executed this First Amendment.

MCCUNE RANCH, LLC, a Colorado limited liability company

By: Mary Sue Liss
Name: Mary Sue Liss
Title: Manager
Date: 8/2/19

SR WATER, LLC, a Colorado limited liability company

By: James F. Morley
Name: James F. Morley
Title: Manager
Date: 8/2/19

SECOND AMENDMENT TO CONTRACT FOR THE PURCHASE NONTRIBUTARY WATER RIGHTS

THIS Second Amendment to Contract for the Purchase of McCune Ranch Nontributary Water Rights ("First Amendment") is dated as of the date of mutual execution by Buyer and Seller ("Effective Date"), and is by and between **McCune Ranch, LLC**, a Colorado limited liability company ("Seller"), and **SR Water, LLC**, a Colorado limited liability company ("Buyer").

RECITALS

A. On September 10, 2017, Seller and Buyer entered into that certain Contract for the Purchase of Nontributary Water Rights, and on August 2, 2019 Seller and Buyer entered into the 1st Amendment thereto (collectively the "Purchase Contract") concerning the water rights more particularly described therein (the "McCune Water Rights"). The Purchase Contract and this Second Amendment shall collectively be termed the "Agreement"; and,

B. Despite the Purchase Contract having expired per its terms, Seller and Buyer by this Second Amendment ratify the terms thereof and include such terms by reference herein to the extent not inconsistent with this Second Amendment, and both Seller and Buyer expressly agree and acknowledge that this Second Amendment acts to ratify and renew the Agreement; and,

C. A condition to closing under the Purchase Contract was the completion of certain "change in place of use" proceedings before the Colorado Ground Water Commission ("GWC") of the McCune Water Rights, allowing the use of the McCune Water Rights for Buyer's purposes at Buyer's locations. Such GWC proceedings were completed in Determination Nos. 1689-BD (Laramie-Fox Hills), 1690-BD (Arapahoe) and 1691-BD (Denver) in February of 2020, and the Parties expressly agree and acknowledge that this condition has been met; and,

D. By agreement dated March 31, 2020, Seller granted to Buyer certain easements necessary to facilitate the construction of wells and pipelines for withdrawal and deliver of the Nontributary Water Rights described in the Purchase Contract; and,

E. The Parties, for the good and valuable consideration described herein, wish to extend the closing date under the Agreement.

NOW THEREFORE, in consideration of the promises and mutual covenants set forth herein, and other good and valuable consideration the receipt and sufficiency of which is hereby acknowledged, the Parties agree as follows:

AGREEMENT

1. All foregoing recitals are incorporated herein by reference.

2. Section 1.1 of the Purchase Contract is hereby replaced in its entirety with the following language:

> Purchaser hereby agrees to purchase ("**Purchase**") from Seller and Seller agrees to sell to Purchaser the Water Rights and Easements for the purchase price of $3,522,000 (the "**Purchase Price**"), which represents a price of $3,000 per determined nontributary acre foot subject of this Agreement, as described in Ground Water Commission Determination Nos. 1689-BD (Laramie-Fox Hills), 1690-BD (Arapahoe) and 1691-BD (Denver) issued in February of 2020, less 15 annual acre feet (100-year) of Denver aquifer water reserved by Seller and transferred to Winsome, LLC by separate contract. The Closing Date ("**Closing Date**") shall not be later than December 31, 2021, unless otherwise extended consistent with the terms of this Agreement.

3. Buyer has provided Seller with additional consideration, above and beyond that described in the Purchase Contract, of $50,000.00, the receipt of which is acknowledged by Seller, in exchange for the extension in the Closing Date described above, and in exchange for Seller's ratification and renewal of this Agreement, as provided in this Second Amendment. Seller may provide further consideration in the form of an additional $50,000.00, and thereby extend the Closing Date as described in Paragraph 2, above (Section 1.1 as amended) further until and including March 31, 2022. Such additional consideration is not included within and shall not be applied to the Purchase Price at closing, as described in revised Paragraph 1.1, above.

4. Should the transaction described in this Agreement fail to close prior to March 31, 2022, unless expressly agreed to the contrary by subsequent agreement signed by the Parties, the Grant of Easements Agreement dated March 31, 2020 shall be null and void and all easements granted therein shall revert to McCune Ranch, LLC. Seller and Buyer shall cooperate in executing and recording all necessary documents to evidence such reversion.

5. Confidentiality of Communications and Documents. All past and future written or oral communications among and between the Parties, their employees, Consultants, agents or Counsel, and all documents shared among and between the Parties, their employees, Consultants, agents or Counsel in connection with or relating to the subject water rights shall remain privileged and confidential to the extent provided by law, until closing of the transaction described in this 2nd Amendment and the Purchase Contract. Except as set forth herein, all such communications and documents ("Common Interest Information") shall, until closing, continue to be protected from disclosure to the extent provided by law by all applicable privileges and immunities, including but not limited to the attorney-client privilege, work product privilege, common interest doctrine, fiduciary law principles, joint plaintiffs privilege, the allied lawyer doctrine, deliberative process privilege and settlement negotiation privilege. Notwithstanding the foregoing, SR Water may disclose quantities, location and determination information concerning the subject water rights only as necessary for municipal water planning purposes.

IN WITNESS WHEREOF, the parties hereto have executed this Second Amendment to Purchase and Sale Agreement.

MCCUNE RANCH, LLC,
a Colorado limited liability company

By: _____
Name: Mary Sue Liss, Manager
Date: 9/17/21

SR WATER, LLC,
a Colorado limited liability company

By: _____
Name: James Morley, Manager
Date: 9/17/2021

THIRD AMENDMENT TO CONTRACT FOR THE PURCHASE NONTRIBUTARY WATER RIGHTS

THIS Third Amendment to Contract for the Purchase of McCune Ranch Nontributary Water Rights ("Third Amendment") is dated as of the date of mutual execution by Buyer and Seller ("Effective Date"), and is by and between **McCune Ranch, LLC**, a Colorado limited liability company ("Seller"), and **SR Water, LLC**, a Colorado limited liability company ("Buyer").

RECITALS

A. On September 10, 2017, Seller and Buyer entered into that certain Contract for the Purchase of Nontributary Water Rights, and on August 2, 2019 Seller and Buyer entered into the 1st Amendment thereto, and on September 17, 2021 Seller and Buyer entered into the 2nd Amendment thereto (collectively the "Purchase Contract") concerning the water rights more particularly described therein (the "McCune Water Rights"). The Purchase Contract and this Third Amendment shall collectively be termed the "Agreement"; and,

B. The Parties, for the good and valuable consideration described herein, wish to extend the closing date under the Agreement.

NOW THEREFORE, in consideration of the promises and mutual covenants set forth herein, and other good and valuable consideration the receipt and sufficiency of which is hereby acknowledged, the Parties agree as follows:

AGREEMENT

1. All foregoing recitals are incorporated herein by reference.

2. Section 1.1 of the Purchase Contract is hereby replaced in its entirety with the following language:

> Purchaser hereby agrees to purchase ("**Purchase**") from Seller and Seller agrees to sell to Purchaser the Water Rights and Easements for the purchase price of $3,522,000 (the "**Purchase Price**"), which represents a price of $3,000 per determined nontributary acre foot subject of this Agreement, as described in Ground Water Commission Determination Nos. 1689-BD (Laramie-Fox Hills), 1690-BD (Arapahoe) and 1691-BD (Denver) issued in February of 2020, less 15 annual acre feet (100-year) of Denver aquifer water reserved by Seller and transferred to Winsome, LLC by separate contract. The Closing Date ("**Closing Date**") shall not be later than June 30, 2022, unless otherwise extended consistent with the terms of this Agreement.

3. Should the transaction described in this Agreement fail to close prior to June 30, 2022, unless expressly agreed to the contrary by subsequent agreement signed by the Parties, the Grant of Easements Agreement dated March 31, 2020 shall be null and

void and all easements granted therein shall revert to McCune Ranch, LLC. Seller and Buyer shall cooperate in executing and recording all necessary documents to evidence such reversion.

4. Consideration. In exchange for this extension of the closing deadline, Buyer shall pay to Seller a one time fee, not applicable to the Purchase Price at closing, and non-refundable should Buyer fail to timely close on the Agreement, of Fifty Thousand US Dollars and no/100's ($50,000.00), due at the time of mutual execution of this 3rd Amendment.

5. Confidentiality of Communications and Documents. All past and future written or oral communications among and between the Parties, their employees, Consultants, agents or Counsel, and all documents shared among and between the Parties, their employees, Consultants, agents or Counsel in connection with or relating to the subject water rights shall remain privileged and confidential to the extent provided by law, until closing of the transaction described in this 3rd Amendment and the Purchase Contract. Except as set forth herein, all such communications and documents ("Common Interest Information") shall, until closing, continue to be protected from disclosure to the extent provided by law by all applicable privileges and immunities, including but not limited to the attorney-client privilege, work product privilege, common interest doctrine, fiduciary law principles, joint plaintiffs privilege, the allied lawyer doctrine, deliberative process privilege and settlement negotiation privilege. Notwithstanding the foregoing, SR Water may disclose quantities, location and determination information concerning the subject water rights only as necessary for municipal water planning purposes.

IN WITNESS WHEREOF, the parties hereto have executed this Third Amendment to Purchase and Sale Agreement.

MCCUNE RANCH, LLC,
a Colorado limited liability company

By: Mary Sue Liss
Name: Mary Sue Liss, Manager
Date: 3-4-22

SR WATER, LLC,
a Colorado limited liability company

By:
Name: James Morley, Manager
Date: 4/24/2022

FOURTH AMENDMENT TO CONTRACT FOR THE PURCHASE NONTRIBUTARY WATER RIGHTS

THIS Fourth Amendment to Contract for the Purchase of McCune Ranch Nontributary Water Rights ("Third Amendment") is dated as of the date of mutual execution by Buyer and Seller ("Effective Date"), and is by and between **McCune Ranch, LLC**, a Colorado limited liability company ("Seller"), and **SR Water, LLC**, a Colorado limited liability company ("Buyer").

RECITALS

A. On September 10, 2017, Seller and Buyer entered into that certain Contract for the Purchase of Nontributary Water Rights, and on August 2, 2019 Seller and Buyer entered into the 1st Amendment thereto, and on September 17, 2021 Seller and Buyer entered into the 2nd Amendment thereto, and on March 4, 2022 Seller and Buyer entered into the 3rd Amendment thereto, (collectively the "Purchase Contract") concerning the water rights more particularly described therein (the "McCune Water Rights"). The Purchase Contract and this Fourth Amendment shall collectively be termed the "Agreement"; and,

B. The Parties, for the good and valuable consideration described herein, wish to extend the closing date under the Agreement.

NOW THEREFORE, in consideration of the promises and mutual covenants set forth herein, and other good and valuable consideration the receipt and sufficiency of which is hereby acknowledged, the Parties agree as follows:

AGREEMENT

1. All foregoing recitals are incorporated herein by reference.

2. Section 1.1 of the Purchase Contract is hereby replaced in its entirety with the following language:

> Purchaser hereby agrees to purchase ("**Purchase**") from Seller and Seller agrees to sell to Purchaser the Water Rights and Easements for the purchase price of $3,522,000 (the "**Purchase Price**"), which represents a price of $3,000 per determined nontributary acre foot subject of this Agreement, as described in Ground Water Commission Determination Nos. 1689-BD (Laramie-Fox Hills), 1690-BD (Arapahoe) and 1691-BD (Denver) issued in February of 2020, less 15 annual acre feet (100-year) of Denver aquifer water reserved by Seller and transferred to Winsome, LLC by separate contract. The Closing Date ("**Closing Date**") shall not be later than August 31, 2022, unless otherwise extended consistent with the terms of this Agreement.

3. Should the transaction described in this Agreement fail to close prior to August 31, 2022, unless expressly agreed to the contrary by subsequent agreement

signed by the Parties or extended by the payment described below, the Grant of Easements Agreement dated March 31, 2020 shall be null and void and all easements granted therein shall revert to McCune Ranch, LLC. Seller and Buyer shall cooperate in executing and recording all necessary documents to evidence such reversion.

4. Consideration. Buyer accepts prior consideration as sufficient to support this extension of the closing deadline; however, should Buyer be unable to close prior to the August 31, 2022 deadline described herein, Buyer shall pay to Seller a one time fee, not applicable to the Purchase Price at closing, and non-refundable, of Fifty Thousand US Dollars and no/100's ($50,000.00), due on or before August 31, 2022, which will allow closing to be extended only to September 30, 2022. Seller does not anticipate further extension of this Agreement.

5. Confidentiality of Communications and Documents. All past and future written or oral communications among and between the Parties, their employees, Consultants, agents or Counsel, and all documents shared among and between the Parties, their employees, Consultants, agents or Counsel in connection with or relating to the subject water rights shall remain privileged and confidential to the extent provided by law, until closing of the transaction described in this 4th Amendment and the Purchase Contract. Except as set forth herein, all such communications and documents ("Common Interest Information") shall, until closing, continue to be protected from disclosure to the extent provided by law by all applicable privileges and immunities, including but not limited to the attorney-client privilege, work product privilege, common interest doctrine, fiduciary law principles, joint plaintiffs privilege, the allied lawyer doctrine, deliberative process privilege and settlement negotiation privilege. Notwithstanding the foregoing, SR Water may disclose quantities, location and determination information concerning the subject water rights only as necessary for municipal water planning purposes.

IN WITNESS WHEREOF, the parties hereto have executed this Third Amendment to Purchase and Sale Agreement.

MCCUNE RANCH, LLC,
a Colorado limited liability company

By: _____
Name: Mary Sue Liss, Manager
Date: 6/23/22

SR WATER, LLC,
a Colorado limited liability company

By: _____
Name: James Morley, Manager
Date: _____

signed by the Parties or extended by the payment described below, the Grant of Easements Agreement dated March 31, 2020 shall be null and void and all easements granted therein shall revert to McCune Ranch, LLC. Seller and Buyer shall cooperate in executing and recording all necessary documents to evidence such reversion.

4. Consideration. Buyer accepts prior consideration as sufficient to support this extension of the closing deadline; however, should Buyer be unable to close prior to the August 31, 2022 deadline described herein, Buyer shall pay to Seller a one time fee, not applicable to the Purchase Price at closing, and non-refundable, of Fifty Thousand US Dollars and no/100's ($50,000.00), due on or before August 31, 2022, which will allow closing to be extended only to September 30, 2022. Seller does not anticipate further extension of this Agreement.

5. Confidentiality of Communications and Documents. All past and future written or oral communications among and between the Parties, their employees, Consultants, agents or Counsel, and all documents shared among and between the Parties, their employees, Consultants, agents or Counsel in connection with or relating to the subject water rights shall remain privileged and confidential to the extent provided by law, until closing of the transaction described in this 4th Amendment and the Purchase Contract. Except as set forth herein, all such communications and documents ("Common Interest Information") shall, until closing, continue to be protected from disclosure to the extent provided by law by all applicable privileges and immunities, including but not limited to the attorney-client privilege, work product privilege, common interest doctrine, fiduciary law principles, joint plaintiffs privilege, the allied lawyer doctrine, deliberative process privilege and settlement negotiation privilege. Notwithstanding the foregoing, SR Water may disclose quantities, location and determination information concerning the subject water rights only as necessary for municipal water planning purposes.

IN WITNESS WHEREOF, the parties hereto have executed this Third Amendment to Purchase and Sale Agreement.

MCCUNE RANCH, LLC,
a Colorado limited liability company

By: _____
Name: Mary Sue Liss, Manager
Date: _____

SR WATER, LLC,
a Colorado limited liability company

By: _____
Name: James Morley, Manager
Date: 6/21/22

EXHIBIT H

CONTRACT FOR THE PURCHASE AND SALE OF WATER RIGHTS

THIS CONTRACT FOR THE PURCHASE AND SALE OF WATER RIGHTS (this "Contract") between Shamrock Water, LLC, a Colorado limited liability company ("Shamrock" or "Seller"), and the SR Water, LLC, a Colorado limited liability company ("SR Water" or "Buyer") is dated as of the day Seller and Buyer have both signed it, as indicated by their signatures below (the latter of which shall be the "Effective Date").

RECITALS

A. Seller owns the water rights from nontributary and not-nontributary Denver Basin aquifers described on the attached Exhibit A (the "Bar X Water Rights") underlying the property located in El Paso County, Colorado described more particularly on the attached Exhibit B (the "Bar X Land"). Seller has previously sold to SR Water a portion of the nontributary groundwater rights underlying the Bar X Land ("Previously Purchased Water Rights") and the Previously Purchased Water Rights are not included in the Bar X Water Rights as described herein and on the attached Exhibit A.

B. Seller also holds certain easement rights for use in connection with the withdrawal, development and transmission of the Bar X Water Rights which easements are described more particularly on the attached Exhibit C (the "Bar X Easements").

C. Seller also owns the water rights described on the attached Exhibit D (the "Shamrock West Water Rights") underlying the property located in El Paso County, Colorado described more particularly on the attached Exhibit E (the "High Forest Ranch Land"). Seller's Bar X Water Rights, together with the Shamrock West Water Rights, are referred to collectively in this Contract as the "Subject Water Rights".

D. Seller also holds certain easement rights for use in connection with the withdrawal, development and transmission of the Shamrock West Water Rights. These easements were platted as part of the High Forest Ranch Land subdivision proceeding, as well as being decreed by the Division 2 Water Court in the proceedings described in Exhibit D. The "High Forest Ranch Easements", as platted, are depicted on the attached Exhibit F and shall be more particularly described by deed at the time of Closing of this Contract.

E. Seller previously sold to buyer a separate portion of the Bar X Water Rights by prior contract, and such contract included earnest money deposits by Buyer on the Bar X Water Rights subject of this Contract which were forfeit to Seller. Buyer now desires to purchase the Subject Water Rights, the Bar X Easements and the High Forest Ranch Easements, and Seller desires to sell to Buyer such Subject Water Rights under the terms and conditions set forth in this Contract. It is Seller's intent to convey to Buyer any and all of Seller's rights to the Subject Water Rights, the Bar X Easements, and the High Forest Ranch Easements, all of which are described herein to the best of Seller's knowledge.

F. Buyer intends to assign the purchase of the Subject Water Rights, Bar X Easements and High Forest Ranch Easements, described in this Contract, or to re-sell post purchase, to a municipal entity, the Falcon Area Water and Wastewater Authority ("FAWWA"), or similar. FAWWA intends to construct a regional water distribution system, including the construction of wells and pipelines within the Bar X Land (through the exercise of the Bar X Easements) and the High Forest Ranch Land (through the High Forest Ranch Easements), and one or more pipelines from the Bar X Land and High Forest Ranch Land to the lands that will be provided water service by FAWWA, including the Sterling Ranch development in El Paso County ("Sterling Ranch") and for further distribution of water within the respective service areas of FAWWA's member entities (the "Water Transmission Pipeline").

AGREEMENT

IN CONSIDERATION of the Recitals and the following valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the parties hereto agree as follows:

Section 1. PURCHASE AND SALE.

1.1 Purchase and Sale; Purchase Price. Buyer hereby agrees to purchase from Seller and Seller agrees to sell to Buyer the Subject Water Rights, the Bar X Easements, and the High Forest Ranch Easements (the "Purchase") for the purchase price of Seven Million Seven Hundred and Fifty Thousand Dollars ($7,750,000.00) (the "Purchase Price").

1.2 Consideration – Extension Deposits. The Parties acknowledge the sufficiency of earnest money previously forfeit to Seller pursuant to prior contracts, in combination with the other good and valuable consideration described herein, and no additional earnest money or deposit is necessary provided this Contract closes prior to August 30, 2022. Should Buyer wish to extend closing beyond August 30, 2022, Buyer shall deposit with Seller for each month of extension of Closing sought, the amount of $300,000.00 ("Extension Deposits"). Extension Deposits shall be non-refundable, but shall be applied to the Purchase Price at Closing. Buyer may extend Closing through the use of such Extension Deposits for a maximum of four (4) months, to no later than December 31, 2022. Upon Closing, the Extension Deposits shall be applied to the Purchase Price. If Buyer fails to timely pay any Extension Deposit, this Contract shall automatically terminate and neither party shall have any rights or obligations hereunder.

1.3 Closing Date. The Purchase will be closed at the offices of Land Title Guarantee Company located at 1755 Telstar Drive, Colorado Springs, CO 80920, on the earlier of:

(a) August 30, 2022, at 12:00 PM, Mountain Standard Time, or

(b) another date and time agreed to by the parties, including dates beyond August 30, 2022 pursuant to Extension Deposits described in Paragraph 1.2, above (the "Closing Date").

The failure of Buyer to close on the Purchase on the Closing Date shall be a default of this Contract, and Seller shall be entitled to retain the Deposit as damages.

1.4 Title Insurance. Seller will provide to Buyer a title commitment(s) with respect to the Bar X Easements and the High Forest Ranch Easements to be issued by Land Title Guarantee Company ("Title Company"), within ten (10) days of mutual execution of this Contract. Promptly after the Closing, Seller shall, at Seller's expense, cause the Title Company to issue to Buyer an owner's policy of title insurance insuring title to the interests in the Bar X Easements and High Forest Ranch Easements conveyed to Buyer in the amount of $500,000.00.

1.5 Deliveries at Closing.

(a) At Closing, Seller shall deliver to Title Company:

i. A special warranty deed conveying to Buyer the Subject Water Rights in a form substantially similar to that attached hereto as Exhibit G.

ii. A special warranty deed conveying to Buyer the Bar X Easements and the High Forest Ranch Easements, so as to allow Buyer rights of ingress and egress to construct, operate and maintain water wells and water transmission/supply pipelines, and any appurtenances thereto, and to withdraw, develop and use the Subject Water Rights. Said special warranty deed shall be in a form substantially similar to that attached hereto as Exhibit H.

iii. An affidavit setting forth its federal tax identification number and a certificate that it is not a "foreign person" with the meaning of the Internal Revenue Code.

iv. A settlement statement and such other affidavits and documents required or requested by the Title Company to consummate the transactions contemplated by this Contract.

(b) At Closing, Buyer shall deliver to Title Company:

i. The balance of the Purchase Price, less the Deposit, and credited and debited with applicable Closing costs.

ii. A settlement statement and such affidavits and documents required or requested by the Title Company to consummate the transactions contemplated by this Contract.

(c) Title Company shall disburse funds in accordance with the settlement statements. Each party agrees to execute and deliver such additional documents as are customary in such transactions or may be reasonably requested by the other party or the Title Company.

(d) Closing Costs. Costs to record all closing documents to be recorded in the office of the Clerk and Recorder for El Paso County, including documentary fees, shall be paid for by the Buyer. The closing fees charged by Title Company, shall be shared equally by Seller and Buyer. All other closing costs shall be paid by the parties in accordance with the local prevailing custom for transactions of this kind in El Paso County, Colorado.

(e) All payments required to be made under this Contract shall be by direct wire transfer of immediately available U.S. funds.

1.6 Conditions to Closing.

(a) Buyer's Conditions. Buyer's obligations under this Contract to purchase the Bar X Nontributary Water Rights are subject to the following conditions precedent, which must be satisfied or waived on or before Closing:

i. Representations by Seller. The representations and warranties made by Seller in this Contract must be true and correct as of the Closing.

ii. Compliance by Seller. Seller shall have complied with the terms and conditions of this Contract in all material respects.

iii. No Material Change. Title to the Subject Water Rights, Bar X Easements and High Forest Ranch Easements shall be subject to no matters other than the Permitted Exceptions.

(b) Seller's Conditions. Seller's obligations under this Contract to sell the Bar X Nontributary Water Rights are the subject to the following conditions precedent, which must be satisfied or waived on or before Closing:

i. Representations by Buyer. The representations and warranties made by Buyer in this Contract must be true and correct as of the Closing.

ii. Compliance by Buyer. Buyer shall have complied with the terms and conditions of this Contract in all material respects.

(c) Failure of Conditions Precedent; Cancellation. If any of the foregoing conditions precedent to Closing has not been satisfied by the Closing Date, the party benefited by the failed condition may elect, at its option and by notice to the other party, to (i) cancel this Contract, in which case neither party shall have any further rights or obligations under the Contract; or (ii) waive the conditions and proceed to Closing, and (iii) in the event of a default by the other party, pursue any remedies

available for the default under this Contract, at law or in equity. The parties agree that notwithstanding the failure of any conditions precedent, Seller shall be entitled to retain the Deposit as consideration for entering into the Contract.

Section 2. TITLE.

2.1. Title to the Subject Water Rights, the Bar X Easements, and the High Forest Ranch Easements shall be marketable and shall be free and clear of all liens and encumbrances, subject in both instances only to:

(a) Any exceptions shown on a title commitment for the Bar X Easements and High Forest Ranch Easements that do not impair the use of the Subject Water Rights, or the Bar X Easements, or the High Forest Ranch Easements, for their allowed uses; and

(b) Any defects or encumbrances created by Buyer, at the instance of Seller, or with Seller's consent.

The foregoing title exceptions are hereinafter called the "Permitted Exceptions".

Section 3. BUYER'S ACCESS TO BAR X LAND and HIGH FOREST RANCH LAND for DUE DILIGENCE.

3.1 Buyer's Access to Bar X Land and High Forest Ranch Land. Seller grants permission to Buyer, its agents and/or employees, from and after the Effective Date, and subject to the provisions of this Section 3.1, to exercise the access rights under the Bar X Easements to enter upon the Bar X Land, and to exercise the access rights under the High Forest Ranch Easements to enter upon the High Forest Ranch Land, for purposes of making surveys, engineering studies, soil tests, water tests, obtaining topographical information and for other similar preliminary work in connection with the proposed withdrawal, use and transmission of the Subject Water Rights. Buyer hereby agrees to hold Seller harmless from any mechanic's liens which might be filed against the Bar X Land or the High Forest Ranch Land by reason of the performance of any of the acts herein mentioned, and from any and all claims, demands, losses, costs, expenses or liabilities resulting from the performance of any of the acts herein mentioned, including reasonable attorneys' fees incurred by Seller. Prior to any entry by Buyer, its agents and employees on to the Bar X Land and/or High Forest Ranch Land, Buyer shall, at its sole cost and expense, obtain a policy of public liability insurance, in connection with Buyer's activities on the Bar X Land and/or High Forest Ranch Land, from an insurer reasonably acceptable to Seller and in form and content reasonably acceptable to Seller, in an amount of not less than One Million Dollars ($1,000,000.00), naming Seller as an additional insured party, which policy shall be maintained by Buyer, at its sole cost and expense, in full force and effect until the last Closing to occur hereunder or the termination of this Contract, as the case may be.

3.2 Other Investigations. Previously, Seller delivered to representatives of Buyer copies of any and all water court decrees, agreements, engineering reports, the Bar X Easements, the High Forest Ranch Easements, and other documents in its possession relating to or concerning the Subject Water Rights, Bar X Easements, and High Forest Ranch Easements. Buyer, at its expense, shall have the option to retain a water resources engineer and/or attorney to examine the Subject Water Rights, the Bar X Easements, and the High Forest Ranch Easements, including any documents received from Seller. Buyer may also perform such further due diligence investigations concerning the Subject Water Rights, the Bar X Easements, and the High Forest Ranch Easements, and the withdrawal, use and transmission of the Subject Water Rights and exercise of rights under the Bar X Easements and High Forest Ranch Easements as it deems appropriate. Seller shall cooperate in such investigations; provided, however, that Seller shall not be required to bear any more than nominal expense in so doing.

Section 4. REPRESENTATIONS AND WARRANTIES.

4.1 Representations, Warranties and Covenants of Seller. Seller hereby represents, warrants and covenants to Buyer that, as of the date hereof and the date of each Closing:

(a) Authority. The execution and delivery by Seller of this Contract are within Seller's powers and have been duly authorized by all requisite organizational actions. The person executing this Contract on behalf of Seller has the authority to do so. This Contract is a legal, valid and binding obligation of Seller, enforceable in accordance with its terms.

(b) Title. Seller holds good and marketable title to the Subject Water Rights, the Bar X Easements, and the High Forest Ranch Easements, free and clear of all liens and encumbrances except the Permitted Encumbrances. During the term of this Contract, Seller will not enter into any agreement or suffer any lien with respect to the Subject Water Rights, Bar X Easements, or High Forest Ranch Easements.

(c) Litigation. To the knowledge of Seller, there is no pending or threatened litigation affecting the Subject Water Rights, Bar X Easements, and High Forest Ranch Easements.

(d) Governmental Notices. Seller has not received any notices or directives from any governmental entities with jurisdiction over the Subject Water Rights, Bar X Easements, and High Forest Ranch Easements claiming that any current use of or current condition with the Subject Water Rights, Bar X Easements and/or High Forest Ranch Easements violates any federal, state, or local laws or regulations.

(e) No Other Warranties. Other than the foregoing representations, warranties and covenants, no representations and warranties have been made by Seller or anyone on its behalf to the Buyer as to the condition of the Subject Water Rights, Bar

X Easements, or High Forest Ranch Easements, and it is understood and agreed that the same are sold "as is" at the time of each Closing.

4.2 Representations, Warranties and Covenants of Buyer. Buyer hereby represents, warrants and covenants to Seller that, as of the date hereof and the date of each Closing:

(a) Authority. The execution and delivery by Buyer of this Contract are within Buyer's powers and have been duly authorized by all requisite organizational actions. The person executing this Contract on behalf of Buyer has the authority to do so. This Contract is a legal, valid and binding obligation of Seller, enforceable in accordance with its terms.

4.3 Seller's Disclaimers. Seller makes no warranty or representation regarding the physical yield and quality of the Subject Water Rights or that the Subject Water Rights are fit for the purposes for their intended use by Buyer.

Section 5. DEFAULT; REMEDIES.

5.1 Default. Time is of the essence hereof, and if any payment or any other condition is not made, tendered or performed as herein provided, there shall be the following remedies:

(a) Breach by Buyer. In the event of any breach by Buyer of its obligation to purchase the Subject Water Rights, Seller will give Buyer written notice of Buyer's default. If Buyer fails to cure the default within ten (10) days after Seller's notice, Seller shall be entitled terminate this Contract, retain the Deposit, and may also avail itself to all remedies normally available therefor, at law or in equity, including the remedy of specific performance, and continue to enforce the obligations of Buyer that are intended to survive the termination of this Contract.

(b) Breach by Seller. In the event of a breach by Seller to sell the Subject Water Rights, the Bar X Easements, and the High Forest Ranch Easements, Buyer will give Seller written notice of Seller's default. If Seller fails to cure the default within ten (10) days after Buyer's notice Buyer may, at its election, treat this Contract as terminated, and the Deposit shall be returned to Buyer; provided, however, that Buyer may, at is election, treat this Contract as being in full force and effect with the right to an action for specific performance, damages or both.

Section 6. NO ENCUMBRANCE OF BUYER'S CONTRACT INTEREST.

6.1 Buyer shall not grant a security interest in or a collateral assignment of, or otherwise encumber: its rights in, obligations under or interest in this Contract. Any purported grant of such a security interest, collateral assignment or encumbrance shall be void *ab initio* and shall constitute a default under this Contract.

Section 7. MISCELLANEOUS.

7.1 Replacement of Prior Contracts. All prior contractual commitments between Seller and SR Water, LLC concerning the Subject Water Rights, the Bar X Easements and/or the High Forest Ranch Easements, including that "Water Wells and Pipelines Easement and Sharing Agreement" dated September 17, 2014, are hereby expressly terminated by the Parties, and shall no longer be of any force or effect.

7.2 Effect of Headings. The subject headings of paragraphs and subparagraphs of this Contract are included for purposes of convenience only, and shall not affect the construction or interpretation of any of its provisions.

7.3 Entire Contract; Survival of Contract; Construction. This Contract constitutes the entire agreement between the parties hereto and supersedes all prior and contemporaneous agreements, representations and understandings of the parties regarding the subject matter of this Contract. No supplement, modification or amendment of this Contract shall be binding unless executed in writing by the parties hereto. Both parties participated in the preparation of this Contract and consequently any rule of construction construing any provision against the drafter shall not be applicable.

7.4 Counterparts. This Contract may be executed in one or more counterparts, each of which shall be deemed an original, and all of which together shall constitute one and the same instrument.

7.5 Assignment. Buyer may assign its interest in this Contract to FAWWA without prior written approval of Seller. Buyer may assign its interest in this Contract to any other entity or person only with the express written approval of Seller, which shall not be unreasonably withheld.

7.6 Notices. All notices and other communications under this Contract shall be in writing and shall be given either personally or by an overnight courier service (which obtains a receipt evidencing delivery) and shall be addressed as follows:

To Buyer: SR Water, LLC
20 Boulder Crescent, Suite 200
Colorado Springs, Colorado 80915

To Seller: Shamrock Water, LLC
1826 North Loop 1604 West, Suite 200
San Antonio, Texas 78212

A party may change its addresses for purposes of receiving notice by providing the other party with notice of its new address.

7.7 Governing Law. This Contract shall be construed in accordance with the laws of the State of Colorado, and venue shall be proper in the District Court for El Paso County, Colorado.

7.8 Prohibition Against Recording. This Contract shall not be recorded without the prior written consent of the Seller. If it is recorded without such prior written consent, this Contract shall terminate, and such recording shall constitute notice to all third parties that this Contract has been terminated and the Buyer has no right, title, claim, or interest in the Lots.

7.9 Recovery of Litigation Costs. If any legal action or proceeding is brought for the enforcement of this Contract, or because of an alleged dispute, breach, default, or misrepresentation in connection with any of the provisions of this Contract, the successful or prevailing party shall be entitled to recover attorneys' fees and other costs incurred in that action or proceeding, in addition to any other relief to which it or they may be entitled. As used herein, "attorneys' fees" shall mean the full and actual costs of any legal services actually rendered in connection with the matters involved, calculated on the basis of the usual fee charged by the attorneys performing such services and shall not be limited to "reasonable fees" as defined by any statute, case law or rule of court. The parties intend that in addition to all other legal and equitable remedies available, injunctive relief and the remedy of specific performance may be utilized in the event of the breach or threatened breach of this Contract.

7.10 Further Assurances. Each of the parties hereto undertakes and agrees to execute and deliver such documents, writings, and further assurances as may be required to carry out the intent and purpose of this Contract.

7.11 Dates. If any date set forth in this Contract for the delivery of a document or occurrence of any event (such as closings and payment hereunder) should, under the terms hereof, fall on a weekend or holiday, then such date shall automatically be extended to the next succeeding weekday that is not a holiday.

7.12 Recording of Memorandum. The parties may execute and record a memorandum of this Contract to put third parties on notice of Buyer's interest in the Subject Water Rights, Bar X Easements and High Forest Ranch Easements. In the event this Contract terminates, Buyer grants permission to Seller to record on behalf of both parties a memorandum notifying third parties of such termination.

(remainder of page intentionally blank, signatures follow)

7.8 Prohibition Against Recording. This Contract shall not be recorded without the prior written consent of the Seller. If it is recorded without such prior written consent, this Contract shall terminate, and such recording shall constitute notice to all third parties that this Contract has been terminated and the Buyer has no right, title, claim, or interest in the Lots.

7.9 Recovery of Litigation Costs. If any legal action or proceeding is brought for the enforcement of this Contract, or because of an alleged dispute, breach, default, or misrepresentation in connection with any of the provisions of this Contract, the successful or prevailing party shall be entitled to recover attorneys' fees and other costs incurred in that action or proceeding, in addition to any other relief to which it or they may be entitled. As used herein, "attorneys' fees" shall mean the full and actual costs of any legal services actually rendered in connection with the matters involved, calculated on the basis of the usual fee charged by the attorneys performing such services and shall not be limited to "reasonable fees" as defined by any statute, case law or rule of court. The parties intend that in addition to all other legal and equitable remedies available, injunctive relief and the remedy of specific performance may be utilized in the event of the breach or threatened breach of this Contract.

7.10 Further Assurances. Each of the parties hereto undertakes and agrees to execute and deliver such documents, writings, and further assurances as may be required to carry out the intent and purpose of this Contract.

7.11 Dates. If any date set forth in this Contract for the delivery of a document or occurrence of any event (such as closings and payment hereunder) should, under the terms hereof, fall on a weekend or holiday, then such date shall automatically be extended to the next succeeding weekday that is not a holiday.

7.12 Recording of Memorandum. The parties may execute and record a memorandum of this Contract to put third parties on notice of Buyer's interest in the Subject Water Rights, Bar X Easements and High Forest Ranch Easements. In the event this Contract terminates, Buyer grants permission to Seller to record on behalf of both parties a memorandum notifying third parties of such termination.

(*remainder of page intentionally blank, signatures follow*)

IN WITNESS WHEREOF, the parties hereto have hereunto set their hands and seals the day and year first above written.

SELLER:

SHAMROCK WATER, LLC, a Colorado limited liability company

By: _____

Name: JAMES C WORTH

Title: MANAGER
Date: JUNE 19, 2022

BUYER:

SR WATER, LLC, a Colorado limited liability company

By:
Name: JAMES F. MORLEY
Title: MANAGER
Date: 6/20/22

Exhibit A
Bar X Water Rights

The "Bar-X Water Rights" are defined as all of Seller's right, title and interest in and to a portion of the groundwater and groundwater rights in the Denver Basin aquifers underlying all or a portion of the Bar-X Property, described more particularly on the attached Exhibit B, that were decreed by and are subject to the terms and conditions set forth in the Amended Ruling und Decree of the Water Court, Water Division No. 1, Case No. 93-CW-018 (85-CW-445) entered on March 17, 1995, amending the decree entered in Case No. 85-CW-445, Water Division No. 1 on December 31, 1985. Said Bar-X Water Rights are comprised of the following decreed average annual amounts of withdrawal of nontributary groundwater from the following Denver Basin aquifers:

Dawson – 1,288 acre-feet
Denver – 1,199 acre-feet
Arapahoe – 742.5 acre-feet

together with all of Seller's share of any "banked" water (as defined by the Colorado Division of Water Resources) attributable to the above-described groundwater rights, and Seller's share of any additional groundwater that may be available from the foregoing Denver Basin aquifers attributable to the above-described groundwater rights based on actual aquifer conditions, said groundwater rights being subject to the retained jurisdiction of the Water Court pursuant to the terms of said decree.

Exhibit B
Bar X Land

A parcel of land located in Township 11 South, Range 65 West of the 6th Principal Meridian, El Paso County, Colorado, and more particularly described as follows:

All of Section 16; the E1/2 of the SW1/4 and the SE1/4 of Section 17; the E1/2 of the E1/2 of the W1/2 of Section 20; the NE1/4 and the W1/2, except for the east 30 feet of the SW1/4, of Section 21.

Exhibit C
Bar X Easements

Declaration of Establishment of Water Rights Easements, recorded at Reception No. 097024427 in the Office of the Clerk and Recorder of El Paso County, Colorado.

Water Site, Water Storage Tank and Water Transmission Line Agreement, recorded at Reception No. 097024428 in the Office of the Clerk and Recorder of El Paso County, Colorado.

Water Rights Special Warranty Deed, recorded at Reception No. 097025568 in the Office of the Clerk and Recorder of El Paso County, Colorado.

Amended and Restated Declaration Creating Covenants, Conditions and Easements for Highland Estates, recorded at Book 6623, Page 1310 in the Office of the Clerk and Recorder of El Paso County, Colorado.

Second Amended and Restated Declaration Creating Conditions, Covenants and Restrictions for Highland Estates, recorded at Reception No. 201087557 in the Office of the Clerk and Recorder of El Paso County, Colorado.

Well Field Easement, recorded at Book 6487, Page 1183, Reception No. 094097789 in the Office of the Clerk and Recorder of El Paso County, Colorado.

Easement, recorded at Book 6487, Page 1190, Reception No. 094097790 in the Office of the Clerk and Recorder of El Paso County, Colorado.

Easement, recorded at Book 6203, Page 1085, Reception No. 002314866 in the Office of the Clerk and Recorder of El Paso County, Colorado.

Easement, recorded at Book 4224, Page 523, Reception No. 002328991 in the Office of the Clerk and Recorder of El Paso County, Colorado.

Well Field Easement, recorded at Book 6224, Page 529, Reception No. 002328892 in the Office of the Clerk and Recorder of El Paso County, Colorado.

Exhibit D
Shamrock West Water Rights

The "Shamrock West Water Rights" are defined as all of Seller's right, title and interest in and to a portion of the groundwater and groundwater rights in the Denver Basin aquifers underlying all or a portion of the High Forest Ranch Land, described more particularly on the attached Exhibit E, that were decreed by and are subject to the terms and conditions set forth in the Ruling and Decree of the Water Court, Water Division No. 2, Case No. 85-CW-131(B) entered on March 8, 1996, amending the decree entered in Case No. 85-CW-131, Water Division No. 2 on December 31, 1985. Said Shamrock West Water Rights are comprised of the following decreed average annual amounts of withdrawal of nontributary groundwater and not nontributary groundwater from the following Denver Basin aquifers:

Dawson (not nontributary) – 498 acre-feet
Denver (nontributary) – 187 acre-feet
Denver (not nontributary) – 1057 acre-feet
Arapahoe (nontributary) – 474 acre-feet
Arapahoe (not nontributary) – 25 acre-feet

together with all of Seller's share of any "banked" water (as defined by the Colorado Division of Water Resources) attributable to the above-described groundwater rights, and Seller's share of any additional groundwater that may be available from the foregoing Denver Basin aquifers attributable to the above-described groundwater rights based on actual aquifer conditions, said groundwater rights being subject to the retained jurisdiction of the Water Court pursuant to the terms of said decree.

Exhibit E
High Forest Ranch Land

A parcel of land located in Township 11 South, Range 66 West of the 6th Principal Meridian, El Paso County, Colorado, and more particularly described as follows:

The following portion of Section 25: The NW l/4 and the SW1/4 of the SW1/4; All of Section 26; The following portion of Section 27: that part of the E1/2 of the E1/2 and of the W1/2 of the SE1/4 of the SW1/4 of the SE1/4 1ying East of Colorado State Highway 83; The E1/2 of the SE1/4 of the SW1/4 of the SE1/4 and that part of the SE1/4 of the NW1/4 of the SE1/4 lying East of Colorado State Highway 83; The following portion of Section 34: The E1/2 of the E1/2 and that part of the E1/2 of the W1/2 of the E1/2 and of the E1/2 of the SW1/4 and of the W1/2 of the W1/2 of the SE1/4 lying East of the center line of the road described in deed recorded in Book 781 at Page 87 in the office of the clerk and recorder of El Paso County, Colorado.

Exhibit F
High Forest Ranch Easements

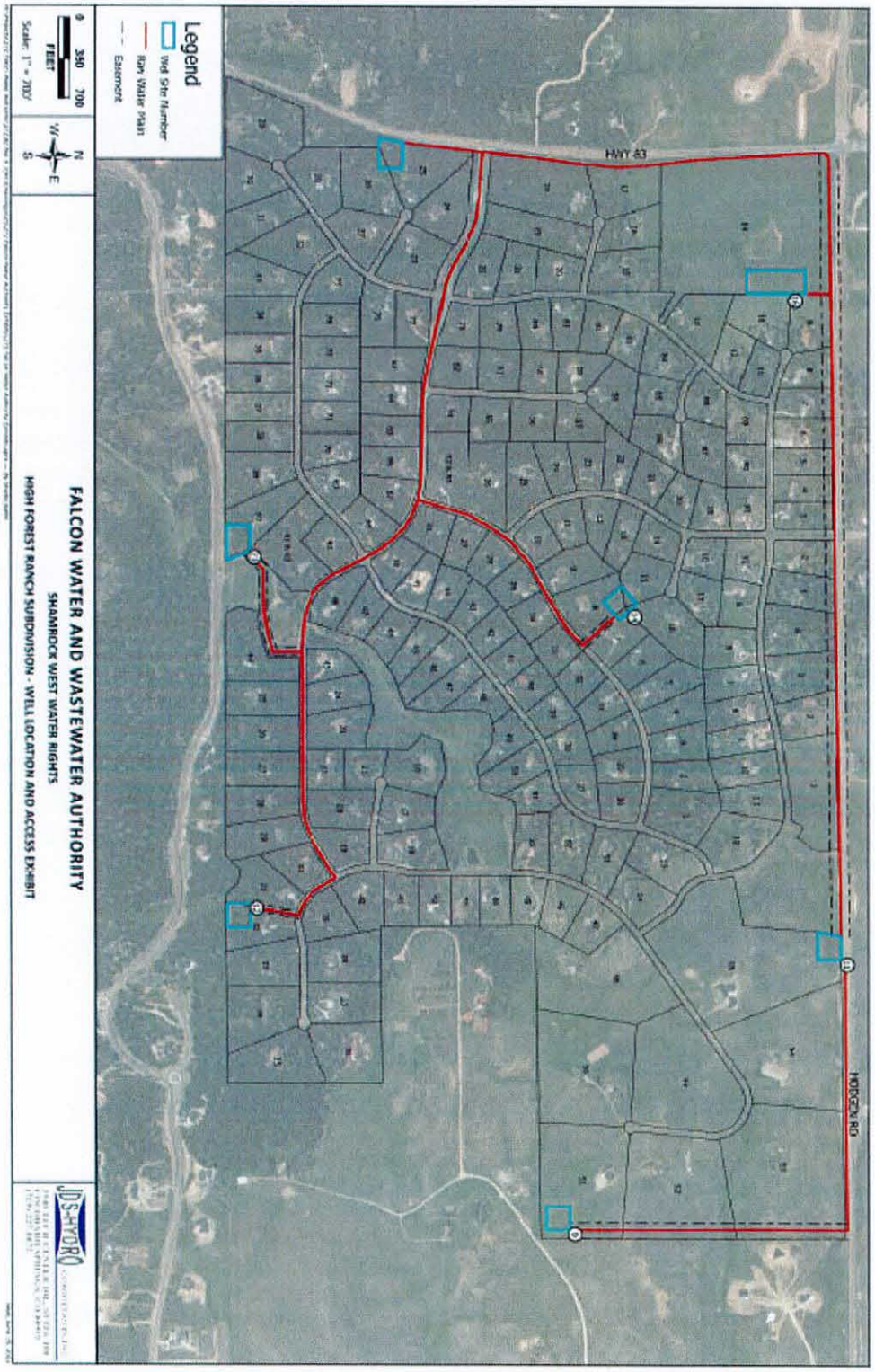


Exhibit G
Form Special Warranty Deed – Subject Water Rights

SPECIAL WARRANTY DEED
(Water Rights)

THIS DEED, made this ____ day of _____, 2022, between **Shamrock Water, LLC**, a _____ limited liability company ("Grantor"), and **SR Water, LLC**, a Colorado limited liability company ("Grantee"), whose address is 20 Boulder Crescent, Colorado Springs, Colorado 80903.

WITNESS, that the Grantor, for and in consideration of the sum of ten dollars and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, has remised, released, sold, and conveyed and quitclaimed, and by these presents does remise, release, sell, convey and quitclaim unto the Grantee, his heirs and assigns forever, all right, title and interest in and to the following described water and water rights located in the County of El Paso, State of Colorado:

All of Seller's right, title and interest in and to a portion of the groundwater and groundwater rights in the Denver Basin aquifers underlying all or a portion of the real property described more particularly on Attachment A, that were decreed by and are subject to the terms and conditions set forth in the Amended Ruling und Decree of the Water Court, Water Division No. 1, Case No. 93CW018 (85CW445) entered on March 17, 1995, amending the decree entered in Case No. 85CW445, Water Division No. 1 on December 31, 1985, including, but not limited to the following decreed average annual amounts of withdrawal of nontributary groundwater from the following Denver Basin aquifers: (a) not-nontributary Dawson aquifer – 1,288 acre-feet; (b) nontributary Denver aquifer, 1,199 acre-feet; and, (c) nontributary Arapahoe aquifer – 742.5 acre-feet; together with all of Seller's share of any "banked" water (as defined by the Colorado Division of Water Resources) attributable to the above-described groundwater rights, and Seller's share of any additional groundwater that may be available from the foregoing Denver Basin aquifers attributable to the above-described groundwater rights based on actual aquifer conditions. Such groundwater rights are subject to the retained jurisdiction of the Water Court pursuant to the terms of the 93CW018 and 85CW445 decrees, and include all licenses, permits, certificates, contracts and decrees evidencing such water and water rights, and all wells and fixtures relating thereto, along with all replacements, substitutions, accessions thereto and proceeds deriving therefrom; along with,

All of Seller's right, title and interest in and to a portion of the groundwater and groundwater rights in the Denver Basin aquifers underlying all or a portion of the real property described more particularly on Attachment B, that were decreed by and are subject to the terms and conditions set forth in the Ruling and Decree of the Water Court, Water Division No. 2, Case No. 85CW131(B) entered on March 8, 1996, amending the decree entered in Case No. 85CW131, Water Division No. 2 on December 31, 1985. Said Denver Basin groundwater rights include, but are not limited to, the following decreed average annual amounts of withdrawal of nontributary groundwater and not nontributary groundwater from the following

Denver Basin aquifers: (d) not-nontributary Dawson aquifer – 498 acre-feet; (b) not-nontributary Denver aquifer – 1,057 (c) not-nontributary Arapahoe aquifer – 25 acre-feet; (d) nontributary Denver aquifer – 187 acre-feet; and, (e) nontributary Arapahoe aquifer – 474 acre-feet; together with all of Seller's share of any "banked" water (as defined by the Colorado Division of Water Resources) attributable to the above-described groundwater rights, and Seller's share of any additional groundwater that may be available from the foregoing Denver Basin aquifers attributable to the above-described groundwater rights based on actual aquifer conditions, said groundwater rights being subject to the retained jurisdiction of the Water Court pursuant to the terms of said decree. Such groundwater rights are subject to the retained jurisdiction of the Water Court pursuant to the terms of the 85CW131(b) decree, and include all licenses, permits, certificates, contracts and decrees evidencing such water and water rights, and all wells and fixtures relating thereto, along with all replacements, substitutions, accessions thereto and proceeds deriving therefrom.

TOGETHER, with all the hereditaments and appurtenances thereunto belonging, or in anywise appertaining, the reversions, remainders, rents, issues, and profits thereof, and all the estate, right, title, interest, claim, and demand whatsoever of the Grantor, either in law or equity, in and to the above bargained premises;

TO HAVE AND TO HOLD the rights to divert, apply, extract and use the water and groundwater rights above bargained and described, with the appurtenances, unto the Grantee and assigns forever. The Grantor, for himself and his successors and assigns, does hereby covenant and agree that Grantor shall and will WARRANT AND FOREVER DEFEND the above bargained premises in the quiet and peaceable possession of the Grantee, his successors and assigns, against all and every person or persons claiming the whole or any part thereof, by, through or under the Grantor.

IN WITNESS WHEREOF, the Grantor has executed this Special Warranty Deed on the date set forth above.

_____

_____, as _____
Of Shamrock Water, LLC, a _____ limited liability company

STATE OF _____)
) ss.
COUNTY OF _____)

The foregoing instrument was acknowledged before me this ____ day of _____, 2022, by _____, as the _____ of Shamrock Water, LLC, a _____ limited liability company.

Witness my hand and official seal.

My commission expires: _____

_____
Notary Public

ATTACHMENT A
Legal Description of Land

A parcel of land located in Township 11 South, Range 65 West of the 6th Principal Meridian, El Paso County, Colorado, and more particularly described as follows:

All of Section 16; the E1/2 of the SW1/4 and the SE1/4 of Section 17; the E1/2 of the E1/2 of the W1/2 of Section 20; the NE1/4 and the W1/2, except for the east 30 feet of the SW1/4, of Section 21.

ATTACHMENT B
Legal Description of Land

A parcel of land located in Township 11 South, Range 66 West of the 6th Principal Meridian, El Paso County, Colorado, and more particularly described as follows:

The following portion of Section 25: The NW l/4 and the SW1/4 of the SW1/4; All of Section 26; The following portion of Section 27: that part of the E1/2 of the E1/2 and of the W1/2 of the SE1/4 of the SW1/4 of the SE1/4 1ying East of Colorado State Highway 83; The E1/2 of the SE1/4 of the SW1/4 of the SE1/4 and that part of the SE1/4 of the NW1/4 of the SE1/4 lying East of Colorado State Highway 83; The following portion of Section 34: The E1/2 of the E1/2 and that part of the E1/2 of the W1/2 of the E1/2 and of the E1/2 of the SW1/4 and of the W1/2 of the W1/2 of the SE1/4 lying East of the center line of the road described in deed recorded in Book 781 at Page 87 in the office of the clerk and recorder of El Paso County, Colorado.

Exhibit H
Form Special Warranty Deed – Bar X Easements and High Forest Ranch Easements

SPECIAL WARRANTY DEED
(Easements)

THIS DEED, made this ____ day of _____, 2022, between **Shamrock Water, LLC**, a Colorado limited liability company ("Grantor"), and **SR Water, LLC**, a Colorado limited liability company ("Grantee"), whose address is 20 Boulder Crescent, Colorado Springs, Colorado 80903.

WITNESS, that the Grantor, for and in consideration of the sum of ten dollars and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, has remised, released, sold, and conveyed and quitclaimed, and by these presents does remise, release, sell, convey and quitclaim unto the Grantee, his heirs and assigns forever, all right, title and interest in and to the following described property located in the County of El Paso, State of Colorado:

All of Seller's right, title and interest in and to those easements encumbering the real property described more particularly on Attachment A, that were decreed by and are subject to the terms and conditions set forth in the Amended Ruling und Decree of the Water Court, Water Division No. 1, Case No. 93CW018 (85CW445) entered on March 17, 1995, amending the decree entered in Case No. 85CW445, Water Division No. 1 on December 31, 1985, and further subject to recorded plats in El Paso County, Colorado associated with the Bar X Subdivision, as recorded at Reception Nos. _____, as more particularly described on Attachment C, hereto, and depicted on Attachment D, as incorporated herein; along with,

All of Seller's right, title and interest in and to those easements encumbering the real property described more particularly on Attachment B, that may be subject to the terms and conditions set forth in the Ruling and Decree of the Water Court, Water Division No. 2, Case No. 85CW131(B) entered on March 8, 1996, amending the decree entered in Case No. 85CW131, Water Division No. 2 on December 31, 1985, and further subject to recorded plats in El Paso County, Colorado associated with the High Forest Ranch Subdivision, as recorded at Reception Nos. _____, as more particularly described on Attachment E, hereto, and depicted on Attachment F, as incorporated herein.

TOGETHER, with all the hereditaments and appurtenances thereunto belonging, or in anywise appertaining, the reversions, remainders, rents, issues, and profits thereof, and all the estate, right, title, interest, claim, and demand whatsoever of the Grantor, either in law or equity, in and to the above bargained premises;

TO HAVE AND TO HOLD the rights to divert, apply, extract and use the water and groundwater rights above bargained and described, with the appurtenances, unto the Grantee and assigns forever. The Grantor, for himself and his successors and assigns, does hereby covenant and agree that Grantor shall and will WARRANT AND FOREVER DEFEND the above

bargained premises in the quiet and peaceable possession of the Grantee, his successors and assigns, against all and every person or persons claiming the whole or any part thereof, by, through or under the Grantor.

IN WITNESS WHEREOF, the Grantor has executed this Special Warranty Deed on the date set forth above.

_____
_____, as _____
Of Shamrock Water, LLC, a _____ limited liability company

STATE OF _____)
) ss.
COUNTY OF _____)

The foregoing instrument was acknowledged before me this ____ day of _____, 2022, by _____, as the _____ of Shamrock Water, LLC, a Colorado limited liability company.

Witness my hand and official seal.

My commission expires: _____

_____
Notary Public

ATTACHMENT A
Legal Description of Land

A parcel of land located in Township 11 South, Range 65 West of the 6th Principal Meridian, El Paso County, Colorado, and more particularly described as follows:

All of Section 16; the E1/2 of the SW1/4 and the SE1/4 of Section 17; the E1/2 of the E1/2 of the W1/2 of Section 20; the NE1/4 and the W1/2, except for the east 30 feet of the SW1/4, of Section 21.

ATTACHMENT B
Legal Description of Land

A parcel of land located in Township 11 South, Range 66 West of the 6th Principal Meridian, El Paso County, Colorado, and more particularly described as follows:

The following portion of Section 25: The NW l/4 and the SW1/4 of the SW1/4; All of Section 26; The following portion of Section 27: that part of the E1/2 of the E1/2 and of the W1/2 of the SE1/4 of the SW1/4 of the SE1/4 1ying East of Colorado State Highway 83; The E1/2 of the SE1/4 of the SW1/4 of the SE1/4 and that part of the SE1/4 of the NW1/4 of the SE1/4 lying East of Colorado State Highway 83; The following portion of Section 34: The E1/2 of the E1/2 and that part of the E1/2 of the W1/2 of the E1/2 and of the E1/2 of the SW1/4 and of the W1/2 of the W1/2 of the SE1/4 lying East of the center line of the road described in deed recorded in Book 781 at Page 87 in the office of the clerk and recorder of El Paso County, Colorado.

ATTACHMENT C

Bar X Easements

Declaration of Establishment of Water Rights Easements, recorded at Reception No. 097024427 in the Office of the Clerk and Recorder of El Paso County, Colorado.

Water Site, Water Storage Tank and Water Transmission Line Agreement, recorded at Reception No. 097024428 in the Office of the Clerk and Recorder of El Paso County, Colorado.

Water Rights Special Warranty Deed, recorded at Reception No. 097025568 in the Office of the Clerk and Recorder of El Paso County, Colorado.

Amended and Restated Declaration Creating Covenants, Conditions and Easements for Highland Estates, recorded at Book 6623, Page 1310 in the Office of the Clerk and Recorder of El Paso County, Colorado.

Second Amended and Restated Declaration Creating Conditions, Covenants and Restrictions for Highland Estates, recorded at Reception No. 201087557 in the Office of the Clerk and Recorder of El Paso County, Colorado.

Well Field Easement, recorded at Book 6487, Page 1183, Reception No. 094097789 in the Office of the Clerk and Recorder of El Paso County, Colorado.

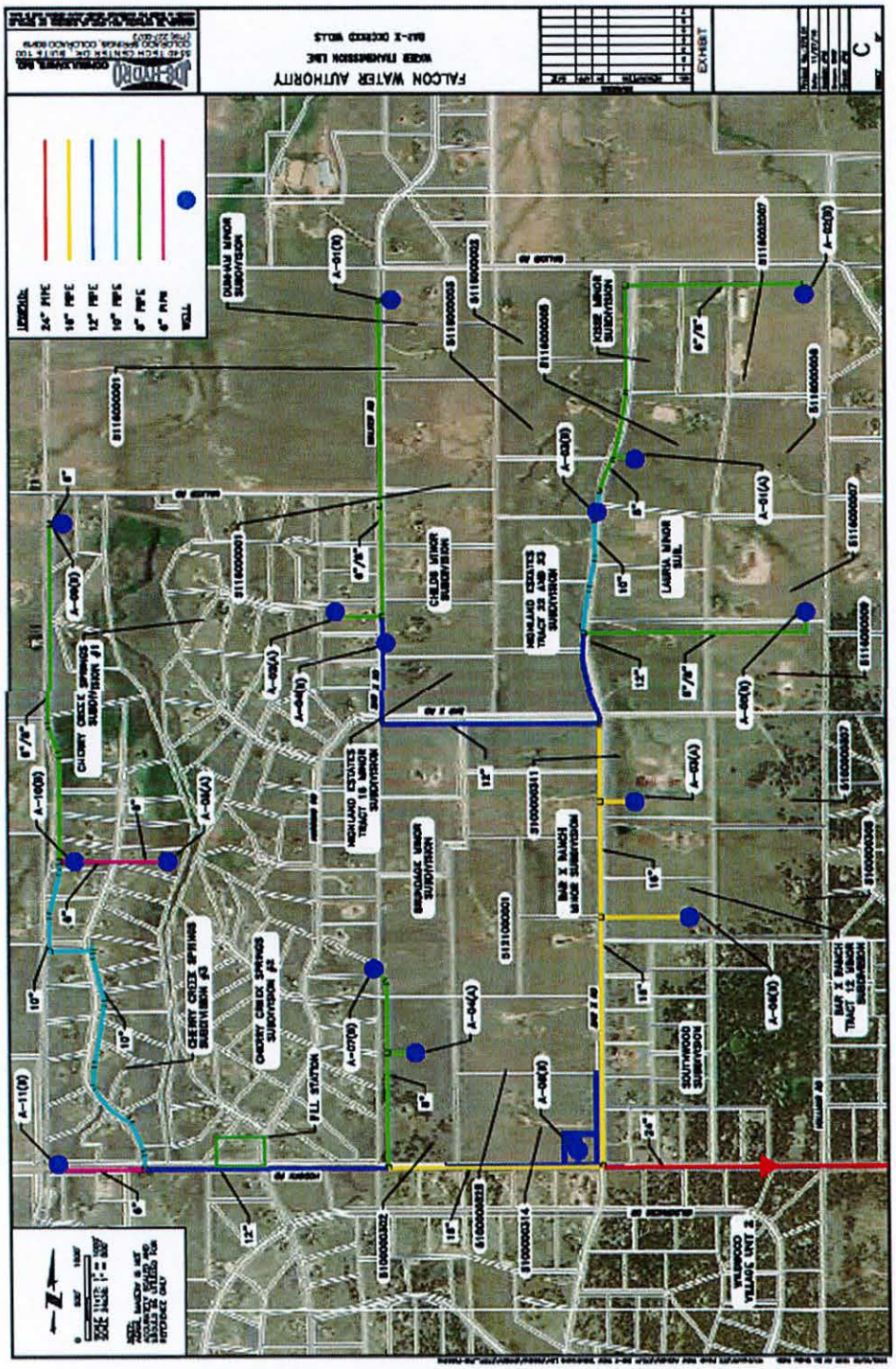
Easement, recorded at Book 6487, Page 1190, Reception No. 094097790 in the Office of the Clerk and Recorder of El Paso County, Colorado.

Easement, recorded at Book 6203, Page 1085, Reception No. 002314866 in the Office of the Clerk and Recorder of El Paso County, Colorado.

Easement, recorded at Book 4224, Page 523, Reception No. 002328991 in the Office of the Clerk and Recorder of El Paso County, Colorado.

Well Field Easement, recorded at Book 6224, Page 529, Reception No. 002328892 in the Office of the Clerk and Recorder of El Paso County, Colorado.

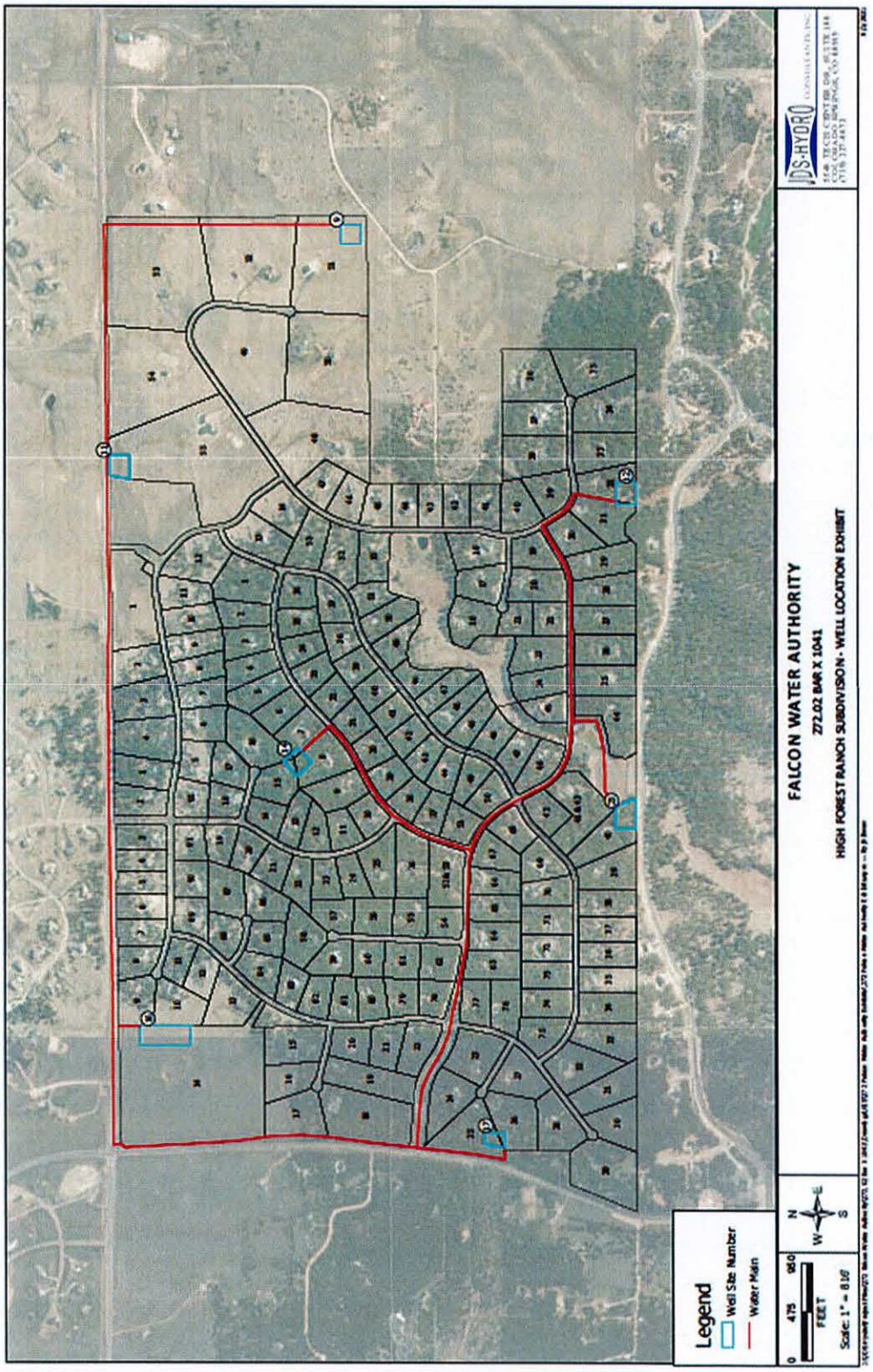
ATTACHMENT D
Bar X Easements Map



ATTACHMENT E
Shamrock West Easements

ATTACHMENT F

Shamrock West Easements Map



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PGS 4 $28.00 DF $775.00
Electronically Recorded Official Records El Paso County CO
Chuck Broerman, Clerk and Recorder
TD1000 Y

State Documentary Fee

Date 9-7-2022

$ 775.00

SPECIAL WARRANTY DEED
(Water Rights)

THIS DEED, made this 7th day of September, 2022, between **Shamrock Water, LLC**, a Colorado limited liability company ("Grantor"), and **Falcon Area Water & Wastewater Authority**, a public corporation and political subdivision of the State of Colorado ("Grantee"), whose address is c/o Spencer Fane LLP, 1700 Lincoln Street, Suite 2000, Denver, CO 80203.

WITNESS, that the Grantor, for and in consideration of the sum of ten dollars and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, has remised, released, sold, and conveyed and quitclaimed, and by these presents does remise, release, sell, convey and quitclaim unto the Grantee, his heirs and assigns forever, all right, title and interest in and to the following described water and water rights located in the County of El Paso, State of Colorado:

All of Seller's right, title and interest in and to a portion of the groundwater and groundwater rights in the Denver Basin aquifers underlying all or a portion of the real property described more particularly on Attachment A, that were decreed by and are subject to the terms and conditions set forth in the Amended Ruling und Decree of the Water Court, Water Division No. 1, Case No. 93CW018 (85CW445) entered on March 17, 1995, amending the decree entered in Case No. 85CW445, Water Division No. 1 on December 31, 1985, including, but not limited to the following decreed average annual amounts of withdrawal of nontributary groundwater from the following Denver Basin aquifers: (a) not-nontributary Dawson aquifer – 1,288 acre-feet; (b) nontributary Denver aquifer, 1,199 acre-feet; and, (c) nontributary Arapahoe aquifer – 742.5 acre-feet; together with all of Seller's share of any "banked" water (as defined by the Colorado Division of Water Resources) attributable to the above-described groundwater rights, and Seller's share of any additional groundwater that may be available from the foregoing Denver Basin aquifers attributable to the above-described groundwater rights based on actual aquifer conditions. Such groundwater rights are subject to the retained jurisdiction of the Water Court pursuant to the terms of the 93CW018 and 85CW445 decrees, and include all licenses, permits, certificates, contracts and decrees evidencing such water and water rights, and all wells and fixtures relating thereto, along with all replacements, substitutions, accessions thereto and proceeds deriving therefrom; along with,

All of Seller's right, title and interest in and to a portion of the groundwater and groundwater rights in the Denver Basin aquifers underlying all or a portion of the real property described more particularly on Attachment B, that were decreed by and are subject to the terms and conditions set forth in the Ruling and Decree of the Water Court, Water Division No. 2, Case No. 85CW131(B) entered on March 8, 1996, amending the decree entered in Case No. 85CW131, Water Division No. 2 on December 31, 1985. Said Denver Basin groundwater rights include, but are not limited to, the following decreed average annual amounts of withdrawal of nontributary groundwater and not nontributary groundwater from the following Denver Basin aquifers: (d) not-nontributary Dawson aquifer – 498 acre-feet; (b) not-nontributary Denver aquifer – 1,057 (c) not-nontributary Arapahoe aquifer – 25 acre-feet; (d) nontributary Denver aquifer – 187 acre-feet; and, (e) nontributary Arapahoe aquifer – 474 acre-feet; together with all of Seller's share of any

"banked" water (as defined by the Colorado Division of Water Resources) attributable to the above-described groundwater rights, and Seller's share of any additional groundwater that may be available from the foregoing Denver Basin aquifers attributable to the above-described groundwater rights based on actual aquifer conditions, said groundwater rights being subject to the retained jurisdiction of the Water Court pursuant to the terms of said decree. Such groundwater rights are subject to the retained jurisdiction of the Water Court pursuant to the terms of the 85CW131(b) decree, and include all licenses, permits, certificates, contracts and decrees evidencing such water and water rights, and all wells and fixtures relating thereto, along with all replacements, substitutions, accessions thereto and proceeds deriving therefrom.

TOGETHER, with all the hereditaments and appurtenances thereunto belonging, or in anywise appertaining, the reversions, remainders, rents, issues, and profits thereof, and all the estate, right, title, interest, claim, and demand whatsoever of the Grantor, either in law or equity, in and to the above bargained premises;

TO HAVE AND TO HOLD the rights to divert, apply, extract and use the water and groundwater rights above bargained and described, with the appurtenances, unto the Grantee and assigns forever. The Grantor, for himself and his successors and assigns, does hereby covenant and agree that Grantor shall and will WARRANT AND FOREVER DEFEND the above bargained premises in the quiet and peaceable possession of the Grantee, his successors and assigns, against all and every person or persons claiming the whole or any part thereof, by, through or under the Grantor.

IN WITNESS WHEREOF, the Grantor has executed this Special Warranty Deed on the date set forth above.

Gregory C. King, as Manager
of Shamrock Water, LLC,
a Colorado limited liability company

STATE OF Texas)
) ss.
COUNTY OF Bexar)

The foregoing instrument was acknowledged before me this 6th day of September, 2022, by Gregory C. King, as the Manager of Shamrock Water, LLC, a Colorado limited liability company.

Witness my hand and official seal.

My commission expires: 05/19/2026

Notary Public

MICHELLE LOUISE BROYLES
ID #2611908
My Commission Expires
May 19, 2026

ATTACHMENT A
Legal Description of Land

A parcel of land located in Township 11 South, Range 65 West of the 6th Principal Meridian, El Paso County, Colorado, and more particularly described as follows:

All of Section 16; the E1/2 of the SW1/4 and the SE1/4 of Section 17; the E1/2 of the E1/2 of the W1/2 of Section 20; the NE1/4 and the W1/2, except for the east 30 feet of the SW1/4, of Section 21.

ATTACHMENT B
Legal Description of Land

A parcel of land located in Township 11 South, Range 66 West of the 6th Principal Meridian, El Paso County, Colorado, and more particularly described as follows:

The following portion of Section 25: The NW l/4 and the SW1/4 of the SW1/4; All of Section 26; The following portion of Section 27: that part of the E1/2 of the E1/2 and of the W1/2 of the SE1/4 of the SW1/4 of the SE1/4 1ying East of Colorado State Highway 83; The E1/2 of the SE1/4 of the SW1/4 of the SE1/4 and that part of the SE1/4 of the NW1/4 of the SE1/4 lying East of Colorado State Highway 83; The following portion of Section 34: The E1/2 of the E1/2 and that part of the E1/2 of the W1/2 of the E1/2 and of the E1/2 of the SW1/4 and of the W1/2 of the W1/2 of the SE1/4 lying East of the center line of the road described in deed recorded in Book 781 at Page 87 in the office of the clerk and recorder of El Paso County, Colorado.

222115503 9/1/2022 11:52 AM
PGS 3 $23.00 DF $352.20
Electronically Recorded Official Records El Paso County CO
Chuck Broerman, Clerk and Recorder
TD1000 Y

SPECIAL WARRANTY DEED

(Water Rights)

THIS DEED, made this 31 day of August, 2022, between **McCune Ranch, LLC**, a Colorado limited liability company ("Grantor"), and **Falcon Area Water and Wastewater Authority**, a public corporation and political subdivision of the State of Colorado ("Grantee"), whose address is c/o Spencer Fane LLP, 1700 Lincoln Street, Suite 2000, Denver, CO 80203.

WITNESS, that the Grantor, for and in consideration of the sum of ten dollars and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, has remised, released, sold, and conveyed and quitclaimed, and by these presents does remise, release, sell, convey and quitclaim unto the Grantee, its heirs and assigns forever, all right, title and interest in and to the following described water and water rights located in the County of El Paso, State of Colorado:

> All of Seller's right, title and interest in and to a portion of the groundwater and groundwater rights in the Denver Basin aquifers underlying the real property described more particularly on Attachment A, that were determined by the Colorado Ground Water Commission in Determination Nos. 1689-BD, 1690-BD, and 1691-BD, and subject to the terms and conditions set forth therein. Said water rights are more particularly described as entitlements to the following decreed average annual amounts of withdrawal of nontributary groundwater from the following Denver Basin aquifers: (a) nontributary Denver aquifer, 513 annual acre-feet (100-year allocation); (b) nontributary Arapahoe aquifer – 398 annual acre-feet; and, (c) nontributary Laramie Fox Hills aquifer – 263 annual acre-feet; together with all of Seller's share of any "banked" water (as defined by the Colorado Division of Water Resources) attributable to the above-described groundwater rights, and Seller's share of any additional groundwater that may be available from the foregoing Denver Basin aquifers attributable to the above-described groundwater rights based on actual aquifer conditions. Such groundwater rights include all licenses, permits, certificates, contracts, determinations and decrees evidencing such water and water rights, and all wells and fixtures relating thereto, along with all replacements, substitutions, accessions thereto and proceeds deriving therefrom; as well as all appurtenant easement interests associated with the above described water rights, as described and reserved on the plats associated with the (a) Winsome Subdivision (Plat Nos. 1 and 2), as recorded in the records of the El Paso County Clerk and Recorder at Reception Nos. 221714686, 222714900, respectively, and (b) the to-be-recorded final plat known as Winsome Filing No 3.

TOGETHER, with all the hereditaments and appurtenances thereunto belonging, or in anywise appertaining, the reversions, remainders, rents, issues, and profits thereof, and all the estate, right, title, interest, claim, and demand whatsoever of the Grantor, either in law or equity, in and to the above bargained premises;

TO HAVE AND TO HOLD the rights to divert, apply, extract and use the water and groundwater rights above bargained and described, with the appurtenances, unto the Grantee and assigns forever. The Grantor, for himself and his successors and assigns, does hereby covenant and agree that Grantor shall and will WARRANT AND FOREVER DEFEND the above

bargained premises in the quiet and peaceable possession of the Grantee, his successors and assigns, against all and every person or persons claiming the whole or any part thereof, by, through or under the Grantor.

IN WITNESS WHEREOF, the Grantor has executed this Special Warranty Deed on the date set forth above.

Mary Sue Liss, as Manager
Of McCune Ranch, LLC, a Colorado limited
liability company

STATE OF COLORADO)
) ss.
COUNTY OF EL PASO)

The foregoing instrument was acknowledged before me this 31st day of August, 2022, by Mary Sue Liss, as the Manager of McCune Ranch, LLC, a Colorado limited liability company.

Witness my hand and official seal.

My commission expires: 12-02-2025

Notary Public

CHRISTINE L WISE
NOTARY PUBLIC
STATE OF COLORADO
NOTARY ID 19974021715
MY COMMISSION EXPIRES DECEMBER 02, 2025

ATTACHMENT A
Legal Description of McCune Ranch Land

The Southwest quarter of the Southwest quarter Section 18, the West half of the Northwest quarter and the West half of the Southwest quarter, Section 19, Township 11 South, Range 64 West of the 6th PM and the South half of the Southeast quarter, Section 13 and all of Section 24, Township 11 South, Range 65 West of the 6th Principal Meridian, in El Paso County, Colorado.

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.: 08CW113

APPLICANT: MORLEY-BENTLEY INVESTMENTS, LLC

AQUIFER : DAWSON

In compliance with C.R.S. 37-92-302(2), Morley-Bentley Investments, LLC, (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 December 31, 2008.

2. According to the application, the applicant owns, or has consent to withdraw ground water underlying 1451.44 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 1451.44 acres of land claimed in the application is 42,309 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 145.8 feet.

4. 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.

5. A review of the records in the State Engineer's Office has disclosed that there are existing wells or other water rights withdrawing ground water from the aquifer underlying the land claimed by the applicant. The well permit numbers, locations, rates of diversion, and other relevant data concerning such rights are set forth in the attached Exhibit A. To prevent material injury to such vested water rights, the quantity of water underlying the land claimed in the application which is considered available for withdrawal has been reduced to 39,247 acre-feet. This reduction was based on a calculation of the area necessary to provide a quantity of water underlying such lands as would be sufficient for the persons entitled to divert water under existing rights to divert the average annual amount of water from the aquifer for the minimum aquifer life of 100 years. The effect of this calculation is

to reduce the land available for calculating the quantity of water underlying the land claimed in the application to 1,345.92 acres.

6. 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(10.7). 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.

7. The allowed average annual amount of water available for withdrawal from the aquifer underlying the lands claimed in the application is 392.5 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 54 feet to 346 feet below land surface. A site specific evaluation must be conducted with each well permit to identify the interval due to the varied elevation of the aquifer and surface topography.

Dated this 4th day of March, 2009.

Dick Wolfe

Dick Wolfe, P.E.
Director/State Engineer

By: Sarah Reinsel

Sarah Reinsel
Water Resources Engineer

Prepared by: SKR

EXHIBIT A

Well	Location									
Number	Q40	Q160	Sec.	Twp.	Rng.	AF	ST	SY	Radius	Area
8745-R	NE	SW	33	12S	65W	24.2	109	20	1240	87
8746-R	NE	SW	33	12S	65W	16.1	112	20	1001	71
8747-R	NE	SW	33	12S	65W	12.9	114	20	886	57
8748-R	NE	SW	33	12S	65W	16.1	109	20	1011	74

Well Number = Well permit number and/or water court case number

AF = Annual appropriation of the well (acre-feet)

ST = Thickness of the saturated aquifer material at the well location (feet)

SY = Specific Yield of the saturated aquifer material (%)

Radius = Radius of the cylinder of appropriation (feet)

Area = Area of the applicant's land that is overlapped by the cylinder of appropriation (acres)

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

Case No. 86-CW-18

FINDINGS OF FACT, CONCLUSIONS OF LAW, JUDGMENT AND DECREE

CONCERNING THE APPLICATION FOR NONTRIBUTARY GROUND WATER RIGHTS OF THE FIRST INTERSTATE BANK OF DENVER N.A., CARLA W. LEWIS, AND SAMUEL S. SHERMAN AS COTRUSTEES UNDER THE LIFE INSURANCE TRUST OF THOMAS M. DINES FROM THE ARAPAHOE FORMATION, EL PASO COUNTY.

THIS MATTER, having come on ~~for hearing before the Court~~ this 29 day of Oct., 1986 upon the application of The First Interstate Bank of Denver N.A., Carla W. Lewis, and Samuel S. Sherman as Cotrustees under the Life Insurance Trust of Thomas M. Dines ("Applicants") and the Court having considered the pleadings filed and the evidence presented, and being fully advised in the premises, hereby enters the following Findings of Fact, Conclusions of Law, and Judgment and Decree:

FINDINGS OF FACT

1. The Applicants are The First Interstate Bank of Denver N.A., Carla W. Lewis, and Samuel S. Sherman as Cotrustees under the Life Insurance Trust of Thomas M. Dines whose address is First Interstate Bank of Denver, 633 Seventeenth Street, Denver, Colorado 80202, Attn: Jack Alexander. Applicants filed the application in this case styled Application For Nontributary Ground Water From The Arapahoe Formation (the "Application") on March 28, 1986, seeking an adjudication of nontributary ground water rights from the Arapahoe Formation underlying lands owned by Applicants in El Paso County.

2. 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 all parties affected hereby, whether they have appeared or not. None of the lands or water rights involved in this case are within the boundaries of a designated groundwater basin.

3. A timely statement of opposition was filed by JVRC, Inc. No other statements of opposition were filed within the time provided by law nor did any other parties enter their appearance or intervene in these proceedings.

4. The Water Referee by Order dated July 9, 1986, under Section 37-92-303(2), C.R.S., rereferred the Application to the Water Judge for all further proceedings.

5. The State Engineer issued a Determination of Facts on the Application, dated July 28, 1986, which has been filed with the Court. The Division Engineer adopted the Determination of Facts as his recommendations on August 8, 1986. The Determination of Facts and the findings contained therein have been reviewed and considered by this Court in accordance with Section 37-92-305(6), C.R.S.

6. Applicants seek an adjudication of rights to nontributary ground water from the Arapahoe Formation beneath 1,410 acres of land in El Paso County which are described in Exhibit A and depicted on the map attached as Exhibit B, both of which are incorporated herein by this reference (the "Subject Lands"). Applicants are the owners of the Subject Lands and have the right to withdraw and use the waters from the Arapahoe Formation underlying those lands. The waters claimed herein may be withdrawn through the proposed wells described in Paragraph 7 below and through such additional, replacement and supplemental wells as may be necessary to withdraw all of the water in the Arapahoe Formation underlying the Subject Lands without causing material injury to any vested water right whose source of supply is the Arkansas River and any of its tributaries or any other natural stream, or any ground water tributary thereto, and the Applicants have so proven.

7. Applicants will divert the waters claimed herein from the Arapahoe Formation through Dines Wells KA-1, KA-2, KA-3, and KA-4 more particularly described as follows:

Well Name: Dines Well KA-1

(a) In the SE 1/4 of the NW 1/4 of Section 27, Township 12 South, Range 65 West of the 6th P.M., 2500 feet from the North Section line and 2200 feet from the West Section line, in El Paso County.

(b) Depth: 1900 feet.

(c) Source: Nontributary Arapahoe Formation.

(d) Pumping rate: 150 gpm.

(e) Annual quantity: 240 acre-feet.*

Well Name: Dines Well KA-2

(a) Location: In the SW 1/4 of the SW 1/4 of Section 27, Township 12 South, Range 65 West of the 6th P.M., 200 feet from the South Section line and 200 feet from the West Section line, in El Paso County.

(b) Depth: 1800 feet.

(c) Source: Nontributary Arapahoe Formation.

(d) Pumping rate: 150 gpm.

(e) Annual quantity: 240 acre-feet.*

Well Name: Dines Well KA-3

(a) Location: In the NW 1/4 of the SE 1/4 of Section 33, Township 12 South, Range 65 West of the 6th P.M., 1500 feet from the South Section line and 2100 feet from the East Section line, in El Paso County.

(b) Depth: 1700 feet.

(c) Source: Nontributary Arapahoe Formation.

(d) Pumping rate: 150 gpm.

(e) Annual quantity: 240 acre-feet.*

Well Name: Dines Well KA-4

(a) Location: In the NE 1/4 of the SW 1/4 of Section 34, Township 12 South, Range 65 West of the 6th P.M., 1400 feet from the South Section line and 2100 feet from the West Section line, in El Paso County.

(b) Depth: 1700 feet.

(c) Source: Nontributary Arapahoe Formation.

(d) Pumping rate: 150 gpm.

(e) Annual quantity: 240 acre-feet.

* Not to exceed in total the amount available to Applicants from the Arapahoe Formation pursuant to § 37-90-137(4), C.R.S. and the provisions of this decree.

8. Pursuant to §37-90-137(4), C.R.S., five hundred seventy-five (575) acre-feet of water per year are available to Applicants from the Arapahoe Formation underlying the Subject Lands. The average thickness of saturated sand of the Arapahoe Formation underlying the Subject Lands is 240 feet but the final determination on actual saturated sand thickness will be determined when the wells are drilled, and the amount decreed herein may be subsequently adjusted in accordance with that saturated sand thickness as provided in Paragraph 29 below. The specific yield of the Arapahoe Formation is 17% in and beneath the Subject Lands. This finding is specific to the property involved and does not indicate or in any way reflect upon proper values for the subject aquifer elsewhere. All the water in the Arapahoe Formation underlying the Subject Lands remains available for withdrawal by the wells decreed herein.

9. The State Engineer in his Determination of Facts found that 581 acre-feet per year were available for appropriation through the subject wells. The State Engineer's determination is based on a finding that only 1395 acres of the Subject Lands are available for appropriation, and based on saturated sand thicknesses of 245 feet and 250 feet for different parts of the Subject Lands and a specific yield of 17% for the Arapahoe Formation. The State Engineer also found that of the total 581 acre-feet per year of water available for appropriation, 569 acre-feet was nontributary and 12 acre-feet was not nontributary. The 12 acre-feet per year the State Engineer found as not nontributary underly 37 acres of Section 32 of the Subject Lands. Applicant has shown by a preponderance of the evidence that there are no existing wells with a right to water from the Arapahoe Formation underlying the Subject Lands and that the water underlying 1410 acres is available for appropriation by Applicants. The Court also finds that the withdrawals through Applicants' proposed wells of the water claimed herein including the amount of water underlying the 37 acres in Section 32 is nontributary. The proposed wells will not, at their location and withdrawing the amounts decreed herein, within one hundred years deplete the flow of any natural stream at a rate greater than one-tenth of one percent of the annual rate of withdrawal. Applicants' engineer ~~has testified~~ that 575 acre-feet per year is available for appropriation calculated with a saturated sand thickness of 240 feet for the

Arapahoe Formation. Subject to the final determination of saturated sand thickness based on the information derived from the drilling of the wells, Applicants will use 240 feet for the saturated sand thickness of the Arapahoe Formation beneath the Applicants' property.

10. The source of water for the proposed wells is nontributary as defined in Section 37-90-103 (10.5), C.R.S. The proposed withdrawals through Dines Wells KA-1, KA-2, KA-3, and KA-4 in the amount of 575 acre-feet per year, or in any lesser or greater amount determined under Paragraph 29, will not, within one hundred years, deplete the flow of any natural stream or its alluvium or any ground water tributary thereto at an annual rate greater than one-tenth of 1% of the annual rate of withdrawal.

11. The waters of the Arapahoe Formation that are the subject of the appropriation claimed herein will be, and Applicants intend that they be used, and Applicants shall have the right of succession of uses, for municipal, domestic, commercial, fire protection, industrial, residential, recreation, irrigation, exchange, replacement of depletions, augmentation, livestock and agricultural uses. The water will be produced for immediate application to beneficial use and for storage and subsequent application to beneficial use. Subject only to the provisions of Paragraph 31, Applicants shall have the right to make any reuse, successive use or disposition of the developed water claimed herein until totally consumed free of any limitations, restrictions, or requirements as to the place of use, amount of discharge or location of discharge after such reuse, successive use or disposition in accord with Section 37-82-106, C.R.S.

12. All of the requirements of C.R.S. § 37-90-137(4), in effect on this date have been complied with, and the issuance of permits for the subject wells is justified and those permits will be issued as described in Paragraph 34 below.

13. Applicants will relinquish the right to consume after use, reuse, and successive use 2% of the amount of ground water withdrawn through Dines Wells KA-1, KA-2, KA-3 and KA-4 and any additional, supplemental, or replacement, wells without regard to dominion or control of the ground water so relinquished.

14. Applicants seek a decree designating all of the wells described in Paragraph 7 above as original and alternate points of diversion for each other permitting the withdrawal of up to the full cumulative amount by flow rate and volume of water which may be lawfully withdrawn from any one or more of those wells. The Court finds that no material injury will result to the owners or persons entitled to use water under any vested

water right or decreed conditional water right by the granting of this request, and it is hereby granted.

15. Applicants may withdraw more water than the amounts set forth in Paragraph 8 so long as the sum of the withdrawals from all wells decreed herein (as that sum may subsequently be adjusted pursuant to Paragraph 29 hereof) does not exceed the product of the number of years since the date of this decree, times the annual rate of one percent (1%) of the total amount of unappropriated water recoverable from the Arapahoe Formation.

16. Applicants have requested that the Court determine that Applicants have the right to withdraw all of the unappropriated water from the Arapahoe Formation lying below their land and to increase their annual appropriations based upon the local aquifer characteristics established through information obtained from the drilling of the wells upon notice to all parties and approval by the Court, without amending the Application or republishing. The Court finds that there has been full and adequate notice of these claims and Applicants will be entitled to an adjustment under the provisions of Paragraph 29 below on the amount of water to which the wells are entitled.

17. Applicants may construct any well within 200 feet of the described locations without amending the Application or reopening this decree.

18. With respect to the permits to be issued by the State Engineer's office for construction of the wells described in Paragraph 7 herein, the provisions of Paragraph 34 below are and have been justified and shall apply.

19. As of March 3, 1986, Applicants have intended to claim the waters sought in the Application and have so demonstrated by open and physical acts on the ground and by the completion of an engineering study and hydrogeological investigation on the water available for appropriation in the Arapahoe Formation. Applicants have demonstrated and manifested an intent to appropriate the waters claimed herein by giving sufficient notice thereof, all in accordance with law. The evidence presented shows that the Applicants intend to appropriate the waters claimed herein, that such intent to appropriate has been adequately demonstrated, and that Applicants are entitled to a decree for the water rights herein decreed.

20. There is unappropriated water available for withdrawal by the structures decreed herein and the vested water rights of others will not be materially injured by the appropriations as decreed. Only that quantity of water underlying the Subject Lands has been considered to be

unappropriated; the minimum useful life of the Arapahoe Formation is at least one hundred (100) years, assuming no substantial artificial recharge within one hundred (100) years; and no material injury to vested water rights will result from the issuance of or exercise of the permits for the subject wells.

CONCLUSIONS OF LAW

21. The Court has jurisdiction to determine Applicants' rights to nontributary ground water pursuant to Sections 37-90-137(6), 37-92-203(1), and 37-92-302 through 305, C.R.S. (Supp. 1985). The procedures and requirements of these statutes have been complied with, full and adequate notice has been given, and no additional notice is required.

22. The Court concludes as a matter of law that the Application herein is one contemplated by law. The Application for a decree confirming Applicants' right to divert and use ground water from the Arapahoe Formation beneath the Subject Lands, pursuant to C.R.S. § 37-90-137(4), should be granted, subject to the provisions of this decree. The rights confirmed by this decree are vested property rights. The amount of water confirmed in this decree is that quantity of water underlying the Subject Lands and the annual withdrawals are based on an aquifer life of one hundred years.

23. The Court concludes that the rights to ground water determined herein are not conditional water rights and subsequent showings or findings of reasonable diligence under Section 37-92-301(4), C.R.S., are inapplicable and need not be made. Accordingly, each of the water rights adjudicated herein is a final vested property right.

24. Applicants are entitled as a matter of law to use, reuse, and successively use to extinction and dispose of all nontributary ground water decreed herein pursuant to Section 37-82-106, C.R.S. (Supp. 1985) subject only to a 2% relinquishment of Applicants' right to total consumption. Failure to use, reuse or recapture such water, including return flows, shall not be deemed a forfeiture or abandonment of the right to such use, reuse or recapture.

25. The Court shall retain jurisdiction over this matter to make adjustments to the amount of water available for withdrawal annually to conform to the actual aquifer characteristics encountered upon the drilling of the wells. This retained jurisdiction may be invoked only by the parties under Paragraph 36.

JUDGMENT AND DECREE

26. The Findings of Fact and Conclusions of Law set forth in Paragraphs 1-25, above are incorporated herein by this reference.

27. The Application for determination of water rights for the subject wells is granted subject to the following limitations.

28. A right to five hundred seventy-five (575) acre-feet of nontributary ground water per year is decreed and confirmed in Applicants pursuant to § 37-90-137(4), C.R.S., for Dines Wells KA-1, KA-2, KA-3, and KA-4, from the Arapahoe Formation for municipal, domestic, commercial, fire protection, industrial, residential, recreation, irrigation, exchange, replacement of depletions, augmentation, livestock and agricultural uses. Applicants shall have the right to recapture, reuse, and dispose of the water developed by the subject wells. Applicants shall have the right to withdraw water for immediate application to beneficial use and for storage and subsequent application to beneficial use and shall have the right to make any reuse, successive use or disposition of the developed water claimed herein to extinction free of any limitations, restrictions, or requirements as to the place of use, amount of discharge or location of discharge after such reuse, successive use or disposition in accord with Section 37-82-106, C.R.S. subject only to the provisions of Paragraph 31 below. The water may be withdrawn through the wells described in Paragraph 7 above and through such additional wells as may be required in order to maintain the annual appropriation as determined herein. The proposed withdrawals through Dines Wells KA-1, KA-2, KA-3, and KA-4 and any additional, supplemental, or replacement wells in the amount of 575 acre-feet per year, or in any additional amounts of water from the Arapahoe Formation underlying the Subject Lands, will not, within one hundred years, deplete the flow of any natural stream or its alluvium or any ground water tributary thereto at an annual rate greater than one-tenth of 1% of the annual rate of withdrawal, and those waters are nontributary to any natural surface stream, its alluvium, and any ground water tributary thereto, and the proposed withdrawals will not result in material injury to vested water rights.

29. The total amount of water to which Applicants are entitled and which is available to Applicants from the Arapahoe Formation beneath the Subject Lands shall be 575 acre-feet per year or the lesser or greater amount of water each such well is entitled to as subsequently determined from the saturated sand thickness of the Arapahoe Formation determined from the geophysical data obtained from the construction of the wells. Geophysical logs shall be taken in accordance with the applicable

rules promulgated by the State Engineer. In making the determination of the final amount of water to which the subject wells are entitled, the following criteria shall apply:

(a) Saturated sand thickness shall be defined as the cumulative thickness of saturated materials as shown on the geophysical logs for each well applying standard accepted geophysical log interpretation methodology;

(b) The specific yield for the Arapahoe Formation shall be 17%;

(c) The water in the Arapahoe Formation underlying the 1410 acres of the Subject Lands shall be considered available for appropriation by the wells decreed herein.

After the completion of the wells subject to this decree, Applicants shall submit the geophysical logs and any other geophysical information obtained from the drilling of the wells to the State Engineer and to the other parties in this action together with a statement from Applicants on the final actual saturated sand thickness and final annual appropriation for each well as determined by Applicants. Within 60 days from the date on which Applicants mail copies of the geophysical logs and statement to the parties herein, any party may petition this Court to invoke the Court's retained jurisdiction under Paragraph 36 of this decree to reconsider the saturated sand thickness of the Arapahoe Formation underlying the Subject Lands for the purpose of adjusting the total entitlement of water to the wells decreed herein. Those proceedings shall be limited exclusively to the issue of saturated sand thickness. If the Court's retained jurisdiction is not invoked within the time prescribed in this Paragraph, the respective amounts set forth in Applicants' statement as the final annual entitlement to each well shall be final, which amount shall be confirmed as final by order of the Court upon Applicants' motion to the Court setting forth facts showing compliance with this Paragraph.

30. The issuance by the Colorado Division of Water Resources pursuant to Colorado Revised Statutes, Section 37-90-137(4) of permits to construct the subject wells is justified and the Division of Water Resources is directed to issue the permits in accordance with Paragraph 34 below. Each of the requirements of the statute has been complied with. Unappropriated waters are available for appropriation from the Arapahoe Formation beneath the Subject Lands and the proposed withdrawals will not result in material injury to other vested water rights.

31. Applicants shall relinquish the right to consume, after use, reuse, and successive use 2% of the water withdrawn through Dines Wells KA-1, KA-2, KA-3 and KA-4 and any additional, supplemental, or replacement wells without regard to dominion or control of the ground water so relinquished.

32. All of the wells described in Paragraph 7 may be used as original and alternate points of diversion for each other permitting the withdrawal by flow rate and volume of up to the full cumulative amount of water which may be lawfully withdrawn from all of those wells from any one or more of those wells. The Court finds that no material injury will result to the owners or persons entitled to use water under any vested water right or decreed conditional water right by the granting of this request, and it is hereby granted.

33. Applicants may withdraw more water than the final annual appropriation for each well so long as the sum of the withdrawals from all wells decreed herein (as that sum may subsequently be adjusted pursuant to Paragraph 29 hereof) does not exceed the product of the number of years since the date of issuance of this decree, times the annual rate of one percent (1%) of the total amount of unappropriated water recoverable from the Arapahoe Formation.

34. With respect to the permits to be issued by the State Engineer's office for construction of the wells described in Paragraph 7 herein, the following provisions shall apply.

(a) The State Engineer shall consider the rights granted herein as valid and shall consider the water sought by Applicants as taken and appropriated by Applicants.

(b) When Applicants are prepared to drill a well described in this decree, Applicants shall apply to the State Engineer for a well permit and that permit shall be issued within 60 days under terms and conditions no less stringent than those set forth in this decree with the conditions for equipping and constructing the well as are specified in Paragraph 35 herein. In the event that a well permit expires prior to the construction of the well and the application of water to beneficial use, Applicants may apply for a new well permit and the State Engineer shall within 60 days issue a new well permit with the same terms and conditions as the permit that expired.

(c) Applicants shall submit well permit applications to the State Engineer's office for any replacement, supplemental or additional wells.

(d) Any well permitted pursuant to this decree which is drilled within 200 feet of the decreed location shall be deemed to have been drilled at the decreed well location and shall not require application for a new or amended well permit.

(e) In determining whether good cause exists for granting a request by Applicants to extend well permits for nontributary wells for one or more additional one-year periods pursuant to Section 37-90-137(3)(a)(II), C.R.S. (1985 Supp.), the State Engineer shall recognize that each well decreed herein, and such additional wells as are required from time to time to fully recover the annual appropriation herein, are part of a single integrated water supply system to be constructed over a phased period of time. So long as Applicants still desire to use the groundwater the well permits shall be extended.

(f) Prior to constructing any additional wells, Applicants shall submit well permit applications to the State Engineer. In considering such permit applications, the State Engineer shall be governed by Section 37-90-137(10), C.R.S. (1985 Supp.) and the provisions of this decree. Any such permitting action may be reviewed by this Court pursuant to Section 37-92-305(6), C.R.S. (1985 Supp.).

(g) For the purpose of well permit applications, Applicants need not submit separate proof, apart from the terms of this decree, of matters which have been determined herein.

35. Applicants shall geophysically log the entire bore hole of each well prior to the installation of casing. Such logs shall be taken in accordance with the applicable rules promulgated by the State Engineer. In constructing and maintaining any well which will withdraw water from the Arapahoe Formation under this decree, the Applicants shall seal off and encase the well with an impervious lining at all levels, except the level of the Arapahoe Formation, to prevent withdrawal of and mixing of groundwater in other aquifers and a totalizing flow meter shall be installed on each well. After construction the Applicants shall attach an identification tag to the well specifying the name of the well, the permit number and the aquifer from which the water is withdrawn. Applicants shall maintain records of the amounts pumped from each well on a monthly basis and such records shall be provided to the Division Engineer or the State Engineer on request.

36. This Court retains jurisdiction in this case for the reconsideration of the final amounts of water appropriated by the proposed wells in accord with Paragraph 29 above. The Court's retained jurisdiction may be invoked only by the Applicants and JVRC, Inc. The Court's retained jurisdiction may be invoked by written notice to the Court requesting a hearing. Copies of that notice will be served on the parties herein at their latest address of record in this case.

Dated this 29 day of Oct., 1986.

BY THE COURT

John C. Tracey

Honorable John Tracey
Water Judge
Water Division No. 2
State of Colorado

APPROVED AS TO FORM AND SUBSTANCE:

SHERMAN & HOWARD

By: Kenneth L. Salazar
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Attorneys for Applicants, The First Interstate Bank of Denver N.A., Carla W. Lewis, and Samuel S. Sherman as Cotrustees under the Life Insurance Trust of Thomas M. Dines.

VRANESH & RAISCH

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Attorneys for Objector JVRC, Inc.

Filed in the office of the Clerk, District Court Water Division No. 2, State of Colorado

OCT 29 1986

Priscilla L. Lyons
Clerk

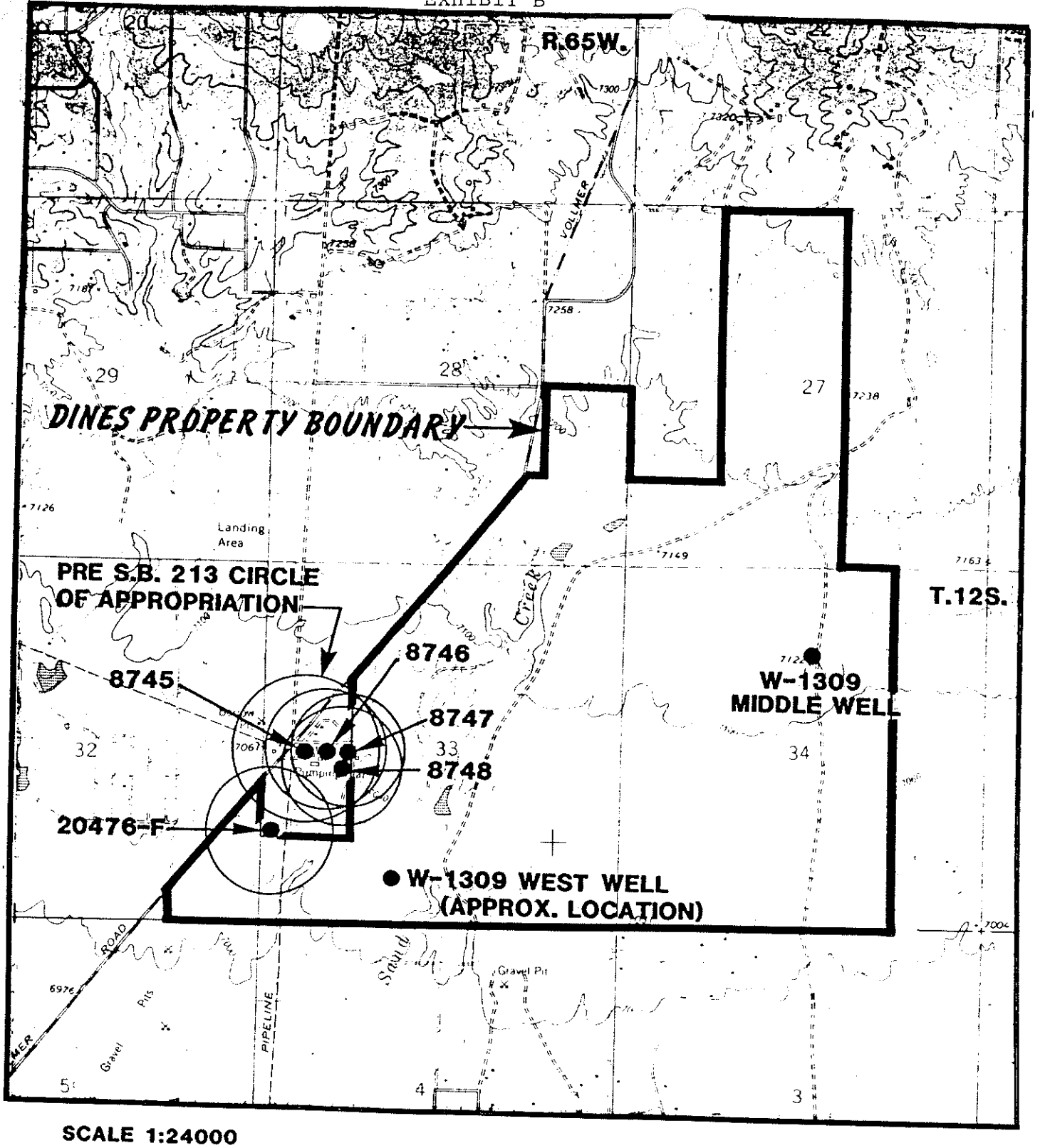
c: Sherman and Howard (Salazar)
Vranesh & Raisch (Shimmin)
Division Engineer
State Engineer

EXHIBIT A

The Subject Lands consist of the following:

The W1/2 W1/2 E1/2 and the E1/2 W1/2 and the SW1/4 SW1/4 of Section 27; the E1/2 SE1/4 and that portion of the SW1/4 SE1/4 lying South and East of the County Road across said premises, both in Section 28; that portion of the SE1/4 SE1/4 of Section 32 lying South and East of said County Road, and that portion of the NE1/4 SE1/4 of said Section 32, lying South and East of said County Road; the E1/2 and the E1/2 SW1/4 and the SW1/4 SW1/4 of Section 33, and all that part of the NW1/4 of said Section 33 lying South and East of the said County Road across said premises, except that portion of the SW1/4 NW1/4 of said Section 33 lying South and East of said County Road containing approximately 10 acres deeded to Colorado Interstate Gas Company by Warranty Deed recorded in Book 1173 at Page 359 of the El Paso County Records; and the W1/2 E1/2 and the W1/2 of Section 34, all in Township 12 South, Range 65 West of the 6th P.M., located in El Paso County, Colorado.

EXHIBIT B



SCALE 1:24000

LOCATION MAP

FIGURE 1

Filed in the office of the Clerk, District Court Water Division No. 2, State of Colorado

OCT 29 1986

Priscilla A. Symes

Clerk

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

OCT 29 1986

Case No. 86-CW-19

Priscilla L. Lyons
Clerk

FINDINGS OF FACT, CONCLUSIONS OF LAW, JUDGMENT AND DECREE

CONCERNING THE APPLICATION FOR NONTRIBUTARY GROUND WATER RIGHTS OF THE FIRST INTERSTATE BANK OF DENVER N.A., CARLA W. LEWIS, AND SAMUEL S. SHERMAN AS COTRUSTEES UNDER THE LIFE INSURANCE TRUST OF THOMAS M. DINES FROM THE LARAMIE-FOX HILLS AQUIFER, EL PASO COUNTY.

THIS MATTER, having come on ~~for hearing before the Court~~ this 29 day of Oct., 1986 upon the application of The First Interstate Bank of Denver N.A., Carla W. Lewis, and Samuel S. Sherman as Cotrustees under the Life Insurance Trust of Thomas M. Dines ("Applicants") and the Court having considered the pleadings filed and the evidence presented, and being fully advised in the premises, hereby enters the following Findings of Fact, Conclusions of Law, and Judgment and Decree:

FINDINGS OF FACT

1. The Applicants are The First Interstate Bank of Denver N.A., Carla W. Lewis, and Samuel S. Sherman as Cotrustees under the Life Insurance Trust of Thomas M. Dines whose address is First Interstate Bank of Denver, 633 Seventeenth Street, Denver, Colorado 80202, Attn: Jack Alexander. Applicants filed the application in this case styled Application For Nontributary Ground Water From The Laramie-Fox Hills Aquifer (the "Application") on March 28, 1986, seeking an adjudication of nontributary ground water rights from the Laramie-Fox Hills Aquifer underlying lands owned by Applicants in El Paso County.

2. 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 all parties affected hereby, whether they have appeared or not. None of the lands or water rights involved in this case are within the boundaries of a designated groundwater basin.

3. A timely statement of opposition was filed by JVRC, Inc. No other statements of opposition were filed within the time provided by law nor did any other parties enter their appearance or intervene in these proceedings.

4. The Water Referee by Order dated July ~~19~~ 9, 1986, under Section 37-92-303(2), C.R.S., rereferred the Application to the Water Judge for all further proceedings.

5. The State Engineer issued a Determination of Facts on the Application, dated July 28, 1986, which has been filed with the Court. The Division Engineer adopted the Determination of Facts as his recommendations on August 8, 1986. The Determination of Facts and the findings contained therein have been reviewed and considered by this Court in accordance with Section 37-92-305(6), C.R.S.

6. Applicants seek an adjudication of rights to nontributary ground water from the Laramie-Fox Hills Aquifer beneath 1,410 acres of land in El Paso County which are described in Exhibit A and depicted on the map attached as Exhibit B, both of which are incorporated herein by this reference (the "Subject Lands"). Applicants are the owners of the Subject Lands and have the right to withdraw and use the waters from the Laramie-Fox Hills Aquifer underlying those lands. The waters claimed herein may be withdrawn through the proposed wells described in Paragraph 7 below and through such additional, replacement and supplemental wells as may be necessary to withdraw all of the water in the Laramie-Fox Hills Aquifer underlying the Subject Lands without causing material injury to any vested water right whose source of supply is the Arkansas River and any of its tributaries or any other natural stream, or any ground water tributary thereto, and the Applicants have so proven.

7. Applicants will divert the waters claimed herein from the Laramie-Fox Hills Aquifer through Dines Wells KLF-1, KLF-2, KLF-3, and KLF-4 more particularly described as follows:

Well Name: Dines Well KLF-1

(a) In the SE 1/4 of the NW 1/4 of Section 27, Township 12 South, Range 65 West of the 6th P.M., 2500 feet from the North Section line and 2300 feet from the West Section line, in El Paso County.

(b) Depth: 2350 feet.

(c) Source: Nontributary Laramie-Fox Hills Aquifer.

(d) Pumping rate: 150 gpm.

(e) Annual quantity: 240 acre-feet.*

Well Name: Dines Well KLF-2

(a) Location: In the SW 1/4 of the SW 1/4 of Section 27, Township 12 South, Range 65 West of the 6th P.M., 100 feet from the South Section line and 100 feet from the West Section line, in El Paso County.

(b) Depth: 2250 feet.

(c) Source: Nontributary Laramie-Fox Hills Aquifer.

(d) Pumping rate: 150 gpm.

(e) Annual quantity: 240 acre-feet.*

Well Name: Dines Well KLF-3

(a) Location: In the NW 1/4 of the SE 1/4 of Section 33, Township 12 South, Range 65 West of the 6th P.M., 1400 feet from the South Section line and 2200 feet from the East Section line, in El Paso County.

(b) Depth: 2150 feet.

(c) Source: Nontributary Laramie-Fox Hills Aquifer.

(d) Pumping rate: 150 gpm.

(e) Annual quantity: 240 acre-feet.*

Well Name: Dines Well KLF-4

(a) Location: In the NE 1/4 of the SW 1/4 of Section 34, Township 12 South, Range 65 West of the 6th P.M., 1400 feet from the South Section line and 2200 feet from the West Section line, in El Paso County.

(b) Depth: 2150 feet.

(c) Source: Nontributary Laramie-Fox Hills Aquifer.

(d) Pumping rate: 150 gpm.

(e) Annual quantity: 240 acre-feet.

* Not to exceed in total the amount available to Applicants from the Laramie-Fox Aquifer pursuant to § 37-90-137(4), C.R.S. and the provisions of this decree.

8. Pursuant to §37-90-137(4), C.R.S., five hundred thirty-nine (539) acre-feet of water per year are available to Applicants from the Laramie-Fox Hills Aquifer underlying the Subject Lands. The average thickness of saturated sand of the Laramie-Fox Hills Aquifer underlying the Subject Lands is 255 feet but the final determination on actual saturated sand thickness will be determined when the wells are drilled, and the amount decreed herein may be subsequently adjusted in accordance with that saturated sand thickness as provided in Paragraph 29 below. The specific yield of the Laramie-Fox Hills Aquifer is 15% in and beneath the Subject Lands. This finding is specific to the property involved and does not indicate or in any way reflect upon proper values for the subject aquifer elsewhere. All the water in the Laramie-Fox Hills Aquifer underlying the Subject Lands remains available for withdrawal by the wells decreed herein.

9. The State Engineer in his Determination of Facts found that 423 acre-feet per year were available for appropriation through the subject wells based on a specific yield of 15% and a saturated sand thickness of 200 feet for the Laramie-Fox Hill Aquifer beneath the Subject Lands. Applicants' engineer ~~has testified~~ that 539 acre-feet per year is available for appropriation calculated with a saturated sand thickness of 255 feet for the Laramie-Fox Hills Aquifer derived from a review of wells in the vicinity of the Subject Lands. Subject to the final determination of saturated sand thickness based on the information derived from the drilling of the wells, Applicants have shown by a preponderance of the evidence that the saturated sand thickness for the Laramie-Fox Hills Aquifer is 255 feet beneath the Applicants' property.

10. The source of water for the proposed wells is nontributary as defined in Section 37-90-103 (10.5), C.R.S. The proposed withdrawals through Dines Wells KLF-1, KLF-2, KLF-3, and KLF-4 in the amount of 539 acre-feet per year, or in any lesser or greater amount determined under Paragraph 29, will not, within one hundred years, deplete the flow of any natural stream or its alluvium or any ground water tributary thereto at an annual rate greater than one-tenth of 1% of the annual rate of withdrawal.

11. The waters of the Laramie-Fox Hills Aquifer that are the subject of the appropriation claimed herein will be, and Applicants intend that they be used, and Applicants shall have the right of succession of uses, for municipal, domestic, commercial, fire protection, industrial, residential, recreation, irrigation, exchange, replacement of depletions, augmentation, livestock and agricultural uses. The water will be produced for immediate application to beneficial use and for storage and subsequent application to beneficial use. Subject only to the provisions of Paragraph 31, Applicants shall have the right to make any reuse, successive use or disposition of the developed water claimed herein until totally consumed free of any limitations, restrictions, or requirements as to the place of use, amount of discharge or location of discharge after such reuse, successive use or disposition in accord with Section 37-82-106, C.R.S.

12. All of the requirements of C.R.S. § 37-90-137(4), in effect on this date have been complied with, and the issuance of permits for the subject wells is justified and those permits will be issued as described in Paragraph 34 below.

13. Applicants will relinquish the right to consume after use, reuse, and successive use 2% of the amount of ground water withdrawn through Dines Wells KLF-1, KLF-2, KLF-3 and KLF-4 and any additional, supplemental, or replacement, wells without regard to dominion or control of the ground water so relinquished.

14. Applicants seek a decree designating all of the wells described in Paragraph 7 above as original and alternate points of diversion for each other permitting the withdrawal of up to the full cumulative amount by flow rate and volume of water which may be lawfully withdrawn from any one or more of those wells. The Court finds that no material injury will result to the owners or persons entitled to use water under any vested water right or decreed conditional water right by the granting of this request, and it is hereby granted.

15. Applicants may withdraw more water than the amounts set forth in Paragraph 8 so long as the sum of the withdrawals from all wells decreed herein (as that sum may subsequently be adjusted pursuant to Paragraph 29 hereof) does not exceed the product of the number of years since the date of this decree, times the annual rate of one percent (1%) of the total amount of unappropriated water recoverable from the Laramie-Fox Hills Aquifer.

16. Applicants have requested that the Court determine that Applicants have the right to withdraw all of the unappropriated water from the Larimie-Fox Hills Aquifer lying

below their land and to increase their annual appropriations based upon the local aquifer characteristics established through information obtained from the drilling of the wells upon notice to all parties and approval by the Court, without amending the Application or republishing. The Court finds that there has been full and adequate notice of these claims and Applicants will be entitled to an adjustment under the provisions of Paragraph 29 below on the amount of water to which the wells are entitled.

17. Applicants may construct any well within 200 feet of the described locations without amending the Application or reopening this decree.

18. With respect to the permits to be issued by the State Engineer's office for construction of the wells described in Paragraph 7 herein, the provisions of Paragraph 34 below are and have been justified and shall apply.

19. As of March 3, 1986, Applicants have intended to claim the waters sought in the Application and have so demonstrated by open and physical acts on the ground and by the completion of an engineering study and hydrogeological investigation on the water available for appropriation in the Laramie-Fox Hills Aquifer. Applicants have demonstrated and manifested an intent to appropriate the waters claimed herein by giving sufficient notice thereof, all in accordance with law. The evidence presented shows that the Applicants intend to appropriate the waters claimed herein, that such intent to appropriate has been adequately demonstrated, and that Applicants are entitled to a decree for the water rights herein decreed.

20. There is unappropriated water available for withdrawal by the structures decreed herein and the vested water rights of others will not be materially injured by the appropriations as decreed. Only that quantity of water underlying the Subject Lands has been considered to be unappropriated; the minimum useful life of the Laramie-Fox Hills Aquifer is at least one hundred (100) years, assuming no substantial artificial recharge within one hundred (100) years; and no material injury to vested water rights will result from the issuance of or exercise of the permits for the subject wells.

CONCLUSIONS OF LAW

21. The Court has jurisdiction to determine Applicants' rights to nontributary ground water pursuant to Sections 37-90-137(6), 37-92-203(1), and 37-92-302 through 305, C.R.S. (Supp. 1985). The procedures and requirements of these statutes have been complied with, full and adequate notice has been given, and no additional notice is required.

22. The Court concludes as a matter of law that the Application herein is one contemplated by law. The Application for a decree confirming Applicants' right to divert and use ground water from the Laramie-Fox Hills Aquifer beneath the Subject Lands, pursuant to C.R.S. § 37-90-137(4), should be granted, subject to the provisions of this decree. The rights confirmed by this decree are vested property rights. The amount of water confirmed in this decree is that quantity of water underlying the Subject Lands and the annual withdrawals are based on an aquifer life of one hundred years.

23. The Court concludes that the rights to ground water determined herein are not conditional water rights and subsequent showings or findings of reasonable diligence under Section 37-92-301(4), C.R.S., are inapplicable and need not be made. Accordingly, each of the water rights adjudicated herein is a final vested property right.

24. Applicants are entitled as a matter of law to use, reuse, and successively use to extinction and dispose of all nontributary ground water decreed herein pursuant to Section 37-82-106, C.R.S. (Supp. 1985) subject only to a 2% relinquishment of Applicants' right to total consumption. Failure to use, reuse or recapture such water, including return flows, shall not be deemed a forfeiture or abandonment of the right to such use, reuse or recapture.

25. The Court shall retain jurisdiction over this matter to make adjustments to the amount of water available for withdrawal annually to conform to the actual aquifer characteristics encountered upon the drilling of the wells. This retained jurisdiction may be invoked only by the parties under Paragraph 36.

JUDGMENT AND DECREE

26. The Findings of Fact and Conclusions of Law set forth in Paragraphs 1-25, above are incorporated herein by this reference.

27. The Application for determination of water rights for the subject wells is granted subject to the following limitations.

28. A right to five hundred thirty-nine (539) acre-feet of nontributary ground water per year is decreed and confirmed in Applicants pursuant to § 37-90-137(4), C.R.S., for Dines Wells KLF-1, KLF-2, KLF-3, and KLF-4, from the Laramie-Fox Hills Aquifer for municipal, domestic, commercial, fire protection, industrial, residential, recreation, irrigation,

exchange, replacement of depletions, augmentation, livestock and agricultural uses. Applicants shall have the right to recapture, reuse, and dispose of the water developed by the subject wells. Applicants shall have the right to withdraw water for immediate application to beneficial use and for storage and subsequent application to beneficial use and shall have the right to make any reuse, successive use or disposition of the developed water claimed herein to extinction free of any limitations, restrictions, or requirements as to the place of use, amount of discharge or location of discharge after such reuse, successive use or disposition in accord with Section 37-82-106, C.R.S. subject only to the provisions of Paragraph 31 below. The water may be withdrawn through the wells described in Paragraph 7 above and through such additional wells as may be required in order to maintain the annual appropriation as determined herein. The proposed withdrawals through Dines Wells KLF-1, KLF-2, KLF-3, and KLF-4 and any additional, supplemental, or replacement wells in the amount of 539 acre-feet per year, or in any additional amounts of water from the Laramie-Fox Hills Aquifer underlying the Subject Lands, will not, within one hundred years, deplete the flow of any natural stream or its alluvium or any ground water tributary thereto at an annual rate greater than one-tenth of 1% of the annual rate of withdrawal, and is nontributary to any natural surface stream, its alluvium, and any ground water tributary thereto, and the proposed withdrawals will not result in material injury to vested water rights.

29. The total amount of water to which Applicants are entitled and which is available to Applicants from the Laramie-Fox Hills Aquifer beneath the Subject Lands shall be 539 acre-feet per year or the lesser or greater amount of water each such well is entitled to as subsequently determined from the saturated sand thickness of the Laramie-Fox Hills Aquifer determined from the geophysical data obtained from the construction of the wells. Geophysical logs shall be taken in accordance with the applicable rules promulgated by the State Engineer. In making the determination of the final amount of water to which the subject wells are entitled, the following criteria shall apply:

(a) Saturated sand thickness shall be defined as the cumulative thickness of saturated materials as shown on the geophysical logs for each well applying standard accepted geophysical log interpretation methodology;

(b) The specific yield for the Laramie-Fox Hills Aquifer shall be 15%;

(c) The water in the Laramie-Fox Hills Aquifer underlying the 1410 acres of the Subject Lands shall be considered available for appropriation by the wells decreed herein.

After the completion of the wells subject to this decree, Applicants shall submit the geophysical logs and any other geophysical information obtained from the drilling of the wells to the State Engineer and to the other parties in this action together with a statement from Applicants on the final actual saturated sand thickness and final annual appropriation for each well as determined by Applicants. Within 60 days from the date on which Applicants mail copies of the geophysical logs and statement to the parties herein, any party may petition this Court to invoke the Court's retained jurisdiction under Paragraph 36 of this decree to reconsider the saturated sand thickness of the Laramie-Fox Hills Aquifer underlying the Subject Lands for the purpose of adjusting the total entitlement of water to the wells decreed herein. Those proceedings shall be limited exclusively to the issue of saturated sand thickness. If the Court's retained jurisdiction is not invoked within the time prescribed in this Paragraph, the respective amounts set forth in Applicants' statement as the final annual entitlement to each well shall be final, which amount shall be confirmed as final by order of the Court upon Applicants' motion to the Court setting forth facts showing compliance with this Paragraph.

30. The issuance by the Colorado Division of Water Resources pursuant to Colorado Revised Statutes, Section 37-90-137(4) of permits to construct the subject wells is justified and the Division of Water Resources is directed to issue the permits in accordance with Paragraph 34 below. Each of the requirements of the statute has been complied with. Unappropriated waters are available for appropriation from the Laramie-Fox Hills Aquifer beneath the Subject Lands and the proposed withdrawals will not result in material injury to other vested water rights.

31. Applicants shall relinquish the right to consume, after use, reuse, and successive use 2% of the water withdrawn through Dines Wells KLF-1, KLF-2, KLF-3 and KLF-4 and any additional, supplemental, or replacement wells without regard to dominion or control of the ground water so relinquished.

32. All of the wells described in Paragraph 7 may be used as original and alternate points of diversion for each other permitting the withdrawal by flow rate and volume of up to the full cumulative amount of water which may be lawfully withdrawn from all of those wells from any one or more of those wells. The Court finds that no material injury will result to the owners or persons entitled to use water under any vested water right or

decreed conditional water right by the granting of this request, and it is hereby granted.

33. Applicants may withdraw more water than the final annual appropriation for each well so long as the sum of the withdrawals from all wells decreed herein (as that sum may subsequently be adjusted pursuant to Paragraph 29 hereof) does not exceed the product of the number of years since the date of issuance of this decree, times the annual rate of one percent (1%) of the total amount of unappropriated water recoverable from the Laramie-Fox Hills Aquifer.

34. With respect to the permits to be issued by the State Engineer's office for construction of the wells described in Paragraph 7 herein, the following provisions shall apply.

(a) The State Engineer shall consider the rights granted herein as valid and shall consider the water sought by Applicants as taken and appropriated by Applicants.

(b) When Applicants are prepared to drill a well described in this decree, Applicants shall apply to the State Engineer for a well permit and that permit shall be issued within 60 days under terms and conditions no less stringent than those set forth in this decree with the conditions for equipping and constructing the well as are specified in Paragraph 35 herein. In the event that a well permit expires prior to the construction of the well and the application of water to beneficial use, Applicants may apply for a new well permit and the State Engineer shall within 60 days issue a new well permit with the same terms and conditions as the permit that expired.

(c) Applicants shall submit well permit applications to the State Engineer's office for any replacement, supplemental or additional wells.

(d) Any well permitted pursuant to this decree which is drilled within 200 feet of the decreed location shall be deemed to have been drilled at the decreed well location and shall not require application for a new or amended well permit.

(e) In determining whether good cause exists for granting a request by Applicants to extend well permits for nontributary wells for one or more additional one-year periods pursuant to Section 37-90-137(3)(a)(II), C.R.S. (1985 Supp.), the State Engineer shall recognize that each well decreed herein, and such additional

wells as are required from time to time to fully recover the annual appropriation herein, are part of a single integrated water supply system to be constructed over a phased period of time. So long as Applicants still desire to use the groundwater the well permits shall be extended.

(f) Prior to constructing any additional wells, Applicants shall submit well permit applications to the State Engineer. In considering such permit applications, the State Engineer shall be governed by Section 37-90-137(10), C.R.S. (1985 Supp.) and the provisions of this decree. Any such permitting action may be reviewed by this Court pursuant to Section 37-92-305(6), C.R.S. (1985 Supp.).

(g) For the purpose of well permit applications, Applicants need not submit separate proof, apart from the terms of this decree, of matters which have been determined herein.

35. Applicants shall geophysically log the entire bore hole of each well prior to the installation of casing. Such logs shall be taken in accordance with the applicable rules promulgated by the State Engineer. In constructing and maintaining any well which will withdraw water from the Laramie-Fox Hills Aquifer under this decree, the Applicants shall seal off and encase the well with an impervious lining at all levels, except the level of the Laramie-Fox Hills Aquifer, to prevent withdrawal of and mixing of groundwater in other aquifers and a totalizing flow meter shall be installed on each well. After construction the Applicants shall attach an identification tag to the well specifying the name of the well, the permit number and the aquifer from which the water is withdrawn. Applicants shall maintain records of the amounts pumped from each well on a monthly basis and such records shall be provided to the Division Engineer or the State Engineer on request.

36. This Court retains jurisdiction in this case for the reconsideration of the final amounts of water appropriated by the proposed wells in accord with Paragraph 29 above. The Court's retained jurisdiction may be invoked only by the Applicants and JVRC, Inc. The Court's retained jurisdiction may be invoked by written notice to the Court requesting a hearing. Copies of that notice will be served on the parties herein at their latest address of record in this case.

Dated this 29 day of Oct, 1986.

BY THE COURT

John L. Tracey

Honorable John Tracey
Water Judge
Water Division No. 2
State of Colorado

APPROVED AS TO FORM AND SUBSTANCE:

SHERMAN & HOWARD

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Attorneys for Applicants, The First Interstate Bank of Denver N.A., Carla W. Lewis, and Samuel S. Sherman as Cotrustees under the Life Insurance Trust of Thomas M. Dines.

VRANESH & RAISCH

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Attorneys for Objector JVRC, Inc.

c: Sherman and Howard (Salazar)
Vranesh & Raisch (Shimmin)
Division Engineer
State Engineer

Filed in the office of the Clerk, District Court Water Division No. 2, State of Colorado

OCT 29 1986

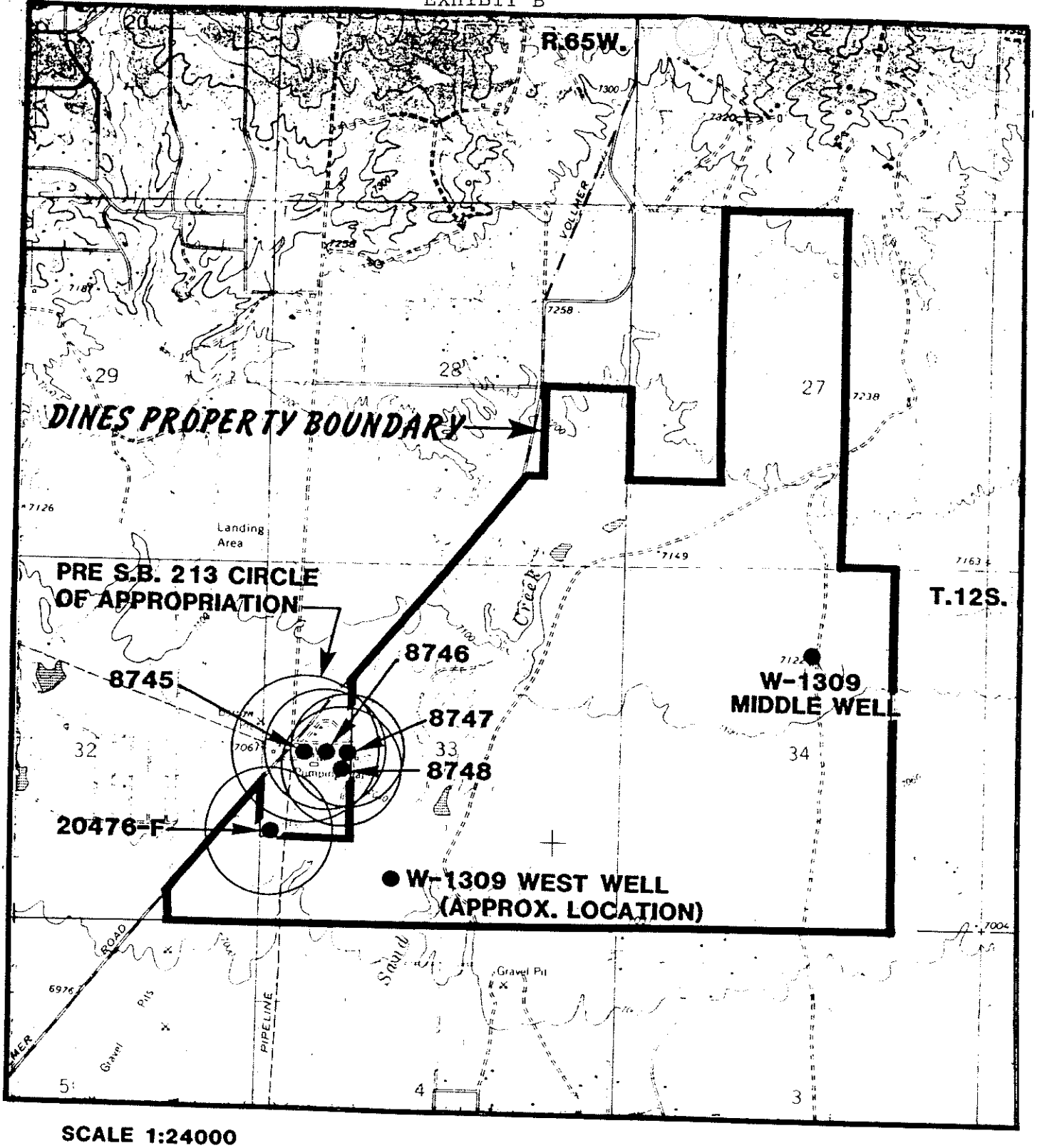
Priscilla L. Lyons
Clerk

EXHIBIT A

The Subject Lands consist of the following:

The W1/2 W1/2 E1/2 and the E1/2 W1/2 and the SW1/4 SW1/4 of Section 27; the E1/2 SE1/4 and that portion of the SW1/4 SE1/4 lying South and East of the County Road across said premises, both in Section 28; that portion of the SE1/4 SE1/4 of Section 32 lying South and East of said County Road, and that portion of the NE1/4 SE1/4 of said Section 32, lying South and East of said County Road; the E1/2 and the E1/2 SW1/4 and the SW1/4 SW1/4 of Section 33, and all that part of the NW1/4 of said Section 33 lying South and East of the said County Road across said premises, except that portion of the SW1/4 NW1/4 of said Section 33 lying South and East of said County Road containing approximately 10 acres deeded to Colorado Interstate Gas Company by Warranty Deed recorded in Book 1173 at Page 359 of the El Paso County Records; and the W1/2 E1/2 and the W1/2 of Section 34, all in Township 12 South, Range 65 West of the 6th P.M., located in El Paso County, Colorado.

EXHIBIT B



SCALE 1:24000

Filed in the office of the Clerk, District Court Water Division No. 2, State of Colorado

OCT 29 1986

Priscilla L. Lyners
Clerk

LOCATION MAP

FIGURE 1

N

217062313 5/31/2017 10:16 AM
PGS 16 $88.00 DF $0.00
Electronically Recorded Official Records El Paso County CO
Chuck Broerman, Clerk and Recorder
TD1000 N

DISTRICT COURT, WATER DIVISION 2, COLORADO Court Address: 501 North Elizabeth Street, Suite 116 Pueblo, CO 81003	DATE FILED: May 31, 2017 9:37 AM CASE NUMBER: 2017CW3002
CONCERNING THE APPLICATION FOR WATER RIGHTS OF: **ARROYA INVESTMENTS, LLC, JACOB DECOTO, MARVIN ORNES and TERRI WAHLBERG** **IN EL PASO COUNTY**	▲ COURT USE ONLY ▲ Case No.: 17CW3002
FINDINGS OF FACT, CONCLUSIONS OF LAW, RULING OF REFEREE AND DECREE	

THIS MATTER comes before the Water Referee on the Application filed by Arroya Investments, LLC, Jacob Decoto, Marvin Ornes and Terri Wahlberg, and having reviewed said Application and other pleadings on file, and being fully advised on this matter, the Water Referee makes the following findings and orders:

GENERAL FINDINGS OF FACT

1. The applicants in this case are Arroya Investments, LLC ("Arroya"), Jacob Decoto ("Decoto"), Marvin Ornes ("Ornes") and Terri Wahlberg ("Wahlberg") (collectively, "Applicants"). Applicants are, collectively, the owners of the four separately owned parcels of land totaling approximately 335.59 acres under which the groundwater sought to be adjudicated herein are located, and are likewise the owners of the place of use where the water is anticipated to be put to beneficial use.

2. The Applicants filed this Application with the Water Court for Water Division 2 on January 31, 2017. The Application was referred to the Water Referee by order of the Court dated February 2, 2017.

3. The time for filing statements of opposition to the Application expired on the last day of March, 2017, and a no statements of opposition were timely filed.

4. On February 2, 2017, the Division 2 Water Court ordered that publication occur in the *Daily Transcript* within El Paso County.

5. The Clerk of this Court has caused publication of the Application filed in this matter as provided by statute and the publication costs have been paid. On February 15, 2017, proof of publication in the *Daily Transcript* was filed with the Court. All notices of the Application have been given in the manner required by law.

6. Pursuant to C.R.S. §37-92-302(2), the Office of the State Engineer has filed Determination of Facts for each aquifer with this Court dated March 14, 2017.

7. Pursuant to C.R.S. §37-92-302(4), the office of the Division Engineer for Water Division 2 filed its Consultation Report dated March 29, 2017, with the Court. The Consultation Report has been considered by the Water Referee in the entry of this Ruling.

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

GROUNDWATER RIGHTS

9. The Applicants requested the adjudication and quantification all Denver Basin groundwater in each aquifer underlying the four (4) specifically described parcels of land owned by each of the Applicants, respectively, as described herein. No plan for augmentation for the use of the not-nontributary groundwater was sought or is decreed herein. The Applicants shall construct such wells as necessary for withdrawal of Applicants' full entitlements of water supplies decreed herein. The following findings are made with respect to such underground water rights:

A. Property Description. All wells to all aquifers will be located on the Applicants respective properties. Such Properties are more specifically described as follows:

i. Arroya Parcel. The "Arroya Parcel" is an approximately 226 acre parcel located in the SE1/4 SE1/4 of Section 21, the W1/2 SW1/4 of Section 22, the E1/2 NE1/4 of Section 28, the W1/2 NW1/4 and the NW1/4 SW1/4 of Section 27, all in Township 21 South, Range 65 West of the 6th P.M., El Paso County, Colorado, as more particularly described on attached **Exhibit A**, and depicted on attached **Exhibit E**. The Arroya Parcel is owned by Applicant Arroya Investments, LLC.

ii. West Parcel No. 1. The "West Parcel No. 1" is an approximately 36.01 acre parcel located in the SW1/4 SE1/4 and the SE1/4 SE1/4 of Section 21, and the NE1/4 NE1/4 of Section 27, Township 12 South, Range 65 West of the 6th P.M., El Paso County, Colorado, as more particularly described on attached **Exhibit B**, and depicted on attached **Exhibit E**. The West Parcel No. 1 is owned by Applicant Jacob Decoto.

iii. West Parcel No. 2. The "West Parcel No. 2" is an approximately 36.03 acre parcel located in the SW1/4 SE1/4 and the SE1/4 SE1/4 of Section 21, Township 12 South, Range 65 West of the 6th P.M., El Paso County, Colorado, as more particularly described on attached **Exhibit C**, and depicted on attached **Exhibit E**. The West Parcel No. 2 is owned by Applicant Jacob Decoto.

iv. West Parcel No. 3. The "West Parcel No. 3" is an approximately 37.58 acre parcel located in the NW1/4 SE1/4 and the NE1/4 SE1/4 of Section 21, Township 12 South, Range 65 West of the 6th P.M., El Paso County, Colorado, as more particularly described on attached **Exhibit D**, and depicted on attached **Exhibit E**. The West Parcel No. 3 is owned by Applicants Marvin Ornes and Terri Wahlberg.

B. Existing Wells. There is currently one (1) existing well constructed to the Dawson aquifer on West Parcel No. 2 (Decoto): DWR Permit No. 4554, an exempt domestic well. DWR Permit No. 4554 is an exempt structure; water from the Dawson aquifer sufficient to allow for such continued exempt use has been excluded from the quantification herein. Two additional exempt domestic wells have been permitted since the filing of the application in this matter, DWR Permit No. 304551 on West Parcel No. 1 (Decoto), and DWR Permit No. 304498 on West Parcel No. 3 (Ornes/Wahlberg), and are excluded from quantification herein.

C. Additional Wells. Applicants anticipated additional wells will be constructed on each the Applicants' respective properties. To the extent any additional wells may be constructed to the not-nontributary Dawson and/or Denver aquifer(s), such wells may be constructed only pursuant to a subsequent decree providing an approved plan for augmentation, or as exempt well structures pursuant to C.R.S. §37-92-602.

10. Of the statutorily described Denver Basin aquifers, the Dawson, Denver, Arapahoe, and Laramie-Fox Hills aquifers all exist beneath the Applicants' respective properties. The Dawson and Denver aquifers contain not-nontributary water, while the water of the Arapahoe and Laramie-Fox Hills aquifers underlying the Applicants' respective properties is nontributary. The quantity of water in the Denver Basin aquifers exclusive of artificial recharge underlying each of the Applicants' respective properties as allocated on a pro-rata per acre basis from the amounts described in the State Engineer's Determination of Facts, is as follows:

A. Arroya Parcel (225.97 acres):

Aquifer	Sand Thickness (Feet)	Total Ground Water Storage (Acre Feet)	Annual Average Withdrawal – 100 Years (Acre Feet)
Dawson (NNT)	270	12,202	122
Denver (NNT)	310	11,909	119.1
Arapahoe (NT)	255	9,796	98
Laramie-Fox Hills (NT)	190	6,440	64.4

B. West Parcel No. 1 (Decoto – 36.01 acres):

Aquifer	Sand Thickness (Feet)	Total Ground Water Storage (Acre Feet)	Annual Average Withdrawal – 100 Years (Acre Feet)
Dawson (NNT)	270	1,944.4	16.44[1]
Denver (NNT)	310	1,897.7	18.98
Arapahoe (NT)	255	1,561	15.61
Laramie-Fox Hills (NT)	190	1,026.2	10.26

C. West Parcel No. 2 (Decoto – 36.03 acres):

Aquifer	Sand Thickness (Feet)	Total Ground Water Storage (Acre Feet)	Annual Average Withdrawal – 100 Years (Acre Feet)
Dawson (NNT)	270	1,945.4	16.45[2]
Denver (NNT)	310	1,898.8	18.99
Arapahoe (NT)	255	1,562	15.62
Laramie-Fox Hills (NT)	190	1,026.8	10.27

D. West Parcel No. 3 (Ornes & Wahlberg – 37.58 acres):

Aquifer	Sand Thickness (Feet)	Total Ground Water Storage (Acre Feet)	Annual Average Withdrawal – 100 Years (Acre Feet)
Dawson (NNT)	270	2,029.2	17.29[3]
Denver (NNT)	310	1,980.5	19.80
Arapahoe (NT)	255	1,629	16.29
Laramie-Fox Hills (NT)	190	1,071	10.7

[1] Three (3) annual acre feet of Dawson groundwater has been reserved from quantification herein for permitting of an exempt domestic well on this parcel pursuant to C.R.S. §37-92-602, *et seq.*, recently permitted as DWR Permit No. 304551.

[2] Three (3) annual acre feet of Dawson groundwater has been reserved from quantification herein for continued use of DWR Permit No. 4554 as an exempt domestic well on this parcel pursuant to C.R.S. §37-92-602, et seq.

[3] Three (3) annual acre feet of Dawson groundwater has been reserved from quantification herein for permitting of an exempt domestic well on this parcel pursuant to C.R.S. §37-92-602, et seq., recently permitted as DWR Permit No. 304498.

11. Pursuant to §37-90-137(9)(c.5)(I), C.R.S., the augmentation requirements for wells in the Dawson aquifer require the replacement to the effected stream systems of actual stream depletions on an annual basis, to the extent necessary to prevent injurious effect, based upon actual aquifer conditions. The augmentation requirements for wells to the Denver aquifer are for 4% of pumping. Applicants shall not be entitled to construct a non-exempt well or use water from the not-nontributary Dawson or Denver aquifers except pursuant to an approved augmentation plan in accordance with C.R.S. §37-90-137(9)(c.5).

12. Applicants shall be entitled to withdraw all legally available groundwater in the Denver Basin aquifers underlying Applicants' respective properties. Said amounts can be withdrawn over the 100-year life for the aquifers as set forth in C.R.S. §37-90-137(4), or withdrawn over a longer period of time based upon local governmental regulations or Applicants' water needs. The average annual amounts of ground water available for withdrawal from the underlying Denver Basin aquifers, based upon the 100-year aquifer life is determined and set forth above, based upon the March 14, 2017 Office of the State Engineer Determination of Facts. Such groundwater may be withdrawn from wells located upon the overlying land or contiguous properties with such contiguity to allow such withdrawal, consistent with the Denver Basin Rules as promulgated by the Office of the State Engineer, as may be amended from time to time.

13. Applicants shall be entitled to withdraw an amount of groundwater in excess of the average annual amount decreed herein from the Denver Basin aquifers underlying Applicants' respective properties, so long as the sum of the total withdrawals from wells in the aquifer does not exceed the product of the number of years since the date of issuance of the original well permit or the date of entry of the decree herein, whichever comes first, and the annual volume of water which Applicants are entitled to withdraw from the aquifer underlying Applicants' respective properties.

14. The Applicants shall have the right to use the ground water for beneficial uses on or off the Applicants' respective properties consisting of domestic, commercial, irrigation, stock water, recreation, wildlife, wetlands, fire protection, piscatorial, and for storage and augmentation associated with such uses. The amount of groundwater decreed for such uses upon the Applicants' respective properties is reasonable as such uses are to be made for the long term use and enjoyment of the Applicants' respective properties and are to establish and provide for adequate water reserves. The nontributary groundwater, may be used, reused, and successively used to extinction, both on and off the Applicants' respective properties subject, however, to the relinquishment of the right to consume two percent of such nontributary water withdrawn. Applicants may use such water by immediate application or by storage and subsequent application to the beneficial uses and purposes stated herein. Provided however, as set forth above, Applicants shall only be entitled to construct a non-exempt well or use water from the not-nontributary Dawson and Denver aquifers pursuant to a decreed augmentation plan entered by the Court. Withdrawals of groundwater available from the nontributary aquifers beneath the Applicants' respective properties in the

amounts determined in accordance with the provisions of this decree will not result in material injury to any other vested water rights or to any other owners or users of water.

15. Applicants may construct such wells on their respective properties as necessary for the withdrawal of all entitlements from each aquifer as described above, and such withdrawals may be made through any combination of wells. As to each of Applicants' respective properties, these wells shall be treated as a well field.

CONCLUSIONS OF LAW

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

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

18. Subject to the terms of this decree, the Applicants are entitled to the sole right to withdraw all the legally available water in the Denver Basin aquifers underlying the Applicants' respective properties, and the right to use that water to the exclusion of all others subject to the terms of this decree.

19. The Applicants have complied with C.R.S. §37-90-137(4), and the groundwater is legally available for withdrawal by the requested nontributary well(s), and legally available for withdrawal by the requested not-nontributary well(s) upon the entry of a subsequent decree approving an augmentation plan pursuant to C.R.S. §37-90-137(9)(c.5). Applicants are entitled to a decree from this Court confirming their rights to withdraw groundwater pursuant to C.R.S. §37-90-137(4).

20. The Denver Basin water rights applied for in this case are not conditional water rights, but are vested water rights determined pursuant to C.R.S. §37-90-137(4). No applications for diligence are required. The claims for nontributary and not-nontributary groundwater meet the requirements of Colorado Law.

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

IT IS THEREFORE ORDERED, ADJUDGED AND DECREED AS FOLLOWS:

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

23. The Application for Adjudication of Denver Basin Groundwater proposed by the Applicants is approved, subject to the terms of this decree.

24. The Applicants have furnished acceptable proof as to all claims and, therefore, the Application for Adjudication of Groundwater as requested by the Applicants is granted and approved in accordance with the terms and conditions of this decree. Approval of this Application will not result in any material injury to senior vested water rights.

25. The Applicants shall comply with C.R.S. §37-90-137(9)(b), requiring the relinquishment of the right to consume two percent (2%) of the amount of the nontributary groundwater withdrawn. Ninety-eight percent (98%) of the nontributary groundwater withdrawn may therefore be consumed. No plan for augmentation shall be required to provide for such relinquishment.

26. The Court retains jurisdiction over this matter to make adjustments in the allowed average annual amount of withdrawal from the Denver Basin aquifers, either upwards or downwards, to conform to actual local aquifer characteristic, and that the Applicants need not refile, republish, or otherwise amend this application to request such adjustments.

A. At such time as adequate data may be available, Applicant or the State Engineer may invoke the Court's retained jurisdiction as provided in this Paragraph 26 for purposes of making a final determination of water rights as to the quantities of water available and allowed average annual withdrawals from any of the Denver Basin aquifers quantified and adjudicated herein. Any person seeking to invoke the Court's retained jurisdiction for such purpose shall file a verified petition with the Court setting forth with particularity the factual basis for such final determination of Denver Basin water rights under this decree, together with the proposed decretal language to effect the petition. Within four months of the filing of such verified petition, the State Engineer's Office shall utilize such information as available to make a final determination of water rights finding, and shall provide such information to the Court, Applicant, and the petitioning party.

B. If no protest is filed with the Court to such findings by the State Engineer's Office within sixty (60) days, this Court shall incorporate by entry of an Amended Decree such "final determination of water rights", and the provisions of this Paragraph 26 concerning adjustments to the Denver Basin ground water rights based upon local aquifer conditions shall no longer be applicable. In the event of a protest

being timely filed, or should the State Engineer's Office make no timely determination as provided in Paragraph 26.A., above, the "final determination of water rights" sought in the petition may be made by the Water Court after notice to all parties and following a full and fair hearing, including entry of an Amended Decree, if applicable in the Court's reasonable discretion.

27. Pursuant to C.R.S. §37-92-502(5)(a), the Applicants shall install and maintain such water measurement devices and recording devices as are deemed essential by the State Engineer or Division Engineers, and the same shall be installed and operated in accordance with instructions from said entities. Applicants are to install and maintain a totalizing flow meter on all wells, and any additional or replacement wells. Applicants are also to maintain records and provide reports to the State Engineer or Division Engineers as instructed by said entities, on at least an annual basis.

28. The vested water rights and water right structures decreed herein shall be subject to all applicable administrative rules and regulations, as currently in place or as may in the future be promulgated, of the offices of Colorado State and Division Engineers for administration of such water rights, to the extent such rules and regulations are uniformly applicable to other similarly situated water rights and water users.

29. This Ruling of Referee, when entered as a decree of the Water Court, shall be recorded in the real property records of El Paso County, Colorado. Copies of this ruling shall be mailed as provided by statute.

DATED THIS 5th day of May, 2017.

BY THE REFEREE:

Mardell R. DiDomenico, Water Referee
Water Division 2

DECREE

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

Dated: May 31, 2017.

BY THE COURT:

LARRY C. SCHWARTZ, WATER JUDGE
WATER DIVISION 2

EXHIBIT A

LEGAL DESCRIPTION – ARROYA PARCEL

A PARCEL OF LAND LOCATED IN A PORTION OF THE SOUTHEAST ONE-QUARTER (SE1/4) OF SECTION 21 AND A PORTION OF THE SOUTHWEST ONE-QUARTER OF SECTION 22, TOWNSHIP 12 SOUTH, RANGE 65 WEST OF THE 6TH P.M., EL PASO COUNTY, COLORADO, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BASIS OF BEARINGS: A LINE BETWEEN THE NORTHEAST CORNER OF THE NORTHWEST ONE-QUARTER OF THE NORTHWEST ONE-QUARTER (NW1/4 NW1/4) OF SECTION 27 AND THE SOUTHEAST CORNER OF THE NORTHWEST ONE-QUARTER OF THE SOUTHWEST ONE-QUARTER (NW1/4 SW1/4) OF SAID SECTION 27, TOWNSHIP 12 SOUTH, RANGE 65 WEST, MONUMENTED AT THE NORTHERLY END BY A 3-1/4" ALUMINUM CAP STAMED "2006 ESI PLS 10376" AND MONUMENTED AT THE SOUTHERLY END BY A 3-1/4" ALUMINUM CAP STAMPED "2006 ESI PLS 10376" AND IS ASSUMED TO BEAR S00°54'30"E, A DISTANCE OF 3925.63 FEET;

COMMENCING AT THE NORTHEAST CORNER OF THE NORTHWEST ONE-QUARTER OF THE NORTHWEST ONE-QUARTER (NW1/4 NW1/4) OF SECTION 27;
THENCE S88°38'56"W ALONG THE NORTH LINE OF SAID NORTHWEST ONE-QUARTER OF THE NORTHWEST ONE-QUARTER (NW1/4 NW1/4), A DISTANCE OF 1047.88 FEET TO THE POINT OF BEGINNING OF THE PARCEL OF LAND HEREIN DESCRIBED;

THENCE S88°38'56"W CONTINUING ALONG SAID NORTH LINE, A DISTANCE OF 283.03 FEET TO THE NORTHWEST CORNER OF SAID SECTION 27 SAID POINT ALSO BEING A POINT ON THE EASTERLY RIGHT-OF-WAY LINE AS DESCRIBED IN THE DEED, AS RECORDED IN BOOK 2678 AT PAGE 431 OF THE RECORDS OF THE EL PASO COUNTY CLERK AND RECORDER;

THENCE ALONG THE EASTERLY AND NORTHERLY RIGHT-OF-WAY LINES OF SAID DEED THE FOLLOWING TWO (2) COURSES:

1. N00°37'14"W SAID LINE ALSO BEING THE WEST LINE OF THE SOUTHWEST ONE-QUARTER (SW1/4) OF SAID SECTION 22, A DISTANCE OF 30.00 FEET;
2. S89°40'23"W, A DISTANCE OF 736.82 FEET TO THE POINT OF INTERSECTION OF THE EASTERLY RIGHT-OF-WAY LINE AS DESCRIBED IN THE DEED, AS RECORDED IN BOOK 2678 AT PAGE 430 OF SAID COUNTY RECORDS;

THENCE N21°41'10"E ALONG SAID EASTERLY RIGHT-OF-WAY LINE, A DISTANCE OF 1798.07 FEET;
THENCE N59°58'50"E, A DISTANCE OF 694.83 FEET;
THENCE S14°30'58"E, A DISTANCE OF 567.09 FEET;
THENCE N69°36'18"E, A DISTANCE OF 603.87 FEET;
THENCE S30°23'46"E, A DISTANCE OF 264.58 FEET;
THENCE S61°52'38"W, A DISTANCE OF 227.40 FEET;

THENCE S79°15'47"W, A DISTANCE OF 276.17 FEET;
THENCE S89°39'18"W, A DISTANCE OF 356.07 FEET;
THENCE S40°09'47"W, A DISTANCE OF 310.61 FEET;
THENCE S09°56'46"W, A DISTANCE OF 270.03 FEET;
THENCE S35°00'25"W, A DISTANCE OF 167.38 FEET;
THENCE S57°24'01"W, A DISTANCE OF 235.36 FEET;
THENCE S27°23'34"E, A DISTANCE OF 611.29 FEET TO THE POINT OF BEGINNING;

SAID PARCEL OF LAND CONTAINS A CALCULATED AREA OF 35.08 ACRES OF LAND, MORE OR LESS.

Along With:

A PARCEL OF LAND BEING THE NORTHWEST ONE-QUARTER OF THE NORTHWEST ONE-QUARTER (NW1/4 NW1/4) OF SECTION 27, THE SOUTHWEST ONE-QUARTER OF THE NORTHWEST ONE-QUARTER (SW1/4 NW1/4) OF SECTION 27, THE NORTHWEST ONE-QUARTER OF THE SOUTHWEST ONE-QUARTER (NW1/4 SW1/4) OF SECTION 27, A PORTION OF THE SOUTHEAST ONE-QUARTER OF THE NORTHEAST ONE-QUARTER OF SECTION 28 AND A PORTION OF THE NORTHEAST ONE-QUARTER OF THE NORTHEAST ONE-QUARTER (NE1/4 NE1/4) OF SECTION 28, ALL IN TOWNSHIP 12 SOUTH, RANGE 65 WEST OF THE 6TH P.M., EL PASO COUNTY, COLORADO, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BASIS OF BEARINGS: A LINE BETWEEN THE NORTHEAST CORNER OF THE NORTHWEST ONE-QUARTER OF THE NORTHWEST ONE-QUARTER (NW1/4 NW1/4) OF SECTION 27 AND THE SOUTHEAST CORNER OF THE NORTHWEST ONE-QUARTER OF THE SOUTHWEST ONE-QUARTER (NW1/4 SW1/4) OF SAID SECTION 27, TOWNSHIP 12 SOUTH, RANGE 65 WEST, MONUMENTED AT THE NORTHERLY END BY A 3-1/4" ALUMINUM CAP STAMED "2006 ESI PLS 10376" AND MONUMENTED AT THE SOUTHERLY END BY A 3-1/4" ALUMINUM CAP STAMPED "2006 ESI PLS 10376" AND IS ASSUMED TO BEAR S00°54'30"E, A DISTANCE OF 3925.63 FEET;

COMMENCING AT THE NORTHEAST CORNER OF THE NORTHWEST ONE-QUARTER OF THE NORTHWEST ONE-QUARTER (NW1/4 NW1/4) OF SECTION 27, SAID POINT ALSO BEING THE POINT OF BEGINNING OF THE PARCEL OF LAND HEREIN DESCRIBED;

THENCE S00°54'30"E ALONG THE EAST LINE OF THE WEST ONE-HALF (W1/2) OF SAID SECTION 27, A DISTANCE OF 3925.63 FEET TO THE SOUTHEAST CORNER OF THE NORTHWEST ONE-QUARTER OF THE SOUTHWEST ONE-QUARTER NW1/4 SW1/4) OF SAID SECTION 27;
THENCE S87°35'00"W ALONG THE SOUTH LINE OF SAID NORTHWEST ONE-QUARTER OF THE SOUTHWEST ONE-QUARTER (NW1/4 SW1/4), A DISTANCE OF 1332.78 FEET TO THE SOUTHWEST CORNER OF SAID NORTHWEST ONE-QUARTER OF THE SOUTHWEST ONE-QUARTER (NW1/4 SW1/4);
THENCE N00°53'18"W ALONG THE WEST LINE OF SAID NORTHWEST ONE-QUARTER OF THE SOUTHWEST ONE-QUARTER (NW1/4 SW1/4), A DISTANCE OF 1316.78 FEET TO THE NORTHWEST CORNER OF SAID NORTHWEST ONE-QUARTER OF THE SOUTHWEST ONE-QUARTER (NW1/4 SW1/4);
THENCE S89°08'28"W ALONG THE SOUTH LINE OF THE SOUTHEAST ONE-QUARTER OF THE NORTHEAST ONE-QUARTER (SE1/4 NE1/4) OF SECTION 28, A DISTANCE OF 1326.68 FEET TO THE SOUTHWEST CORNER OF SAID SOUTHEAST ONE-QUARTER OF THE NORTHEAST ONE-QUARTER (SE1/4 NE1/4);
THENCE N00°30'49"W ALONG THE WEST LINE OF SAID SOUTHEAST ONE-QUARTER OF THE NORTHEAST ONE-QUARTER (SE1/4 NE1/4), A DISTANCE OF 1270.77 FEET TO A POINT ON THE EASTERLY RIGHT-OF-WAY LINE AS DESCRIBED IN THE DEED, AS RECORDED IN

BOOK 2678 AT PAGE 430 OF THE RECORDS OF THE EL PASO COUNTY CLERK AND RECORDER;
THENCE N21°41'10"E ALONG SAID EASTERLY RIGHT-OF-WAY LINE, A DISTANCE OF 1450.84 FEET TO THE POINT OF INTERSECTION OF THE SOUTHERLY RIGHT-OF-WAY LINE AS DESCRIBED IN THE DEED, AS RECORDED IN BOOK 2678 AT PAGE 431 OF SAID COUNTY RECORDS;

THENCE ALONG THE SOUTHERLY AND EASTERLY RIGHT-OF-WAY LINES OF SAID DEED THE FOLLOWING TWO (2) COURSES:

1. N89°40'23"E, A DISTANCE OF 761.52 FEET TO A POINT ON THE EAST LINE OF SAID NORTHEAST ONE-QUARTER OF THE NORTHEAST ONE-QUARTER (NE1/4 NE1/4);
2. N00°52'58"W ALONG SAID EAST LINE, A DISTANCE OF 30.00 FEET TO THE NORTHWEST CORNER OF SAID SECTION 27;

THENCE N88°38'56"E ALONG THE NORTH LINE OF SAID NORTHWEST ONE-QUARTER OF THE NORTHWEST ONE-QUARTER (NW1/4 NW1/4), A DISTANCE OF 1330.91 FEET TO THE POINT OF BEGINNING;

SAID PARCEL OF LAND CONTAINS A CALCULATED AREA OF 190.89 ACRES OF LAND, MORE OR LESS.

EXHIBIT B

LEGAL DESCRIPTION TRAILS AT TIMBERLINE WEST PARCEL 1:

A PARCEL OF LAND LOCATED IN A PORTION OF THE SOUTHEAST ONE-QUARTER (SE1/4) OF SECTION 21 AND A PORTION OF THE NORTHEAST ONE-QUARTER (NE1/4) OF SECTION 28, TOWNSHIP 12 SOUTH, RANGE 65 WEST OF THE 6TH P.M., EL PASO COUNTY, COLORADO, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BASIS OF BEARINGS: THE WEST LINE OF THE SOUTHEAST ONE-QUARTER (SE1/4) OF SECTION 21, TOWNSHIP 12 SOUTH, RANGE 65 WEST IS ASSUMED TO BEAR N00°25'32"W, A DISTANCE OF 2638.53 FEET.

COMMENCING AT THE SOUTHWEST CORNER OF SAID SOUTHEAST ONE-QUARTER (SE1/4); SAID POINT ALSO BEING THE POINT OF BEGINNING OF THE PARCEL OF LAND HEREIN DESCRIBED;
THENCE N00°25'32"W ALONG THE WEST LINE OF SAID SOUTHEAST ONE-QUARTER (SE1/4), A DISTANCE OF 650.11 FEET;
THENCE N89°40'31"E, A DISTANCE OF 5077.12 FEET TO A POINT ON THE WESTERLY RIGHT-OF-WAY LINE OF VOLLMER ROAD AS DESCRIBED IN THE DOCUMENT RECORDED IN BOOK 2678 AT PAGE 430 OF THE RECORDS OF THE EL PASO COUNTY CLERK AND RECORDER;
THENCE S21°41'10"W ALONG SAID WESTERLY RIGHT-OF-WAY LINE, A DISTANCE OF 2013.88 FEET TO A POINT ON THE EAST LINE OF THE NORTHWEST ONE-QUARTER OF THE NORTHEAST ONE-QUARTER (NW1/4 NE1/4) OF SAID SECTION 28;
THENCE N00°41'17"W ALONG SAID EAST LINE, A DISTANCE OF 1217.12 FEET TO THE SOUTHEAST CORNER OF THE SOUTHWEST ONE-QUARTER OF THE SOUTHEAST ONE-QUARTER (SW1/4 SE1/4) OF SAID SECTION 21;
THENCE S89°40'14"W ALONG THE SOUTH LINE OF SAID SOUTHWEST ONE-QUARTER OF THE SOUTHEAST ONE-QUARTER (SW1/4 SE1/4), A DISTANCE OF 1343.49 FEET TO THE POINT OF BEGINNING.

SAID PARCEL OF LAND CONTAINS A CALCULATED AREA OF 38.01 ACRES OF LAND, MORE OR LESS.

EXHIBIT C

LEGAL DESCRIPTION TRAILS AT TIMBERLINE WEST PARCEL 2:

A PARCEL OF LAND LOCATED IN A PORTION OF THE SOUTHEAST ONE-QUARTER (SE1/4) OF SECTION 21, TOWNSHIP 12 SOUTH, RANGE 65 WEST OF THE SIXTH PRINCIPAL MERIDIAN, EL PASO COUNTY, COLORADO, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BASIS OF BEARINGS: THE WEST LINE OF THE SOUTHEAST ONE-QUARTER (SE1/4) OF SECTION 21, TOWNSHIP 12 SOUTH, RANGE 65 WEST IS ASSUMED TO BEAR N00°25'32"W, A DISTANCE OF 2638.53 FEET;

COMMENCING AT THE SOUTHWEST CORNER OF SAID SOUTHEAST ONE-QUARTER (SE1/4);
THENCE N00°25'32"W ALONG THE WEST LINE OF SAID SOUTHEAST ONE-QUARTER (SE1/4), A DISTANCE OF 650.01 FEET TO THE POINT OF BEGINNING OF THE PARCEL OF LAND HEREIN DESCRIBED;
THENCE N00°25'32"W CONTINUING ALONG SAID WEST LINE, A DISTANCE OF 705.70 FEET;
THENCE N89°48'31"E, A DISTANCE OF 2364.04 FEET TO A POINT ON THE WESTERLY RIGHT-OF-WAY LINE OF VOLLMER ROAD AS DESCRIBED IN THE DOCUMENT RECORDED IN BOOK 2678 AT PAGE 430 OF THE RECORDS OF THE EL PASO COUNTY CLERK AND RECORDER;
THENCE S21°41'10"W ALONG SAID WESTERLY RIGHT-OF-WAY LINE, A DISTANCE OF 762.26 FEET;
THENCE S89°48'31"W, A DISTANCE OF 2077.12 FEET TO THE POINT OF BEGINNING;

SAID PARCEL OF LAND CONTAINS A CALCULATED AREA OF 36.03 ACRES OF LAND , MORE OR LESS.

EXHIBIT D

LEGAL DESCRIPTION TRAILS AT TIMBERLINE WEST PARCEL 3:

A PARCEL OF LAND LOCATED IN A PORTION OF THE SOUTHEAST ONE-QUARTER (SE1/4) OF SECTION 21, TOWNSHIP 12 SOUTH, RANGE 65 WEST OF THE SIXTH PRINCIPAL MERIDIAN, EL PASO COUNTY, COLORADO, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BASIS OF BEARINGS: THE WEST LINE OF THE SOUTHEAST ONE-QUARTER (SE1/4) OF SECTION 21, TOWNSHIP 12 SOUTH, RANGE 65 WEST IS ASSUMED TO BEAR N00°25'32"W, A DISTANCE OF 2638.53 FEET;

COMMENCING AT THE SOUTHWEST CORNER OF SAID SOUTHEAST ONE-QUARTER (SE1/4);
THENCE N00°25'32"W ALONG THE WEST LINE OF SAID SOUTHEAST ONE-QUARTER (SE1/4), A DISTANCE OF 1356.81 FEET TO THE POINT OF BEGINNING OF THE PARCEL OF LAND HEREIN DESCRIBED;
THENCE N00°25'32"W CONTINUING ALONG SAID WEST LINE, A DISTANCE OF 656.30 FEET;
THENCE N89°40'31"E, A DISTANCE OF 2590.16 FEET TO A POINT ON THE WESTERLY RIGHT-OF-WAY LINE OF VOLLMER ROAD AS DESCRIBED IN THE DOCUMENT RECORDED IN BOOK 2678 AT PAGE 430 OF THE RECORDS OF THE EL PASO COUNTY CLERK AND RECORDER;

THENCE ALONG SAID WESTERLY RIGHT-OF-WAY LINE THE FOLLOWING TWO (2) COURSES:
1. S00°37'14"E, A DISTANCE OF 98.54 FEET;
2. S21°41'10"W, A DISTANCE OF 691.81 FEET;

THENCE S89°40'31"W, A DISTANCE OF 2364.04 FEET TO THE POINT OF BEGINNING;

SAID PARCEL OF LAND CONTAINS A CALCULATED AREA OF 37.58 ACRES OF LAND, MORE OR LESS.

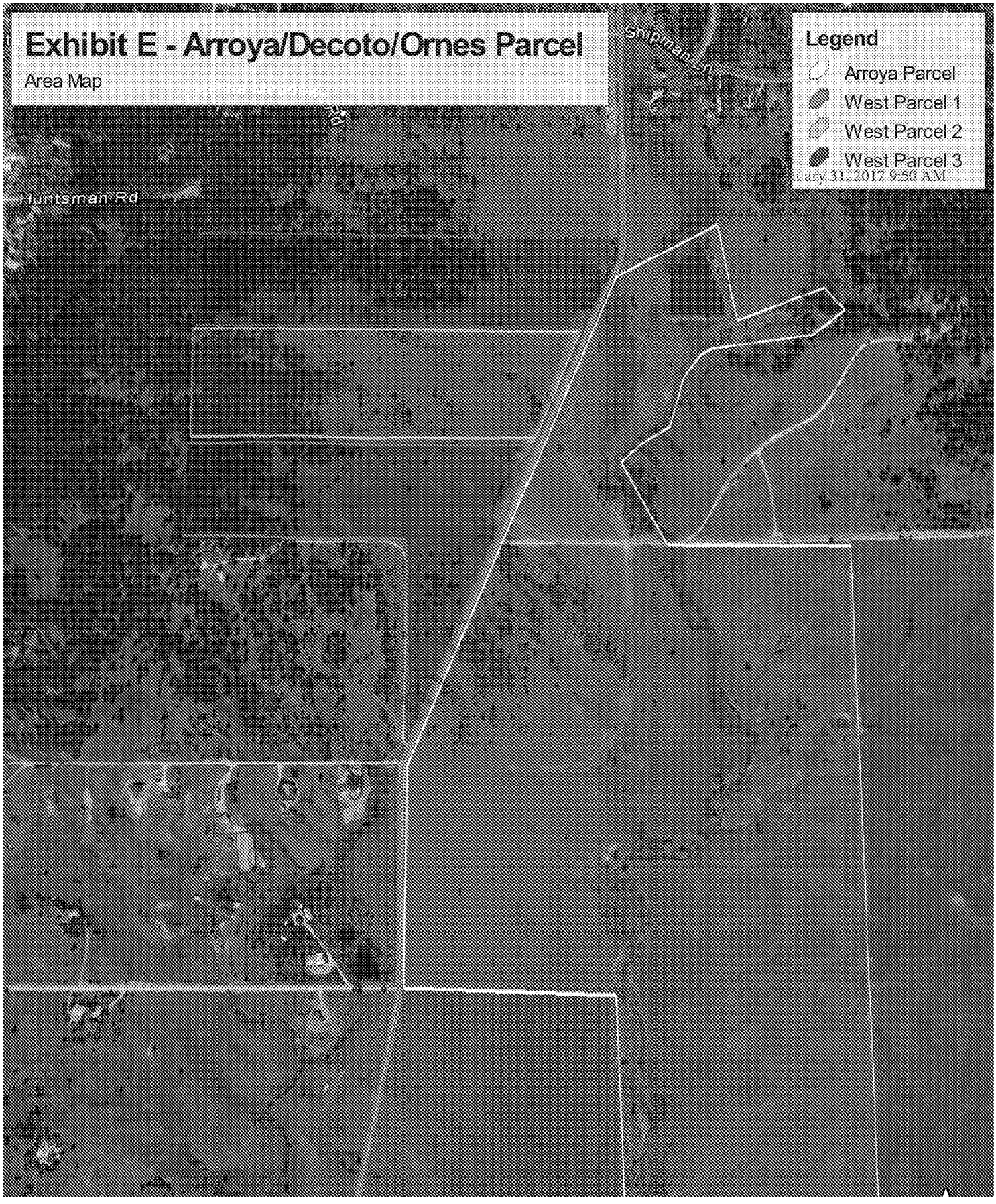


Exhibit E - Arroya/Decoto/Ornes Parcel
Area Map
Legend
Arroya Parcel
West Parcel 1
West Parcel 2
West Parcel 3
Huntsman Rd
Ski Ranch Rd
January 31, 2017 9:50 AM

218092584 8/9/2018 3:54 PM
PGS 12 $68.00 DF $0.00
Electronically Recorded Official Records El Paso County CO
Chuck Broerman, Clerk and Recorder
TD1000 N

DISTRICT COURT, WATER DIVISION 2, CO Court Address: 501 North Elizabeth Street, Suite 116 Pueblo, CO 81003 Phone Number: (719) 404-8832	DATE FILED: August 9, 2018 3:38 PM CASE NUMBER: 2018CW3002
CONCERNING THE APPLICATION FOR WATER RIGHTS OF: **ARROYA INVESTMENTS, LLC** **IN EL PASO COUNTY**	▲ COURT USE ONLY ▲ **Case No.: 18CW3002** (17CW3002)

FINDINGS OF FACT, CONCLUSIONS OF LAW, RULING OF REFEREE AND DECREE

THIS MATTER comes before the Water Referee on the Application filed by Arroya Investments, LLC, and having reviewed said Application and other pleadings on file, and being fully advised on this matter, the Water Referee makes the following findings and orders:

GENERAL FINDINGS OF FACT

1. The applicant in this case is Arroya Investments, LLC, whose address is 1283 Kelly Johnson Blvd., Colorado Springs, CO 80920 ("Applicant"). Applicant is the owner of the land totaling approximately 72.5 acres (a portion of the larger 225.97-acre Arroya Parcel previously adjudicated in Case No. 17CW3002), on which the structures sought to be adjudicated herein are located, and are the owners of the place of use where the water will be put to beneficial use.

2. The Applicant filed this Application with the Water Court for Water Division 2 on January 9, 2018. The Application was referred to the Water Referee in Division 2 on or about January 18, 2018.

3. The time for filing statements of opposition to the Application expired on the last day of March 2018. No Statements of Opposition were timely filed.

4. On January 18, 2018, the Water Court, Division 2 ordered that publication occur in the *Daily Transcript* within El Paso County.

5. The Clerk of this Court has caused publication of the Application filed in this matter as provided by statute and the publication costs have been paid. On February 15, 2018, proof of publication in the *Daily Transcript* was filed with Water

Court Division 2. All notices of the Application have been given in the manner required by law.

6. Pursuant to C.R.S. §37-92-302(4), the office of the Division Engineer for Water Division 2 has filed its Consultation Report dated May 2, 2018, with the Court, and a Response to the Consultation Report was filed by the Applicant on June 26, 2018. Both the Consultation Report and Response have been considered by the Water Referee in the entry of this Ruling.

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

8. The Applicant, consistent with the decree entered in Case No. 17CW3002, seeks to utilize ground water rights granted therein for the construction of Timber Ridge Wells Nos. 1 through 29 to the Dawson aquifer, and additional or replacement wells associated therewith, for withdrawal of Applicant's full entitlements of supply under the plan for augmentation sought herein.

9. The land overlying the groundwater subject to the adjudication in this case is owned by the Applicant and was previously quantified in Case No. 17CW3002, which concerned a 225.97 acre parcel of land located in El Paso County, Colorado ("Arroya Parcel"). The land relevant to this decree consists of an approximately 72.5 acre portion of the larger Arroya Parcel as described in Case No. 17CW3002, located in a portion of the SE¼ of Section 21 and a portion of the SW¼ of Section 22, Township 12 South, Range 65 West of the 6th P.M., El Paso County, Colorado, as more particularly described on the attached **Exhibit A**, and depicted on the attached **Exhibit B** map ("Subject Property"). Applicant intends to subdivide the property into up to twenty-nine (29) lots of approximately 2.5 acres each. All groundwater adjudicated herein shall be withdrawn from the overlying land.

10. Timber Ridge Wells Nos. 1 through 29: Each of the Timber Ridge Wells Nos. 1 through 29 are to be constructed to the not-nontributary Dawson aquifer pursuant to the Plan for Augmentation decreed herein to provide domestic water supplies to a single family residence to be located upon the subdivided Subject Property. Upon entry of this decree and submittal by the Applicant of a complete well permit application and filing fee, the State Engineer shall issue a revised permit for Timber Ridge Wells Nos. 1 through 29 pursuant to C.R.S. §37-90-137(4), consistent with and references the Plan for Augmentation decreed herein.

PLAN FOR AUGMENTATION

11. The structures to be augmented are Timber Ridge Wells Nos. 1 through 29 in the not-nontributary Dawson aquifer underlying the Applicant's Property, along with any additional or replacement wells associated therewith.

12. Pursuant to C.R.S. §37-90-137(9)(c.5), the augmentation obligation for Timber Ridge Wells Nos. 1 through 29, and any additional or replacement wells constructed to the Dawson aquifer requires the replacement of actual stream depletions to the extent necessary to prevent any injurious effect. The water rights to be used for augmentation during pumping are the septic return flows of the not-nontributary Timber Ridge Wells Nos. 1 through 29, to be pumped as set forth in this plan for augmentation. The water rights to be used for augmentation after pumping are a reserved portion of Applicant's nontributary water rights in the Laramie-Fox Hills aquifers. Applicant shall provide for the augmentation of stream depletions caused by pumping the Timber Ridge Wells Nos. 1 through 29 as approved herein. Water use criteria as follows:

A. Use: The Timber Ridge Wells Nos. 1 through 29 may each pump up to 0.32 acre feet of water per year, for a maximum total of 9.32 acre feet being withdrawn from the Dawson aquifer annually. Households will utilize up to 0.26 acre feet of water per year per residence, with the additional pumping available for landscape irrigation, the watering of horses or equivalent livestock, and other beneficial uses decreed in 17CW3002 at each residence. The foregoing figures assume the use of 29 septic systems, with resulting return flows from each. Should Applicant subdivide Applicant's property into fewer than 29 lots, both depletions and return flows for the replacement of the same will be correspondingly reduced, though pumping for uses other than household use may be increased provided at all times septic return flows shall replace the maximum depletions resulting from pumping.

B. Depletions: Applicant has determined that maximum stream depletions over the 300-year pumping period will amount to approximately fifty-six percent (56%) of pumping. Maximum annual depletions for total residential pumping from all wells is therefore 5.22 acre feet in year 300. Should Applicant's pumping be less than the 0.32 acre feet per lot described herein, or should fewer lots be developed, resulting depletions and required replacements will be correspondingly reduced.

C. Augmentation of Depletions During Pumping Life of Wells: Depletions during pumping will be effectively replaced by residential return flows from non-evaporative septic systems. The annual consumptive use for non-evaporative septic systems is 10% per year per residence. At a conservatively estimated household use rate of 0.18 acre feet per residence per year (rather than the full 0.26 acre feet annually), a total of 5.22 acre feet is replaced to the stream system per year, utilizing non-evaporative septic systems, assuming all 29 wells are utilized. With maximum depletions from the pumping of 29 wells at 0.18 acre feet, and anticipated replacement of 5.22 acre feet annually, during pumping, stream depletions will be adequately augmented.

D. Augmentation of Post Pumping Depletions: This plan for augmentation shall have a pumping period of a minimum of 300 years. For the replacement of any injurious post-pumping depletions which may be associated with the use of the Timber Ridge Wells Nos. 1 through 29, Applicant will reserve up to 2,796

acre feet of water from the nontributary Laramie Fox Hills aquifer, less actual stream depletions replaced during the plan pumping period as necessary to replace any injurious post pumping depletions. Applicant also reserves the right to substitute other legally available augmentation sources for such post pumping depletions upon further approval of the Court under its retained jurisdiction. Even though this reservation is made, under the Court's retained jurisdiction, Applicant reserves the right in the future to prove that post pumping depletions will be noninjurious. The reserved nontributary Laramie-Fox Hills groundwater will be used to replace any injurious post-pumping depletions. Upon entry of a decree in this case, the Applicant will be entitled to apply for and receive a new well permit for the Timber Ridge Wells Nos. 1 through 29 for the uses in accordance with this Application and otherwise in compliance with C.R.S. §37-90-137.

13. This decree, upon recording, shall constitute a covenant running with Applicant's Property, benefitting and burdening said land, and requiring construction of well(s) to the nontributary Laramie-Fox Hills aquifer and pumping of water to replace any injurious post-pumping depletions under this decree. Subject to the requirements of this decree, in order to determine the amount and timing of post-pumping replacement obligations, if any, under this augmentation plan, Applicant or its successors shall use information commonly used by the Colorado Division of Water Resources for augmentation plans of this type at the time. Pursuant to this covenant, the water from the nontributary Laramie-Fox Hills aquifer reserved herein may not be severed in ownership from the overlying subject property. This covenant shall be for the benefit of, and enforceable by, third parties owning vested water rights who would be materially injured by the failure to provide for the replacement of post-pumping depletions under the decree, and shall be specifically enforceable by such third parties against the owner of the Applicant's Property.

14. Applicant or its successors shall be required to initiate pumping from the Laramie-Fox Hills aquifer for the replacement of post-pumping depletions when either: (i) the absolute total amount of water available from the Dawson aquifer allowed to be withdrawn under the plan for augmentation decreed herein has been pumped; (ii) the Applicant or its successors in interest have acknowledged in writing that all withdrawals for beneficial use through the Timber Ridge Wells Nos. 1 through 29 have permanently ceased, (iii) a period of 10 consecutive years where either no withdrawals of groundwater has occurred, or (iv) accounting shows that return flows from the use of the water being withdrawn is insufficient to replace depletions caused by the withdrawals that already occurred.

15. Accounting and responsibility for post-pumping depletions in the amount set forth herein shall continue for the shortest of the following periods: (i) the period provided by statute; (ii) the period specified by any subsequent change in statute; (iii) the period required by the Court under its retained jurisdiction; (iv) the period determined by the State Engineer; or (v) the period as established by Colorado Supreme Court final decisions. Should Applicant's obligation hereunder to account for and replace such post-pumping stream depletions be abrogated for any reason, then

the Laramie-Fox Hills aquifer groundwater reserved for such a purpose shall be free from the reservation herein and such groundwater may be used or conveyed by its owner without restriction for any post-pumping depletions.

16. The term of this augmentation plan is for a minimum of 300 years, however, the length of the plan for a particular well or wells may be extended beyond such time provided the total plan pumping allocated to such well or wells is not exceeded. Should the actual operation of this augmentation plan depart from the planned diversions described herein such that annual diversions are increased or the duration of the plan is extended, the Applicant must prepare and submit a revised model of stream depletions caused by the actual pumping schedule. This analysis must utilize depletion modeling acceptable to the State Engineer, and to this Court, and must represent the water use under the plan for the entire term of the plan to date. The analysis must show that return flows have equaled or exceeded actual stream depletions throughout the pumping period and that reserved nontributary water remains sufficient to replace post-pumping depletions.

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

18. It is determined that the timing, quantity and location of replacement water under the protective terms in this decree are sufficient to protect the vested rights of other water users and eliminate material injury thereto. The replacement water shall be of a quantity and quality so as to meet the requirements for which the water of senior appropriators has normally been used, and provided of such quality, such replacement water shall be accepted by the senior appropriators for substitution for water derived by the exercise of the Timber Ridge Wells Nos. 1 through 29. As a result of the operation of this plan for augmentation, the depletions from the Timber Ridge Wells Nos. 1 through 29 and any additional or replacement wells associated therewith will not result in material injury to the vested water rights of others.

CONCLUSIONS OF LAW

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

20. Subject to the terms of the 17CW3002 decree, the Applicant is entitled to the sole right to withdraw all the legally available water in the Denver Basin aquifers underlying the Applicant's Property, and the right to use that water to the exclusion of all others subject to the terms of said 17CW3002 decree.

21. The Applicant's request for approval of a plan for augmentation is contemplated and authorized by law. If administered in accordance with this decree, this plan for augmentation will permit the uninterrupted diversions from the Timber Ridge Wells Nos. 1 through 29 without adversely affecting any other vested water rights in the Arkansas River or its tributaries and when curtailment would otherwise be required to meet a valid senior call for water. C.R.S. §§37-92-305(3),(5), and (8).

IT IS THEREFORE ORDERED, ADJUDGED AND DECREED AS FOLLOWS:

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

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

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

25. The Applicant shall comply with C.R.S. §37-90-137(9)(b), requiring the relinquishment of the right to consume two percent (2%) of the amount of the nontributary groundwater withdrawn. Ninety-eight percent (98%) of the nontributary groundwater withdrawn may therefore be consumed. No plan for augmentation shall be required to provide for such relinquishment.

26. The State Engineer, the Division Engineer, and/or the Water Commissioner shall not curtail the diversion and use of water covered by the Timber Ridge Wells Nos. 1 through 29 so long as the return flows from the annual diversions associated with the Timber Ridge Wells Nos. 1 through 29 accrue to the stream system pursuant to the conditions contained herein. To the extent that Applicant or one of its successors or assigns is ever unable to provide the replacement water required, then the Timber Ridge Wells Nos. 1 through 29 shall not be entitled to operate under the protection of this plan, and shall be subject to administration and curtailment in accordance with the laws, rules, and regulation of the State of Colorado. Pursuant to C.R.S. §37-92-305(8), the State Engineer shall curtail all out-of-priority diversions which are not so replaced as to prevent injury to vested water rights. In order for this plan for augmentation to operate, return flows from the one or both of the septic systems discussed herein, as appropriate, shall at all times during pumping be in an amount sufficient to replace the amount of stream depletions.

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

28. Except as otherwise specifically provided in Paragraph 28, above, pursuant to the provisions of C.R.S. §37-92-304(6), this plan for augmentation decreed herein shall be subject to the reconsideration of this Court on the question of material injury to vested water rights of others, for a period of five (5) years, except as otherwise provided herein. 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 material 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 materially injured, or (ii) that any modification sought by the petitioner is not required to avoid material injury to the petitioner, or (iii) that any term or condition proposed by Applicant in response to the petition does avoid material injury to the petitioner. The Division of Water Resources as a petitioner shall be entitled to assert material 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 revisions of the statute, this matter shall become final under its own terms.

29. Pursuant to C.R.S. §37-92-502(5)(a), the Applicant shall install and maintain such water measurement devices and recording devices as are deemed essential by the State Engineer or Division Engineers, and the same shall be installed and operated in accordance with instructions from said entities. Applicant is to install and maintain a totalizing flow meters on all Timber Ridge Wells or any additional or replacement wells associated therewith. Applicant is also to maintain records and provide reports to the State Engineer or Division Engineers as instructed by said entities, on at least an annual basis.

30. The vested water rights, water right structures, and plan for augmentation decreed herein shall be subject to all applicable administrative rules and regulations, as currently in place or as may in the future be promulgated, of the offices of Colorado State and Division Engineers for administration of such water rights, to the extent such rules and regulations are uniformly applicable to other similarly situated water rights and water users.

31. This Ruling of Referee, when entered as a decree of the Water Court, shall be recorded in the real property records of El Paso County, Colorado. Copies of this ruling shall be mailed as provided by statute.

DATED THIS 18th day of July, 2018.

BY THE REFEREE:

Mardell R. DiDomenico, Water Referee
Water Division 2

DECREE

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

Dated: August 9th, 2018.

BY THE COURT:

LARRY C. SCHWARTZ, WATER JUDGE
WATER DIVISION 2

EXHIBIT A

LEGAL DESCRIPTION – ARROYA PARCEL

A PARCEL OF LAND LOCATED IN A PORTION OF THE SOUTHEAST ONE-QUARTER (SE1/4) OF SECTION 21 AND A PORTION OF THE SOUTHWEST ONE-QUARTER OF SECTION 22, TOWNSHIP 12 SOUTH, RANGE 65 WEST OF THE 6TH P.M., EL PASO COUNTY, COLORADO, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BASIS OF BEARINGS: A LINE BETWEEN THE NORTHEAST CORNER OF THE NORTHWEST ONE-QUARTER OF THE NORTHWEST ONE-QUARTER (NW1/4 NW1/4) OF SECTION 27 AND THE SOUTHEAST CORNER OF THE NORTHWEST ONE-QUARTER OF THE SOUTHWEST ONE-QUARTER (NW1/4 SW1/4) OF SAID SECTION 27, TOWNSHIP 12 SOUTH, RANGE 65 WEST, MONUMENTED AT THE NORTHERLY END BY A 3-1/4" ALUMINUM CAP STAMED "2006 ESI PLS 10376" AND MONUMENTED AT THE SOUTHERLY END BY A 3-1/4" ALUMINUM CAP STAMPED "2006 ESI PLS 10376" AND IS ASSUMED TO BEAR S00°54'30"E, A DISTANCE OF 3925.63 FEET;

COMMENCING AT THE NORTHEAST CORNER OF THE NORTHWEST ONE-QUARTER OF THE NORTHWEST ONE-QUARTER (NW1/4 NW1/4) OF SECTION 27;
THENCE S88°38'56"W ALONG THE NORTH LINE OF SAID NORTHWEST ONE-QUARTER OF THE NORTHWEST ONE-QUARTER (NW1/4 NW1/4), A DISTANCE OF 1047.88 FEET TO THE POINT OF BEGINNING OF THE PARCEL OF LAND HEREIN DESCRIBED;

THENCE S88°38'56"W CONTINUING ALONG SAID NORTH LINE, A DISTANCE OF 283.03 FEET TO THE NORTHWEST CORNER OF SAID SECTION 27 SAID POINT ALSO BEING A POINT ON THE EASTERLY RIGHT-OF-WAY LINE AS DESCRIBED IN THE DEED, AS RECORDED IN BOOK 2678 AT PAGE 431 OF THE RECORDS OF THE EL PASO COUNTY CLERK AND RECORDER;

THENCE ALONG THE EASTERLY AND NORTHERLY RIGHT-OF-WAY LINES OF SAID DEED THE FOLLOWING TWO (2) COURSES:

1. N00°37'14"W SAID LINE ALSO BEING THE WEST LINE OF THE SOUTHWEST ONE-QUARTER (SW1/4) OF SAID SECTION 22, A DISTANCE OF 30.00 FEET;
2. S89°40'23"W, A DISTANCE OF 736.82 FEET TO THE POINT OF INTERSECTION OF THE EASTERLY RIGHT-OF-WAY LINE AS DESCRIBED IN THE DEED, AS RECORDED IN BOOK 2678 AT PAGE 430 OF SAID COUNTY RECORDS;

THENCE N21°41'10"E ALONG SAID EASTERLY RIGHT-OF-WAY LINE, A DISTANCE OF 1798.07 FEET;
THENCE N59°58'50"E, A DISTANCE OF 694.83 FEET;
THENCE S14°30'58"E, A DISTANCE OF 567.09 FEET;
THENCE N69°36'18"E, A DISTANCE OF 603.87 FEET;
THENCE S30°23'46"E, A DISTANCE OF 264.58 FEET;
THENCE S61°52'38"W, A DISTANCE OF 227.40 FEET;

THENCE S79°15'47"W, A DISTANCE OF 276.17 FEET;
THENCE S89°39'18"W, A DISTANCE OF 356.07 FEET;
THENCE S40°09'47"W, A DISTANCE OF 310.61 FEET;
THENCE S09°56'46"W, A DISTANCE OF 270.03 FEET;
THENCE S35°00'25"W, A DISTANCE OF 167.38 FEET;
THENCE S57°24'01"W, A DISTANCE OF 235.36 FEET;
THENCE S27°23'34"E, A DISTANCE OF 611.29 FEET TO THE POINT OF BEGINNING;

SAID PARCEL OF LAND CONTAINS A CALCULATED AREA OF 35.08 ACRES OF LAND, MORE OR LESS.

Along With:

A PARCEL OF LAND BEING THE NORTHWEST ONE-QUARTER OF THE NORTHWEST ONE-QUARTER (NW1/4 NW1/4) OF SECTION 27, THE SOUTHWEST ONE-QUARTER OF THE NORTHWEST ONE-QUARTER (SW1/4 NW1/4) OF SECTION 27, THE NORTHWEST ONE-QUARTER OF THE SOUTHWEST ONE-QUARTER (NW1/4 SW1/4) OF SECTION 27, A PORTION OF THE SOUTHEAST ONE-QUARTER OF THE NORTHEAST ONE-QUARTER OF SECTION 28 AND A PORTION OF THE NORTHEAST ONE-QUARTER OF THE NORTHEAST ONE-QUARTER (NE1/4 NE1/4) OF SECTION 28, ALL IN TOWNSHIP 12 SOUTH, RANGE 65 WEST OF THE 6TH P.M., EL PASO COUNTY, COLORADO, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BASIS OF BEARINGS: A LINE BETWEEN THE NORTHEAST CORNER OF THE NORTHWEST ONE-QUARTER OF THE NORTHWEST ONE-QUARTER (NW1/4 NW1/4) OF SECTION 27 AND THE SOUTHEAST CORNER OF THE NORTHWEST ONE-QUARTER OF THE SOUTHWEST ONE-QUARTER (NW1/4 SW1/4) OF SAID SECTION 27, TOWNSHIP 12 SOUTH, RANGE 65 WEST, MONUMENTED AT THE NORTHERLY END BY A 3-1/4" ALUMINUM CAP STAMED "2006 ESI PLS 10376" AND MONUMENTED AT THE SOUTHERLY END BY A 3-1/4" ALUMINUM CAP STAMPED "2006 ESI PLS 10376" AND IS ASSUMED TO BEAR S00°54'30"E, A DISTANCE OF 3925.63 FEET;

COMMENCING AT THE NORTHEAST CORNER OF THE NORTHWEST ONE-QUARTER OF THE NORTHWEST ONE-QUARTER (NW1/4 NW1/4) OF SECTION 27, SAID POINT ALSO BEING THE POINT OF BEGINNING OF THE PARCEL OF LAND HEREIN DESCRIBED;

THENCE S00°54'30"E ALONG THE EAST LINE OF THE WEST ONE-HALF (W1/2) OF SAID SECTION 27, A DISTANCE OF 3925.63 FEET TO THE SOUTHEAST CORNER OF THE NORTHWEST ONE-QUARTER OF THE SOUTHWEST ONE-QUARTER NW1/4 SW1/4) OF SAID SECTION 27;
THENCE S87°35'00"W ALONG THE SOUTH LINE OF SAID NORTHWEST ONE-QUARTER OF THE SOUTHWEST ONE-QUARTER (NW1/4 SW1/4), A DISTANCE OF 1332.78 FEET TO THE SOUTHWEST CORNER OF SAID NORTHWEST ONE-QUARTER OF THE SOUTHWEST ONE-QUARTER (NW1/4 SW1/4);
THENCE N00°53'18"W ALONG THE WEST LINE OF SAID NORTHWEST ONE-QUARTER OF THE SOUTHWEST ONE-QUARTER (NW1/4 SW1/4), A DISTANCE OF 1316.78 FEET TO THE NORTHWEST CORNER OF SAID NORTHWEST ONE-QUARTER OF THE SOUTHWEST ONE-QUARTER (NW1/4 SW1/4);
THENCE S89°08'28"W ALONG THE SOUTH LINE OF THE SOUTHEAST ONE-QUARTER OF THE NORTHEAST ONE-QUARTER (SE1/4 NE1/4) OF SECTION 28, A DISTANCE OF 1326.68 FEET TO THE SOUTHWEST CORNER OF SAID SOUTHEAST ONE-QUARTER OF THE NORTHEAST ONE-QUARTER (SE1/4 NE1/4);
THENCE N00°30'49"W ALONG THE WEST LINE OF SAID SOUTHEAST ONE-QUARTER OF THE NORTHEAST ONE-QUARTER (SE1/4 NE1/4), A DISTANCE OF 1270.77 FEET TO A POINT ON THE EASTERLY RIGHT-OF-WAY LINE AS DESCRIBED IN THE DEED, AS RECORDED IN

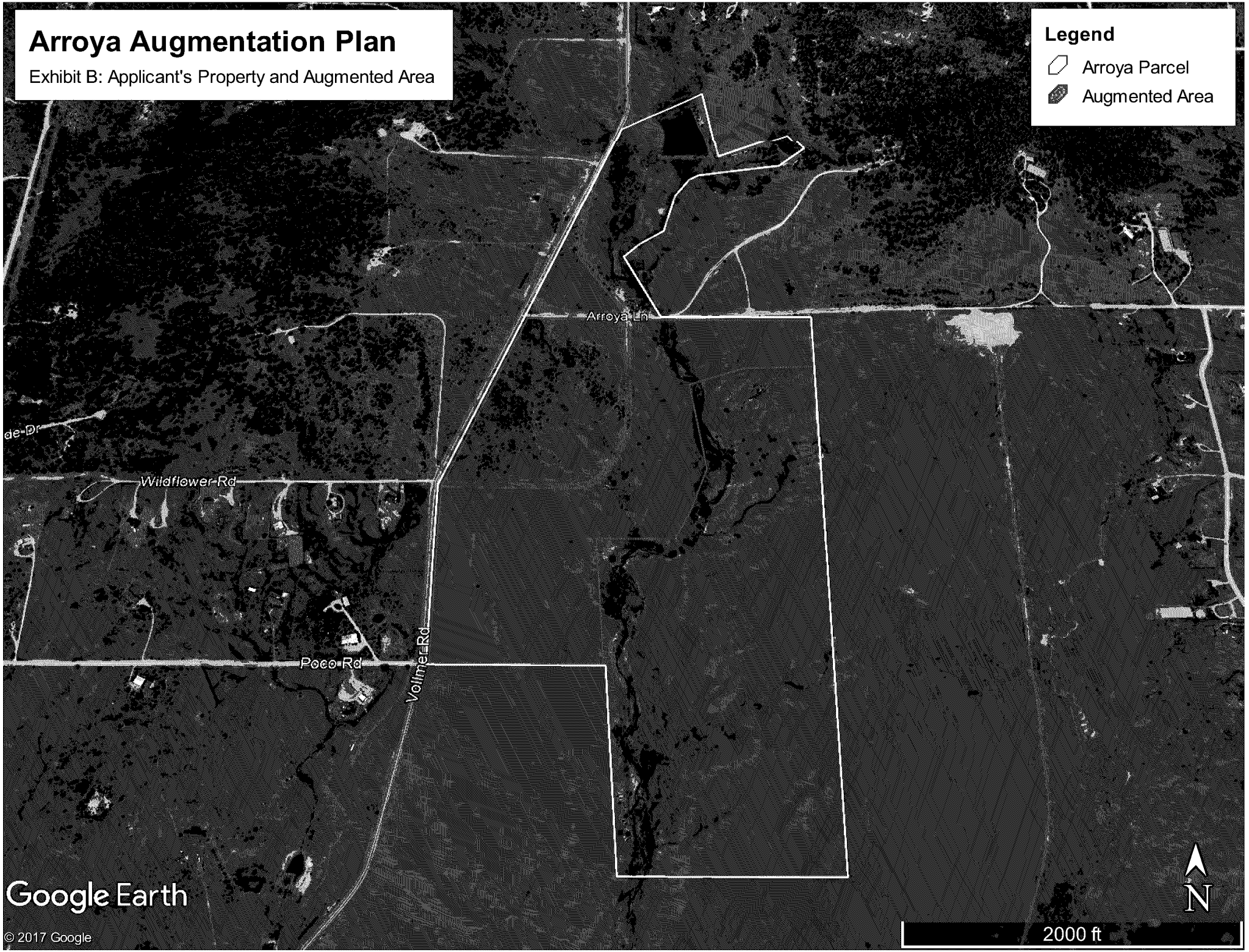
BOOK 2678 AT PAGE 430 OF THE RECORDS OF THE EL PASO COUNTY CLERK AND RECORDER;
THENCE N21°41'10"E ALONG SAID EASTERLY RIGHT-OF-WAY LINE, A DISTANCE OF 1450.84 FEET TO THE POINT OF INTERSECTION OF THE SOUTHERLY RIGHT-OF-WAY LINE AS DESCRIBED IN THE DEED, AS RECORDED IN BOOK 2678 AT PAGE 431 OF SAID COUNTY RECORDS;

THENCE ALONG THE SOUTHERLY AND EASTERLY RIGHT-OF-WAY LINES OF SAID DEED THE FOLLOWING TWO (2) COURSES:

1. N89°40'23"E, A DISTANCE OF 761.52 FEET TO A POINT ON THE EAST LINE OF SAID NORTHEAST ONE-QUARTER OF THE NORTHEAST ONE-QUARTER (NE1/4 NE1/4);
2. N00°52'58"W ALONG SAID EAST LINE, A DISTANCE OF 30.00 FEET TO THE NORTHWEST CORNER OF SAID SECTION 27;

THENCE N88°38'56"E ALONG THE NORTH LINE OF SAID NORTHWEST ONE-QUARTER OF THE NORTHWEST ONE-QUARTER (NW1/4 NW1/4), A DISTANCE OF 1330.91 FEET TO THE POINT OF BEGINNING;

SAID PARCEL OF LAND CONTAINS A CALCULATED AREA OF 190.89 ACRES OF LAND, MORE OR LESS.


Arroya Augmentation Plan
Exhibit B: Applicant's Property and Augmented Area
Legend
Arroya Parcel
Augmented Area
Arroya Ln
Wildflower Rd
Poco Rd
Vollmer Rd
Google Earth
© 2017 Google
N
2000 ft

DISTRICT COURT, WATER DIVISION 2, COLORADO Court Address: 501 North Elizabeth Street, Suite 116 Pueblo, CO 81003 Phone Number: (719) 404-8832	DATE FILED: March 4, 2022 10:52 AM CASE NUMBER: 2020CW3059
CONCERNING THE APPLICATION FOR WATER RIGHTS OF: STERLING RANCH METROPOLITAN DISTRICT NO. 1 IN EL PASO COUNTY	▲ COURT USE ONLY ▲ Case No.: 20CW3059

FINDINGS OF FACT, CONCLUSIONS OF LAW, AMENDED RULING OF REFEREE AND DECREE: ADJUDICATING DENVER BASIN GROUNDWATER, WATER STORAGE RIGHTS AND APPROVAL OF PLAN FOR AUGMENTATION

THIS MATTER comes before the Court on the Application filed by Sterling Ranch Metropolitan District No. 1, and having reviewed said Application and other pleadings on file, and being fully advised on this matter, the Court makes the following findings and orders:

GENERAL FINDINGS OF FACT

1. The applicant in this case is Sterling Ranch Metropolitan District No. 1, whose address is 20 Boulder Crescent, #200, Colorado Springs, Colorado 80903 ("Applicant" or "District"). The Applicant seeks the adjudication of surface water rights, groundwater rights, and approval of a plan for augmentation.

2. The land upon which the surface water rights adjudicated herein are located are within the District, and the District is the owner of, or controls, all Denver Basin groundwater described herein. All land is located within the District, where the water will be put to beneficial use.

3. The Applicant filed this Application with the Water Court for Water Division 2 on October 12, 2020, and filed an Amended Application on October 13, 2020. The Application was referred to the Water Referee Division 2 on October 12, 2020.

4. The time for filing statements of opposition to the Application expired on the last day of December 2020. A Statement of Opposition was timely filed by The City of Colorado Springs, acting through its enterprise, Colorado Springs Utilities, on December 28, 2020, and a Statement of Opposition was timely filed by the State Engineer and the

Division Engineer for Water Division No. 2 on December 30, 2020.

5. On October 21, 2020, Water Court, Division 2, ordered that publication occur in El Paso County. The Clerk of this Court has caused publication of the Application filed in this matter as provided by statute and the publication costs have been paid. On November 19, 2020, proof of publication in *The Colorado Springs Gazette* was filed with the Division 2 Water Court. All notices of the Application have been given in the manner required by law.

6. On January 19, 2022, a stipulation between the Applicant and The City of Colorado Springs, acting through its enterprise, Colorado Springs Utilities was filed with the Division 2 Water Court. By Order dated January 24, 2022, the Division 2 Water Court approved such stipulation.

7. On November 5, 2021, a stipulation between the Applicant and the State Engineer and the Division Engineer for Water Division No. 2 was filed with the Division 2 Water Court. By Order dated November 5, 2021, the Division 2 Water Court approved such stipulation.

8. Pursuant to C.R.S. §37-92-302(2), the Office of the State Engineer has filed Determination of Facts for each aquifer with this Court on January 29, 2021.

9. As the State and Division Engineers timely filed a statement of opposition in this matter and obtained party status, no Consultation Report pursuant to C.R.S. §37-92-302(4) is necessary or required.

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

SURFACE WATER STORAGE RIGHTS

11. The Applicant seeks the adjudication of absolute surface water storage rights and the following findings are made with respect those rights:

A. Name of Structure: SRMD Pond No. 1. The terms of this decree concerning SRMD Pond No. 1 abrogate and replace all uses, terms, and conditions of prior decree of this Court in Case No. W-1309 as concerns the like structure decreed therein as Dines Reservoir No. 1, with the exception of claimed appropriation date for stockwater uses.

i. Legal Description of Structure: SRMD Pond No. 1 is located in the NE¼ SW¼ and the NW¼ SE¼ of Section 33, Township 12 South, Range 65 West of the 6th P.M. with the center of the embankment at a point approximately 1,450 feet from the south section line of said Section 33, and approximately 2,590 feet from the east

section line of said Section 33, in El Paso County, Colorado.

ii. Source: The source for filling and re-filling of this existing on-channel structure is Sand Creek, a tributary of Fountain Creek, tributary to the Arkansas River.

iii. Date and Initiation of Appropriation: This water right shall be administered with a priority date of October 13, 2020, coincident with the filing of this Application. A stock tank in this location was decreed by the Division 2 Water Court in 1973, Case No. W-1309 as Dines Reservoir No. 1. However, Applicant's uses are far more expansive than those considered in W-1309, and Applicant therefore does not claim the earlier September 24, 1962 appropriation date decreed therein, except as to stockwater uses for purposes of demonstrating in-priority storage of water in support of Applicant's absolute claim for such uses.

iv. Date Water Applied to Beneficial Use: SRMD Pond No. 1 has existed since at least September 24, 1962, per the decree in W-1309.

v. Amount Claimed: 12.25 acre feet, with the right to freshening flows for maintenance of recreational, wildlife, fish propagation and fire protection purposes when in priority or when augmented by the plan approved herein. Since the initial construction of SRMD Pond No. 1 in 1962, there have been a number of instances where the Arkansas River call (and Sand Creek and Fountain Creek, as tributaries thereto), has been junior to the priority date of September 24, 1962 decreed to stockwater uses for this facility in W-1309, including in 1999. Each of these circumstances of in-priority storage occurred for decreed stockwatering purposes, supporting the absolute water rights decreed herein in the amount of 12.25 acre feet for such stockwater uses. All other municipal uses, including domestic, commercial, industrial, recreation, fish propagation, wetlands, wildlife habitat, and fire protection purposes decreed herein are conditional, in the amount of 12.25 acre feet.

vi. Uses: All municipal uses, including domestic, commercial, industrial, recreation, fish propagation, stockwater, wetlands, wildlife habitat, and fire protection purposes.

vii. Pond Specifications: SRMD Pond No. 1 has a maximum surface area at the high-water line of approximately 2.51 acres. The maximum height of the dam is approximately 10 feet and the length of the dam is approximately 510 feet.

viii. Total Capacity of Pond: Approximately 12.25 acre feet, all of which is dead storage.

ix. Place of Use: All uses of water associated with SRMD Pond No. 1 shall be within the boundaries of the District.

B. Name of Structure: SRMD Pond No. 2. The terms of this decree

concerning SRMD Pond No. 2 abrogate and replace all the uses, terms, and conditions of prior decree of this Court in Case No. W-1309 as concerns the like structure decreed therein as Dines Reservoir No. 3, with the exception of appropriation date for stockwater uses.

i. Legal Description of Structure: SRMD Pond No. 2 is located in the SE¼ SE¼ of Section 28, Township 12 South, Range 65 West of the 6th P.M. at a point approximately 115 feet from the south section line of said Section 28, and approximately 156 feet from the east section line of said Section 28, in El Paso County, Colorado.

ii. Source: The source for filling and re-filling of this existing on-channel structure is Sand Creek, a tributary of Fountain Creek, tributary to the Arkansas River.

iii. Date and Initiation of Appropriation: This water right shall be administered with a priority date of October 13, 2020, coincident with the filing of this Application. A stock tank in this location was decreed by the Division 2 Water Court in 1973, Case No. W-1309 as Dines Reservoir No. 3. However, Applicant's uses are far more expansive than those considered in W-1309, and Applicant therefore does not claim the earlier September 24, 1962 appropriation date decreed therein, except as to stockwater uses for purposes of demonstrating in-priority storage of water in support of Applicant's absolute claim for such uses.

iv. Date Water Applied to Beneficial Use: The pond has existed since at least October 4, 1962, per the decree in W-1309.

v. Amount Claimed: 4.29 acre feet, with the right freshening flows for maintenance of recreational, wildlife, fish propagation and fire protection purposes when in priority or when augmented by the plan approved herein. Since the initial construction of SRMD Pond No. 1 in 1962, there have been a number of instances where the Arkansas River call (and Sand Creek and Fountain Creek, as tributaries thereto), has been junior to the priority date of September 24, 1962 decreed to stockwater uses for this facility in W-1309, including in 1999. Each of these circumstances in-priority storage occurred for decreed stockwatering purposes, supporting the absolute water rights decreed herein in the amount of 4.29 acre feet for such stockwater uses. All other municipal uses, including domestic, commercial, industrial, recreation, fish propagation, wetlands, wildlife habitat, and fire protection purposes decreed herein are conditional, in the amount of 4.29 acre feed acre feet.

vi. Uses: All municipal uses, domestic, commercial, industrial, recreation, fish propagation, stockwater, wetlands, wildlife habitat, and fire protection purposes.

vii. Pond Specifications: SRMD Pond No. 2 has a maximum surface area at the high-water line of approximately 1.30 acres. The maximum height of

the dam is approximately 10 feet and the length of the dam is approximately 155 feet.

viii. Total Capacity of Pond: Approximately 4.29 acre feet, all of which is dead storage.

ix. Place of Use: All uses of water associated with SRMD Pond No. 2 will be within the boundaries of the District.

12. The Court finds the absolute surface water storage rights decreed herein have been fully developed and the Applicant has utilized the water rights in-priority for stock-watering beneficial uses, as requested in the application. The Court further finds that the Applicant has completed all of the elements for the appropriation of the absolute water right, as to such stockwater uses, including: (a) formation of the intent to appropriate water; (b) performance of overt acts coincidental with this intent to manifest the intention to appropriate water to beneficial use and to demonstrate the taking of a substantial step toward applying water to beneficial use; (c) these acts were of such a nature as to provide interested third parties with notice of the nature and extent of the proposed diversion and the consequent demand upon the river system water to beneficial use; and as to the absolute water rights for stockwater purposes, (d) unappropriated waters have been diverted and have been applied to the beneficial use set forth herein. Applicant's documented in-priority fill and beneficial use of water stored within SRMD Pond Nos. 1 and 2 for stock-watering purposes is sufficient for creation of an absolute water right. The appropriation dates of the conditional water rights decreed herein establishes such water rights' relative priority among all other water rights or conditional water rights awarded on applications filed in Water Division 2 in the original years of filing for such conditional water rights, but such conditional water right shall be junior to all water rights and conditional water rights awarded on applications filed in previous calendar years.

GROUNDWATER RIGHTS

13. The Applicant requested quantification and adjudication of underground Denver Basin water rights, including as associated with an existing well with Permit No. 26947-F, as constructed to the Denver aquifer, and for an undetermined quantity of additional or replacement wells to one or more of the Denver Basin aquifers, as quantified herein, for withdrawal of Applicant's full entitlement of water supplies underlying the SR Quarry Parcel, as more particularly described on the attached **Exhibit A** and depicted on the **Exhibit B1** map, pursuant to the plan for augmentation decreed herein. Applicant also sought, and this Court decrees that, to the extent wells or well fields constructed on nearby property owned or controlled by Applicant and its affiliates have or are legally interpreted to have contiguity, Applicant shall have the right to withdraw all groundwater entitlements quantified herein from such contiguous wells and be considered a well field. The following findings are made with respect to such groundwater rights:

14. The land overlying the groundwater subject to the adjudication in this case is owned by the Applicant and consists of approximately 97.54 acres located in the S½ SW¼ and the SW¼ SE¼ in Township 12 South, Range 65 West of the 6th P.M., El Paso

County, Colorado, described as the SR Quarry Parcel, and depicted on the attached **Exhibit B1** map ("SR Quarry Parcel"). All groundwater adjudicated herein shall be withdrawn from the overlying land, or from a contiguous parcel owned or controlled by the Applicant and its affiliates.

15. In accordance with the notice requirements of C.R.S. §37-92-302, lienholders of the SR Quarry Parcel were sent a Letter of Notice dated November 30, 2020. A Certificate of Notice was filed with the District Court, Water Division 2, on December 22, 2020.

16. Existing and Future Wells. All wells will be located on the SR Quarry Parcel, and/or on contiguous parcels thereto. There is an existing well on the property permitted and constructed under Well Permit No. 26947-F constructed to the Denver aquifer. Applicant is awarded the vested right to use the existing well and future wells, along with any necessary additional or replacement wells associated with such structures, for the extraction and use of groundwater from the not-nontributary Denver and Arapahoe aquifers pursuant to the Plan for Augmentation decreed herein. Upon entry of this decree and submittal by the Applicant of a complete well permit application and filing fee, the State Engineer shall issue a revised permit for the existing well, and new permits for any future well pursuant to C.R.S. §37-90-137(4), consistent with and referencing the Plan for Augmentation decreed herein.

17. Of the statutorily described Denver Basin aquifers, the Dawson, Denver, Arapahoe, and Laramie-Fox Hills aquifers all exist beneath the SR Quarry Parcel. The Dawson, Denver, and Arapahoe aquifers underlying the SR Quarry Parcel contain not-nontributary water, while the water of the Laramie-Fox Hills aquifer underlying the SR Quarry Parcel is nontributary. The quantity of water in the Denver Basin aquifers exclusive of artificial recharge underlying the SR Quarry Parcel is as follows:

AQUIFER	NET SAND (ft)	Annual Average Withdrawal 100 Years (Acre Feet)	Annual Average Withdrawal 300 Years (Acre Feet)	Total Withdrawal (Acre Feet)
Dawson (NNT)	50	9.75	3.25	975
Denver (NNT)	300	45.56[1,2]	15.19[2]	4,556[2]
Arapahoe (NNT)	260	43.11	14.37	4,311
Laramie-Fox Hills (NT)	190	27.8	9.27	2,780

[1] Consistent with the State Engineer's Determination of Facts, this entire amount requires the existing well with Permit No. 26947-F to be re-permitted upon entry of this decree, as anticipated. If the well is not re-permitted, the average annual amount shall be reduced to 0 acre-feet.

[2] Applicant's consultants have estimated the maximum uses of the well with existing Permit No. 26947-F since it was first placed to beneficial use in 1989 as 13.1 acre feet annually, though it is highly unlikely that such maximum pumping actually occurred in each of the past 32 years. Nonetheless, Applicant has conservatively estimated that a total of 419 acre feet has been pumped thereby, and therefore the quantity of water claimed in the Denver aquifer in this decree has been reduced by such amounts.

18. Pursuant to C.R.S. §37-90-137(9)(c.5)(I)(B), the augmentation requirements for wells in the Dawson aquifer underlying the SR Quarry Parcel requires the replacement to the affected stream systems of actual stream depletions on an annual basis. Pursuant to C.R.S. §37-90-137(9)(c.5)(I)(C), the water of the Denver and Arapahoe aquifers underlying the SR Quarry Parcel, which are located greater than 1 mile from any point of contact between a natural stream, requires replacement to the affected stream system of four percent (4%) of the amount of the water withdrawn from those aquifers on an annual basis. The Applicant shall not be entitled to construct a well or use water from the not-nontributary Dawson, Denver, or Arapahoe aquifers except pursuant to an approved augmentation plan in accordance with C.R.S. §37-90-137(9)(c.5), including as decreed herein as concerns the Denver and Arapahoe aquifers.

19. Subject to the augmentation requirements described in Paragraph 18 and the other requirements and limitations in this decree, Applicant shall be entitled to withdraw all legally available groundwater in the Denver Basin aquifers underlying the SR Quarry Parcel. Said amounts can be withdrawn over the 100-year life for the aquifers as set forth in C.R.S. §37-90-137(4), or withdrawn over a longer period of time based upon local governmental regulations or Applicant's water needs provided withdrawals during such longer period are in compliance with the augmentation requirements of this decree. This decree is based upon a pumping period of 300-years as required by El Paso County, Colorado Land Development Code §8.4.7(C)(1). The average annual amounts of groundwater available for withdrawal from the underlying Denver Basin aquifers, based upon a 300-year aquifer life, are determined and set forth above, based upon the January 29, 2021 Office of the State Engineer Determination of Facts described in Paragraph 8.

20. Applicant shall be entitled to withdraw an amount of groundwater in excess of the average annual amount decreed herein from the Denver Basin aquifers underlying the SR Quarry Parcel for a 300-year aquifer life, so long as the sum of the total withdrawals from wells in each of the aquifers does not exceed the product of the number of years since the date of entry of the decree herein, and the average annual volume of water which Applicant is entitled to withdraw from each of the aquifers underlying the SR Quarry Parcel, subject to the requirement that such banking and excess withdrawals do not violate the terms and conditions of the plan for augmentation decreed herein and any other plan for augmentation decreed by the Court that authorizes withdrawal of the Denver Basin groundwater adjudicated and decreed herein.

21. Subject to the terms and conditions of the plan for augmentation decreed herein and final approval by the State Engineer's Office pursuant to the issuance of well permits in accordance with C.R.S. §§37-90-137(4) or 37-90-137(10), the Applicant shall have the right to use the groundwater for beneficial municipal uses including, without limitation, domestic, commercial, industrial, irrigation of any irrigable acreage within the District boundaries or District service area, stock water, recreation, fish and wildlife propagation, fire protection, central water supply for such uses and also for exchange, aquifer recharge, replacement, and augmentation purposes. The amount of groundwater decreed for such uses is reasonable as such uses are to be made for the long-term use

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

22. Withdrawals of groundwater available from the nontributary Laramie-Fox Hills aquifer beneath the SR Quarry Parcel in the amount determined in accordance with the provisions of this decree will not result in injury to any other vested water rights or to any other owners or users of water.

PLAN FOR AUGMENTATION

23. The structures to be augmented are the existing and future wells as constructed and to be constructed to the not-nontributary Denver and Arapahoe aquifers within the boundaries of the District or contiguous thereto and available to the District and the decree entered in Case No. 08CW113, as well as out-of-priority storage and evaporative depletions associated with the SRMD Pond Nos. 1 and 2.

24. Applicant is hereby decreed a plan for augmentation for out-of-priority depletions associated with the SRMD Pond Nos. 1 and 2, and for the withdrawal of not-nontributary Denver Basin groundwater rights in the Denver and Arapahoe aquifers, respectively, underlying property owned and controlled by the Applicant and affiliates Sterling Ranch Metropolitan District Nos. 2 and 3 as previously decreed in Case No. 08CW113, and underlying the SR Quarry Parcel as decreed herein, to support development of land served by the District, more particularly described on the attached **Exhibit A**, and depicted on the attached **Exhibit B1** and **B2** maps. During the pumping life of wells to the Denver and Arapahoe aquifers described above, it is anticipated that any out-of-priority depletions will be replaced by Lawn Irrigation Return Flows ("LIRFs") resulting from the irrigation of approximately 48 acres of parks and common areas, supplemented by pumping of decreed nontributary water supplies from the Arapahoe and/or Laramie-Fox Hills aquifers underlying the District and its affiliates, as decreed to Applicant's use in Case Nos. 86CW18, 86CW19 and 08CW113, including from existing SRMD wells. Applicant shall utilize a portion of the nontributary Denver Basin groundwater underlying property outside of the District ("Bar X Parcel") as decreed in Case No. 93CW18 and 93CW19 by the Division 1 Water Court, which amended prior Case No. 85CW445, for replacement of any injurious post-pumping depletions.

25. SRMD Pond Nos. 1 and 2, with a total maximum surface area of 3.81 acres, have been calculated by Applicant's consultants to result in maximum annual evaporative

losses of 10.58 acre feet assuming such ponds are maintained at full stage, resulting in a like depletion to Sand Creek, a tributary of Fountain Creek, tributary to the Arkansas River. As described below, Applicant will replace this 10.58 acre foot annual depletion through dedicated LIRFs accruing to Sand Creek in the vicinity of the District, as depicted on the **Exhibit B2** Map, or by pumping of the decreed nontributary supplies decreed in Case Nos. 86CW19 and 08CW113, including from existing SRMD wells. Applicant asserts, and this Court accepts as reasonable, that the SRMD Pond Nos. 1 and 2 were filled in priority in 1999, and have been maintained at full stage since such in-priority fill. Should the SRMD Pond Nos. 1 and 2 be fully or partially drained at any point in the future and thus require partial or complete refill, and should such re-fill be unavailable in priority, Applicant shall augment any such out-of-priority storage and refill of SRMD Pond Nos. 1 and 2 utilizing reusable LIRF credits accruing to Sand Creek and in excess of those required to replace depletions from the pumping of the not-nontributary wells described herein, and in excess of those required to replace evaporative depletions (including from less than full-stage storage), or by pumping of decreed nontributary water supplies from the Arapahoe and/or Laramie-Fox Hills aquifers underlying the District and its affiliates, as decreed to Applicant's use in Case Nos. 86CW18, 86CW19 and 08CW113, including from existing SRMD wells up to a maximum of 16.54 acre feet, being the total combined capacity of both SRMD Pond Nos. 1 and 2.

26. The not-nontributary Denver Basin groundwater underlying the property owned by the District and its affiliates that is available for withdrawal in accordance with this plan for augmentation was previously adjudicated and quantified by the Division 2 Water Court in Case No. 08CW113 as follows:

Aquifer	**Annual Average Withdrawal (Acre-Feet)[3]**
Denver (NNT)	242.97
Arapahoe (NNT)	0.20

As quantified and determined herein, the SR Quarry Parcel has the following additional not-nontributary groundwater that is available for withdrawal in accordance plan for augmentation:

Aquifer	**Annual Average Withdrawal (Acre-Feet)**[2]
Denver (NNT)	15.19

[3] This represents the annually estimated available quantity of water for a 300-year pumping life, as required by El Paso County Land Development Code.

Arapahoe (NNT)	14.37

Depletions from the pumping of the not-nontributary Denver and Arapahoe aquifer water described above are equal to 4% of pumping, a maximum of 10.91 annual acre feet.

27. All existing exempt permitted wells to the Denver and Arapahoe aquifers, if any, shall be either repermitted as augmented structures under the plan for augmentation decreed herein, or abandoned, consistent with the rules and regulations of the State and Division Engineers. Applicant is hereby granted pursuant to the terms and conditions of the augmentation plan decreed herein, the right to withdraw all quantities of not-nontributary Denver Basin groundwater in the Denver and Arapahoe aquifers underlying the SR Quarry Parcel, and underlying the District and its affiliates as described above, through existing, additional or replacement wells located on the subject properties or upon contiguous properties, consistent with Rule 11.A. of the Statewide Nontributary Ground Water Rules, provided Applicant first acquires such interests in the overlying land as may be necessary for construction, maintenance and operation of any such wells, and infrastructure related thereto. Applicant expressly may withdraw the not-nontributary groundwater underlying the SR Quarry Parcel from any and all wells, both existing and as may in the future be developed, available to Applicant on said parcel or other contiguous properties upon which the District has wells and infrastructure to each of the Denver and Arapahoe aquifers, respectively.

28. Water Rights to be Used for Augmentation.

A. Depletions During Pumping. During the pumping life of the not-nontributary wells described herein, any out-of-priority depletions caused by the pumping of the wells, as well as evaporative depletions from the SRMD Pond Nos. 1 and 2 described herein and located on-channel on Sand Creek with total surface area of approximately 3.81 acres, will be augmented by LIRFs unless and until such a time as the District has reusable treated effluent credits available in proper time, place and amount, and unless such LIRFs are insufficient to fully replace actual out-of-priority depletions. Maximum pumping of the not-nontributary aquifers described herein, in combination, shall be 272.73 acre feet over the pumping life of the wells. If at any time LIRFs prove insufficient to replace out-of-priority depletions, Applicant shall utilize decreed nontributary water supplies from the Arapahoe and/or Laramie-Fox Hills aquifers underlying the District and its affiliates, as decreed to Applicant's use in Case Nos. 86CW18, 86CW19 and 08CW113, including from existing SRMD wells. Applicant's LIRFs will accrue to Sand Creek as a result of irrigation uses throughout the District. Maximum evaporative depletions from SRMD Pond Nos. 1 and 2 are 10.58 acre feet annually, and

maximum depletions from the pumping of the not-nontributary Denver and Arapahoe aquifer wells within the District are 4% of pumping, or 10.91 annual acre feet, for total approximate annual depletions of 21.49 acre feet that are to be replaced under the plan for augmentation decreed herein, plus any out-of-priority storage within SRMD Pond Nos. 1 and 2, as described in Paragraph 25, above. As described in Paragraph 30, below, LIRFs resulting from irrigation within the District's service area will result in up to 27.45 annual acre feet of reusable return flow credits to Sand Creek, though Applicant will be limited to 17.65 annual acre feet of LIRF credits for such augmentation uses unless and until Applicant is awarded a right to additional LIRF credits utilizing the process identified in Paragraph 30, below.

B. Post Pumping Depletions. The water rights to be used for augmentation of any injurious post-pumping depletions occurring after the anticipated 300-year pumping life of the wells resulting from the pumping of the not-nontributary groundwater described in this plan for augmentation are a portion of the nontributary Denver Basin groundwater rights underlying the Bar X Parcel, as decreed in Case Nos. 93CW18 and 93CW19 by the Division 1 Water Court, which amended prior Case No. 85CW445 as owned and controlled by the District:

Aquifer	Total Allocation (AF)
Denver (NT)	136,000
Arapahoe (NT)	81,300
Laramie-Fox Hills (NT)	42,700
BAR X TOTAL:	**260,000**

i. Maximum post-pumping depletions resulting from the pumping of the not-nontributary Denver and Arapahoe aquifers underlying the lands owned and controlled by the District and its affiliates, including the SR Quarry Parcel, as described herein, should not exceed 258.13 annual acre-feet from the not-nontributary Denver Aquifer, and 14.60 annual acre-feet from the not-nontributary Arapahoe aquifer over 300-years of pumping, a total of 272.73 annual acre feet in combination. To replace any injurious post-pumping depletions Applicant shall dedicate 82,167 acre-feet, equivalent to an average of 272.73 acre feet annually based on 300-years of pumping, from the nontributary Denver aquifer underlying the Bar X Parcel, owned or controlled by SRMD and its affiliates, less the amount of actual stream depletions replaced hereunder during the plan pumping period. Applicant's consultant estimates that a total of 1,978.12 acre-feet of lawn irrigation return flows will replace stream depletions over the 300-year pumping period. The total 82,167 acre feet of reserved post-pumping replacement water, less the amount of actual stream depletions replaced during the plan pumping period, will be sufficient to replace all calculated injurious post-pumping depletions. Applicant's dedication and reservation of up to 82,167 acre feet annually of nontributary Denver aquifer groundwater, being a portion of the Bar X water previously adjudicated in Case No. 93CW18, will provide this maximum post-pumping augmentation supply. The total reserved nontributary groundwater supply, less the amount of actual stream depletions replaced during the plan pumping period, is sufficient to replace all estimated injurious

post-pumping depletions.

29. Augmentation of Evaporative and Out-of-Priority Storage Depletions. Applicant's consultants have calculated, and the Court accepts such calculations as reasonable, that net evaporative depletions of the combined maximum surface areas of the SRMD Ponds Nos. 1 and 2, being approximately 3.81 surface acres, will be 46.5 inches. The equations upon which Applicant's consultants have relied upon for calculating evaporative depletions and out-of-priority storage, are more particularly described in Paragraph 29.A., below. Therefore, the SRMD Ponds Nos. 1 and 2 will have combined evaporative depletions of approximately 10.58 annual acre-feet. Evaporative depletions resulting from the SRMD Ponds Nos. 1 and 2 will be augmented by: (1) excess LIRF credits, or (2) pumping from the nontributary Arapahoe and/or Laramie-Fox Hills aquifers underlying the District and its affiliates, as decreed to Applicant's use in Case Nos. 86CW18, 86CW19 and 08CW113, including from existing SRMD wells, as described above.

A. Depletion/Evaporation Formulas:

i. Gross Evaporation at the SRMD Ponds No. 1 and No. 2 = 46.5 inches (per NOAA Plate No. 33 in Colorado)

ii. Monthly Gross Evaporation = (46.5"/12) * (Monthly Evap. Percentage)

iii. Monthly Evaporation Percentage Table from Colorado Division of Water Resources:

Month	Percentage
January	1.0%
February	3.0 %
March	6.0 %
April	9.0 %
May	12.5 %
June	15.5 %
July	16.0 %
August	13.0 %
September	11.0 %
October	7.5 %
November	4.0 %
December	1.5 %

iv. Monthly Gross Precipitation (inches) = Black Forest WNW Weather Station No. 6

v. Monthly Effective Precipitation (feet) = (Monthly Gross Precipitation) * 70 % / 12

vi. Net Monthly Pond Evaporation = ((Monthly Gross Evap.) * (Monthly %)) – (Effective Precipitation)

vii. Monthly Total Lake Evaporation = (Monthly Net Lake Evaporation) * (Total Surface Area of Ponds) (Note: Total Surface Area of ponds are assumed to be full at 3.81 Acres)

B. Out-of-Priority Storage: The method to accurately obtain monthly out-of-priority storage volumes for the two ponds is as follows:

i. Stage capacity curves for ponds, as constructed, are attached to this Decree collectively as **Exhibit D**.

ii. Prior to storage of water and administration of the augmentation plan decreed herein, a staff gauge shall be installed in each of the ponds with increments sufficient to monument the staff gauge to the stage capacity curves described in **Exhibit D**.

iii. Using the daily accounting summary for Case No. 20CW3059 daily readings of the SRMD Pond No. 1 and No. 2 staff gauges can be recorded with associated pond volumes documented in Acre-Feet to determine out-of-priority storage. Any positive differences in the pond storage can be documented in the daily data entry form as out-of-priority storage that must be augmented hereunder.

C. LIRF Credits. LIRF credits resulting from irrigation of parks and common areas throughout the District, anticipated to be approximately 48 acres, are anticipated to be available in excess of that required for augmentation of the not-nontributary Denver and Arapahoe aquifer wells described herein, as further described in Paragraph 30, below. Applicant shall likewise utilize such LIRF credits to offset and augment all or part of the estimated 10.58 annual acre feet of evaporative depletions associated with SRMD Pond Nos. 1 and 2, supplemented with nontributary water supplies from the Arapahoe and/or Laramie-Fox Hills aquifers underlying the District and its affiliates, as decreed to Applicant's use in Case Nos. 86CW18, 86CW19 and 08CW113, including from existing SRMD wells, as described below.

D. Nontributary Groundwater. In the alternative, and at all times when LIRF credits are insufficient to offset and augment the out-of-priority depletions described herein, including until such time as Applicant has constructed all of the approximately 48 acres of irrigated parks and common areas from which LIRF credits will ultimately accrue, Applicant shall pump to the stream such quantities of nontributary groundwater as necessary to fully augment evaporative depletions associated with SRMD Pond Nos. 1 and 2, estimated to be a maximum of 10.58 annual acre feet, not otherwise augmented through excess LIRF credits. The nontributary Laramie-Fox Hills aquifer underlying approximately 1,410 acres of the District was quantified in Case No. 86CW19 by the Division 2 Water Court, while the nontributary Laramie-Fox Hills aquifer underlying the

remaining 41.44 acres of the District was quantified in Case No. 08CW113, Water Division 2. Nontributary groundwater in the Arapahoe aquifer was primarily quantified in Case No. 86CW18, Water Division 1, with a 4 acre-foot portion quantified in Case No. 08CW113, Water Division 2. Such adjudications provide for the combined annual withdrawals of nontributary groundwater well in excess of any depletions created through the use and maintenance of SRMD Pond Nos. 1 and 2, and such groundwater was previously adjudicated for all municipal uses, expressly including augmentation. Such groundwater will be pumped to Sand Creek in times and volumes necessary to prevent injury to other vested water rights users, at or above the point on Sand Creek depicted on the **Exhibit B2** Map. Prior to operation of the augmentation plan decreed herein, Applicant shall design and install infrastructure sufficient to allow Applicant, as contemplated in paragraph 30(L) herein, to deliver non-tributary Denver Basin Groundwater to Sand Creek at a point at or above the point depicted on Exhibit B2.

30. Quantification of Reusable LIRFs. Water use within the District's boundaries will include use for outdoor purposes, including irrigation of lawns, landscaping, open space, medians, and similar (*i.e.* parks and common areas). A portion of the water used for outdoor purposes, being reusable LIRFs, will return to the Sand Creek stream system unconsumed, and is therefore available to replace evaporative and well pumping depletions from the structures described herein. The District's consultants conducted a study of anticipated water uses within the District using water use data, climate data, anticipated irrigated acreages, irrigation requirements, and projected tree canopy areas in order to determine total annual LIRFs as a percentage of total annual outdoor water use. The location, amount, and timing of reusable LIRFs available for use by the District from outdoor water use shall be determined using the procedures described in this Paragraph 30.

A. As a baseline, the LIRFs available for use as an augmentation supply for purposes of this decree will be a minimum of 15% of the total amount of water applied for irrigation of parks and common areas within the District's current and future boundaries, which will accrue to Sand Creek, tributary to Fountain Creek, tributary to the Arkansas River, estimated at an average of 17.65 acre feet annually. Applicant shall not be entitled to claim greater than 15% of the total amount of water applied for irrigation of common areas and parks within the District as LIRF credits without first complying with all provisions of this Paragraph 30. The approximate location at or upstream of which all such LIRFs are anticipated to accrue is shown on the attached **Exhibit B2** map. However, the District's consultants' analysis determined that actual re-usable LIRFs are estimated to be an average of 26.14% of the total amount of water applied to outdoor use, with resulting return flows of 27.45 acre feet annually. The actual re-usable LIRFs will therefore amount to between 15% and 26.14% of total outdoor irrigation uses, based upon the relationship between deep percolation (expressed as a fraction of the amount of water applied) and the amount of water applied (expressed as a fraction of the potential consumptive use of lawn grass), referenced as the "Cottonwood Curve", and the methodology referred to as the "Cottonwood Methodology", first approved in Case No. 81CW142 in Water Division 1. The District has calculated the timing of the deep percolation portion of such reusable LIRFs to the Sand Creek stream system using the

Glover bounded alluvial aquifer equation. Applicant's consultants have estimated based upon zoning and land use plans developed by the District's landscape architects and approved by El Paso County, that approximately 48 acres of parks and common areas will be irrigated throughout the District, resulting in LIRFs calculated at approximately 17.65 to 27.45 acre feet annually, based on the percentages described above, and this Court determines this estimate to be reasonable. With maximum annual depletions from pumping of not-nontributary aquifers estimated at 10.91 acre feet (4% of a maximum of 272.73 annual acre feet of pumping), and evaporative depletions of the SRMD Ponds estimated at a maximum of 10.58 acre feet, for a total of 21.49 annual acre feet to be augmented, LIRFs available after construction and irrigation of approximately 48 acres of parks and common area may sufficiently augment evaporative depletions from the SRMD Ponds and well depletions during pumping, with any shortfall in LIRF supply being supplemented with pumping from the nontributary aquifers located within the District in an amount sufficient to replace any remaining depletions. To determine a final LIRF percentage upon buildout of areas upon which outdoor uses will be made (*i.e.* construction of the approximately 48 acres of parks and common areas from which LIRFs will accrue, and application of metered irrigation water supplies thereto), should the District wish to claim the minimum 15%, or a greater amount of reusable LIRFs, the District shall utilize the following procedures:

B. Total outdoor water use shall be determined on a monthly basis for the months of April through October of each year as the total amount of metered monthly deliveries to the parks and common areas. Prior to Utilizing LIRFs as an augmentation source, Applicant shall install meters capable of recording the amount of irrigation water provided to each park and/or common area from which LIRFs will accrue.

C. Reusable subsurface LIRFs from outdoor water use shall be preliminarily calculated as 15% of the total metered irrigation use for that month. The location of accretions to Sand Creek is the point where LIRFs are deemed to accrue to Sand Creek, as depicted on **Exhibit B2**.

D. The timing of accretion of such subsurface LIRFs to the alluvium has been determined by Applicant's consultants to be within 30 days, in light of local conditions and the proximity of irrigation to Sand Creek and its alluvium.

E. Prior to taking any credits for LIRFs in percentages greater than the baseline percentage of 15%, the District shall install a series of piezometers in consultation with the State Engineer's Office and complete a piezometer study, in order to document the presence, depth and calculated baseline quantities of the groundwater table, and verify the direction of groundwater flow.

F. To assure that the LIRFs are actually returning to the Sand Creek stream system, in order to take credits for LIRFs in percentages greater than the baseline percentage of 15%, the District shall demonstrate through piezometer measurements the existence of a water table with a hydraulic gradient toward the Sand Creek stream system, including its associated alluvium.

G. To document the quantity of LIRFs accruing to Sand Creek the District shall demonstrate through piezometer observations and measurements the increase in groundwater quantities resulting from LIRFs, and provide the State and Division Engineers, and any opposers in this matter requesting the same, an engineering analysis of such increased groundwater quantities, and calculation of the resulting appropriate LIRF percentage in an amount greater than the baseline 15%.

H. The following additional provisions shall apply to the piezometer study described above, necessary for the District to take credit for LIRFs in percentages greater than the baseline 15%:

i. The exact location of piezometers shall be determined by field observation jointly with the District's consultants and State Engineer staff and, prior to constructing any piezometers, the District shall notify the Division of Water Resources of the date and location when construction will occur to allow for observation, if desired. The contemplated location of piezometers is depicted on the attached **Exhibit B2**.

ii. The piezometer boreholes shall be logged under the supervision of a professional geologist or professional engineer and shall be sampled at not less than 5-foot intervals using a split-barrel sampler using the Standard Penetration Test, ASTM D1586. Written borehole logs shall be prepared that describe the subsurface materials at not less than 5-foot intervals, including a description of grain sizes and induration of sediments encountered during piezometer borehole construction.

iii. The total depth of unconsolidated materials overlying bedrock shall be identified for each piezometer borehole log. The top of bedrock shall be defined as the depth at which geologic materials are consolidated, or when the Standard Penetration Test results in a blow count greater than 29 blows to advance the split-barrel sampler the last 1 foot of the 1.5-foot Standard Penetration Test interval, whichever is shallower.

iv. Piezometer construction shall comply with the Colorado Water Well Construction Rules and shall consist of 2-inch PVC pipe with suitable perforations in the pipe and with a hole drilled in the bottom cap, and shall extend through the entire saturated thickness of the materials. The bottom of the piezometer shall be installed at the depth at which bedrock is encountered.

v. The elevation of the surface at, and the location of, each piezometer shall be determined by survey, and following piezometer construction, the depth to water shall be measured in the piezometers and reported to the Division of Water Resources and, upon request, to any other objector hereto. Piezometers shall be monitored and read on a monthly basis for a minimum period of 12 consecutive months (or longer, in the District's discretion), beginning upon the installation of the piezometer or the first measurement of a water table, and the piezometer water level shall be recorded in a monthly table of groundwater elevation and depth to groundwater.

vi. Piezometer Report. The District shall develop a report prepared by a professional geologist or professional engineer that presents all of the following information:

a. Location of each piezometer;

b. Borehole log and Standard Penetration Test for each piezometer location;

c. Monthly water level measured in each piezometer for twelve (12) consecutive months;

d. Average water level elevation in each piezometer;

e. Map of average piezometer groundwater level elevation that demonstrates a groundwater gradient towards Sand Creek and its tributaries.

vii. Acceptance of Piezometer Report. If piezometer measurements for a continuous period of 12 months (or longer, in the District's discretion) demonstrate increases in the water table resulting from LIRFs in excess of the baseline 15% authorized by this decree, the District shall serve its Piezometer Report to the Division of Water Resources and the Opposers, to demonstrate that an increase in the percentage of re-usable LIRFs is appropriate. The Opposers will have 63 days from the date of service to provide written comments concerning the Piezometer Report to the District and the Division of Water Resources. Applicant must obtain the Division of Water Resources' approval of the Piezometer Report prior to claiming augmentation credit for LIRFs that is greater than the 15% credit approved herein. The Division of Water Resources shall review said Piezometer Report and the Opposers' comments thereto and within 63 days of receipt of said comments, the Division of Water Resources shall (a) Reject the findings of the Piezometer Report and not allow any increase in LIRF credits; (b) Accept the findings of the Piezometer Report and approve the increase in LIRF credit percentage requested therein by the District; or (c) Accept a portion of the findings of the Piezometer Report while rejecting others and recommending an alternative increase in LIRF credit percentages. Either Applicant or Opposers may appeal any such decision by the Division of Water Resources to this Court under the Court's retained jurisdiction as described in Paragraphs 57 and 58, below, and any such appealing party shall have the burden of proof in such an appeal. Applicant shall have the initial burden of proof that the requested increase in percentage of LIRFs credit will not result in injury to other water users. Following acceptance of the Piezometer Report by the Division of Water Resources or the Court under its retained jurisdiction, in whole or in part, increased LIRF credits may be taken by the District.

viii. The District shall have the right to decide if and when to install each of the said piezometers, but the District shall receive no increased credit for LIRFs

in the Sand Creek basin until the piezometers are installed and the Division of Water Resources has approved any increase in the LIRF credit percentage based upon the Piezometer Report described above.

I. The timing of accrual of LIRFs to the Sand Creek stream system was determined by the District using the Glover equation, using representative aquifer hydraulic characteristics and centroidal distances to live flow in the respective creeks, and the alluvial boundaries for each drainage basin. Such analysis determined that LIRFs will accrue to the alluvium of Sand Creek within 30 days. The timing of accrual of LIRFs is such that the LIRFS will accrue in the month following irrigation water application.

J. The LIRFs available to the District under this Decree may be used, reused, and successively used by the District for the same decreed purposes as the reusable water which generates such LIRFs, including, but not limited to, use as a replacement source for the plan for augmentation decreed herein.

K. LIRF credits in excess of the District's augmentation obligations will remain in the stream, but the District does not waive and expressly reserves its right to claim and use any excess LIRF credits in a subsequent plan for augmentation upon approval by this Court. To the extent LIRF credits are insufficient in any month to replace depletions resulting from not-nontributary well pumping, evaporation, and out-of-priority storage, the District shall during such month, and on a schedule acceptable to the Division Engineer, pump sufficient quantities of nontributary Denver Basin groundwater to Sand Creek at a point at or above the point depicted on **Exhibit B2**. In order to document the amount of monthly nontributary Denver Basin pumping required to augment any alluvial depletions measured to be in excess of available LIRF's, if any, depletions will be tracked on a daily basis in Applicant's accounting, an example of which is provided in **Exhibit C**, and augmented monthly as reported to the Water Commissioner. Depletions will be tracked in the accounting sheet as follows:

1) Daily Total Depletion to Alluvium = Column AR
2) Daily Estimated LIRF Volume (Credits to Alluvium) = Column AS
3) Daily Obligations to Alluvium = Column AT
4) Daily Excess Credits to Alluvium = Column AU

At the end of each month, if augmentation obligations are in excess of LIRF credits calculated to be available, the District shall pump nontributary groundwater at or above the point depicted on **Exhibit B2**. If there are excess LIRF credits, such LIRF Credits can be carried over for augmentation purposes only for a period of one month as tracked in column AW of the Exhibit C accounting.

31. Other Supplies of Augmentation Water of Limited Duration. Pursuant to C.R.S. §37-92-305(8), the Court may authorize the District to use additional or alternative sources of augmentation water for replacement in this augmentation plan, including water leased by the District, if such sources are part of a substitute water supply plan approved pursuant to C.R.S. §37-92-308, or an interruptible supply agreement approved under C.R.S. §37-92-309, or other applicable and/or successor statutes, or if such sources are

decreed for such use. In order to add these sources to this plan for augmentation, the procedures in Paragraphs 31.A. and 31.B. must be followed. These procedures are adequate to prevent injury to other water rights that might otherwise result from the addition of these sources to this plan.

A. Additional Water Rights Separately Decreed or Lawfully Available for Augmentation Use. If a water right is decreed or lawfully available for augmentation use and not already approved for such use under this Decree, the District shall give at least 63 days advance written notice of use of the water right for augmentation to the Court, the Division Engineer, and all the objectors herein which shall describe: 1) the water right by name and decree, if any; 2) the annual and monthly amount of water available to SRMD from the water right; 3) the manner by which the water will be used to replace out-of-priority depletions associated with this plan for augmentation; 4) the date of initial use of the water in this plan for augmentation; 5) the duration of use of the water in this plan for augmentation; 6) identification of any applicable exchanges, including the exchange reach, if the water is to be introduced downstream of the out-of-priority depletion; 7) if an exchange is required for the water to be used, proposed terms and conditions relative to the exchange operation; 8) the location or locations at which the water will be delivered to the stream; 9) evidence that the claimed amount of water is available for use in this plan for augmentation and is not and will not be used by any other person; and, 10) the manner in which the District will account for use of the augmentation credits. Said notice shall specifically include a request that the Court enter an Order either affirming or denying the District's proposal, and that said Order be attached to this Decree.

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

ii. Hearing on Use of New Source. Where an objection has been filed to the use of a noticed water right in this plan for augmentation, the Court shall promptly schedule a hearing to determine whether and under what terms and conditions the water right may be used in this plan for augmentation. The Court shall conduct whatever proceedings are needed to appropriately address and resolve the disputed issues. At such hearing, the Court shall impose such terms and conditions as necessary to prevent injury to vested water rights and decreed conditional water rights. If the Notice requested temporary use of the noticed water rights in this plan for augmentation for a period not to exceed one year, then the Court shall grant an expedited hearing.

iii. New Sources Requiring Operation of Exchange. Where the use of a noticed water right in this plan for augmentation requires the operation of any new exchange(s), the District must obtain approval of the Division Engineer and Water Commissioner prior to operating such exchanges. The District must submit a separate

Water Court application if seeking to adjudicate any such exchange(s).

B. Additional Water rights – Temporary Administrative Approval. If a water right is not decreed or otherwise lawfully available for augmentation use, and Colorado Statutes or other governing authority provides a mechanism for using such water right without the need of a decree, the District shall provide written notice to the objectors herein of its request for approval of the State Engineer pursuant to C.R.S. §37-92-308, or C.R.S. §37-92-309, or any other applicable statute or rule. Such notice shall be in addition to any notice required by any applicable statute or rule. The District may use such water rights in this plan for augmentation upon the State Engineer's approval of the underlying administrative application for the term of any such approval, unless such approval is reversed or modified on appeal or under the retained jurisdiction provisions of this Case No. 20CW3059.

32. Applicant may substitute other legally available augmentation sources for replacement of any such injurious post-pumping depletions under this Court's retained jurisdiction, as described in Paragraph 31, above. Applicant claims that post-pumping depletions will be noninjurious and need not be replaced to prevent injury, though this Court makes no such finding by this decree. Applicant has reserved the right in the future to prove that said post-pumping depletions will be noninjurious under the Court's retained jurisdiction pursuant to paragraph 58.

33. Applicant shall replace post-pumping depletions for the shortest of the following: (a) the period provided by C.R.S. §37-90-137(9)(c); (b) the express period specified by the Colorado Legislature, should it specify one; (c) the period determined by the State Engineer, should he choose to set such a period and have jurisdiction to do so; (d) the period established through rulings of the Colorado Supreme Court on relevant cases, or (e) until Applicant petitions the Water Court, and after notice to parties in the case and the State Engineer's Office, proves that it has complied with any statutory requirement.

34. If operated pursuant to the terms and conditions set forth herein, the plan for augmentation decreed herein will allow Applicant to provide for the augmentation of any injurious out-of-priority stream depletions which may be caused by the pumping of the not-nontributary Denver and Arapahoe aquifer groundwater underlying the Sterling Ranch Metropolitan District Nos. 2 and 3, the SR Quarry Parcel, and out-of-priority storage and evaporative depletions from the SRMD Ponds Nos. 1 and 2. Applicant shall utilize the not-nontributary Denver Basin groundwater in the Denver and Arapahoe aquifers underlying the SRMD Metropolitan District Nos. 2 and 3 and the SR Quarry Parcel for municipal uses throughout the District's municipal service area, as currently exists or as may exist in the future, expressly including augmentation purposes. Applicant shall replace any out-of-priority depletions resulting from the SRMD Ponds Nos. 1 and 2, and the Applicant's use of the not-nontributary Denver Basin ground water described in paragraph 28 above during the pumping life of the wells through LIRFs accruing to Sand Creek, or by pumping of the decreed nontributary supplies decreed in Case Nos. 86CW19 and 08CW113, including from existing SRMD wells, and any injurious post-pumping or

evaporative depletions through the dedication of nontributary Denver Basin groundwater supplies and excess LIRFs. Applicant has reserved sufficient nontributary Denver Basin groundwater supplies for replacement of any injurious post-pumping depletions.

35. Curtailment. Applicant's plan for augmentation, as decreed herein, is sufficient to permit the pumping of not-nontributary supplies in the Denver and Arapahoe aquifers underlying the District as described herein, including the SR Quarry Parcel, and the evaporative depletions from the SRMD Ponds Nos. 1 and 2, to the extent the District complies with all the terms and conditions of this decree including, but not limited to, providing the necessary replacement water as required by this decree. 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 to prevent injury to vested water rights.

36. Terms and Conditions. This Court finds that there will be no material injury to the owners or users of water diverted under vested water rights or conditional water rights as a result of operation of the plan for augmentation, so long as there is compliance with and proper administration of the protective terms and conditions herein.

A. Lawn Irrigation Return Flow Credits. The lawn irrigation return flows from the District's use of nontributary and not-nontributary groundwater rights, after meeting replacement requirements, shall only be used as an augmentation source in the instant plan for augmentation. All such return flow credits not utilized in the instant plan for augmentation shall, subject to the terms of a future decree, be available for the District's use and re-use, including for sale or lease to other parties.

B. The reserved nontributary Denver Basin groundwater rights are adequate for replacement of all anticipated post-pumping depletions resulting from the groundwater withdrawals from the not-nontributary Denver and Arapahoe aquifers underlying the District as described herein, including the SR Quarry Parcel, and the evaporative depletions from the SRMD Ponds Nos. 1 and 2, augmented under this plan for augmentation. The District shall initiate pumping of said nontributary Denver Basin groundwater, or provision of any alternative augmentation supply as may be decreed by the Court, for the replacement of any out-of-priority post-pumping depletions upon cessation of withdrawals from the Denver and Arapahoe aquifers as augmented herein. "Cessation of Withdrawals" occurs when (1) the total volume of water available from the Denver and Arapahoe aquifers allowed to be withdrawn under the plan for augmentation decreed herein has been withdrawn; (2) the District has acknowledged in writing that all withdrawals from such aquifers have ceased permanently; (3) no withdrawals of groundwater have been made from the subject aquifers for a period of ten (10) consecutive calendar years; or (4) accounting shows that the augmentation sources described in Paragraph 28.B, above, are insufficient to replace depletions caused by withdrawals that have already occurred, and Applicant has not provided supplemental or additional augmentation supplies to remedy such insufficiency. Nothing herein shall preclude the District or its successors from resuming withdrawals from such not-nontributary aquifers after cessation of withdrawals as defined above has occurred. If pumping is resumed, then the District's augmentation requirements for such wells shall

be determined in accordance with Paragraph 28.B of this Decree, and its post-pumping augmentation obligation shall be determined as if no cessation of withdrawals had occurred.

C. A copy of the Decree shall be recorded in the records of the Clerk and Recorder for El Paso County, Colorado, and shall constitute a covenant running with the land, requiring Applicant and its successors in interest to be bound by the terms, conditions, and requirements of this Decree and the plan for augmentation herein, including the requirement to construct and pump well(s) to the nontributary aquifers identified herein or take such other measures as necessary to replace any injurious post-pumping depletions upon Cessation of Withdrawals. Failure of Applicant or its successors in interest to comply with such requirements of this Decree may result in enforcement actions from the State Engineer's Office including curtailment or elimination of pumping from the not-nontributary aquifers. The covenant represented by this Decree when so recorded shall be amended as necessary to conform to the provisions of any amendment to this plan for augmentation which may occur

D. While the adjudications of the Denver Basin groundwater to be utilized in this plan for augmentation anticipate an aquifer life of 300 years for each Denver Basin aquifer, the length of this plan for augmentation may be shorter than, or extend beyond, such time period provided the total pumping allocated to any augmented well or wells is not exceeded. Should the actual operation of this augmentation plan depart from the planned diversions described in this decree such that the plan may be extended beyond the anticipated 300-year aquifer life, Applicant may be required to develop a revised model of stream depletions caused by the actual pumping schedule by the State or Division Engineer. Any such revised model analysis shall utilize depletion modelling acceptable to the State Engineer, and shall represent the water use under the plan for the entire term of the plan to date. The analysis shall further demonstrate that return flows have equaled or exceeded actual stream depletions to date throughout the pumping periods and that reserved nontributary water remains sufficient to replace post-pumping and evaporative depletions. If such revised modeling is required by the State and Division Engineers, the District shall serve the revised model on the Opposers and they shall have 63 days from service of the revised model and analysis to provide the Division Engineer with comments, concerns or objections regarding the revised model. The Division Engineer shall have 70 days from the receipt of the opposers comments on the revised model and analysis to consider the analysis and Opposers comments thereto, and to approve or disapprove the extension of the term of the plan, or to suggest terms and conditions appropriate to such an approval. Either Applicant or Opposers may appeal any such decision by the Division Engineer to this Court under the Court's retained jurisdiction as described in Paragraphs 57 and 58, below, and any such appealing party shall have the burden of proof in such an appeal. Applicant shall have the initial burden of proof that the extension of the term of the plan for augmentation will not result in injury to other water users.

37. Consideration has been given to the depletions from Applicant's use and proposed uses of water, in quantity, time and location, together with the amount and

timing of augmentation water which will be provided by the Applicant, and the existence, if any, of injury to any owner of or person entitled to use water under a vested water right.

38. It is determined that the timing, quantity and location of replacement water under the terms and conditions of this decree are sufficient to protect the vested rights of other water users and eliminate injury thereto. The replacement water shall be of a quantity and quality so as to meet the requirements for which the water of senior appropriators has normally been used, and such replacement water shall be accepted by the senior appropriators in substitution for water derived by the exercise of their decreed rights pursuant to CRS § 37-92-305(5) . The depletions from the wells withdrawing not-nontributary water underlying the SR Quarry Parcel, and any additional or replacement wells associated therewith, and the evaporation from the SRMD Ponds Nos. 1 and 2 will not result in injury to the vested water rights of others.

CONCLUSIONS OF LAW

39. Based upon and fully incorporating herein the Findings of Fact set forth above as though fully set forth herein, this Court concludes as a matter of law that:

40. Applicant's request for adjudication of the Denver Basin groundwater underlying the SR Quarry Parcel is contemplated and authorized by law, and this Court and the Water Referee have exclusive jurisdiction over these proceedings. §§ 37-92-302(1)(a), 37-92-203, and 37-92-305, C.R.S.

41. Subject to the terms and conditions of this decree, the Applicant is entitled to the sole right to withdraw all the legally available water in the Denver Basin aquifers underlying the parcels and property described herein, and the right to use that water to the exclusion of all others subject to the terms of this decree.

42. The Applicant has complied with C.R.S. §37-90-137(4), and the Laramie-Fox Hills groundwater underlying the SR Quarry Parcel is legally available for withdrawal, and the not-nontributary Dawson, Denver, and Arapahoe aquifer groundwater underlying the SR Quarry Parcel is legally available for withdrawal upon the entry of a decree approving an augmentation plan pursuant to C.R.S. §37-90-137(9)(c.5), and such a plan for augmentation is decreed herein as concerns the not-nontributary Denver and Arapahoe aquifer groundwater. Applicant is entitled to a decree from this Court confirming its rights to withdraw groundwater pursuant to §37-90-137(4), C.R.S.

43. The Denver Basin water rights described herein are not conditional water rights, but are vested water rights determined pursuant to C.R.S. §37-90-137(4). No applications for diligence are required. The claims for nontributary and not-nontributary groundwater meet the requirements of Colorado Law.

44. The confirmation, determination and quantification of the nontributary and not-nontributary groundwater rights in the Denver Basin aquifers as set forth herein is

contemplated and authorized by law. C.R.S. §§37-90-137, and 37-92-302 through 37-92-305.

45. Satisfaction of Burdens of Proof. Applicant has complied with all requirements and satisfied all standards and burdens of proof including, but not limited to, C.R.S. §§37-92-302 through 305, excepting sections 305(3.5) and 305(3.6) which are inapplicable hereto, as amended. Applicant is entitled to a decree confirming and approving the quantification of Denver Basin groundwater, and the plan for augmentation decreed herein, which will not injuriously affect the owners of or persons entitled to use water under vested water rights or decreed conditional water rights as long as the plan for augmentation is operated and administered in accordance with the terms and conditions herein.

46. The augmentation plan decreed herein is one contemplated by law. If implemented in accordance with the terms and conditions of this decree, the plan will permit the use of water without material injury to the vested or conditionally decreed water rights of others.

47. The Court is required to retain jurisdiction in a decree approving an augmentation plan on the question of injury to vested or conditional water rights. C.R.S. §37-92-304(6). Such jurisdiction is retained and described in detail at Paragraph 57, below.

IT IS THEREFORE ORDERED, ADJUDGED AND DECREED AS FOLLOWS:

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

49. The Application for Surface Water Storage Rights, Adjudication of Denver Basin Groundwater and for Approval of Plan for Augmentation filed by the Applicant is approved, subject to the terms of this decree.

50. The Applicant will comply with C.R.S. §37-90-137(9)(b) requiring the relinquishment of the right to consume two percent (2%) of the amount of the nontributary groundwater underlying the SR Quarry Parcel adjudicated herein. Ninety eight percent (98%) of the nontributary groundwater withdrawn may therefore be consumed. No plan for augmentation is or shall be required to provide for such relinquishment.

51. The operation of the District's augmentation plan as decreed herein provides for the replacement of all injurious out-of-priority depletions which may result from withdrawals of not-nontributary groundwater from the Denver and Arapahoe aquifers underlying the District, including the SR Quarry Parcel, and out-of-priority storage and evaporative depletions from the use and operation of the SRMD Ponds Nos. 1 and 2, as described herein, augmented during pumping through dedication of lawn irrigation return flows, or pumping of nontributary groundwater decreed in Case Nos. 86CW18, 86CW19

and 08CW113, or additional sources approved in accordance with the terms of this decree, and augmented post-pumping through dedication and pumping of the nontributary Denver Basin groundwater rights decreed in Case No. 93CW18, as more particularly described in Paragraph 28.B, herein. The terms and conditions of this decree are adequate to assure that no injury to any water users will result from operation of this plan for augmentation. The Court approves this plan subject to the terms and conditions contained in this decree.

52. The replacement and augmentation supplies that the District will use for operation of the plan for augmentation decreed herein are of a quality and quantity so as to meet the requirements for which the water of senior appropriators has normally been used.

53. The State and Division Engineers and the Water Commissioner shall administer this augmentation plan in accordance with the terms and conditions contained in this decree. So long as the District operates the SRMD Ponds Nos. 1 and 2, and its wells to the not-nontributary Denver and Arapahoe aquifers in accordance with this decree, this augmentation plan can be operated without adversely affecting the owners or users of vested water rights or decreed conditional water rights on Sand Creek or its tributaries. So long as water is used in conformance with the requirements of this decree, there will be no injurious effects to the vested or decreed conditional water rights of others related to the amount or timing of water availability.

54. The State Engineer, the Division Engineer, and/or the Water Commissioner shall not curtail the diversion and use of water covered by the plan for augmentation decreed herein, so long as the lawn irrigation return flows necessary for augmentation during the pumping life of the not-nontributary Denver and Arapahoe aquifers described herein continue to accrue to the stream system pursuant to the conditions contained herein or the Applicant utilizes the nontributary water available to it under Case Nos. 86CW18, 86CW19 and 08CW113 to replace depletions. To the extent that Applicant or its successors or assigns is unable to provide the replacement water required, then the wells and ponds shall not be entitled to continue under the protection of this plan, and shall be subject to administration and curtailment in accordance with the laws, rules, and regulation of the State of Colorado. Pursuant to C.R.S. §37-92-305(8), the State Engineer shall curtail all out-of-priority diversions which are not so replaced as to prevent injury to vested water rights. In order for this plan for augmentation to operate, LIRFs must at all times during pumping be in an amount sufficient to replace the amount of stream depletions. The State Engineer shall issue well permits in accordance with C.R.S. §37-90-137(4) and/or (10) and consistent with the terms and conditions of this Decree. All such wells constructed by Applicant pursuant to the augmentation plan decreed herein shall be geophysically logged consistent with applicable rules and regulations of the State and Division Engineers.

55. Applicant shall install such metering and measuring devices as may be reasonably required by the State and Division Engineers to ensure proper measurement and accounting of all withdrawals and pumping.

56. Accounting. The District has demonstrated an appropriate method of accounting for diversions and stream depletions associated with the operation of this plan for augmentation. The District's accounting under this decree shall include the following information: (1) the daily volume of water pumped from each not-nontributary Denver and Arapahoe aquifer well; (2) the daily amount of water used for irrigation within the District and from which LIRFs are claimed, (3) the weekly out-of-priority stream depletions from prior weeks' pumping and from the current week's pumping; (4) the source and amount of the replacement sources used for augmentation in this plan, which shall be accounted for daily and reported monthly; and (5) the amount of any additional or alternative augmentation supplies allowed under Paragraph 29, which shall be accounted for daily, balanced weekly, and reported monthly. Unless specifically indicated by this decree, all accounting records required by this decree shall be filed with the State Engineer and Division Engineer on a monthly basis. An example of the District's current accounting forms, in which the accounting required by this plan for augmentation will be integrated, is attached as **Exhibit C**. Such Accounting forms are included as an example only and are not decreed herein. The Applicant's current accounting forms are adequate to account for the water rights and augmentation plan under this decree; however, said forms are not decreed herein and may be changed from time to time so long as the information required by this decree is included in the forms. Applicant shall serve the Opposers and the Division Engineer with any modified accounting forms. The Opposers will have 63 days thereafter to provide written comments concerning the modified accounting forms to Applicant and the Division Engineer. Applicant must obtain the Division Engineer's approval of the modified accounting forms prior to their use. Upon the Division Engineer's approval of the modified accounting forms, Applicant shall file the approved modified accounting forms with the Court, with service on the opposers herein. Applicant shall make its accounting available to the Water Commissioner and to any party who requests it, providing a summary of withdrawals, return flows, depletions, and augmentation releases associated with the District's operation of the augmentation plan approved herein. The daily accounting and all backup and supporting information and documents shall also be provided to any objector making a written request for said accounting for the accounting year, upon payment of reasonable costs. The accounting shall be delivered to the Division Engineer and Water Commissioner in the manner they prescribe and may be delivered to other objectors in paper or electronic format at the District's option.

57. Retained Jurisdiction. Pursuant to the provisions of C.R.S. §37-92-304(6), this plan for augmentation decreed herein shall be subject to the reconsideration of this Court on the question of material injury to vested water rights of others, for a period of five years after Applicant fully utilizes the LIRFs as an augmentation supply, as evidenced by the District's provision of written notice to Opposers herein that all parks and common areas anticipated to result in LIRF credits have been developed and constructed, and the District is irrigating such parks and common areas with approved water sources allowing such LIRF credits to be claimed. 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 the factual basis for the relief requested in the petition, 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 the facts alleged in the petition. If the Court finds those facts are established, Applicant shall thereupon have the burden of proof to show: (a) that the petitioner is not injured, or (b) that any modification sought by the petitioner is not required to avoid injury to the petitioner, or (c) 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 revisions of the statute, this matter shall become final under its own terms. The Court also retains continuing jurisdiction for the purpose of determining whether the continued reservation of the nontributary Denver Basin water rights in the Denver, Arapahoe, and Laramie-Fox Hills aquifers, more particularly described in Paragraph 28.B., above, for augmentation use hereunder is required and retained jurisdiction for such purpose shall be perpetual. After notice to all objectors, if Applicant can demonstrate to the Court that post-pumping depletions need no longer be replaced and/or are non-injurious, the Court may remove the requirement that the nontributary groundwater must continue to be reserved.

58. Pursuant to C.R.S. §37-92-304(6), the Court shall retain continuing jurisdiction over the plan for augmentation decreed herein for reconsideration of the question of whether the provisions of this decree are necessary and/or sufficient to prevent injury to vested water rights of others, as pertains to the use of Denver Basin groundwater supplies adjudicated herein for augmentation purposes. The Court also retains continuing jurisdiction for the purpose of determining compliance with the terms of the augmentation plan. The Court further retains jurisdiction should the Applicant later seek to amend this decree by seeking to prove that post-pumping depletions are noninjurious, that the extent of replacement for post-pumping depletions is less than the amount of water reserved herein, and other post-pumping matters addressed in Paragraph 28.B. The Court's retained jurisdiction may be invoked using the process set forth in Paragraph 57.

59. Pursuant to C.R.S. §37-92-502(5)(a), the Applicant shall install and maintain such water measurement devices and recording devices as are deemed necessary by the State Engineer or Division Engineers, and the same shall be installed and operated in accordance with instructions from said entities. Applicant is to install and maintain a totalizing flow meter on each well, or any additional or replacement wells associated therewith and are required to include geophysical logging on each well. Applicant shall read and record their well meter readings on April 1st and November 1st of each year and shall submit their meter readings to the Water Commissioner by April 15th and November 15th of each year or more frequently as requested by the Water Commissioner.

60. In compliance with Local Water Court Rule 9, the owner of a conditional water right shall:

A. Upon the sale or transfer of a conditional water right, the transferee shall file with the Water court a notice of transfer which shall state:

1. The title and case number of the case in which the conditional decree was issued;
2. The description of the conditional water right transferred;
3. The name of the transferor;
4. The name and mailing address of the transferee; and
5. A copy of the recorded deed.

B. The transferor of any conditional water rights shall notify the clerk of the water court having jurisdiction of any change in mailing address.

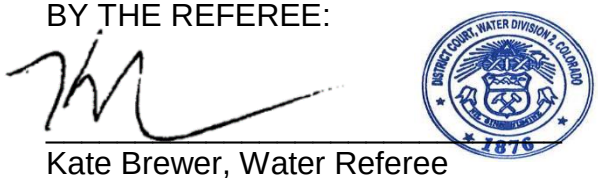
C. The clerk shall place any notice of transfer or change of address in the case file in which the conditional decree was entered and in the case file in which the court first made a finding of reasonable diligence.

61. As to the conditional water rights, pursuant to C.R.S. §37-92-301(4)(a), the Applicant shall, every sixth year after the calendar year in which this conditional water right was decreed or subsequent diligence decreed or issued, if it desires to maintain the same, file an application for a finding of reasonable diligence or these conditional water rights shall be considered abandoned. Applicant shall, during the month of March, and the year of 2028, file an application for a finding of reasonable diligence herein, unless Applicant has, prior to that time, made application to make absolute the conditional water rights guaranteed herein.

62. This Ruling of Referee, when entered as a decree of the Water Court, shall be recorded in the real property records of El Paso County, Colorado. Copies of this ruling shall be mailed as provided by statute.

DATED: March 2, 2022.

BY THE REFEREE:



Kate Brewer, Water Referee
Water Division 2

DECREE

THE COURT FINDS THAT NO PROTEST WAS MADE IN THIS MATTER, THEREFOR THE FORGOING RULING IS CONFIRMED AND APPROVED, AND IS HEREBY MADE

THE JUDGMENT AND DECREE OF THIS COURT.

Dated: March 4, 2022

Honorable Larry C. Schwartz
Water Judge, Water Division 2
State of Colorado

EXHIBIT A – Legal Descriptions

Sterling Ranch Metropolitan District Nos. 1, 2 and 3

DATE FILED: January 24, 2022 11:58 AM

The W1/2 W1/2 E1/2 and the E1/2 W1/2 and the SW1f4 SW1/4 of Section 27; the E1/2 SE1/4 and that portion of the SW1/4 SE1/4 lying South and East of the County Road across said premises, both in Section 28; that portion of the SE1/4 SE1/4 of Section 32 lying South and East of said County Road, that portion of the NE1/4 SE1f4 of said Section 32, lying South and East of said County Road, and that portion of the SE1/4 SW1/4 SE1/4 of Section 32 beginning at the SE comer of the SE1/4 SW1/4 SE1/4, then northerly along the east line of the SE1/4 SW1/4 SE1/4 a distance of 495 feet to a point on Vollmer Road, then southwesterly along Vollmer Road 660 feet to a point on the south line, then easterly 495 feet to the point of beginning; the E1/2 and the E1/2 SW1/4 and the SW1/4 SW1f4 of Section 33, and all that part of the NW1/4 of said Section 33 lying South and East of the said County Road across said premises, except that portion of the SW1/4 NW1/4 of said Section 33 lying South and East of said County Road containing approximately 1O acres deeded to Colorado Interstate Gas Company by Warranty Deed recorded in Book 1173 at Page 359 of the El Paso County Records; and the W1/2 E1/2 and the W1/2 of Section 34, all in Township 12 South, Range 65 West of the 6th P.M., located in El Paso County, Colorado. The NW1/4 of the NW1/4 of Section 4, Township 13 South, Range 65 West of the 6th P.M., located in El Paso County, Colorado.

Bar X Land

A parcel of land located in Township 11 South, Range 65 West of the 6th Principal Meridian, El Paso County, Colorado, and more particularly described as follows:

All of Section 16; the E1/2 of the SW1/4 and the SE1/4 of Section 17; the E1/2 of the E1/2 of the W1/2 of Section 20; the NE1/4 and the W1/2, except for the east 30 feet of the SW1/4, of Section 21.

SR Quarry Land

A TRACT OF LAND IN THE SOUTHWEST ONE-QUARTER AND THE SOUTHWEST ONE-QUARTER OF THE SOUTHEAST ONE-QUARTER OF SECTION 32, TOWNSHIP 12 SOUTH, RANGE 65 WEST OF THE 6TH PRINCIPAL MERIDIAN, IN EL PASO COUNTY, COLORADO, DESCRIBED AS FOLLOWS:

COMMENCING AT THE SOUTHWEST CORNER OF SAID SECTION 32; THENCE N89°23'57"E ALONG THE SOUTH LINE OF SECTION 32, 30.00 FEET TO POINT ON THE EASTERLY LINE OF BLACK FOREST ROAD, ACCORDING TO THE RESOLUTION ADOPTED BY THE BOARD OF COMMISSIONERS OF EL PASO COUNTY RECORDED IN ROAD BOOK A AT PAGE 78, WHICH POINT IS THE POINT OF BEGINNING; THENCE N00°02'19"W ALONG SAID EASTERLY LINE, 125.50 FEET TO A POINT ON THE SOUTH LINE OF THAT TRACT OF LAND DESCRIBED IN BOOK 3859 AT PAGE 151; THENCE ALONG THE BOUNDARY OF SAID TRACT FOR THE FOLLOWING FOUR (4) COURSES; (1) THENCE N89°23'57"E, 25.20 FEET; (2) THENCE N42°32'21"E, 664.79 FEET; (3) THENCE N01°44'16"W, 403.43 FEET; (4) THENCE N87°25'38"W, 463.51 FEET TO A POINT ON SAID EASTERLY LINE OF BLACK FOREST ROAD; THENCE N00°02'19"E ALONG SAID EASTERLY LINE, 124.08 FEET; THENCE N89°27'58"E, 2607.50 FEET; THENCE N00°00'40"W ALONG THE NORTH-SOUTH CENTERLINE OF SECTION 32, 152.93 FEET TO THE SOUTHWEST CORNER OF HOLIDAY HILLS NO. 1, ACCORDING TO THE PLAT RECORDED IN PLAT BOOK E2 AT PAGE 12; THENCE N89°31'30"E ALONG THE SOUTH LINE OF SAID HOLIDAY HILLS NO. 1, 1260.38 FEET; THENCE S00°33'58"E ALONG THE WESTERLY LINE OF GLIDER PORT ROAD, AS DEDICATED IN SAID HOLIDAY HILLS NO. 1, 741.29 FEET; THENCE S37°18'25"W ALONG THE NORTHWESTERLY LINE OF VOLLMER ROAD, 721.56 FEET; THENCE S89°23'57"W ALONG THE SOUTH LINE OF SECTION 32, 3437.29 FEET TO THE POINT OF BEGINNING, COUNTY OF EL PASO, STATE OF COLORADO

Retreat Land

A PARCEL OF LAND LOCATED IN A PORTION OF THE SOUTHEAST ONE-QUARTER (SE1/4) OF SECTION 21 AND A PORTION OF THE SOUTHWEST ONE-QUARTER OF SECTION 22, TOWNSHIP 12 SOUTH, RANGE 65 WEST OF THE 6TH P.M., EL PASO COUNTY, COLORADO, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BASIS OF BEARINGS: A LINE BETWEEN THE NORTHEAST CORNER OF THE NORTHWEST ONE-QUARTER OF THE NORTHWEST ONE-QUARTER (NW1/4 NW1/4) OF SECTION 27 AND THE SOUTHEAST CORNER OF THE NORTHWEST ONE-QUARTER OF THE SOUTHWEST ONE-QUARTER (NW1/4 SW1/4) OF SAID SECTION 27, TOWNSHIP 12 SOUTH, RANGE 65 WEST, MONUMENTED AT THE NORTHERLY END BY A 3-1/4" ALUMINUM CAP STAMED "2006 ESI PLS 10376" AND MONUMENTED AT THE SOUTHERLY END BY A 3-1/4" ALUMINUM CAP STAMPED "2006 ESI PLS 10376" AND IS ASSUMED TO BEAR S00°54'30”E, A DISTANCE OF 3925.63 FEET;

COMMENCING AT THE NORTHEAST CORNER OF THE NORTHWEST ONE-QUARTER OF THE NORTHWEST ONE-QUARTER (NW1/4 NW1/4) OF SECTION 27; THENCE S88°38'56”W ALONG THE NORTH LINE OF SAID NORTHWEST ONE-QUARTER OF THE NORTHWEST ONE-QUARTER (NW1/4 NW1/4), A DISTANCE OF 1047.88 FEET TO THE POINT OF BEGINNING OF THE PARCEL OF LAND HEREIN DESCRIBED; THENCE S88°38'56”W CONTINUING ALONG SAID NORTH LINE, A DISTANCE OF 283.03 FEET TO THE NORTHWEST CORNER OF SAID SECTION 27 SAID POINT ALSO BEING A POINT ON THE EASTERLY RIGHT-OF-WAY LINE AS DESCRIBED IN THE DEED, AS RECORDED IN BOOK 2678 AT PAGE 431 OF THE RECORDS OF THE EL PASO COUNTY CLERK AND RECORDER; THENCE ALONG THE EASTERLY AND NORTHERLY RIGHT-OF-WAY LINES OF SAID DEED THE FOLLOWING TWO (2) COURSES:
1.N00°37'14”W SAID LINE ALSO BEING THE WEST LINE OF THE SOUTHWEST ONE-QUARTER (SW1/4) OF SAID SECTION 22, A DISTANCE OF 30.00 FEET; 2.S89°40'23”W, A DISTANCE OF 736.82 FEET TO THE POINT OF INTERSECTION OF THEEASTERLY RIGHT-OF-WAY LINE AS DESCRIBED IN THE DEED, AS RECORDED IN BOOK 2678 AT PAGE 430 OF SAID COUNTY RECORDS; THENCE N21°41'10”E ALONG SAID EASTERLY RIGHT-OF-WAY LINE, A DISTANCE OF 1798.07 FEET; THENCE N59°58'50”E, A DISTANCE OF 694.83 FEET; THENCE S14°30'58”E, A DISTANCE OF 567.09 FEET; THENCE N69°36'18”E, A DISTANCE OF 603.87 FEET; THENCE S30°23'46”E, A DISTANCE OF 264.58 FEET; THENCE S61°52'38”W, A DISTANCE OF 227.40 FEET; THENCE S79°15'47”W, A DISTANCE OF 276.17 FEET; THENCE S89°39'18”W, A DISTANCE OF 356.07 FEET; THENCE S40°09'47”W, A DISTANCE OF 310.61 FEET; THENCE S09°56'46”W, A DISTANCE OF 270.03 FEET; THENCE S35°00'25”W, A DISTANCE OF 167.38 FEET; THENCE S57°24'01”W, A DISTANCE OF 235.36 FEET; THENCE S27°23'34”E, A DISTANCE OF 611.29 FEET TO THE POINT OF BEGINNING; SAID PARCEL OF LAND CONTAINS A CALCULATED AREA OF 35.08 ACRES OF LAND, MORE OR LESS.

Along With:

A PARCEL OF LAND BEING THE NORTHWEST ONE-QUARTER OF THE NORTHWEST ONE-QUARTER (NW1/4 NW1/4) OF SECTION 27, THE SOUTHWEST ONE-QUARTER OF THE NORTHWEST ONE-QUARTER (SW1/4 NW1/4) OF SECTION 27, THE NORTHWEST ONE-QUARTER OF THE SOUTHWEST ONE-QUARTER (NW1/4 SW1/4) OF SECTION 27, A PORTION OF THE SOUTHEAST ONE-QUARTER OF THE NORTHEAST ONE-QUARTER OF SECTION 28 AND A PORTION OF THE NORTHEAST ONE-QUARTER OF THE NORTHEAST ONE-QUARTER (NE1/4 NE1/4) OF SECTION 28, ALL IN TOWNSHIP 12 SOUTH, RANGE 65 WEST OF THE 6TH P.M., EL PASO COUNTY, COLORADO, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BASIS OF BEARINGS: A LINE BETWEEN THE NORTHEAST CORNER OF THE NORTHWEST ONE-QUARTER OF THE NORTHWEST ONE-QUARTER (NW1/4 NW1/4) OF SECTION 27 AND THE SOUTHEAST CORNER OF THE NORTHWEST ONE-QUARTER OF THE SOUTHWEST ONE-QUARTER (NW1/4 SW1/4) OF SAID SECTION 27, TOWNSHIP 12 SOUTH, RANGE 65 WEST, MONUMENTED AT THE NORTHERLY END BY A 3-1/4" ALUMINUM CAP STAMED "2006 ESI PLS 10376" AND MONUMENTED AT THE SOUTHERLY END BY A 3-1/4" ALUMINUM CAP STAMPED "2006 ESI PLS 10376" AND IS ASSUMED TO BEAR S00°54'30”E, A DISTANCE OF 3925.63 FEET;

COMMENCING AT THE NORTHEAST CORNER OF THE NORTHWEST ONE-QUARTER OF THE NORTHWEST ONE-QUARTER (NW1/4 NW1/4) OF SECTION 27, SAID POINT ALSO BEING THE POINT OF BEGINNING OF THE PARCEL OF LAND HEREIN DESCRIBED; THENCE S00°54'30”E ALONG THE EAST LINE OF THE WEST ONE-HALF (W1/2) OF SAID SECTION 27, A DISTANCE OF 3925.63 FEET TO THE SOUTHEAST CORNER OF THE NORTHWEST ONE-QUARTER OF THE SOUTHWEST ONE-QUARTER NW1/4 SW1/4) OF SAID SECTION 27; THENCE S87°35'00”W ALONG THE SOUTH LINE OF SAID NORTHWEST ONE-QUARTER OF THE SOUTHWEST ONE-QUARTER (NW1/4 SW1/4), A DISTANCE OF 1332.78 FEET TO THE SOUTHWEST CORNER OF SAID NORTHWEST ONE-QUARTER OF THE SOUTHWEST ONE-QUARTER (NW1/4 SW1/4); THENCE N00°53'18”W ALONG THE WEST LINE OF SAID NORTHWEST ONE-QUARTER OF THE SOUTHWEST ONE-QUARTER (NW1/4 SW1/4), A DISTANCE OF 1316.78 FEET TO THE NORTHWEST CORNER OF SAID NORTHWEST ONE-QUARTER OF THE SOUTHWEST ONE-QUARTER (NW1/4 SW1/4); THENCE S89°08'28”W ALONG THE SOUTH LINE OF THE SOUTHEAST ONE-QUARTER OF THE NORTHEAST ONE-QUARTER (SE1/4 NE1/4) OF SECTION 28, A DISTANCE OF 1326.68 FEET TO THE SOUTHWEST CORNER OF SAID SOUTHEAST ONE-QUARTER OF THE NORTHEAST ONE-QUARTER (SE1/4 NE1/4); THENCE N00°30'49”W ALONG THE WEST LINE OF SAID SOUTHEAST ONE-QUARTER OF THE NORTHEAST ONE-QUARTER (SE1/4 NE1/4), A DISTANCE OF 1270.77 FEET TO A POINT ON THE EASTERLY RIGHT-OF-WAY LINE AS DESCRIBED IN THE DEED, AS RECORDED IN BOOK 2678 AT PAGE 430 OF THE RECORDS OF THE EL PASO COUNTY CLERK AND RECORDER; THENCE N21°41'10”E ALONG SAID EASTERLY RIGHT-OF-WAY LINE, A DISTANCE OF 1450.84 FEET TO THE POINT OF INTERSECTION OF THE SOUTHERLY RIGHT-OF-WAY LINE AS DESCRIBED IN THE DEED, AS RECORDED IN BOOK 2678 AT PAGE 431 OF SAID COUNTY RECORDS; THENCE ALONG THE SOUTHERLY AND EASTERLY RIGHT-OF-WAY LINES OF SAID DEED THE FOLLOWING TWO (2) COURSES: 1. N89°40'23”E, A DISTANCE OF 761.52 FEET TO A POINT ON THE EAST LINE OF SAID NORTHEAST ONE-QUARTER OF THE NORTHEAST ONE-QUARTER (NE1/4 NE1/4); 2. N00°52'58”W ALONG SAID EAST LINE, A DISTANCE OF 30.00 FEET TO THE NORTHWEST CORNER OF SAID SECTION 27; THENCE N88°38'56”E ALONG THE NORTH LINE OF SAID NORTHWEST ONE-QUARTER OF THE NORTHWEST ONE-QUARTER (NW1/4 NW1/4), A DISTANCE OF 1330.91 FEET TO THE POINT OF BEGINNING; SAID PARCEL OF LAND CONTAINS A CALCULATED AREA OF 190.89 ACRES OF LAND, MORE OR LESS.

2021/02/19 10:28 AM By: Andrew Hood J:\JDS-Hydro\Project Files\161 Morley Investments, LLC\161.06 Sterling Ranch Water Reports\Drawings\Exhibits\16106E_Water_Court_Case.dwg

NOTE:
1. AERIAL IMAGERY IS NOT ACCURATELY SCALED AND SHOULD BE UTILIZED FOR REFERENCE ONLY (SOURCE: COLORADO DNR MAPS)

SCALE: N.T.S.

BAR X RANCH

THE RETREAT

STERLING RANCH METROPOLITAN DISTRICT NO. 1

SR QUARRY

T11.0S R65.0W

T12.0S R65.0W

T13.0S R65.0W

STERLING RANCH METROPOLITAN DISTRICT NO. 1

WATER COURT CASE NO. 20CW3059 AND SUPPORTING PROPERTIES

LOCATION OF STERLING RANCH AND SUBJECT PROPERTIES

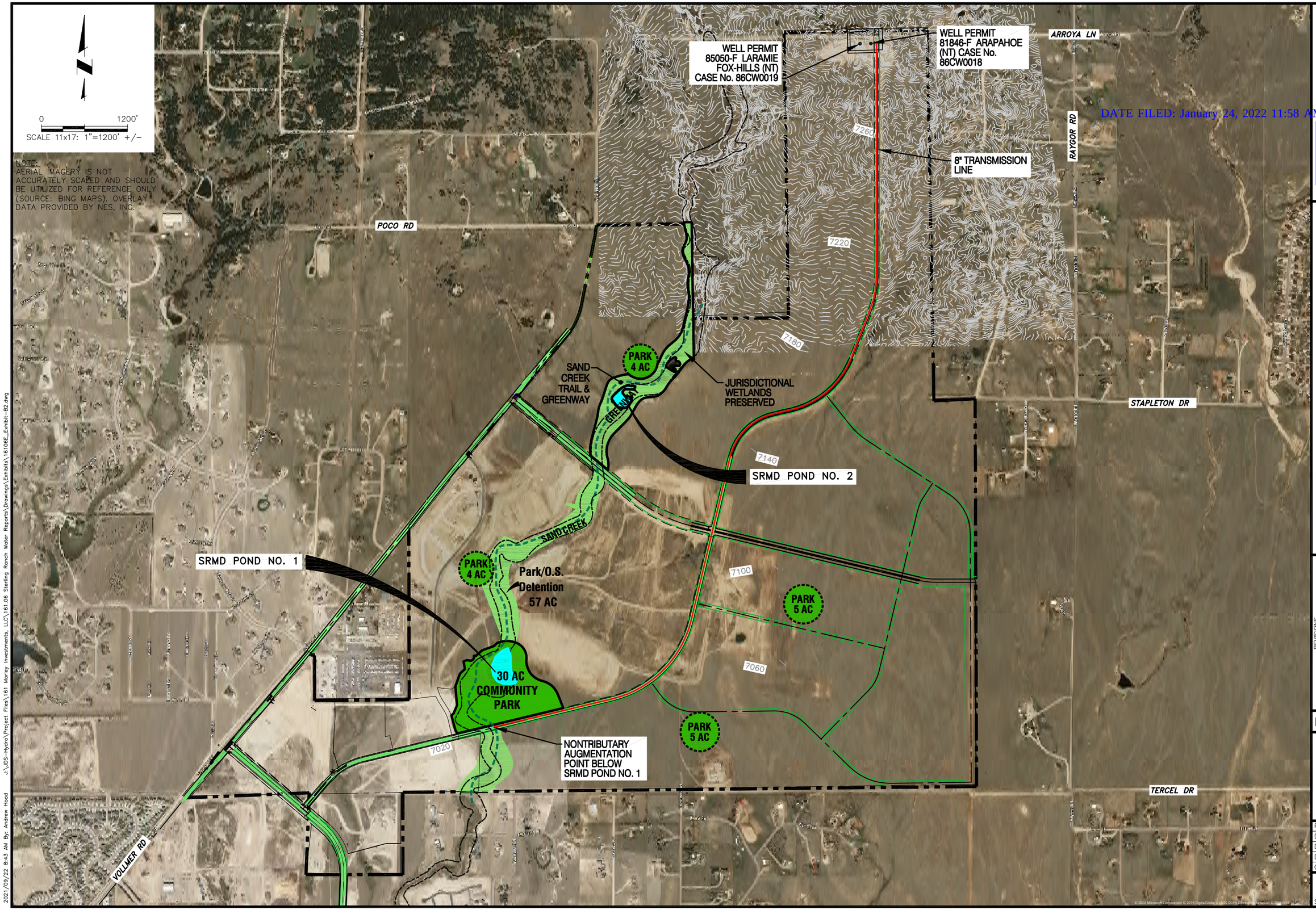
EXHIBIT B1

Project No.:	161.06E
Date:	02/19/21
Design:	DES
Drawn:	ACH
Check:	DES
Revised:	
Revised:	

EXHIBIT

SHEET 1 OF 1.

JDS-HYDRO CONSULTANTS, INC.
5540 TECH CENTER DR., SUITE 100
COLORADO SPRINGS, COLORADO 80919
(719) 227-0072



JDS-HYDRO CONSULTANTS, INC.
545 EAST PIKES PEAK AVENUE, SUITE 300
COLORADO SPRINGS, COLORADO 80903
(719) 227-0072

STERLING RANCH METROPOLITAN DISTRICT

NONTRIBUTARY AUGMENTATION POINT

EXHIBIT B.2.

REVISIONS				
NO.	DESCRIPTION	BY	APP.	DATE
1				
2				
3				
4				
5				
6				
7				

PRELIMINARY

Project No.:	161.06E
Date:	09/21/21
Design:	DES
Drawn:	ACH
Check:	DES

SHEET 2 OF

prepared by: JDS-Hydro Consultants, Inc.

EXHIBIT C

ounting - SRMD Pond No. 1 and Pond No. 2

No. 1

Beginning of Day Staff Gauge Reading	_____	ft
Beginning of Day Volume[1]	_____	Acre-feet
End of Day Staff Gauge Reading	_____	ft
End of Day Staff Volume[1]	_____	Acre-feet
End of Day Gain / Loss in Volume (D-B)	_____	ft

No. 2

Beginning of Day Staff Gauge Reading	_____	ft
Beginning of Day Volume[2]	_____	Acre-feet
End of Day Staff Gauge Reading	_____	ft
End of Day Staff Volume[2]	_____	Acre-feet
End of Day Gain / Loss in Volume (I-G)	_____	ft

Total Volume Gain / Loss in Volume (E+J)	_____	Acre-feet
Is there a Free River? (yes / no)	_____	
Admin Number of Calling Right	_____	

1) Volume from SRMD Pond No. 1 Stage-Storage Table No. 1

2) Volume from SRMD Pond No. 2 Stage-Storage Table No. 2

Sterling Ranch Metropolitan District
Case No. 20CW3059 - Daily Accounting Summary for Augmentation Plan
prepared by: JDS-Hydro Consultants, Inc.

Evaporation Accounting - SRMD Pond No. 1 and Pond No. 2

Date: _____

SRMD Pond No. 1

A)	Beginning of Day Staff Gauge Reading	_____ ft
B)	Beginning of Day Surface Area[1]	_____ Acre-feet
C)	End of Day Staff Gauge Reading	_____ ft
D)	End of Day Staff Surface Area[1]	_____ Acre-feet
E)	End of Day Average Surface Area (D-B)	_____ ft
F)	Precipitation[2]	_____ inches
G)	Effective Precipitation (((F)*0.7)/12)	_____ ft
I)	Gross Lake Evaporation[3]	_____ ft
J)	Net Lake Evaporation (I-G)	_____ AF/Acre
K)	Daily Average Evaporation (J*E)	_____ AF

SRMD Pond No. 2

L)	Beginning of Day Staff Gauge Reading	_____ ft
M)	Beginning of Day Surface Area[2]	_____ Acre-feet
N)	End of Day Staff Gauge Reading	_____ ft
O)	End of Day Staff Surface Area[2]	_____ Acre-feet
P)	End of Day Average Surface Area (D-B)	_____ ft
Q)	Precipitation[2]	_____ inches
R)	Effective Precipitation (((Q)*0.7)/12)	_____ ft
S)	Gross Lake Evaporation[3]	_____ ft
T)	Net Lake Evaporation (S-R)	_____ AF/Acre
U)	Daily Average Evaporation (T*P)	_____ AF

Summary

V)	Total Evaporation Volume (U+K)	_____ Acre-feet
W)	Is there a Free River? (yes / no)	_____
X)	Admin Number of Calling Right	_____

Note: 1) Volume from SRMD Pond No. 1 Stage-Surface Area Table No. 1
2) From Black Forest 6 WNW Weather Station
3) Monthly Gross Evaporation Rate from Table 3

2) Volume from SRMD Pond No. 2 Stage-Surface Area Table No. 2

Sterling Ranch Metropolitan District
Case No. 20CW3059 - Daily Accounting Summary for Augmentation Plan
prepared by: JDS-Hydro Consultants, Inc.

Table 3 - Monthly Gross Evaporation Rates for SRMD

Month	% of Annual Evaporation % of Acres	Gross Lake Evaporation Rate - Feet
January	1.0%	0.039
February	3.0%	0.116
March	6.0%	0.233
April	9.0%	0.349
May	12.5%	0.484
June	15.5%	0.601
July	16.0%	0.620
August	13.0%	0.504
September	11.0%	0.426
October	7.5%	0.291
November	4.0%	0.155
December	1.5%	0.058
Total	**1.0**	**3.875**

Sterling Ranch Metropolitan District
Case No. 20CW3059 - Daily Accounting Summary for Augmentation Plan
prepared by: JDS-Hydro Consultants, Inc.

Well Pumping / Accounting - NT and NNT Wells

Date: _____

Not-Nontributary Well Pumping

1) SR Quarry Denver Well No. 1

A) Meter Reading - Beginning of Day _____ gallons
B) Meter Reading - End of Day _____ gallons
C) Total gallons pumped (B-A) _____ gallons
D) Alluvial depletions (4%*C) _____ gallons
E) Alluvial deplations (D/325851) _____ AF

2) SR Quarry Arapahoe Well No. 1

F) Meter Reading - Beginning of Day _____ gallons
G) Meter Reading - End of Day _____ gallons
H) Total gallons pumped (G-F) _____ gallons
I) Alluvial depletions (4%*H) _____ gallons
J) Alluvial deplations (I/325851) _____ AF

3) SRMD Well D-1

K) Meter Reading - Beginning of Day _____ gallons
L) Meter Reading - End of Day _____ gallons
M) Total gallons pumped (L-K) _____ gallons
N) Alluvial depletions (4%*N) _____ gallons
O) Alluvial deplations (N/325851) _____ AF

P) Total alluvial depletions (E+J+O) _____ AF

Nontributary Well Pumping

4) SRMD Well A-1

Q) Meter Reading - Beginning of Day _____ gallons
R) Meter Reading - End of Day _____ gallons
S) Total gallons pumped (R-Q) _____ gallons
T) Total gallons pumped (S/325851) _____ AF

5) SRMD Well LFH-2

U)	Meter Reading - Beginning of Day	_____	gallons
V)	Meter Reading - End of Day	_____	gallons
W)	Total gallons pumped (R-Q)	_____	gallons
X)	Total gallons pumped (S/325851)	_____	AF
		_____	
Y)	Total NT pumped (T+X)	_____	AF

Sterling Ranch Metropolitan District
Case No. 20CW3059 - Daily Accounting Summary for Augmentation Plan
prepared by: JDS-Hydro Consultants, Inc.

Lawn Irrigation Return Flows (LIRF) Calculations

Date: _____

LIRF Credit Calculations

A)	Metered municipal irrigation use	_____	gallons
B)	Metered municipal irrigation use (A/325851)	_____	AF
C)	Estimated irrigation losses (B*0.735)	_____	AF
D)	Adjusted irrigation application (B-C)	_____	AF
E)	Fixed LIRF return flow rate	15	%
F)	Estiamted LIRF volume (D*E)	_____	AF

Sterling Ranch Metropolitan District
Case No. 20CW3059 - Daily Accounting Summary for Augmentation Plan
prepared by: JDS-Hydro Consultants, Inc.

Daily Data Entry Form

DATE	Pond Storage							Evaporation											Administration			Well Pumping															LIRF						Daily Summary				Weekly Summary		Monthly Summary [1]	
	SRMD Pond No. 1			SRMD Pond No. 2				SRMD Pond No. 1					SRMD Pond No. 1									NNT										NT																		
																						SR Quarry Denver Well No. 1			SR Quarry Arap. Well No. 1			SRMD Well No. 1				SRMD Well A-1		SRMD Well LFH-1																
	Storage BOD (AF)	Storage EOD (AF)	Total Storage (AF)	Storage BOD (AF)	Storage EOD (AF)	Total Storage (AF)	Total Pond Storage (AF)	Avg. Surface Area (AF)	Precip (inches)	Gross Evap (feet)	Net Evap (AF/acre)	Total Evap (AF)	Avg. Surface Area (AF)	Precip (inches)	Gross Evap (feet)	Net Evap (AF/acre)	Total Evap (AF)	Total Pond Evap (AF)	Free River 0 = FR 1 = Call	Admin. Number of Call	Name of Calling Right	Pumped (gallons)	Deplet (gallons)	Deplet (AF)	Pumped (gallons)	Deplet (gallons)	Deplet (AF)	Pumped (gallons)	Deplet (gallons)	Deplet (AF)	Total Deplet (AF)	Pumped (gallons)	Aug. Water (AF)	Pumped (gallons)	Aug. Water (AF)	Total Aug Water (AF)	Metered Municipal Irrigation Use (Gal)	Metered Municipal Irrigation Use (AF)	Estimated Losses @ 7.35% (AF)	Adjusted Irrigation Use (AF)	Minimum LIRF Rate @ 15%	Estimated LIRF Volume (AF)	Total Depletions to Alluvium (AF)	Total Augmentation Credits to Alluvium (AF)	Remaining Augmentation Obligations (AF)	Augmentation Credits in Excess of Obligations (AF)	Remaining Augmentation Obligations (AF)	Augmentation Credits in Excess of Obligations (AF)	Remaining Augmentation Obligations (AF)	Augmentation Credits in Excess of Obligations (AF)
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Note 1: Monthly LIRF Credits as totaled on a monthly basis from column AQ may only be "carried over" for a period of one month as described in Case No. 20CW3059 Paragraph 30.K.

EXHIBIT D

SRMD Pond No. 1 Elevation-Area-Capacity - JDS-Hydro - September 2021					
Staff Gage	Depth	Elevation	Area (ac)	Capacity (ac-ft)	
0	0.00	7028	0.000	0.000	Reservoir Bottom
2	2.00	7030	1.235	1.230	
4	4.00	7032	1.619	4.090	
6	6.00	7034	2.013	7.720	
8	8.00	7036	2.516	12.250	Spillway Crest / NWL
10	10.00	7038	3.612	17.390	
12	12.00	7040	4.676	24.600	Dam Crest
Elevation-Area-Capacity Interpolated to 1/100th ft.					
Staff Gauge	Depth	Elevation	Area (AC)	Capacity (AF)	Comments
0.00	**0.00**	**7028.00**	**0.00**	**0.00**	**Reservoir Bottom**
0.01	0.01	7028.01	0.006	0.006	
0.02	0.02	7028.02	0.012	0.012	
0.03	0.03	7028.03	0.018	0.018	
0.04	0.04	7028.04	0.025	0.025	
0.05	**0.05**	**7028.05**	**0.031**	**0.031**	
0.06	0.06	7028.06	0.037	0.037	
0.07	0.07	7028.07	0.043	0.043	
0.08	0.08	7028.08	0.049	0.049	
0.09	0.09	7028.09	0.055	0.055	
0.10	0.10	7028.10	0.062	0.062	
0.11	0.11	7028.11	0.068	0.068	
0.12	0.12	7028.12	0.074	0.074	
0.13	0.13	7028.13	0.080	0.080	
0.14	0.14	7028.14	0.086	0.086	
0.15	**0.15**	**7028.15**	**0.092**	**0.092**	
0.16	0.16	7028.16	0.098	0.098	
0.17	0.17	7028.17	0.105	0.105	
0.18	0.18	7028.18	0.111	0.111	
0.19	0.19	7028.19	0.117	0.117	
0.20	**0.20**	**7028.20**	**0.123**	**0.123**	
0.21	0.21	7028.21	0.129	0.129	
0.22	0.22	7028.22	0.135	0.135	
0.23	0.23	7028.23	0.141	0.141	
0.24	0.24	7028.24	0.148	0.148	
0.25	**0.25**	**7028.25**	**0.154**	**0.154**	
0.26	0.26	7028.26	0.160	0.160	
0.27	0.27	7028.27	0.166	0.166	
0.28	0.28	7028.28	0.172	0.172	
0.29	0.29	7028.29	0.178	0.178	
0.30	**0.30**	**7028.30**	**0.185**	**0.185**	

SRMD Pond No. 2 Elevation-Area-Capacity - JDS-Hydro - September 2021					
Staff Gage	Depth	Elevation	Area (ac)	Capacity (ac-ft)	
0	0.00	7114	0.000	0.000	Reservoir Bottom
1	1.00	7115	0.031	0.020	
2	2.00	7116	0.662	0.360	
4	4.00	7118	1.015	2.040	
6	6.00	7120	1.233	4.290	Spillway Crest / NWL
8	8.00	7122	1.602	6.76	
10	10.00	7124	2.548	9.96	Dam Crest
Elevation-Area-Capacity Interpolated to 1/100th ft.					
Staff Gauge	Depth	Elevation	Area (AC)	Capacity (AF)	Comments
0.00	**0.00**	**7114.00**	**0.000**	**0.000**	**Reservoir Bottom**
0.01	0.01	7114.01	0.000	0.000	
0.02	0.02	7114.02	0.001	0.000	
0.03	0.03	7114.03	0.001	0.001	
0.04	0.04	7114.04	0.001	0.001	
0.05	**0.05**	**7114.05**	**0.002**	**0.001**	
0.06	0.06	7114.06	0.002	0.001	
0.07	0.07	7114.07	0.002	0.001	
0.08	0.08	7114.08	0.002	0.002	
0.09	0.09	7114.09	0.003	0.002	
0.10	0.10	7114.10	**0.003**	**0.002**	
0.11	0.11	7114.11	0.003	0.002	
0.12	0.12	7114.12	0.004	0.002	
0.13	0.13	7114.13	0.004	0.003	
0.14	0.14	7114.14	0.004	0.003	
0.15	**0.15**	**7114.15**	**0.005**	**0.003**	
0.16	0.16	7114.16	0.005	0.003	
0.17	0.17	7114.17	0.005	0.003	
0.18	0.18	7114.18	0.005	0.004	
0.19	0.19	7114.19	0.006	0.004	
0.20	**0.20**	**7114.20**	**0.006**	**0.004**	
0.21	0.21	7114.21	0.006	0.004	
0.22	0.22	7114.22	0.007	0.004	
0.23	0.23	7114.23	0.007	0.005	
0.24	0.24	7114.24	0.007	0.005	
0.25	**0.25**	**7114.25**	**0.008**	**0.005**	
0.26	0.26	7114.26	0.008	0.005	
0.27	0.27	7114.27	0.008	0.005	
0.28	0.28	7114.28	0.008	0.006	
0.29	0.29	7114.29	0.009	0.006	
0.30	**0.30**	**7114.30**	**0.009**	**0.006**	

0.31	0.31	7028.31	0.191	0.191	
0.32	0.32	7028.32	0.197	0.197	
0.33	0.33	7028.33	0.203	0.203	
0.34	0.34	7028.34	0.209	0.209	
0.35	**0.35**	**7028.35**	**0.215**	**0.215**	
0.36	0.36	7028.36	0.221	0.221	
0.37	0.37	7028.37	0.228	0.228	
0.38	0.38	7028.38	0.234	0.234	
0.39	0.39	7028.39	0.240	0.240	
0.40	**0.40**	**7028.40**	**0.246**	**0.246**	
0.41	0.41	7028.41	0.252	0.252	
0.42	0.42	7028.42	0.258	0.258	
0.43	0.43	7028.43	0.264	0.264	
0.44	0.44	7028.44	0.271	0.271	
0.45	**0.45**	**7028.45**	**0.277**	**0.277**	
0.46	0.46	7028.46	0.283	0.283	
0.47	0.47	7028.47	0.289	0.289	
0.48	0.48	7028.48	0.295	0.295	
0.49	0.49	7028.49	0.301	0.301	
0.50	**0.50**	**7028.50**	**0.308**	**0.308**	
0.51	0.51	7028.51	0.314	0.314	
0.52	0.52	7028.52	0.320	0.320	
0.53	0.53	7028.53	0.326	0.326	
0.54	0.54	7028.54	0.332	0.332	
0.55	**0.55**	**7028.55**	**0.338**	**0.338**	
0.56	0.56	7028.56	0.344	0.344	
0.57	0.57	7028.57	0.351	0.351	
0.58	0.58	7028.58	0.357	0.357	
0.59	0.59	7028.59	0.363	0.363	
0.60	**0.60**	**7028.60**	**0.369**	**0.369**	
0.61	0.61	7028.61	0.375	0.375	
0.62	0.62	7028.62	0.381	0.381	
0.63	0.63	7028.63	0.387	0.387	
0.64	0.64	7028.64	0.394	0.394	
0.65	**0.65**	**7028.65**	**0.400**	**0.400**	
0.66	0.66	7028.66	0.406	0.406	
0.67	0.67	7028.67	0.412	0.412	
0.68	0.68	7028.68	0.418	0.418	
0.69	0.69	7028.69	0.424	0.424	
0.70	**0.70**	**7028.70**	**0.430**	**0.430**	
0.71	0.71	7028.71	0.437	0.437	
0.72	0.72	7028.72	0.443	0.443	
0.73	0.73	7028.73	0.449	0.449	
0.74	0.74	7028.74	0.455	0.455	
0.75	**0.75**	**7028.75**	**0.461**	**0.461**	
0.76	0.76	7028.76	0.467	0.467	

0.31	0.31	7114.31	0.009	0.006	
0.32	0.32	7114.32	0.010	0.006	
0.33	0.33	7114.33	0.010	0.007	
0.34	0.34	7114.34	0.010	0.007	
0.35	**0.35**	**7114.35**	**0.011**	**0.007**	
0.36	0.36	7114.36	0.011	0.007	
0.37	0.37	7114.37	0.011	0.007	
0.38	0.38	7114.38	0.011	0.008	
0.39	0.39	7114.39	0.012	0.008	
0.40	**0.40**	**7114.40**	**0.012**	**0.008**	
0.41	0.41	7114.41	0.012	0.008	
0.42	0.42	7114.42	0.013	0.008	
0.43	0.43	7114.43	0.013	0.009	
0.44	0.44	7114.44	0.013	0.009	
0.45	**0.45**	**7114.45**	**0.014**	**0.009**	
0.46	0.46	7114.46	0.014	0.009	
0.47	0.47	7114.47	0.014	0.009	
0.48	0.48	7114.48	0.014	0.010	
0.49	0.49	7114.49	0.015	0.010	
0.50	**0.50**	**7114.50**	**0.015**	**0.010**	
0.51	0.51	7114.51	0.015	0.010	
0.52	0.52	7114.52	0.016	0.010	
0.53	0.53	7114.53	0.016	0.011	
0.54	0.54	7114.54	0.016	0.011	
0.55	**0.55**	**7114.55**	**0.017**	**0.011**	
0.56	0.56	7114.56	0.017	0.011	
0.57	0.57	7114.57	0.017	0.011	
0.58	0.58	7114.58	0.017	0.012	
0.59	0.59	7114.59	0.018	0.012	
0.60	**0.60**	**7114.60**	**0.018**	**0.012**	
0.61	0.61	7114.61	0.018	0.012	
0.62	0.62	7114.62	0.019	0.012	
0.63	0.63	7114.63	0.019	0.013	
0.64	0.64	7114.64	0.019	0.013	
0.65	**0.65**	**7114.65**	**0.020**	**0.013**	
0.66	0.66	7114.66	0.020	0.013	
0.67	0.67	7114.67	0.020	0.013	
0.68	0.68	7114.68	0.020	0.014	
0.69	0.69	7114.69	0.021	0.014	
0.70	**0.70**	**7114.70**	**0.021**	**0.014**	
0.71	0.71	7114.71	0.021	0.014	
0.72	0.72	7114.72	0.022	0.014	
0.73	0.73	7114.73	0.022	0.015	
0.74	0.74	7114.74	0.022	0.015	
0.75	**0.75**	**7114.75**	**0.023**	**0.015**	
0.76	0.76	7114.76	0.023	0.015	

0.77	0.77	7028.77	0.474	0.474	
0.78	0.78	7028.78	0.480	0.480	
0.79	0.79	7028.79	0.486	0.486	
0.80	**0.80**	**7028.80**	**0.492**	**0.492**	
0.81	0.81	7028.81	0.498	0.498	
0.82	0.82	7028.82	0.504	0.504	
0.83	0.83	7028.83	0.510	0.510	
0.84	0.84	7028.84	0.517	0.517	
0.85	**0.85**	**7028.85**	**0.523**	**0.523**	
0.86	0.86	7028.86	0.529	0.529	
0.87	0.87	7028.87	0.535	0.535	
0.88	0.88	7028.88	0.541	0.541	
0.89	0.89	7028.89	0.547	0.547	
0.90	**0.90**	**7028.90**	**0.553**	**0.553**	
0.91	0.91	7028.91	0.560	0.560	
0.92	0.92	7028.92	0.566	0.566	
0.93	0.93	7028.93	0.572	0.572	
0.94	0.94	7028.94	0.578	0.578	
0.95	**0.95**	**7028.95**	**0.584**	**0.584**	
0.96	0.96	7028.96	0.590	0.590	
0.97	0.97	7028.97	0.597	0.597	
0.98	0.98	7028.98	0.603	0.603	
0.99	0.99	7028.99	0.609	0.609	
1.00	**1.00**	**7029.00**	**0.615**	**0.615**	
1.01	1.01	7029.01	0.621	0.621	
1.02	1.02	7029.02	0.627	0.627	
1.03	1.03	7029.03	0.633	0.633	
1.04	1.04	7029.04	0.640	0.640	
1.05	**1.05**	**7029.05**	**0.646**	**0.646**	
1.06	1.06	7029.06	0.652	0.652	
1.07	1.07	7029.07	0.658	0.658	
1.08	1.08	7029.08	0.664	0.664	
1.09	1.09	7029.09	0.670	0.670	
1.10	**1.10**	**7029.10**	**0.676**	**0.676**	
1.11	1.11	7029.11	0.683	0.683	
1.12	1.12	7029.12	0.689	0.689	
1.13	1.13	7029.13	0.695	0.695	
1.14	1.14	7029.14	0.701	0.701	
1.15	**1.15**	**7029.15**	**0.707**	**0.707**	
1.16	1.16	7029.16	0.713	0.713	
1.17	1.17	7029.17	0.720	0.720	
1.18	1.18	7029.18	0.726	0.726	
1.19	1.19	7029.19	0.732	0.732	
1.20	**1.20**	**7029.20**	**0.738**	**0.738**	
1.21	1.21	7029.21	0.744	0.744	
1.22	1.22	7029.22	0.750	0.750	

0.77	0.77	7114.77	0.023	0.015	
0.78	0.78	7114.78	0.023	0.016	
0.79	0.79	7114.79	0.024	0.016	
0.80	**0.80**	**7114.80**	**0.024**	**0.016**	
0.81	0.81	7114.81	0.024	0.016	
0.82	0.82	7114.82	0.025	0.016	
0.83	0.83	7114.83	0.025	0.017	
0.84	0.84	7114.84	0.025	0.017	
0.85	**0.85**	**7114.85**	**0.026**	**0.017**	
0.86	0.86	7114.86	0.026	0.017	
0.87	0.87	7114.87	0.026	0.017	
0.88	0.88	7114.88	0.026	0.018	
0.89	0.89	7114.89	0.027	0.018	
0.90	**0.90**	**7114.90**	**0.027**	**0.018**	
0.91	0.91	7114.91	0.027	0.018	
0.92	0.92	7114.92	0.028	0.018	
0.93	0.93	7114.93	0.028	0.019	
0.94	0.94	7114.94	0.028	0.019	
0.95	**0.95**	**7114.95**	**0.029**	**0.019**	
0.96	0.96	7114.96	0.029	0.019	
0.97	0.97	7114.97	0.029	0.019	
0.98	0.98	7114.98	0.029	0.020	
0.99	0.99	7114.99	0.030	0.020	
1.00	**1.00**	**7115.00**	**0.030**	**0.020**	
1.01	1.01	7115.01	0.036	0.023	
1.02	1.02	7115.02	0.043	0.026	
1.03	1.03	7115.03	0.049	0.029	
1.04	1.04	7115.04	0.055	0.032	
1.05	**1.05**	**7115.05**	0.061	0.035	
1.06	1.06	7115.06	0.068	0.038	
1.07	1.07	7115.07	0.074	0.041	
1.08	1.08	7115.08	0.080	0.044	
1.09	1.09	7115.09	0.087	0.047	
1.10	**1.10**	**7115.10**	0.093	0.050	
1.11	1.11	7115.11	0.099	0.053	
1.12	1.12	7115.12	0.106	0.056	
1.13	1.13	7115.13	0.112	0.059	
1.14	1.14	7115.14	0.118	0.062	
1.15	**1.15**	**7115.15**	0.124	0.065	
1.16	1.16	7115.16	0.131	0.068	
1.17	1.17	7115.17	0.137	0.071	
1.18	1.18	7115.18	0.143	0.074	
1.19	1.19	7115.19	0.150	0.077	
1.20	**1.20**	**7115.20**	0.156	0.080	
1.21	1.21	7115.21	0.162	0.083	
1.22	1.22	7115.22	0.169	0.086	

1.23	1.23	7029.23	0.756	0.756	
1.24	1.24	7029.24	0.763	0.763	
1.25	**1.25**	**7029.25**	**0.769**	**0.769**	
1.26	1.26	7029.26	0.775	0.775	
1.27	1.27	7029.27	0.781	0.781	
1.28	1.28	7029.28	0.787	0.787	
1.29	1.29	7029.29	0.793	0.793	
1.30	**1.30**	**7029.30**	**0.799**	**0.799**	
1.31	1.31	7029.31	0.806	0.806	
1.32	1.32	7029.32	0.812	0.812	
1.33	1.33	7029.33	0.818	0.818	
1.34	1.34	7029.34	0.824	0.824	
1.35	**1.35**	**7029.35**	**0.830**	**0.830**	
1.36	1.36	7029.36	0.836	0.836	
1.37	1.37	7029.37	0.843	0.843	
1.38	1.38	7029.38	0.849	0.849	
1.39	1.39	7029.39	0.855	0.855	
1.40	**1.40**	**7029.40**	**0.861**	**0.861**	
1.41	1.41	7029.41	0.867	0.867	
1.42	1.42	7029.42	0.873	0.873	
1.43	1.43	7029.43	0.879	0.879	
1.44	1.44	7029.44	0.886	0.886	
1.45	**1.45**	**7029.45**	**0.892**	**0.892**	
1.46	1.46	7029.46	0.898	0.898	
1.47	1.47	7029.47	0.904	0.904	
1.48	1.48	7029.48	0.910	0.910	
1.49	1.49	7029.49	0.916	0.916	
1.50	**1.50**	**7029.50**	**0.922**	**0.922**	
1.51	1.51	7029.51	0.929	0.929	
1.52	1.52	7029.52	0.935	0.935	
1.53	1.53	7029.53	0.941	0.941	
1.54	1.54	7029.54	0.947	0.947	
1.55	**1.55**	**7029.55**	**0.953**	**0.953**	
1.56	1.56	7029.56	0.959	0.959	
1.57	1.57	7029.57	0.966	0.966	
1.58	1.58	7029.58	0.972	0.972	
1.59	1.59	7029.59	0.978	0.978	
1.60	**1.60**	**7029.60**	**0.984**	**0.984**	
1.61	1.61	7029.61	0.990	0.990	
1.62	1.62	7029.62	0.996	0.996	
1.63	1.63	7029.63	1.002	1.002	
1.64	1.64	7029.64	1.009	1.009	
1.65	**1.65**	**7029.65**	**1.015**	**1.015**	
1.66	1.66	7029.66	1.021	1.021	
1.67	1.67	7029.67	1.027	1.027	
1.68	1.68	7029.68	1.033	1.033	

1.23	1.23	7115.23	0.175	0.089	
1.24	1.24	7115.24	0.181	0.092	
1.25	**1.25**	**7115.25**	0.187	0.095	
1.26	1.26	7115.26	0.194	0.098	
1.27	1.27	7115.27	0.200	0.101	
1.28	1.28	7115.28	0.206	0.104	
1.29	1.29	7115.29	0.213	0.107	
1.30	**1.30**	**7115.30**	0.219	0.110	
1.31	1.31	7115.31	0.225	0.113	
1.32	1.32	7115.32	0.232	0.116	
1.33	1.33	7115.33	0.238	0.119	
1.34	1.34	7115.34	0.244	0.122	
1.35	**1.35**	**7115.35**	0.250	0.125	
1.36	1.36	7115.36	0.257	0.128	
1.37	1.37	7115.37	0.263	0.131	
1.38	1.38	7115.38	0.269	0.134	
1.39	1.39	7115.39	0.276	0.137	
1.40	**1.40**	**7115.40**	0.282	0.140	
1.41	1.41	7115.41	0.288	0.143	
1.42	1.42	7115.42	0.295	0.146	
1.43	1.43	7115.43	0.301	0.149	
1.44	1.44	7115.44	0.307	0.152	
1.45	**1.45**	**7115.45**	0.313	0.155	
1.46	1.46	7115.46	0.320	0.158	
1.47	1.47	7115.47	0.326	0.161	
1.48	1.48	7115.48	0.332	0.164	
1.49	1.49	7115.49	0.339	0.167	
1.50	**1.50**	**7115.50**	0.345	0.170	
1.51	1.51	7115.51	0.351	0.173	
1.52	1.52	7115.52	0.358	0.176	
1.53	1.53	7115.53	0.364	0.179	
1.54	1.54	7115.54	0.370	0.182	
1.55	**1.55**	**7115.55**	0.376	0.185	
1.56	1.56	7115.56	0.383	0.188	
1.57	1.57	7115.57	0.389	0.191	
1.58	1.58	7115.58	0.395	0.194	
1.59	1.59	7115.59	0.402	0.197	
1.60	**1.60**	**7115.60**	0.408	0.200	
1.61	1.61	7115.61	0.414	0.203	
1.62	1.62	7115.62	0.420	0.206	
1.63	1.63	7115.63	0.427	0.209	
1.64	1.64	7115.64	0.433	0.212	
1.65	**1.65**	**7115.65**	0.439	0.215	
1.66	1.66	7115.66	0.446	0.218	
1.67	1.67	7115.67	0.452	0.221	
1.68	1.68	7115.68	0.458	0.224	

1.69	1.69	7029.69	1.039	1.039	
1.70	**1.70**	**7029.70**	**1.046**	**1.046**	
1.71	1.71	7029.71	1.052	1.052	
1.72	1.72	7029.72	1.058	1.058	
1.73	1.73	7029.73	1.064	1.064	
1.74	1.74	7029.74	1.070	1.070	
1.75	**1.75**	**7029.75**	**1.076**	**1.076**	
1.76	1.76	7029.76	1.082	1.082	
1.77	1.77	7029.77	1.089	1.089	
1.78	1.78	7029.78	1.095	1.095	
1.79	1.79	7029.79	1.101	1.101	
1.80	**1.80**	**7029.80**	**1.107**	**1.107**	
1.81	1.81	7029.81	1.113	1.113	
1.82	1.82	7029.82	1.119	1.119	
1.83	1.83	7029.83	1.125	1.125	
1.84	1.84	7029.84	1.132	1.132	
1.85	**1.85**	**7029.85**	**1.138**	**1.138**	
1.86	1.86	7029.86	1.144	1.144	
1.87	1.87	7029.87	1.150	1.150	
1.88	1.88	7029.88	1.156	1.156	
1.89	1.89	7029.89	1.162	1.162	
1.90	**1.90**	**7029.90**	**1.169**	**1.169**	
1.91	1.91	7029.91	1.175	1.175	
1.92	1.92	7029.92	1.181	1.181	
1.93	1.93	7029.93	1.187	1.187	
1.94	1.94	7029.94	1.193	1.193	
1.95	**1.95**	**7029.95**	**1.199**	**1.199**	
1.96	1.96	7029.96	1.205	1.205	
1.97	1.97	7029.97	1.212	1.212	
1.98	1.98	7029.98	1.218	1.218	
1.99	1.99	7029.99	1.224	1.224	
2.00	**2.00**	**7030.00**	**1.230**	**1.230**	
2.01	2.01	7030.01	1.232	1.244	
2.02	2.02	7030.02	1.234	1.259	
2.03	2.03	7030.03	1.236	1.273	
2.04	2.04	7030.04	1.238	1.287	
2.05	**2.05**	**7030.05**	**1.240**	**1.302**	
2.06	2.06	7030.06	1.242	1.316	
2.07	2.07	7030.07	1.244	1.330	
2.08	2.08	7030.08	1.246	1.344	
2.09	2.09	7030.09	1.248	1.359	
2.10	**2.10**	**7030.10**	**1.250**	**1.373**	
2.11	2.11	7030.11	1.251	1.387	
2.12	2.12	7030.12	1.253	1.402	
2.13	2.13	7030.13	1.255	1.416	
2.14	2.14	7030.14	1.257	1.430	

1.69	1.69	7115.69	0.465	0.227	
1.70	**1.70**	**7115.70**	0.471	0.230	
1.71	1.71	7115.71	0.477	0.233	
1.72	1.72	7115.72	0.483	0.236	
1.73	1.73	7115.73	0.490	0.239	
1.74	1.74	7115.74	0.496	0.242	
1.75	**1.75**	**7115.75**	0.502	0.245	
1.76	1.76	7115.76	0.509	0.248	
1.77	1.77	7115.77	0.515	0.251	
1.78	1.78	7115.78	0.521	0.254	
1.79	1.79	7115.79	0.528	0.257	
1.80	**1.80**	**7115.80**	0.534	0.260	
1.81	1.81	7115.81	0.540	0.263	
1.82	1.82	7115.82	0.546	0.266	
1.83	1.83	7115.83	0.553	0.269	
1.84	1.84	7115.84	0.559	0.272	
1.85	**1.85**	**7115.85**	0.565	0.275	
1.86	1.86	7115.86	0.572	0.278	
1.87	1.87	7115.87	0.578	0.281	
1.88	1.88	7115.88	0.584	0.284	
1.89	1.89	7115.89	0.591	0.287	
1.90	**1.90**	**7115.90**	0.597	0.290	
1.91	1.91	7115.91	0.603	0.293	
1.92	1.92	7115.92	0.609	0.296	
1.93	1.93	7115.93	0.616	0.299	
1.94	1.94	7115.94	0.622	0.302	
1.95	**1.95**	**7115.95**	0.628	0.305	
1.96	1.96	7115.96	0.635	0.308	
1.97	1.97	7115.97	0.641	0.311	
1.98	1.98	7115.98	0.647	0.314	
1.99	1.99	7115.99	0.654	0.317	
2.00	**2.00**	**7116.00**	0.662	0.360	
2.01	2.01	7116.01	0.664	0.368	
2.02	2.02	7116.02	0.665	0.377	
2.03	2.03	7116.03	0.667	0.385	
2.04	2.04	7116.04	0.669	0.394	
2.05	**2.05**	**7116.05**	0.671	0.402	
2.06	2.06	7116.06	0.673	0.410	
2.07	2.07	7116.07	0.674	0.419	
2.08	2.08	7116.08	0.676	0.427	
2.09	2.09	7116.09	0.678	0.436	
2.10	**2.10**	**7116.10**	0.680	0.444	
2.11	2.11	7116.11	0.681	0.452	
2.12	2.12	7116.12	0.683	0.461	
2.13	2.13	7116.13	0.685	0.469	
2.14	2.14	7116.14	0.687	0.478	

2.15	**2.15**	**7030.15**	**1.259**	**1.445**	
2.16	2.16	7030.16	1.261	1.459	
2.17	2.17	7030.17	1.263	1.473	
2.18	2.18	7030.18	1.265	1.487	
2.19	2.19	7030.19	1.267	1.502	
2.20	**2.20**	**7030.20**	**1.269**	**1.516**	
2.21	2.21	7030.21	1.271	1.530	
2.22	2.22	7030.22	1.273	1.545	
2.23	2.23	7030.23	1.275	1.559	
2.24	2.24	7030.24	1.277	1.573	
2.25	**2.25**	**7030.25**	**1.279**	**1.588**	
2.26	2.26	7030.26	1.281	1.602	
2.27	2.27	7030.27	1.283	1.616	
2.28	2.28	7030.28	1.285	1.630	
2.29	2.29	7030.29	1.287	1.645	
2.30	**2.30**	**7030.30**	**1.289**	**1.659**	
2.31	2.31	7030.31	1.290	1.673	
2.32	2.32	7030.32	1.292	1.688	
2.33	2.33	7030.33	1.294	1.702	
2.34	2.34	7030.34	1.296	1.716	
2.35	**2.35**	**7030.35**	**1.298**	**1.731**	
2.36	2.36	7030.36	1.300	1.745	
2.37	2.37	7030.37	1.302	1.759	
2.38	2.38	7030.38	1.304	1.773	
2.39	2.39	7030.39	1.306	1.788	
2.40	**2.40**	**7030.40**	**1.308**	**1.802**	
2.41	2.41	7030.41	1.310	1.816	
2.42	2.42	7030.42	1.312	1.831	
2.43	2.43	7030.43	1.314	1.845	
2.44	2.44	7030.44	1.316	1.859	
2.45	**2.45**	**7030.45**	**1.318**	**1.874**	
2.46	2.46	7030.46	1.320	1.888	
2.47	2.47	7030.47	1.322	1.902	
2.48	2.48	7030.48	1.324	1.916	
2.49	2.49	7030.49	1.326	1.931	
2.50	**2.50**	**7030.50**	**1.327**	**1.945**	
2.51	2.51	7030.51	1.329	1.959	
2.52	2.52	7030.52	1.331	1.974	
2.53	2.53	7030.53	1.333	1.988	
2.54	2.54	7030.54	1.335	2.002	
2.55	**2.55**	**7030.55**	**1.337**	**2.017**	
2.56	2.56	7030.56	1.339	2.031	
2.57	2.57	7030.57	1.341	2.045	
2.58	2.58	7030.58	1.343	2.059	
2.59	2.59	7030.59	1.345	2.074	
2.60	**2.60**	**7030.60**	**1.347**	**2.088**	

2.15	**2.15**	**7116.15**	0.688	0.486	
2.16	2.16	7116.16	0.690	0.494	
2.17	2.17	7116.17	0.692	0.503	
2.18	2.18	7116.18	0.694	0.511	
2.19	2.19	7116.19	0.696	0.520	
2.20	**2.20**	**7116.20**	0.697	0.528	
2.21	2.21	7116.21	0.699	0.536	
2.22	2.22	7116.22	0.701	0.545	
2.23	2.23	7116.23	0.703	0.553	
2.24	2.24	7116.24	0.704	0.562	
2.25	**2.25**	**7116.25**	0.706	0.570	
2.26	2.26	7116.26	0.708	0.578	
2.27	2.27	7116.27	0.710	0.587	
2.28	2.28	7116.28	0.711	0.595	
2.29	2.29	7116.29	0.713	0.604	
2.30	**2.30**	**7116.30**	0.715	0.612	
2.31	2.31	7116.31	0.717	0.620	
2.32	2.32	7116.32	0.719	0.629	
2.33	2.33	7116.33	0.720	0.637	
2.34	2.34	7116.34	0.722	0.646	
2.35	**2.35**	**7116.35**	0.724	0.654	
2.36	2.36	7116.36	0.726	0.662	
2.37	2.37	7116.37	0.727	0.671	
2.38	2.38	7116.38	0.729	0.679	
2.39	2.39	7116.39	0.731	0.688	
2.40	**2.40**	**7116.40**	0.733	0.696	
2.41	2.41	7116.41	0.734	0.704	
2.42	2.42	7116.42	0.736	0.713	
2.43	2.43	7116.43	0.738	0.721	
2.44	2.44	7116.44	0.740	0.730	
2.45	**2.45**	**7116.45**	0.742	0.738	
2.46	2.46	7116.46	0.743	0.746	
2.47	2.47	7116.47	0.745	0.755	
2.48	2.48	7116.48	0.747	0.763	
2.49	2.49	7116.49	0.749	0.772	
2.50	**2.50**	**7116.50**	0.750	0.780	
2.51	2.51	7116.51	0.752	0.788	
2.52	2.52	7116.52	0.754	0.797	
2.53	2.53	7116.53	0.756	0.805	
2.54	2.54	7116.54	0.757	0.814	
2.55	**2.55**	**7116.55**	0.759	0.822	
2.56	2.56	7116.56	0.761	0.830	
2.57	2.57	7116.57	0.763	0.839	
2.58	2.58	7116.58	0.765	0.847	
2.59	2.59	7116.59	0.766	0.856	
2.60	**2.60**	**7116.60**	0.768	0.864	

2.61	2.61	7030.61	1.349	2.102	
2.62	2.62	7030.62	1.351	2.117	
2.63	2.63	7030.63	1.353	2.131	
2.64	2.64	7030.64	1.355	2.145	
2.65	**2.65**	**7030.65**	**1.357**	**2.160**	
2.66	2.66	7030.66	1.359	2.174	
2.67	2.67	7030.67	1.361	2.188	
2.68	2.68	7030.68	1.363	2.202	
2.69	2.69	7030.69	1.365	2.217	
2.70	**2.70**	**7030.70**	**1.366**	**2.231**	
2.71	2.71	7030.71	1.368	2.245	
2.72	2.72	7030.72	1.370	2.260	
2.73	2.73	7030.73	1.372	2.274	
2.74	2.74	7030.74	1.374	2.288	
2.75	**2.75**	**7030.75**	**1.376**	**2.303**	
2.76	2.76	7030.76	1.378	2.317	
2.77	2.77	7030.77	1.380	2.331	
2.78	2.78	7030.78	1.382	2.345	
2.79	2.79	7030.79	1.384	2.360	
2.80	**2.80**	**7030.80**	**1.386**	**2.374**	
2.81	2.81	7030.81	1.388	2.388	
2.82	2.82	7030.82	1.390	2.403	
2.83	2.83	7030.83	1.392	2.417	
2.84	2.84	7030.84	1.394	2.431	
2.85	**2.85**	**7030.85**	**1.396**	**2.446**	
2.86	2.86	7030.86	1.398	2.460	
2.87	2.87	7030.87	1.400	2.474	
2.88	2.88	7030.88	1.402	2.488	
2.89	2.89	7030.89	1.404	2.503	
2.90	**2.90**	**7030.90**	**1.405**	**2.517**	
2.91	2.91	7030.91	1.407	2.531	
2.92	2.92	7030.92	1.409	2.546	
2.93	2.93	7030.93	1.411	2.560	
2.94	2.94	7030.94	1.413	2.574	
2.95	**2.95**	**7030.95**	**1.415**	**2.589**	
2.96	2.96	7030.96	1.417	2.603	
2.97	2.97	7030.97	1.419	2.617	
2.98	2.98	7030.98	1.421	2.631	
2.99	2.99	7030.99	1.423	2.646	
3.00	**3.00**	**7031.00**	**1.425**	**2.660**	
3.01	3.01	7031.01	1.427	2.674	
3.02	3.02	7031.02	1.429	2.689	
3.03	3.03	7031.03	1.431	2.703	
3.04	3.04	7031.04	1.433	2.717	
3.05	**3.05**	**7031.05**	**1.435**	**2.732**	
3.06	3.06	7031.06	1.437	2.746	

2.61	2.61	7116.61	0.770	0.872	
2.62	2.62	7116.62	0.772	0.881	
2.63	2.63	7116.63	0.773	0.889	
2.64	2.64	7116.64	0.775	0.898	
2.65	**2.65**	**7116.65**	0.777	0.906	
2.66	2.66	7116.66	0.779	0.914	
2.67	2.67	7116.67	0.780	0.923	
2.68	2.68	7116.68	0.782	0.931	
2.69	2.69	7116.69	0.784	0.940	
2.70	**2.70**	**7116.70**	0.786	0.948	
2.71	2.71	7116.71	0.788	0.956	
2.72	2.72	7116.72	0.789	0.965	
2.73	2.73	7116.73	0.791	0.973	
2.74	2.74	7116.74	0.793	0.982	
2.75	**2.75**	**7116.75**	0.795	0.990	
2.76	2.76	7116.76	0.796	0.998	
2.77	2.77	7116.77	0.798	1.007	
2.78	2.78	7116.78	0.800	1.015	
2.79	2.79	7116.79	0.802	1.024	
2.80	**2.80**	**7116.80**	0.803	1.032	
2.81	2.81	7116.81	0.805	1.040	
2.82	2.82	7116.82	0.807	1.049	
2.83	2.83	7116.83	0.809	1.057	
2.84	2.84	7116.84	0.811	1.066	
2.85	**2.85**	**7116.85**	0.812	1.074	
2.86	2.86	7116.86	0.814	1.082	
2.87	2.87	7116.87	0.816	1.091	
2.88	2.88	7116.88	0.818	1.099	
2.89	2.89	7116.89	0.819	1.108	
2.90	**2.90**	**7116.90**	0.821	1.116	
2.91	2.91	7116.91	0.823	1.124	
2.92	2.92	7116.92	0.825	1.133	
2.93	2.93	7116.93	0.827	1.141	
2.94	2.94	7116.94	0.828	1.150	
2.95	**2.95**	**7116.95**	0.830	1.158	
2.96	2.96	7116.96	0.832	1.166	
2.97	2.97	7116.97	0.834	1.175	
2.98	2.98	7116.98	0.835	1.183	
2.99	2.99	7116.99	0.837	1.192	
3.00	**3.00**	**7117.00**	0.839	1.200	
3.01	3.01	7117.01	0.841	1.208	
3.02	3.02	7117.02	0.842	1.217	
3.03	3.03	7117.03	0.844	1.225	
3.04	3.04	7117.04	0.846	1.234	
3.05	**3.05**	**7117.05**	0.848	1.242	
3.06	3.06	7117.06	0.850	1.250	

3.07	3.07	7031.07	1.439	2.760	
3.08	3.08	7031.08	1.441	2.774	
3.09	3.09	7031.09	1.443	2.789	
3.10	**3.10**	**7031.10**	**1.444**	**2.803**	
3.11	3.11	7031.11	1.446	2.817	
3.12	3.12	7031.12	1.448	2.832	
3.13	3.13	7031.13	1.450	2.846	
3.14	3.14	7031.14	1.452	2.860	
3.15	**3.15**	**7031.15**	**1.454**	**2.875**	
3.16	3.16	7031.16	1.456	2.889	
3.17	3.17	7031.17	1.458	2.903	
3.18	3.18	7031.18	1.460	2.917	
3.19	3.19	7031.19	1.462	2.932	
3.20	**3.20**	**7031.20**	**1.464**	**2.946**	
3.21	3.21	7031.21	1.466	2.960	
3.22	3.22	7031.22	1.468	2.975	
3.23	3.23	7031.23	1.470	2.989	
3.24	3.24	7031.24	1.472	3.003	
3.25	**3.25**	**7031.25**	**1.474**	**3.018**	
3.26	3.26	7031.26	1.476	3.032	
3.27	3.27	7031.27	1.478	3.046	
3.28	3.28	7031.28	1.480	3.060	
3.29	3.29	7031.29	1.482	3.075	
3.30	**3.30**	**7031.30**	**1.483**	**3.089**	
3.31	3.31	7031.31	1.485	3.103	
3.32	3.32	7031.32	1.487	3.118	
3.33	3.33	7031.33	1.489	3.132	
3.34	3.34	7031.34	1.491	3.146	
3.35	**3.35**	**7031.35**	**1.493**	**3.161**	
3.36	3.36	7031.36	1.495	3.175	
3.37	3.37	7031.37	1.497	3.189	
3.38	3.38	7031.38	1.499	3.203	
3.39	3.39	7031.39	1.501	3.218	
3.40	**3.40**	**7031.40**	**1.503**	**3.232**	
3.41	3.41	7031.41	1.505	3.246	
3.42	3.42	7031.42	1.507	3.261	
3.43	3.43	7031.43	1.509	3.275	
3.44	3.44	7031.44	1.511	3.289	
3.45	**3.45**	**7031.45**	**1.513**	**3.304**	
3.46	3.46	7031.46	1.515	3.318	
3.47	3.47	7031.47	1.517	3.332	
3.48	3.48	7031.48	1.519	3.346	
3.49	3.49	7031.49	1.521	3.361	
3.50	**3.50**	**7031.50**	**1.522**	**3.375**	
3.51	3.51	7031.51	1.524	3.389	
3.52	3.52	7031.52	1.526	3.404	

3.07	3.07	7117.07	0.851	1.259	
3.08	3.08	7117.08	0.853	1.267	
3.09	3.09	7117.09	0.855	1.276	
3.10	**3.10**	**7117.10**	0.857	1.284	
3.11	3.11	7117.11	0.858	1.292	
3.12	3.12	7117.12	0.860	1.301	
3.13	3.13	7117.13	0.862	1.309	
3.14	3.14	7117.14	0.864	1.318	
3.15	**3.15**	**7117.15**	0.865	1.326	
3.16	3.16	7117.16	0.867	1.334	
3.17	3.17	7117.17	0.869	1.343	
3.18	3.18	7117.18	0.871	1.351	
3.19	3.19	7117.19	0.873	1.360	
3.20	**3.20**	**7117.20**	0.874	1.368	
3.21	3.21	7117.21	0.876	1.376	
3.22	3.22	7117.22	0.878	1.385	
3.23	3.23	7117.23	0.880	1.393	
3.24	3.24	7117.24	0.881	1.402	
3.25	**3.25**	**7117.25**	0.883	1.410	
3.26	3.26	7117.26	0.885	1.418	
3.27	3.27	7117.27	0.887	1.427	
3.28	3.28	7117.28	0.888	1.435	
3.29	3.29	7117.29	0.890	1.444	
3.30	**3.30**	**7117.30**	0.892	1.452	
3.31	3.31	7117.31	0.894	1.460	
3.32	3.32	7117.32	0.896	1.469	
3.33	3.33	7117.33	0.897	1.477	
3.34	3.34	7117.34	0.899	1.486	
3.35	**3.35**	**7117.35**	0.901	1.494	
3.36	3.36	7117.36	0.903	1.502	
3.37	3.37	7117.37	0.904	1.511	
3.38	3.38	7117.38	0.906	1.519	
3.39	3.39	7117.39	0.908	1.528	
3.40	**3.40**	**7117.40**	0.910	1.536	
3.41	3.41	7117.41	0.911	1.544	
3.42	3.42	7117.42	0.913	1.553	
3.43	3.43	7117.43	0.915	1.561	
3.44	3.44	7117.44	0.917	1.570	
3.45	**3.45**	**7117.45**	0.919	1.578	
3.46	3.46	7117.46	0.920	1.586	
3.47	3.47	7117.47	0.922	1.595	
3.48	3.48	7117.48	0.924	1.603	
3.49	3.49	7117.49	0.926	1.612	
3.50	**3.50**	**7117.50**	0.927	1.620	
3.51	3.51	7117.51	0.929	1.628	
3.52	3.52	7117.52	0.931	1.637	

3.53	3.53	7031.53	1.528	3.418	
3.54	3.54	7031.54	1.530	3.432	
3.55	**3.55**	**7031.55**	**1.532**	**3.447**	
3.56	3.56	7031.56	1.534	3.461	
3.57	3.57	7031.57	1.536	3.475	
3.58	3.58	7031.58	1.538	3.489	
3.59	3.59	7031.59	1.540	3.504	
3.60	**3.60**	**7031.60**	**1.542**	**3.518**	
3.61	3.61	7031.61	1.544	3.532	
3.62	3.62	7031.62	1.546	3.547	
3.63	3.63	7031.63	1.548	3.561	
3.64	3.64	7031.64	1.550	3.575	
3.65	**3.65**	**7031.65**	**1.552**	**3.590**	
3.66	3.66	7031.66	1.554	3.604	
3.67	3.67	7031.67	1.556	3.618	
3.68	3.68	7031.68	1.558	3.632	
3.69	3.69	7031.69	1.560	3.647	
3.70	**3.70**	**7031.70**	**1.561**	**3.661**	
3.71	3.71	7031.71	1.563	3.675	
3.72	3.72	7031.72	1.565	3.690	
3.73	3.73	7031.73	1.567	3.704	
3.74	3.74	7031.74	1.569	3.718	
3.75	**3.75**	**7031.75**	**1.571**	**3.733**	
3.76	3.76	7031.76	1.573	3.747	
3.77	3.77	7031.77	1.575	3.761	
3.78	3.78	7031.78	1.577	3.775	
3.79	3.79	7031.79	1.579	3.790	
3.80	**3.80**	**7031.80**	**1.581**	**3.804**	
3.81	3.81	7031.81	1.583	3.818	
3.82	3.82	7031.82	1.585	3.833	
3.83	3.83	7031.83	1.587	3.847	
3.84	3.84	7031.84	1.589	3.861	
3.85	**3.85**	**7031.85**	**1.591**	**3.876**	
3.86	3.86	7031.86	1.593	3.890	
3.87	3.87	7031.87	1.595	3.904	
3.88	3.88	7031.88	1.597	3.918	
3.89	3.89	7031.89	1.599	3.933	
3.90	**3.90**	**7031.90**	**1.600**	**3.947**	
3.91	3.91	7031.91	1.602	3.961	
3.92	3.92	7031.92	1.604	3.976	
3.93	3.93	7031.93	1.606	3.990	
3.94	3.94	7031.94	1.608	4.004	
3.95	**3.95**	**7031.95**	**1.610**	**4.019**	
3.96	3.96	7031.96	1.612	4.033	
3.97	3.97	7031.97	1.614	4.047	
3.98	3.98	7031.98	1.616	4.061	

3.53	3.53	7117.53	0.933	1.645	
3.54	3.54	7117.54	0.934	1.654	
3.55	**3.55**	**7117.55**	0.936	1.662	
3.56	3.56	7117.56	0.938	1.670	
3.57	3.57	7117.57	0.940	1.679	
3.58	3.58	7117.58	0.942	1.687	
3.59	3.59	7117.59	0.943	1.696	
3.60	**3.60**	**7117.60**	0.945	1.704	
3.61	3.61	7117.61	0.947	1.712	
3.62	3.62	7117.62	0.949	1.721	
3.63	3.63	7117.63	0.950	1.729	
3.64	3.64	7117.64	0.952	1.738	
3.65	**3.65**	**7117.65**	0.954	1.746	
3.66	3.66	7117.66	0.956	1.754	
3.67	3.67	7117.67	0.957	1.763	
3.68	3.68	7117.68	0.959	1.771	
3.69	3.69	7117.69	0.961	1.780	
3.70	**3.70**	**7117.70**	0.963	1.788	
3.71	3.71	7117.71	0.965	1.796	
3.72	3.72	7117.72	0.966	1.805	
3.73	3.73	7117.73	0.968	1.813	
3.74	3.74	7117.74	0.970	1.822	
3.75	**3.75**	**7117.75**	0.972	1.830	
3.76	3.76	7117.76	0.973	1.838	
3.77	3.77	7117.77	0.975	1.847	
3.78	3.78	7117.78	0.977	1.855	
3.79	3.79	7117.79	0.979	1.864	
3.80	**3.80**	**7117.80**	0.980	1.872	
3.81	3.81	7117.81	0.982	1.880	
3.82	3.82	7117.82	0.984	1.889	
3.83	3.83	7117.83	0.986	1.897	
3.84	3.84	7117.84	0.988	1.906	
3.85	**3.85**	**7117.85**	0.989	1.914	
3.86	3.86	7117.86	0.991	1.922	
3.87	3.87	7117.87	0.993	1.931	
3.88	3.88	7117.88	0.995	1.939	
3.89	3.89	7117.89	0.996	1.948	
3.90	**3.90**	**7117.90**	0.998	1.956	
3.91	3.91	7117.91	1.000	1.964	
3.92	3.92	7117.92	1.002	1.973	
3.93	3.93	7117.93	1.004	1.981	
3.94	3.94	7117.94	1.005	1.990	
3.95	**3.95**	**7117.95**	1.007	1.998	
3.96	3.96	7117.96	1.009	2.006	
3.97	3.97	7117.97	1.011	2.015	
3.98	3.98	7117.98	1.012	2.023	

3.99	3.99	7031.99	1.618	4.076	
4.00	**4.00**	**7032.00**	**1.620**	**4.090**	
4.01	4.01	7032.01	1.622	4.108	
4.02	4.02	7032.02	1.624	4.126	
4.03	4.03	7032.03	1.626	4.144	
4.04	4.04	7032.04	1.628	4.163	
4.05	**4.05**	**7032.05**	**1.630**	**4.181**	
4.06	4.06	7032.06	1.632	4.199	
4.07	4.07	7032.07	1.634	4.217	
4.08	4.08	7032.08	1.636	4.235	
4.09	4.09	7032.09	1.638	4.253	
4.10	**4.10**	**7032.10**	**1.640**	**4.272**	
4.11	4.11	7032.11	1.641	4.290	
4.12	4.12	7032.12	1.643	4.308	
4.13	4.13	7032.13	1.645	4.326	
4.14	4.14	7032.14	1.647	4.344	
4.15	**4.15**	**7032.15**	**1.649**	**4.362**	
4.16	4.16	7032.16	1.651	4.380	
4.17	4.17	7032.17	1.653	4.399	
4.18	4.18	7032.18	1.655	4.417	
4.19	4.19	7032.19	1.657	4.435	
4.20	**4.20**	**7032.20**	**1.659**	**4.453**	
4.21	4.21	7032.21	1.661	4.471	
4.22	4.22	7032.22	1.663	4.489	
4.23	4.23	7032.23	1.665	4.507	
4.24	4.24	7032.24	1.667	4.526	
4.25	**4.25**	**7032.25**	**1.669**	**4.544**	
4.26	4.26	7032.26	1.671	4.562	
4.27	4.27	7032.27	1.673	4.580	
4.28	4.28	7032.28	1.675	4.598	
4.29	4.29	7032.29	1.677	4.616	
4.30	**4.30**	**7032.30**	**1.679**	**4.635**	
4.31	4.31	7032.31	1.680	4.653	
4.32	4.32	7032.32	1.682	4.671	
4.33	4.33	7032.33	1.684	4.689	
4.34	4.34	7032.34	1.686	4.707	
4.35	**4.35**	**7032.35**	**1.688**	**4.725**	
4.36	4.36	7032.36	1.690	4.743	
4.37	4.37	7032.37	1.692	4.762	
4.38	4.38	7032.38	1.694	4.780	
4.39	4.39	7032.39	1.696	4.798	
4.40	**4.40**	**7032.40**	**1.698**	**4.816**	
4.41	4.41	7032.41	1.700	4.834	
4.42	4.42	7032.42	1.702	4.852	
4.43	4.43	7032.43	1.704	4.870	
4.44	4.44	7032.44	1.706	4.889	

3.99	3.99	7117.99	1.014	2.032	
4.00	**4.00**	**7118.00**	**1.016**	**2.040**	
4.01	4.01	7118.01	1.017	2.051	
4.02	4.02	7118.02	1.018	2.063	
4.03	4.03	7118.03	1.019	2.074	
4.04	4.04	7118.04	1.020	2.085	
4.05	**4.05**	**7118.05**	**1.021**	**2.096**	
4.06	4.06	7118.06	1.022	2.108	
4.07	4.07	7118.07	1.023	2.119	
4.08	4.08	7118.08	1.024	2.130	
4.09	4.09	7118.09	1.025	2.141	
4.10	**4.10**	**7118.10**	**1.026**	**2.153**	
4.11	4.11	7118.11	1.027	2.164	
4.12	4.12	7118.12	1.029	2.175	
4.13	4.13	7118.13	1.030	2.186	
4.14	4.14	7118.14	1.031	2.198	
4.15	**4.15**	**7118.15**	**1.032**	**2.209**	
4.16	4.16	7118.16	1.033	2.220	
4.17	4.17	7118.17	1.034	2.231	
4.18	4.18	7118.18	1.035	2.243	
4.19	4.19	7118.19	1.036	2.254	
4.20	**4.20**	**7118.20**	**1.037**	**2.265**	
4.21	4.21	7118.21	1.038	2.276	
4.22	4.22	7118.22	1.039	2.288	
4.23	4.23	7118.23	1.041	2.299	
4.24	4.24	7118.24	1.042	2.310	
4.25	**4.25**	**7118.25**	**1.043**	**2.321**	
4.26	4.26	7118.26	1.044	2.333	
4.27	4.27	7118.27	1.045	2.344	
4.28	4.28	7118.28	1.046	2.355	
4.29	4.29	7118.29	1.047	2.366	
4.30	**4.30**	**7118.30**	**1.048**	**2.378**	
4.31	4.31	7118.31	1.049	2.389	
4.32	4.32	7118.32	1.050	2.400	
4.33	4.33	7118.33	1.051	2.411	
4.34	4.34	7118.34	1.053	2.423	
4.35	**4.35**	**7118.35**	**1.054**	**2.434**	
4.36	4.36	7118.36	1.055	2.445	
4.37	4.37	7118.37	1.056	2.456	
4.38	4.38	7118.38	1.057	2.468	
4.39	4.39	7118.39	1.058	2.479	
4.40	**4.40**	**7118.40**	**1.059**	**2.490**	
4.41	4.41	7118.41	1.060	2.501	
4.42	4.42	7118.42	1.061	2.513	
4.43	4.43	7118.43	1.062	2.524	
4.44	4.44	7118.44	1.063	2.535	

4.45	**4.45**	**7032.45**	**1.708**	**4.907**	
4.46	4.46	7032.46	1.710	4.925	
4.47	4.47	7032.47	1.712	4.943	
4.48	4.48	7032.48	1.714	4.961	
4.49	4.49	7032.49	1.716	4.979	
4.50	**4.50**	**7032.50**	**1.717**	**4.998**	
4.51	4.51	7032.51	1.719	5.016	
4.52	4.52	7032.52	1.721	5.034	
4.53	4.53	7032.53	1.723	5.052	
4.54	4.54	7032.54	1.725	5.070	
4.55	**4.55**	**7032.55**	**1.727**	**5.088**	
4.56	4.56	7032.56	1.729	5.106	
4.57	4.57	7032.57	1.731	5.125	
4.58	4.58	7032.58	1.733	5.143	
4.59	4.59	7032.59	1.735	5.161	
4.60	**4.60**	**7032.60**	**1.737**	**5.179**	
4.61	4.61	7032.61	1.739	5.197	
4.62	4.62	7032.62	1.741	5.215	
4.63	4.63	7032.63	1.743	5.233	
4.64	4.64	7032.64	1.745	5.252	
4.65	**4.65**	**7032.65**	**1.747**	**5.270**	
4.66	4.66	7032.66	1.749	5.288	
4.67	4.67	7032.67	1.751	5.306	
4.68	4.68	7032.68	1.753	5.324	
4.69	4.69	7032.69	1.755	5.342	
4.70	**4.70**	**7032.70**	**1.756**	**5.361**	
4.71	4.71	7032.71	1.758	5.379	
4.72	4.72	7032.72	1.760	5.397	
4.73	4.73	7032.73	1.762	5.415	
4.74	4.74	7032.74	1.764	5.433	
4.75	**4.75**	**7032.75**	**1.766**	**5.451**	
4.76	4.76	7032.76	1.768	5.469	
4.77	4.77	7032.77	1.770	5.488	
4.78	4.78	7032.78	1.772	5.506	
4.79	4.79	7032.79	1.774	5.524	
4.80	**4.80**	**7032.80**	**1.776**	**5.542**	
4.81	4.81	7032.81	1.778	5.560	
4.82	4.82	7032.82	1.780	5.578	
4.83	4.83	7032.83	1.782	5.596	
4.84	4.84	7032.84	1.784	5.615	
4.85	**4.85**	**7032.85**	**1.786**	**5.633**	
4.86	4.86	7032.86	1.788	5.651	
4.87	4.87	7032.87	1.790	5.669	
4.88	4.88	7032.88	1.792	5.687	
4.89	4.89	7032.89	1.794	5.705	
4.90	**4.90**	**7032.90**	**1.795**	**5.724**	

4.45	**4.45**	**7118.45**	**1.065**	**2.546**	
4.46	4.46	7118.46	1.066	2.558	
4.47	4.47	7118.47	1.067	2.569	
4.48	4.48	7118.48	1.068	2.580	
4.49	4.49	7118.49	1.069	2.591	
4.50	**4.50**	**7118.50**	**1.070**	**2.603**	
4.51	4.51	7118.51	1.071	2.614	
4.52	4.52	7118.52	1.072	2.625	
4.53	4.53	7118.53	1.073	2.636	
4.54	4.54	7118.54	1.074	2.648	
4.55	**4.55**	**7118.55**	**1.075**	**2.659**	
4.56	4.56	7118.56	1.077	2.670	
4.57	4.57	7118.57	1.078	2.681	
4.58	4.58	7118.58	1.079	2.693	
4.59	4.59	7118.59	1.080	2.704	
4.60	**4.60**	**7118.60**	**1.081**	**2.715**	
4.61	4.61	7118.61	1.082	2.726	
4.62	4.62	7118.62	1.083	2.738	
4.63	4.63	7118.63	1.084	2.749	
4.64	4.64	7118.64	1.085	2.760	
4.65	**4.65**	**7118.65**	**1.086**	**2.771**	
4.66	4.66	7118.66	1.087	2.783	
4.67	4.67	7118.67	1.089	2.794	
4.68	4.68	7118.68	1.090	2.805	
4.69	4.69	7118.69	1.091	2.816	
4.70	**4.70**	**7118.70**	**1.092**	**2.828**	
4.71	4.71	7118.71	1.093	2.839	
4.72	4.72	7118.72	1.094	2.850	
4.73	4.73	7118.73	1.095	2.861	
4.74	4.74	7118.74	1.096	2.873	
4.75	**4.75**	**7118.75**	**1.097**	**2.884**	
4.76	4.76	7118.76	1.098	2.895	
4.77	4.77	7118.77	1.099	2.906	
4.78	4.78	7118.78	1.101	2.918	
4.79	4.79	7118.79	1.102	2.929	
4.80	**4.80**	**7118.80**	**1.103**	**2.940**	
4.81	4.81	7118.81	1.104	2.951	
4.82	4.82	7118.82	1.105	2.963	
4.83	4.83	7118.83	1.106	2.974	
4.84	4.84	7118.84	1.107	2.985	
4.85	**4.85**	**7118.85**	**1.108**	**2.996**	
4.86	4.86	7118.86	1.109	3.008	
4.87	4.87	7118.87	1.110	3.019	
4.88	4.88	7118.88	1.111	3.030	
4.89	4.89	7118.89	1.113	3.041	
4.90	**4.90**	**7118.90**	**1.114**	**3.053**	

4.91	4.91	7032.91	1.797	5.742	
4.92	4.92	7032.92	1.799	5.760	
4.93	4.93	7032.93	1.801	5.778	
4.94	4.94	7032.94	1.803	5.796	
4.95	**4.95**	**7032.95**	**1.805**	**5.814**	
4.96	4.96	7032.96	1.807	5.832	
4.97	4.97	7032.97	1.809	5.851	
4.98	4.98	7032.98	1.811	5.869	
4.99	4.99	7032.99	1.813	5.887	
5.00	**5.00**	**7033.00**	**1.815**	**5.905**	
5.01	5.01	7033.01	1.817	5.923	
5.02	5.02	7033.02	1.819	5.941	
5.03	5.03	7033.03	1.821	5.959	
5.04	5.04	7033.04	1.823	5.978	
5.05	**5.05**	**7033.05**	**1.825**	**5.996**	
5.06	5.06	7033.06	1.827	6.014	
5.07	5.07	7033.07	1.829	6.032	
5.08	5.08	7033.08	1.831	6.050	
5.09	5.09	7033.09	1.833	6.068	
5.10	**5.10**	**7033.10**	**1.834**	**6.087**	
5.11	5.11	7033.11	1.836	6.105	
5.12	5.12	7033.12	1.838	6.123	
5.13	5.13	7033.13	1.840	6.141	
5.14	5.14	7033.14	1.842	6.159	
5.15	**5.15**	**7033.15**	**1.844**	**6.177**	
5.16	5.16	7033.16	1.846	6.195	
5.17	5.17	7033.17	1.848	6.214	
5.18	5.18	7033.18	1.850	6.232	
5.19	5.19	7033.19	1.852	6.250	
5.20	**5.20**	**7033.20**	**1.854**	**6.268**	
5.21	5.21	7033.21	1.856	6.286	
5.22	5.22	7033.22	1.858	6.304	
5.23	5.23	7033.23	1.860	6.322	
5.24	5.24	7033.24	1.862	6.341	
5.25	**5.25**	**7033.25**	**1.864**	**6.359**	
5.26	5.26	7033.26	1.866	6.377	
5.27	5.27	7033.27	1.868	6.395	
5.28	5.28	7033.28	1.870	6.413	
5.29	5.29	7033.29	1.872	6.431	
5.30	**5.30**	**7033.30**	**1.873**	**6.450**	
5.31	5.31	7033.31	1.875	6.468	
5.32	5.32	7033.32	1.877	6.486	
5.33	5.33	7033.33	1.879	6.504	
5.34	5.34	7033.34	1.881	6.522	
5.35	**5.35**	**7033.35**	**1.883**	**6.540**	
5.36	5.36	7033.36	1.885	6.558	

4.91	4.91	7118.91	1.115	3.064	
4.92	4.92	7118.92	1.116	3.075	
4.93	4.93	7118.93	1.117	3.086	
4.94	4.94	7118.94	1.118	3.098	
4.95	**4.95**	**7118.95**	**1.119**	**3.109**	
4.96	4.96	7118.96	1.120	3.120	
4.97	4.97	7118.97	1.121	3.131	
4.98	4.98	7118.98	1.122	3.143	
4.99	4.99	7118.99	1.123	3.154	
5.00	**5.00**	**7119.00**	**1.125**	**3.165**	
5.01	5.01	7119.01	1.126	3.176	
5.02	5.02	7119.02	1.127	3.188	
5.03	5.03	7119.03	1.128	3.199	
5.04	5.04	7119.04	1.129	3.210	
5.05	**5.05**	**7119.05**	**1.130**	**3.221**	
5.06	5.06	7119.06	1.131	3.233	
5.07	5.07	7119.07	1.132	3.244	
5.08	5.08	7119.08	1.133	3.255	
5.09	5.09	7119.09	1.134	3.266	
5.10	**5.10**	**7119.10**	**1.135**	**3.278**	
5.11	5.11	7119.11	1.136	3.289	
5.12	5.12	7119.12	1.138	3.300	
5.13	5.13	7119.13	1.139	3.311	
5.14	5.14	7119.14	1.140	3.323	
5.15	**5.15**	**7119.15**	**1.141**	**3.334**	
5.16	5.16	7119.16	1.142	3.345	
5.17	5.17	7119.17	1.143	3.356	
5.18	5.18	7119.18	1.144	3.368	
5.19	5.19	7119.19	1.145	3.379	
5.20	**5.20**	**7119.20**	**1.146**	**3.390**	
5.21	5.21	7119.21	1.147	3.401	
5.22	5.22	7119.22	1.148	3.413	
5.23	5.23	7119.23	1.150	3.424	
5.24	5.24	7119.24	1.151	3.435	
5.25	**5.25**	**7119.25**	**1.152**	**3.446**	
5.26	5.26	7119.26	1.153	3.458	
5.27	5.27	7119.27	1.154	3.469	
5.28	5.28	7119.28	1.155	3.480	
5.29	5.29	7119.29	1.156	3.491	
5.30	**5.30**	**7119.30**	**1.157**	**3.503**	
5.31	5.31	7119.31	1.158	3.514	
5.32	5.32	7119.32	1.159	3.525	
5.33	5.33	7119.33	1.160	3.536	
5.34	5.34	7119.34	1.162	3.548	
5.35	**5.35**	**7119.35**	**1.163**	**3.559**	
5.36	5.36	7119.36	1.164	3.570	

5.37	5.37	7033.37	1.887	6.577	
5.38	5.38	7033.38	1.889	6.595	
5.39	5.39	7033.39	1.891	6.613	
5.40	**5.40**	**7033.40**	**1.893**	**6.631**	
5.41	5.41	7033.41	1.895	6.649	
5.42	5.42	7033.42	1.897	6.667	
5.43	5.43	7033.43	1.899	6.685	
5.44	5.44	7033.44	1.901	6.704	
5.45	**5.45**	**7033.45**	**1.903**	**6.722**	
5.46	5.46	7033.46	1.905	6.740	
5.47	5.47	7033.47	1.907	6.758	
5.48	5.48	7033.48	1.909	6.776	
5.49	5.49	7033.49	1.911	6.794	
5.50	**5.50**	**7033.50**	**1.912**	**6.813**	
5.51	5.51	7033.51	1.914	6.831	
5.52	5.52	7033.52	1.916	6.849	
5.53	5.53	7033.53	1.918	6.867	
5.54	5.54	7033.54	1.920	6.885	
5.55	**5.55**	**7033.55**	**1.922**	**6.903**	
5.56	5.56	7033.56	1.924	6.921	
5.57	5.57	7033.57	1.926	6.940	
5.58	5.58	7033.58	1.928	6.958	
5.59	5.59	7033.59	1.930	6.976	
5.60	**5.60**	**7033.60**	**1.932**	**6.994**	
5.61	5.61	7033.61	1.934	7.012	
5.62	5.62	7033.62	1.936	7.030	
5.63	5.63	7033.63	1.938	7.048	
5.64	5.64	7033.64	1.940	7.067	
5.65	**5.65**	**7033.65**	**1.942**	**7.085**	
5.66	5.66	7033.66	1.944	7.103	
5.67	5.67	7033.67	1.946	7.121	
5.68	5.68	7033.68	1.948	7.139	
5.69	5.69	7033.69	1.950	7.157	
5.70	**5.70**	**7033.70**	**1.951**	**7.176**	
5.71	5.71	7033.71	1.953	7.194	
5.72	5.72	7033.72	1.955	7.212	
5.73	5.73	7033.73	1.957	7.230	
5.74	5.74	7033.74	1.959	7.248	
5.75	**5.75**	**7033.75**	**1.961**	**7.266**	
5.76	5.76	7033.76	1.963	7.284	
5.77	5.77	7033.77	1.965	7.303	
5.78	5.78	7033.78	1.967	7.321	
5.79	5.79	7033.79	1.969	7.339	
5.80	**5.80**	**7033.80**	**1.971**	**7.357**	
5.81	5.81	7033.81	1.973	7.375	
5.82	5.82	7033.82	1.975	7.393	

5.37	5.37	7119.37	1.165	3.581	
5.38	5.38	7119.38	1.166	3.593	
5.39	5.39	7119.39	1.167	3.604	
5.40	**5.40**	**7119.40**	**1.168**	**3.615**	
5.41	5.41	7119.41	1.169	3.626	
5.42	5.42	7119.42	1.170	3.638	
5.43	5.43	7119.43	1.171	3.649	
5.44	5.44	7119.44	1.172	3.660	
5.45	**5.45**	**7119.45**	**1.174**	**3.671**	
5.46	5.46	7119.46	1.175	3.683	
5.47	5.47	7119.47	1.176	3.694	
5.48	5.48	7119.48	1.177	3.705	
5.49	5.49	7119.49	1.178	3.716	
5.50	**5.50**	**7119.50**	**1.179**	**3.728**	
5.51	5.51	7119.51	1.180	3.739	
5.52	5.52	7119.52	1.181	3.750	
5.53	5.53	7119.53	1.182	3.761	
5.54	5.54	7119.54	1.183	3.773	
5.55	**5.55**	**7119.55**	**1.184**	**3.784**	
5.56	5.56	7119.56	1.186	3.795	
5.57	5.57	7119.57	1.187	3.806	
5.58	5.58	7119.58	1.188	3.818	
5.59	5.59	7119.59	1.189	3.829	
5.60	**5.60**	**7119.60**	**1.190**	**3.840**	
5.61	5.61	7119.61	1.191	3.851	
5.62	5.62	7119.62	1.192	3.863	
5.63	5.63	7119.63	1.193	3.874	
5.64	5.64	7119.64	1.194	3.885	
5.65	**5.65**	**7119.65**	**1.195**	**3.896**	
5.66	5.66	7119.66	1.196	3.908	
5.67	5.67	7119.67	1.198	3.919	
5.68	5.68	7119.68	1.199	3.930	
5.69	5.69	7119.69	1.200	3.941	
5.70	**5.70**	**7119.70**	**1.201**	**3.953**	
5.71	5.71	7119.71	1.202	3.964	
5.72	5.72	7119.72	1.203	3.975	
5.73	5.73	7119.73	1.204	3.986	
5.74	5.74	7119.74	1.205	3.998	
5.75	**5.75**	**7119.75**	**1.206**	**4.009**	
5.76	5.76	7119.76	1.207	4.020	
5.77	5.77	7119.77	1.208	4.031	
5.78	5.78	7119.78	1.210	4.043	
5.79	5.79	7119.79	1.211	4.054	
5.80	**5.80**	**7119.80**	**1.212**	**4.065**	
5.81	5.81	7119.81	1.213	4.076	
5.82	5.82	7119.82	1.214	4.088	

5.83	5.83	7033.83	1.977	7.411	
5.84	5.84	7033.84	1.979	7.430	
5.85	**5.85**	**7033.85**	**1.981**	**7.448**	
5.86	5.86	7033.86	1.983	7.466	
5.87	5.87	7033.87	1.985	7.484	
5.88	5.88	7033.88	1.987	7.502	
5.89	5.89	7033.89	1.989	7.520	
5.90	**5.90**	**7033.90**	**1.990**	**7.539**	
5.91	5.91	7033.91	1.992	7.557	
5.92	5.92	7033.92	1.994	7.575	
5.93	5.93	7033.93	1.996	7.593	
5.94	5.94	7033.94	1.998	7.611	
5.95	**5.95**	**7033.95**	**2.000**	**7.629**	
5.96	5.96	7033.96	2.002	7.647	
5.97	5.97	7033.97	2.004	7.666	
5.98	5.98	7033.98	2.006	7.684	
5.99	5.99	7033.99	2.008	7.702	
6.00	**6.00**	**7034.00**	**2.010**	**7.720**	
6.01	6.01	7034.01	2.013	7.743	
6.02	6.02	7034.02	2.015	7.765	
6.03	6.03	7034.03	2.018	7.788	
6.04	6.04	7034.04	2.020	7.811	
6.05	**6.05**	**7034.05**	**2.023**	**7.833**	
6.06	6.06	7034.06	2.025	7.856	
6.07	6.07	7034.07	2.028	7.879	
6.08	6.08	7034.08	2.030	7.901	
6.09	6.09	7034.09	2.033	7.924	
6.10	**6.10**	**7034.10**	**2.035**	**7.947**	
6.11	6.11	7034.11	2.038	7.969	
6.12	6.12	7034.12	2.040	7.992	
6.13	6.13	7034.13	2.043	8.014	
6.14	6.14	7034.14	2.045	8.037	
6.15	**6.15**	**7034.15**	**2.048**	**8.060**	
6.16	6.16	7034.16	2.050	8.082	
6.17	6.17	7034.17	2.053	8.105	
6.18	6.18	7034.18	2.056	8.128	
6.19	6.19	7034.19	2.058	8.150	
6.20	**6.20**	**7034.20**	**2.061**	**8.173**	
6.21	6.21	7034.21	2.063	8.196	
6.22	6.22	7034.22	2.066	8.218	
6.23	6.23	7034.23	2.068	8.241	
6.24	6.24	7034.24	2.071	8.264	
6.25	**6.25**	**7034.25**	**2.073**	**8.286**	
6.26	6.26	7034.26	2.076	8.309	
6.27	6.27	7034.27	2.078	8.332	
6.28	6.28	7034.28	2.081	8.354	

5.83	5.83	7119.83	1.215	4.099	
5.84	5.84	7119.84	1.216	4.110	
5.85	**5.85**	**7119.85**	**1.217**	**4.121**	
5.86	5.86	7119.86	1.218	4.133	
5.87	5.87	7119.87	1.219	4.144	
5.88	5.88	7119.88	1.220	4.155	
5.89	5.89	7119.89	1.222	4.166	
5.90	**5.90**	**7119.90**	**1.223**	**4.178**	
5.91	5.91	7119.91	1.224	4.189	
5.92	5.92	7119.92	1.225	4.200	
5.93	5.93	7119.93	1.226	4.211	
5.94	5.94	7119.94	1.227	4.223	
5.95	**5.95**	**7119.95**	**1.228**	**4.234**	
5.96	5.96	7119.96	1.229	4.245	
5.97	5.97	7119.97	1.230	4.256	
5.98	5.98	7119.98	1.231	4.268	
5.99	5.99	7119.99	1.232	4.279	
6.00	**6.00**	**7120.00**	**1.234**	**4.290**	**Spillway / NWS**
6.01	6.01	7120.01	1.235	4.302	
6.02	6.02	7120.02	1.237	4.315	
6.03	6.03	7120.03	1.239	4.327	
6.04	6.04	7120.04	1.241	4.339	
6.05	**6.05**	**7120.05**	**1.243**	**4.352**	
6.06	6.06	7120.06	1.245	4.364	
6.07	6.07	7120.07	1.246	4.376	
6.08	6.08	7120.08	1.248	4.389	
6.09	6.09	7120.09	1.250	4.401	
6.10	**6.10**	**7120.10**	**1.252**	**4.414**	
6.11	6.11	7120.11	1.254	4.426	
6.12	6.12	7120.12	1.256	4.438	
6.13	6.13	7120.13	1.257	4.451	
6.14	6.14	7120.14	1.259	4.463	
6.15	**6.15**	**7120.15**	**1.261**	**4.475**	
6.16	6.16	7120.16	1.263	4.488	
6.17	6.17	7120.17	1.265	4.500	
6.18	6.18	7120.18	1.267	4.512	
6.19	6.19	7120.19	1.268	4.525	
6.20	**6.20**	**7120.20**	**1.270**	**4.537**	
6.21	6.21	7120.21	1.272	4.549	
6.22	6.22	7120.22	1.274	4.562	
6.23	6.23	7120.23	1.276	4.574	
6.24	6.24	7120.24	1.278	4.586	
6.25	**6.25**	**7120.25**	**1.280**	**4.599**	
6.26	6.26	7120.26	1.281	4.611	
6.27	6.27	7120.27	1.283	4.623	
6.28	6.28	7120.28	1.285	4.636	

6.29	6.29	7034.29	2.083	8.377	
6.30	**6.30**	**7034.30**	**2.086**	**8.400**	
6.31	6.31	7034.31	2.088	8.422	
6.32	6.32	7034.32	2.091	8.445	
6.33	6.33	7034.33	2.093	8.467	
6.34	6.34	7034.34	2.096	8.490	
6.35	**6.35**	**7034.35**	**2.099**	**8.513**	
6.36	6.36	7034.36	2.101	8.535	
6.37	6.37	7034.37	2.104	8.558	
6.38	6.38	7034.38	2.106	8.581	
6.39	6.39	7034.39	2.109	8.603	
6.40	**6.40**	**7034.40**	**2.111**	**8.626**	
6.41	6.41	7034.41	2.114	8.649	
6.42	6.42	7034.42	2.116	8.671	
6.43	6.43	7034.43	2.119	8.694	
6.44	6.44	7034.44	2.121	8.717	
6.45	**6.45**	**7034.45**	**2.124**	**8.739**	
6.46	6.46	7034.46	2.126	8.762	
6.47	6.47	7034.47	2.129	8.785	
6.48	6.48	7034.48	2.131	8.807	
6.49	6.49	7034.49	2.134	8.830	
6.50	**6.50**	**7034.50**	**2.137**	**8.853**	
6.51	6.51	7034.51	2.139	8.875	
6.52	6.52	7034.52	2.142	8.898	
6.53	6.53	7034.53	2.144	8.920	
6.54	6.54	7034.54	2.147	8.943	
6.55	**6.55**	**7034.55**	**2.149**	**8.966**	
6.56	6.56	7034.56	2.152	8.988	
6.57	6.57	7034.57	2.154	9.011	
6.58	6.58	7034.58	2.157	9.034	
6.59	6.59	7034.59	2.159	9.056	
6.60	**6.60**	**7034.60**	**2.162**	**9.079**	
6.61	6.61	7034.61	2.164	9.102	
6.62	6.62	7034.62	2.167	9.124	
6.63	6.63	7034.63	2.169	9.147	
6.64	6.64	7034.64	2.172	9.170	
6.65	**6.65**	**7034.65**	**2.174**	**9.192**	
6.66	6.66	7034.66	2.177	9.215	
6.67	6.67	7034.67	2.180	9.238	
6.68	6.68	7034.68	2.182	9.260	
6.69	6.69	7034.69	2.185	9.283	
6.70	**6.70**	**7034.70**	**2.187**	**9.306**	
6.71	6.71	7034.71	2.190	9.328	
6.72	6.72	7034.72	2.192	9.351	
6.73	6.73	7034.73	2.195	9.373	
6.74	6.74	7034.74	2.197	9.396	

6.29	6.29	7120.29	1.287	4.648	
6.30	**6.30**	**7120.30**	**1.289**	**4.661**	
6.31	6.31	7120.31	1.291	4.673	
6.32	6.32	7120.32	1.292	4.685	
6.33	6.33	7120.33	1.294	4.698	
6.34	6.34	7120.34	1.296	4.710	
6.35	**6.35**	**7120.35**	**1.298**	**4.722**	
6.36	6.36	7120.36	1.300	4.735	
6.37	6.37	7120.37	1.302	4.747	
6.38	6.38	7120.38	1.303	4.759	
6.39	6.39	7120.39	1.305	4.772	
6.40	**6.40**	**7120.40**	**1.307**	**4.784**	
6.41	6.41	7120.41	1.309	4.796	
6.42	6.42	7120.42	1.311	4.809	
6.43	6.43	7120.43	1.313	4.821	
6.44	6.44	7120.44	1.314	4.833	
6.45	**6.45**	**7120.45**	**1.316**	**4.846**	
6.46	6.46	7120.46	1.318	4.858	
6.47	6.47	7120.47	1.320	4.870	
6.48	6.48	7120.48	1.322	4.883	
6.49	6.49	7120.49	1.324	4.895	
6.50	**6.50**	**7120.50**	**1.326**	**4.907**	
6.51	6.51	7120.51	1.327	4.920	
6.52	6.52	7120.52	1.329	4.932	
6.53	6.53	7120.53	1.331	4.945	
6.54	6.54	7120.54	1.333	4.957	
6.55	**6.55**	**7120.55**	**1.335**	**4.969**	
6.56	6.56	7120.56	1.337	4.982	
6.57	6.57	7120.57	1.338	4.994	
6.58	6.58	7120.58	1.340	5.006	
6.59	6.59	7120.59	1.342	5.019	
6.60	**6.60**	**7120.60**	**1.344**	**5.031**	
6.61	6.61	7120.61	1.346	5.043	
6.62	6.62	7120.62	1.348	5.056	
6.63	6.63	7120.63	1.349	5.068	
6.64	6.64	7120.64	1.351	5.080	
6.65	**6.65**	**7120.65**	**1.353**	**5.093**	
6.66	6.66	7120.66	1.355	5.105	
6.67	6.67	7120.67	1.357	5.117	
6.68	6.68	7120.68	1.359	5.130	
6.69	6.69	7120.69	1.360	5.142	
6.70	**6.70**	**7120.70**	**1.362**	**5.154**	
6.71	6.71	7120.71	1.364	5.167	
6.72	6.72	7120.72	1.366	5.179	
6.73	6.73	7120.73	1.368	5.192	
6.74	6.74	7120.74	1.370	5.204	

6.75	**6.75**	**7034.75**	**2.200**	**9.419**	
6.76	6.76	7034.76	2.202	9.441	
6.77	6.77	7034.77	2.205	9.464	
6.78	6.78	7034.78	2.207	9.487	
6.79	6.79	7034.79	2.210	9.509	
6.80	**6.80**	**7034.80**	**2.212**	**9.532**	
6.81	6.81	7034.81	2.215	9.555	
6.82	6.82	7034.82	2.217	9.577	
6.83	6.83	7034.83	2.220	9.600	
6.84	6.84	7034.84	2.223	9.623	
6.85	**6.85**	**7034.85**	**2.225**	**9.645**	
6.86	6.86	7034.86	2.228	9.668	
6.87	6.87	7034.87	2.230	9.691	
6.88	6.88	7034.88	2.233	9.713	
6.89	6.89	7034.89	2.235	9.736	
6.90	**6.90**	**7034.90**	**2.238**	**9.759**	
6.91	6.91	7034.91	2.240	9.781	
6.92	6.92	7034.92	2.243	9.804	
6.93	6.93	7034.93	2.245	9.826	
6.94	6.94	7034.94	2.248	9.849	
6.95	**6.95**	**7034.95**	**2.250**	**9.872**	
6.96	6.96	7034.96	2.253	9.894	
6.97	6.97	7034.97	2.255	9.917	
6.98	6.98	7034.98	2.258	9.940	
6.99	6.99	7034.99	2.260	9.962	
7.00	**7.00**	**7035.00**	**2.263**	**9.985**	
7.01	7.01	7035.01	2.266	10.008	
7.02	7.02	7035.02	2.268	10.030	
7.03	7.03	7035.03	2.271	10.053	
7.04	7.04	7035.04	2.273	10.076	
7.05	**7.05**	**7035.05**	**2.276**	**10.098**	
7.06	7.06	7035.06	2.278	10.121	
7.07	7.07	7035.07	2.281	10.144	
7.08	7.08	7035.08	2.283	10.166	
7.09	7.09	7035.09	2.286	10.189	
7.10	**7.10**	**7035.10**	**2.288**	**10.212**	
7.11	7.11	7035.11	2.291	10.234	
7.12	7.12	7035.12	2.293	10.257	
7.13	7.13	7035.13	2.296	10.279	
7.14	7.14	7035.14	2.298	10.302	
7.15	**7.15**	**7035.15**	**2.301**	**10.325**	
7.16	7.16	7035.16	2.303	10.347	
7.17	7.17	7035.17	2.306	10.370	
7.18	7.18	7035.18	2.309	10.393	
7.19	7.19	7035.19	2.311	10.415	
7.20	**7.20**	**7035.20**	**2.314**	**10.438**	

6.75	**6.75**	**7120.75**	**1.372**	**5.216**	
6.76	6.76	7120.76	1.373	5.229	
6.77	6.77	7120.77	1.375	5.241	
6.78	6.78	7120.78	1.377	5.253	
6.79	6.79	7120.79	1.379	5.266	
6.80	**6.80**	**7120.80**	**1.381**	**5.278**	
6.81	6.81	7120.81	1.383	5.290	
6.82	6.82	7120.82	1.384	5.303	
6.83	6.83	7120.83	1.386	5.315	
6.84	6.84	7120.84	1.388	5.327	
6.85	**6.85**	**7120.85**	**1.390**	**5.340**	
6.86	6.86	7120.86	1.392	5.352	
6.87	6.87	7120.87	1.394	5.364	
6.88	6.88	7120.88	1.395	5.377	
6.89	6.89	7120.89	1.397	5.389	
6.90	**6.90**	**7120.90**	**1.399**	**5.401**	
6.91	6.91	7120.91	1.401	5.414	
6.92	6.92	7120.92	1.403	5.426	
6.93	6.93	7120.93	1.405	5.439	
6.94	6.94	7120.94	1.406	5.451	
6.95	**6.95**	**7120.95**	**1.408**	**5.463**	
6.96	6.96	7120.96	1.410	5.476	
6.97	6.97	7120.97	1.412	5.488	
6.98	6.98	7120.98	1.414	5.500	
6.99	6.99	7120.99	1.416	5.513	
7.00	**7.00**	**7121.00**	**1.418**	**5.525**	
7.01	7.01	7121.01	1.419	5.537	
7.02	7.02	7121.02	1.421	5.550	
7.03	7.03	7121.03	1.423	5.562	
7.04	7.04	7121.04	1.425	5.574	
7.05	**7.05**	**7121.05**	**1.427**	**5.587**	
7.06	7.06	7121.06	1.429	5.599	
7.07	7.07	7121.07	1.430	5.611	
7.08	7.08	7121.08	1.432	5.624	
7.09	7.09	7121.09	1.434	5.636	
7.10	**7.10**	**7121.10**	**1.436**	**5.648**	
7.11	7.11	7121.11	1.438	5.661	
7.12	7.12	7121.12	1.440	5.673	
7.13	7.13	7121.13	1.441	5.686	
7.14	7.14	7121.14	1.443	5.698	
7.15	**7.15**	**7121.15**	**1.445**	**5.710**	
7.16	7.16	7121.16	1.447	5.723	
7.17	7.17	7121.17	1.449	5.735	
7.18	7.18	7121.18	1.451	5.747	
7.19	7.19	7121.19	1.452	5.760	
7.20	**7.20**	**7121.20**	**1.454**	**5.772**	

7.21	7.21	7035.21	2.316	10.461	
7.22	7.22	7035.22	2.319	10.483	
7.23	7.23	7035.23	2.321	10.506	
7.24	7.24	7035.24	2.324	10.529	
7.25	**7.25**	**7035.25**	**2.326**	**10.551**	
7.26	7.26	7035.26	2.329	10.574	
7.27	7.27	7035.27	2.331	10.597	
7.28	7.28	7035.28	2.334	10.619	
7.29	7.29	7035.29	2.336	10.642	
7.30	**7.30**	**7035.30**	**2.339**	**10.665**	
7.31	7.31	7035.31	2.341	10.687	
7.32	7.32	7035.32	2.344	10.710	
7.33	7.33	7035.33	2.346	10.732	
7.34	7.34	7035.34	2.349	10.755	
7.35	**7.35**	**7035.35**	**2.352**	**10.778**	
7.36	7.36	7035.36	2.354	10.800	
7.37	7.37	7035.37	2.357	10.823	
7.38	7.38	7035.38	2.359	10.846	
7.39	7.39	7035.39	2.362	10.868	
7.40	**7.40**	**7035.40**	**2.364**	**10.891**	
7.41	7.41	7035.41	2.367	10.914	
7.42	7.42	7035.42	2.369	10.936	
7.43	7.43	7035.43	2.372	10.959	
7.44	7.44	7035.44	2.374	10.982	
7.45	**7.45**	**7035.45**	**2.377**	**11.004**	
7.46	7.46	7035.46	2.379	11.027	
7.47	7.47	7035.47	2.382	11.050	
7.48	7.48	7035.48	2.384	11.072	
7.49	7.49	7035.49	2.387	11.095	
7.50	**7.50**	**7035.50**	**2.390**	**11.118**	
7.51	7.51	7035.51	2.392	11.140	
7.52	7.52	7035.52	2.395	11.163	
7.53	7.53	7035.53	2.397	11.185	
7.54	7.54	7035.54	2.400	11.208	
7.55	**7.55**	**7035.55**	**2.402**	**11.231**	
7.56	7.56	7035.56	2.405	11.253	
7.57	7.57	7035.57	2.407	11.276	
7.58	7.58	7035.58	2.410	11.299	
7.59	7.59	7035.59	2.412	11.321	
7.60	**7.60**	**7035.60**	**2.415**	**11.344**	
7.61	7.61	7035.61	2.417	11.367	
7.62	7.62	7035.62	2.420	11.389	
7.63	7.63	7035.63	2.422	11.412	
7.64	7.64	7035.64	2.425	11.435	
7.65	**7.65**	**7035.65**	**2.427**	**11.457**	
7.66	7.66	7035.66	2.430	11.480	

7.21	7.21	7121.21	1.456	5.784	
7.22	7.22	7121.22	1.458	5.797	
7.23	7.23	7121.23	1.460	5.809	
7.24	7.24	7121.24	1.462	5.821	
7.25	**7.25**	**7121.25**	**1.464**	**5.834**	
7.26	7.26	7121.26	1.465	5.846	
7.27	7.27	7121.27	1.467	5.858	
7.28	7.28	7121.28	1.469	5.871	
7.29	7.29	7121.29	1.471	5.883	
7.30	**7.30**	**7121.30**	**1.473**	**5.895**	
7.31	7.31	7121.31	1.475	5.908	
7.32	7.32	7121.32	1.476	5.920	
7.33	7.33	7121.33	1.478	5.933	
7.34	7.34	7121.34	1.480	5.945	
7.35	**7.35**	**7121.35**	**1.482**	**5.957**	
7.36	7.36	7121.36	1.484	5.970	
7.37	7.37	7121.37	1.486	5.982	
7.38	7.38	7121.38	1.487	5.994	
7.39	7.39	7121.39	1.489	6.007	
7.40	**7.40**	**7121.40**	**1.491**	**6.019**	
7.41	7.41	7121.41	1.493	6.031	
7.42	7.42	7121.42	1.495	6.044	
7.43	7.43	7121.43	1.497	6.056	
7.44	7.44	7121.44	1.498	6.068	
7.45	**7.45**	**7121.45**	**1.500**	**6.081**	
7.46	7.46	7121.46	1.502	6.093	
7.47	7.47	7121.47	1.504	6.105	
7.48	7.48	7121.48	1.506	6.118	
7.49	7.49	7121.49	1.508	6.130	
7.50	**7.50**	**7121.50**	**1.510**	**6.142**	
7.51	7.51	7121.51	1.511	6.155	
7.52	7.52	7121.52	1.513	6.167	
7.53	7.53	7121.53	1.515	6.180	
7.54	7.54	7121.54	1.517	6.192	
7.55	**7.55**	**7121.55**	**1.519**	**6.204**	
7.56	7.56	7121.56	1.521	6.217	
7.57	7.57	7121.57	1.522	6.229	
7.58	7.58	7121.58	1.524	6.241	
7.59	7.59	7121.59	1.526	6.254	
7.60	**7.60**	**7121.60**	**1.528**	**6.266**	
7.61	7.61	7121.61	1.530	6.278	
7.62	7.62	7121.62	1.532	6.291	
7.63	7.63	7121.63	1.533	6.303	
7.64	7.64	7121.64	1.535	6.315	
7.65	**7.65**	**7121.65**	**1.537**	**6.328**	
7.66	7.66	7121.66	1.539	6.340	

7.67	7.67	7035.67	2.433	11.503	
7.68	7.68	7035.68	2.435	11.525	
7.69	7.69	7035.69	2.438	11.548	
7.70	**7.70**	**7035.70**	**2.440**	**11.571**	
7.71	7.71	7035.71	2.443	11.593	
7.72	7.72	7035.72	2.445	11.616	
7.73	7.73	7035.73	2.448	11.638	
7.74	7.74	7035.74	2.450	11.661	
7.75	**7.75**	**7035.75**	**2.453**	**11.684**	
7.76	7.76	7035.76	2.455	11.706	
7.77	7.77	7035.77	2.458	11.729	
7.78	7.78	7035.78	2.460	11.752	
7.79	7.79	7035.79	2.463	11.774	
7.80	**7.80**	**7035.80**	**2.465**	**11.797**	
7.81	7.81	7035.81	2.468	11.820	
7.82	7.82	7035.82	2.470	11.842	
7.83	7.83	7035.83	2.473	11.865	
7.84	7.84	7035.84	2.476	11.888	
7.85	**7.85**	**7035.85**	**2.478**	**11.910**	
7.86	7.86	7035.86	2.481	11.933	
7.87	7.87	7035.87	2.483	11.956	
7.88	7.88	7035.88	2.486	11.978	
7.89	7.89	7035.89	2.488	12.001	
7.90	**7.90**	**7035.90**	**2.491**	**12.024**	
7.91	7.91	7035.91	2.493	12.046	
7.92	7.92	7035.92	2.496	12.069	
7.93	7.93	7035.93	2.498	12.091	
7.94	7.94	7035.94	2.501	12.114	
7.95	**7.95**	**7035.95**	**2.503**	**12.137**	
7.96	7.96	7035.96	2.506	12.159	
7.97	7.97	7035.97	2.508	12.182	
7.98	7.98	7035.98	2.511	12.205	
7.99	7.99	7035.99	2.513	12.227	
8.00	**8.00**	**7036.00**	**2.516**	**12.250**	**Spillway Crest / NWS**
8.01	8.01	7036.01	2.522	12.276	
8.02	8.02	7036.02	2.527	12.301	
8.03	8.03	7036.03	2.533	12.327	
8.04	8.04	7036.04	2.538	12.353	
8.05	**8.05**	**7036.05**	**2.544**	**12.379**	
8.06	8.06	7036.06	2.549	12.404	
8.07	8.07	7036.07	2.555	12.430	
8.08	8.08	7036.08	2.560	12.456	
8.09	8.09	7036.09	2.566	12.481	
8.10	8.10	7036.10	**2.571**	**12.507**	
8.11	8.11	7036.11	2.577	12.533	
8.12	8.12	7036.12	2.582	12.558	

7.67	7.67	7121.67	1.541	6.352	
7.68	7.68	7121.68	1.543	6.365	
7.69	7.69	7121.69	1.544	6.377	
7.70	**7.70**	**7121.70**	**1.546**	**6.389**	
7.71	7.71	7121.71	1.548	6.402	
7.72	7.72	7121.72	1.550	6.414	
7.73	7.73	7121.73	1.552	6.427	
7.74	7.74	7121.74	1.554	6.439	
7.75	**7.75**	**7121.75**	**1.556**	**6.451**	
7.76	7.76	7121.76	1.557	6.464	
7.77	7.77	7121.77	1.559	6.476	
7.78	7.78	7121.78	1.561	6.488	
7.79	7.79	7121.79	1.563	6.501	
7.80	**7.80**	**7121.80**	**1.565**	**6.513**	
7.81	7.81	7121.81	1.567	6.525	
7.82	7.82	7121.82	1.568	6.538	
7.83	7.83	7121.83	1.570	6.550	
7.84	7.84	7121.84	1.572	6.562	
7.85	**7.85**	**7121.85**	**1.574**	**6.575**	
7.86	7.86	7121.86	1.576	6.587	
7.87	7.87	7121.87	1.578	6.599	
7.88	7.88	7121.88	1.579	6.612	
7.89	7.89	7121.89	1.581	6.624	
7.90	**7.90**	**7121.90**	**1.583**	**6.636**	
7.91	7.91	7121.91	1.585	6.649	
7.92	7.92	7121.92	1.587	6.661	
7.93	7.93	7121.93	1.589	6.674	
7.94	7.94	7121.94	1.590	6.686	
7.95	**7.95**	**7121.95**	**1.592**	**6.698**	
7.96	7.96	7121.96	1.594	6.711	
7.97	7.97	7121.97	1.596	6.723	
7.98	7.98	7121.98	1.598	6.735	
7.99	7.99	7121.99	1.600	6.748	
8.00	**8.00**	**7122.00**	**1.602**	**6.760**	
8.01	8.01	7122.01	1.606	6.776	
8.02	8.02	7122.02	1.611	6.792	
8.03	8.03	7122.03	1.616	6.808	
8.04	8.04	7122.04	1.620	6.824	
8.05	**8.05**	**7122.05**	**1.625**	**6.840**	
8.06	8.06	7122.06	1.630	6.856	
8.07	8.07	7122.07	1.635	6.872	
8.08	8.08	7122.08	1.639	6.888	
8.09	8.09	7122.09	1.644	6.904	
8.10	8.10	7122.10	**1.649**	**6.920**	
8.11	8.11	7122.11	1.654	6.936	
8.12	8.12	7122.12	1.658	6.952	

8.13	8.13	7036.13	2.588	12.584	
8.14	8.14	7036.14	2.593	12.610	
8.15	**8.15**	**7036.15**	**2.599**	**12.636**	
8.16	8.16	7036.16	2.604	12.661	
8.17	8.17	7036.17	2.610	12.687	
8.18	8.18	7036.18	2.615	12.713	
8.19	8.19	7036.19	2.620	12.738	
8.20	**8.20**	**7036.20**	**2.626**	**12.764**	
8.21	8.21	7036.21	2.631	12.790	
8.22	8.22	7036.22	2.637	12.815	
8.23	8.23	7036.23	2.642	12.841	
8.24	8.24	7036.24	2.648	12.867	
8.25	**8.25**	**7036.25**	**2.653**	**12.893**	
8.26	8.26	7036.26	2.659	12.918	
8.27	8.27	7036.27	2.664	12.944	
8.28	8.28	7036.28	2.670	12.970	
8.29	8.29	7036.29	2.675	12.995	
8.30	**8.30**	**7036.30**	**2.681**	**13.021**	
8.31	8.31	7036.31	2.686	13.047	
8.32	8.32	7036.32	2.692	13.072	
8.33	8.33	7036.33	2.697	13.098	
8.34	8.34	7036.34	2.703	13.124	
8.35	**8.35**	**7036.35**	**2.708**	**13.150**	
8.36	8.36	7036.36	2.714	13.175	
8.37	8.37	7036.37	2.719	13.201	
8.38	8.38	7036.38	2.725	13.227	
8.39	8.39	7036.39	2.730	13.252	
8.40	**8.40**	**7036.40**	**2.736**	**13.278**	
8.41	8.41	7036.41	2.741	13.304	
8.42	8.42	7036.42	2.747	13.329	
8.43	8.43	7036.43	2.752	13.355	
8.44	8.44	7036.44	2.757	13.381	
8.45	**8.45**	**7036.45**	**2.763**	**13.407**	
8.46	8.46	7036.46	2.768	13.432	
8.47	8.47	7036.47	2.774	13.458	
8.48	8.48	7036.48	2.779	13.484	
8.49	8.49	7036.49	2.785	13.509	
8.50	**8.50**	**7036.50**	**2.790**	**13.535**	
8.51	8.51	7036.51	2.796	13.561	
8.52	8.52	7036.52	2.801	13.586	
8.53	8.53	7036.53	2.807	13.612	
8.54	8.54	7036.54	2.812	13.638	
8.55	**8.55**	**7036.55**	**2.818**	**13.664**	
8.56	8.56	7036.56	2.823	13.689	
8.57	8.57	7036.57	2.829	13.715	
8.58	8.58	7036.58	2.834	13.741	

8.13	8.13	7122.13	1.663	6.968	
8.14	8.14	7122.14	1.668	6.984	
8.15	**8.15**	**7122.15**	**1.672**	**7.000**	
8.16	8.16	7122.16	1.677	7.016	
8.17	8.17	7122.17	1.682	7.032	
8.18	8.18	7122.18	1.687	7.048	
8.19	8.19	7122.19	1.691	7.064	
8.20	**8.20**	**7122.20**	**1.696**	**7.080**	
8.21	8.21	7122.21	1.701	7.096	
8.22	8.22	7122.22	1.706	7.112	
8.23	8.23	7122.23	1.710	7.128	
8.24	8.24	7122.24	1.715	7.144	
8.25	**8.25**	**7122.25**	**1.720**	**7.160**	
8.26	8.26	7122.26	1.724	7.176	
8.27	8.27	7122.27	1.729	7.192	
8.28	8.28	7122.28	1.734	7.208	
8.29	8.29	7122.29	1.739	7.224	
8.30	**8.30**	**7122.30**	**1.743**	**7.240**	
8.31	8.31	7122.31	1.748	7.256	
8.32	8.32	7122.32	1.753	7.272	
8.33	8.33	7122.33	1.758	7.288	
8.34	8.34	7122.34	1.762	7.304	
8.35	**8.35**	**7122.35**	**1.767**	**7.320**	
8.36	8.36	7122.36	1.772	7.336	
8.37	8.37	7122.37	1.777	7.352	
8.38	8.38	7122.38	1.781	7.368	
8.39	8.39	7122.39	1.786	7.384	
8.40	**8.40**	**7122.40**	**1.791**	**7.400**	
8.41	8.41	7122.41	1.795	7.416	
8.42	8.42	7122.42	1.800	7.432	
8.43	8.43	7122.43	1.805	7.448	
8.44	8.44	7122.44	1.810	7.464	
8.45	**8.45**	**7122.45**	**1.814**	**7.480**	
8.46	8.46	7122.46	1.819	7.496	
8.47	8.47	7122.47	1.824	7.512	
8.48	8.48	7122.48	1.829	7.528	
8.49	8.49	7122.49	1.833	7.544	
8.50	**8.50**	**7122.50**	**1.838**	**7.560**	
8.51	8.51	7122.51	1.843	7.576	
8.52	8.52	7122.52	1.847	7.592	
8.53	8.53	7122.53	1.852	7.608	
8.54	8.54	7122.54	1.857	7.624	
8.55	**8.55**	**7122.55**	**1.862**	**7.640**	
8.56	8.56	7122.56	1.866	7.656	
8.57	8.57	7122.57	1.871	7.672	
8.58	8.58	7122.58	1.876	7.688	

8.59	8.59	7036.59	2.840	13.766	
8.60	**8.60**	**7036.60**	**2.845**	**13.792**	
8.61	8.61	7036.61	2.851	13.818	
8.62	8.62	7036.62	2.856	13.843	
8.63	8.63	7036.63	2.862	13.869	
8.64	8.64	7036.64	2.867	13.895	
8.65	**8.65**	**7036.65**	**2.873**	**13.921**	
8.66	8.66	7036.66	2.878	13.946	
8.67	8.67	7036.67	2.884	13.972	
8.68	8.68	7036.68	2.889	13.998	
8.69	8.69	7036.69	2.894	14.023	
8.70	**8.70**	**7036.70**	**2.900**	**14.049**	
8.71	8.71	7036.71	2.905	14.075	
8.72	8.72	7036.72	2.911	14.100	
8.73	8.73	7036.73	2.916	14.126	
8.74	8.74	7036.74	2.922	14.152	
8.75	**8.75**	**7036.75**	**2.927**	**14.178**	
8.76	8.76	7036.76	2.933	14.203	
8.77	8.77	7036.77	2.938	14.229	
8.78	8.78	7036.78	2.944	14.255	
8.79	8.79	7036.79	2.949	14.280	
8.80	**8.80**	**7036.80**	**2.955**	**14.306**	
8.81	8.81	7036.81	2.960	14.332	
8.82	8.82	7036.82	2.966	14.357	
8.83	8.83	7036.83	2.971	14.383	
8.84	8.84	7036.84	2.977	14.409	
8.85	**8.85**	**7036.85**	**2.982**	**14.435**	
8.86	8.86	7036.86	2.988	14.460	
8.87	8.87	7036.87	2.993	14.486	
8.88	8.88	7036.88	2.999	14.512	
8.89	8.89	7036.89	3.004	14.537	
8.90	**8.90**	**7036.90**	**3.010**	**14.563**	
8.91	8.91	7036.91	3.015	14.589	
8.92	8.92	7036.92	3.021	14.614	
8.93	8.93	7036.93	3.026	14.640	
8.94	8.94	7036.94	3.031	14.666	
8.95	**8.95**	**7036.95**	**3.037**	**14.692**	
8.96	8.96	7036.96	3.042	14.717	
8.97	8.97	7036.97	3.048	14.743	
8.98	8.98	7036.98	3.053	14.769	
8.99	8.99	7036.99	3.059	14.794	
9.00	**9.00**	**7037.00**	**3.064**	**14.820**	
9.01	9.01	7037.01	3.070	14.846	
9.02	9.02	7037.02	3.075	14.871	
9.03	9.03	7037.03	3.081	14.897	
9.04	9.04	7037.04	3.086	14.923	

8.59	8.59	7122.59	1.881	7.704	
8.60	**8.60**	**7122.60**	**1.885**	**7.720**	
8.61	8.61	7122.61	1.890	7.736	
8.62	8.62	7122.62	1.895	7.752	
8.63	8.63	7122.63	1.899	7.768	
8.64	8.64	7122.64	1.904	7.784	
8.65	**8.65**	**7122.65**	**1.909**	**7.800**	
8.66	8.66	7122.66	1.914	7.816	
8.67	8.67	7122.67	1.918	7.832	
8.68	8.68	7122.68	1.923	7.848	
8.69	8.69	7122.69	1.928	7.864	
8.70	**8.70**	**7122.70**	**1.933**	**7.880**	
8.71	8.71	7122.71	1.937	7.896	
8.72	8.72	7122.72	1.942	7.912	
8.73	8.73	7122.73	1.947	7.928	
8.74	8.74	7122.74	1.952	7.944	
8.75	**8.75**	**7122.75**	**1.956**	**7.960**	
8.76	8.76	7122.76	1.961	7.976	
8.77	8.77	7122.77	1.966	7.992	
8.78	8.78	7122.78	1.970	8.008	
8.79	8.79	7122.79	1.975	8.024	
8.80	**8.80**	**7122.80**	**1.980**	**8.040**	
8.81	8.81	7122.81	1.985	8.056	
8.82	8.82	7122.82	1.989	8.072	
8.83	8.83	7122.83	1.994	8.088	
8.84	8.84	7122.84	1.999	8.104	
8.85	**8.85**	**7122.85**	**2.004**	**8.120**	
8.86	8.86	7122.86	2.008	8.136	
8.87	8.87	7122.87	2.013	8.152	
8.88	8.88	7122.88	2.018	8.168	
8.89	8.89	7122.89	2.022	8.184	
8.90	**8.90**	**7122.90**	**2.027**	**8.200**	
8.91	8.91	7122.91	2.032	8.216	
8.92	8.92	7122.92	2.037	8.232	
8.93	8.93	7122.93	2.041	8.248	
8.94	8.94	7122.94	2.046	8.264	
8.95	**8.95**	**7122.95**	**2.051**	**8.280**	
8.96	8.96	7122.96	2.056	8.296	
8.97	8.97	7122.97	2.060	8.312	
8.98	8.98	7122.98	2.065	8.328	
8.99	8.99	7122.99	2.070	8.344	
9.00	**9.00**	**7123.00**	**2.075**	**8.360**	
9.01	9.01	7123.01	2.079	8.376	
9.02	9.02	7123.02	2.084	8.392	
9.03	9.03	7123.03	2.089	8.408	
9.04	9.04	7123.04	2.093	8.424	

9.05	9.05	7037.05	3.092	14.949	
9.06	9.06	7037.06	3.097	14.974	
9.07	9.07	7037.07	3.103	15.000	
9.08	9.08	7037.08	3.108	15.026	
9.09	9.09	7037.09	3.114	15.051	
9.10	**9.10**	**7037.10**	**3.119**	**15.077**	
9.11	9.11	7037.11	3.125	15.103	
9.12	9.12	7037.12	3.130	15.128	
9.13	9.13	7037.13	3.136	15.154	
9.14	9.14	7037.14	3.141	15.180	
9.15	**9.15**	**7037.15**	**3.147**	**15.206**	
9.16	9.16	7037.16	3.152	15.231	
9.17	9.17	7037.17	3.158	15.257	
9.18	9.18	7037.18	3.163	15.283	
9.19	9.19	7037.19	3.168	15.308	
9.20	**9.20**	**7037.20**	**3.174**	**15.334**	
9.21	9.21	7037.21	3.179	15.360	
9.22	9.22	7037.22	3.185	15.385	
9.23	9.23	7037.23	3.190	15.411	
9.24	9.24	7037.24	3.196	15.437	
9.25	**9.25**	**7037.25**	**3.201**	**15.463**	
9.26	9.26	7037.26	3.207	15.488	
9.27	9.27	7037.27	3.212	15.514	
9.28	9.28	7037.28	3.218	15.540	
9.29	9.29	7037.29	3.223	15.565	
9.30	**9.30**	**7037.30**	**3.229**	**15.591**	
9.31	9.31	7037.31	3.234	15.617	
9.32	9.32	7037.32	3.240	15.642	
9.33	9.33	7037.33	3.245	15.668	
9.34	9.34	7037.34	3.251	15.694	
9.35	**9.35**	**7037.35**	**3.256**	**15.720**	
9.36	9.36	7037.36	3.262	15.745	
9.37	9.37	7037.37	3.267	15.771	
9.38	9.38	7037.38	3.273	15.797	
9.39	9.39	7037.39	3.278	15.822	
9.40	**9.40**	**7037.40**	**3.284**	**15.848**	
9.41	9.41	7037.41	3.289	15.874	
9.42	9.42	7037.42	3.295	15.899	
9.43	9.43	7037.43	3.300	15.925	
9.44	9.44	7037.44	3.305	15.951	
9.45	**9.45**	**7037.45**	**3.311**	**15.977**	
9.46	9.46	7037.46	3.316	16.002	
9.47	9.47	7037.47	3.322	16.028	
9.48	9.48	7037.48	3.327	16.054	
9.49	9.49	7037.49	3.333	16.079	
9.50	**9.50**	**7037.50**	**3.338**	**16.105**	

9.05	9.05	7123.05	2.098	8.440	
9.06	9.06	7123.06	2.103	8.456	
9.07	9.07	7123.07	2.108	8.472	
9.08	9.08	7123.08	2.112	8.488	
9.09	9.09	7123.09	2.117	8.504	
9.10	**9.10**	**7123.10**	**2.122**	**8.520**	
9.11	9.11	7123.11	2.127	8.536	
9.12	9.12	7123.12	2.131	8.552	
9.13	9.13	7123.13	2.136	8.568	
9.14	9.14	7123.14	2.141	8.584	
9.15	**9.15**	**7123.15**	**2.145**	**8.600**	
9.16	9.16	7123.16	2.150	8.616	
9.17	9.17	7123.17	2.155	8.632	
9.18	9.18	7123.18	2.160	8.648	
9.19	9.19	7123.19	2.164	8.664	
9.20	**9.20**	**7123.20**	**2.169**	**8.680**	
9.21	9.21	7123.21	2.174	8.696	
9.22	9.22	7123.22	2.179	8.712	
9.23	9.23	7123.23	2.183	8.728	
9.24	9.24	7123.24	2.188	8.744	
9.25	**9.25**	**7123.25**	**2.193**	**8.760**	
9.26	9.26	7123.26	2.197	8.776	
9.27	9.27	7123.27	2.202	8.792	
9.28	9.28	7123.28	2.207	8.808	
9.29	9.29	7123.29	2.212	8.824	
9.30	**9.30**	**7123.30**	**2.216**	**8.840**	
9.31	9.31	7123.31	2.221	8.856	
9.32	9.32	7123.32	2.226	8.872	
9.33	9.33	7123.33	2.231	8.888	
9.34	9.34	7123.34	2.235	8.904	
9.35	**9.35**	**7123.35**	**2.240**	**8.920**	
9.36	9.36	7123.36	2.245	8.936	
9.37	9.37	7123.37	2.250	8.952	
9.38	9.38	7123.38	2.254	8.968	
9.39	9.39	7123.39	2.259	8.984	
9.40	**9.40**	**7123.40**	**2.264**	**9.000**	
9.41	9.41	7123.41	2.268	9.016	
9.42	9.42	7123.42	2.273	9.032	
9.43	9.43	7123.43	2.278	9.048	
9.44	9.44	7123.44	2.283	9.064	
9.45	**9.45**	**7123.45**	**2.287**	**9.080**	
9.46	9.46	7123.46	2.292	9.096	
9.47	9.47	7123.47	2.297	9.112	
9.48	9.48	7123.48	2.302	9.128	
9.49	9.49	7123.49	2.306	9.144	
9.50	**9.50**	**7123.50**	**2.311**	**9.160**	

9.51	9.51	7037.51	3.344	16.131	
9.52	9.52	7037.52	3.349	16.156	
9.53	9.53	7037.53	3.355	16.182	
9.54	9.54	7037.54	3.360	16.208	
9.55	**9.55**	**7037.55**	**3.366**	**16.234**	
9.56	9.56	7037.56	3.371	16.259	
9.57	9.57	7037.57	3.377	16.285	
9.58	9.58	7037.58	3.382	16.311	
9.59	9.59	7037.59	3.388	16.336	
9.60	**9.60**	**7037.60**	**3.393**	**16.362**	
9.61	9.61	7037.61	3.399	16.388	
9.62	9.62	7037.62	3.404	16.413	
9.63	9.63	7037.63	3.410	16.439	
9.64	9.64	7037.64	3.415	16.465	
9.65	**9.65**	**7037.65**	**3.421**	**16.491**	
9.66	9.66	7037.66	3.426	16.516	
9.67	9.67	7037.67	3.432	16.542	
9.68	9.68	7037.68	3.437	16.568	
9.69	9.69	7037.69	3.442	16.593	
9.70	**9.70**	**7037.70**	**3.448**	**16.619**	
9.71	9.71	7037.71	3.453	16.645	
9.72	9.72	7037.72	3.459	16.670	
9.73	9.73	7037.73	3.464	16.696	
9.74	9.74	7037.74	3.470	16.722	
9.75	**9.75**	**7037.75**	**3.475**	**16.748**	
9.76	9.76	7037.76	3.481	16.773	
9.77	9.77	7037.77	3.486	16.799	
9.78	9.78	7037.78	3.492	16.825	
9.79	9.79	7037.79	3.497	16.850	
9.80	**9.80**	**7037.80**	**3.503**	**16.876**	
9.81	9.81	7037.81	3.508	16.902	
9.82	9.82	7037.82	3.514	16.927	
9.83	9.83	7037.83	3.519	16.953	
9.84	9.84	7037.84	3.525	16.979	
9.85	**9.85**	**7037.85**	**3.530**	**17.005**	
9.86	9.86	7037.86	3.536	17.030	
9.87	9.87	7037.87	3.541	17.056	
9.88	9.88	7037.88	3.547	17.082	
9.89	9.89	7037.89	3.552	17.107	
9.90	**9.90**	**7037.90**	**3.558**	**17.133**	
9.91	9.91	7037.91	3.563	17.159	
9.92	9.92	7037.92	3.569	17.184	
9.93	9.93	7037.93	3.574	17.210	
9.94	9.94	7037.94	3.579	17.236	
9.95	**9.95**	**7037.95**	**3.585**	**17.262**	
9.96	9.96	7037.96	3.590	17.287	

9.51	9.51	7123.51	2.316	9.176	
9.52	9.52	7123.52	2.320	9.192	
9.53	9.53	7123.53	2.325	9.208	
9.54	9.54	7123.54	2.330	9.224	
9.55	**9.55**	**7123.55**	**2.335**	**9.240**	
9.56	9.56	7123.56	2.339	9.256	
9.57	9.57	7123.57	2.344	9.272	
9.58	9.58	7123.58	2.349	9.288	
9.59	9.59	7123.59	2.354	9.304	
9.60	**9.60**	**7123.60**	**2.358**	**9.320**	
9.61	9.61	7123.61	2.363	9.336	
9.62	9.62	7123.62	2.368	9.352	
9.63	9.63	7123.63	2.372	9.368	
9.64	9.64	7123.64	2.377	9.384	
9.65	**9.65**	**7123.65**	**2.382**	**9.400**	
9.66	9.66	7123.66	2.387	9.416	
9.67	9.67	7123.67	2.391	9.432	
9.68	9.68	7123.68	2.396	9.448	
9.69	9.69	7123.69	2.401	9.464	
9.70	**9.70**	**7123.70**	**2.406**	**9.480**	
9.71	9.71	7123.71	2.410	9.496	
9.72	9.72	7123.72	2.415	9.512	
9.73	9.73	7123.73	2.420	9.528	
9.74	9.74	7123.74	2.425	9.544	
9.75	**9.75**	**7123.75**	**2.429**	**9.560**	
9.76	9.76	7123.76	2.434	9.576	
9.77	9.77	7123.77	2.439	9.592	
9.78	9.78	7123.78	2.443	9.608	
9.79	9.79	7123.79	2.448	9.624	
9.80	**9.80**	**7123.80**	**2.453**	**9.640**	
9.81	9.81	7123.81	2.458	9.656	
9.82	9.82	7123.82	2.462	9.672	
9.83	9.83	7123.83	2.467	9.688	
9.84	9.84	7123.84	2.472	9.704	
9.85	**9.85**	**7123.85**	**2.477**	**9.720**	
9.86	9.86	7123.86	2.481	9.736	
9.87	9.87	7123.87	2.486	9.752	
9.88	9.88	7123.88	2.491	9.768	
9.89	9.89	7123.89	2.495	9.784	
9.90	**9.90**	**7123.90**	**2.500**	**9.800**	
9.91	9.91	7123.91	2.505	9.816	
9.92	9.92	7123.92	2.510	9.832	
9.93	9.93	7123.93	2.514	9.848	
9.94	9.94	7123.94	2.519	9.864	
9.95	**9.95**	**7123.95**	**2.524**	**9.880**	
9.96	9.96	7123.96	2.529	9.896	

9.97	9.97	7037.97	3.596	17.313	
9.98	9.98	7037.98	3.601	17.339	
9.99	9.99	7037.99	3.607	17.364	
10.00	**10.00**	**7038.00**	**3.612**	**17.390**	
10.01	10.01	7038.01	3.617	17.426	
10.02	10.02	7038.02	3.623	17.462	
10.03	10.03	7038.03	3.628	17.498	
10.04	10.04	7038.04	3.633	17.534	
10.05	10.05	7038.05	3.638	17.571	
10.06	**10.06**	**7038.06**	**3.644**	**17.607**	
10.07	10.07	7038.07	3.649	17.643	
10.08	10.08	7038.08	3.654	17.679	
10.09	10.09	7038.09	3.660	17.715	
10.10	**10.10**	**7038.10**	**3.665**	**17.751**	
10.11	10.11	7038.11	3.670	17.787	
10.12	10.12	7038.12	3.676	17.823	
10.13	10.13	7038.13	3.681	17.859	
10.14	10.14	7038.14	3.686	17.895	
10.15	**10.15**	**7038.15**	**3.692**	**17.932**	
10.16	10.16	7038.16	3.697	17.968	
10.17	10.17	7038.17	3.702	18.004	
10.18	10.18	7038.18	3.708	18.040	
10.19	10.19	7038.19	3.713	18.076	
10.20	**10.20**	**7038.20**	**3.718**	**18.112**	
10.21	10.21	7038.21	3.724	18.148	
10.22	10.22	7038.22	3.729	18.184	
10.23	10.23	7038.23	3.734	18.220	
10.24	10.24	7038.24	3.740	18.256	
10.25	**10.25**	**7038.25**	**3.745**	**18.293**	
10.26	10.26	7038.26	3.750	18.329	
10.27	10.27	7038.27	3.756	18.365	
10.28	10.28	7038.28	3.761	18.401	
10.29	10.29	7038.29	3.766	18.437	
10.30	**10.30**	**7038.30**	**3.771**	**18.473**	
10.31	10.31	7038.31	3.777	18.509	
10.32	10.32	7038.32	3.782	18.545	
10.33	10.33	7038.33	3.787	18.581	
10.34	10.34	7038.34	3.793	18.617	
10.35	**10.35**	**7038.35**	**3.798**	**18.654**	
10.36	10.36	7038.36	3.803	18.690	
10.37	10.37	7038.37	3.809	18.726	
10.38	10.38	7038.38	3.814	18.762	
10.39	10.39	7038.39	3.819	18.798	
10.40	**10.40**	**7038.40**	**3.825**	**18.834**	
10.41	10.41	7038.41	3.830	18.870	
10.42	10.42	7038.42	3.835	18.906	

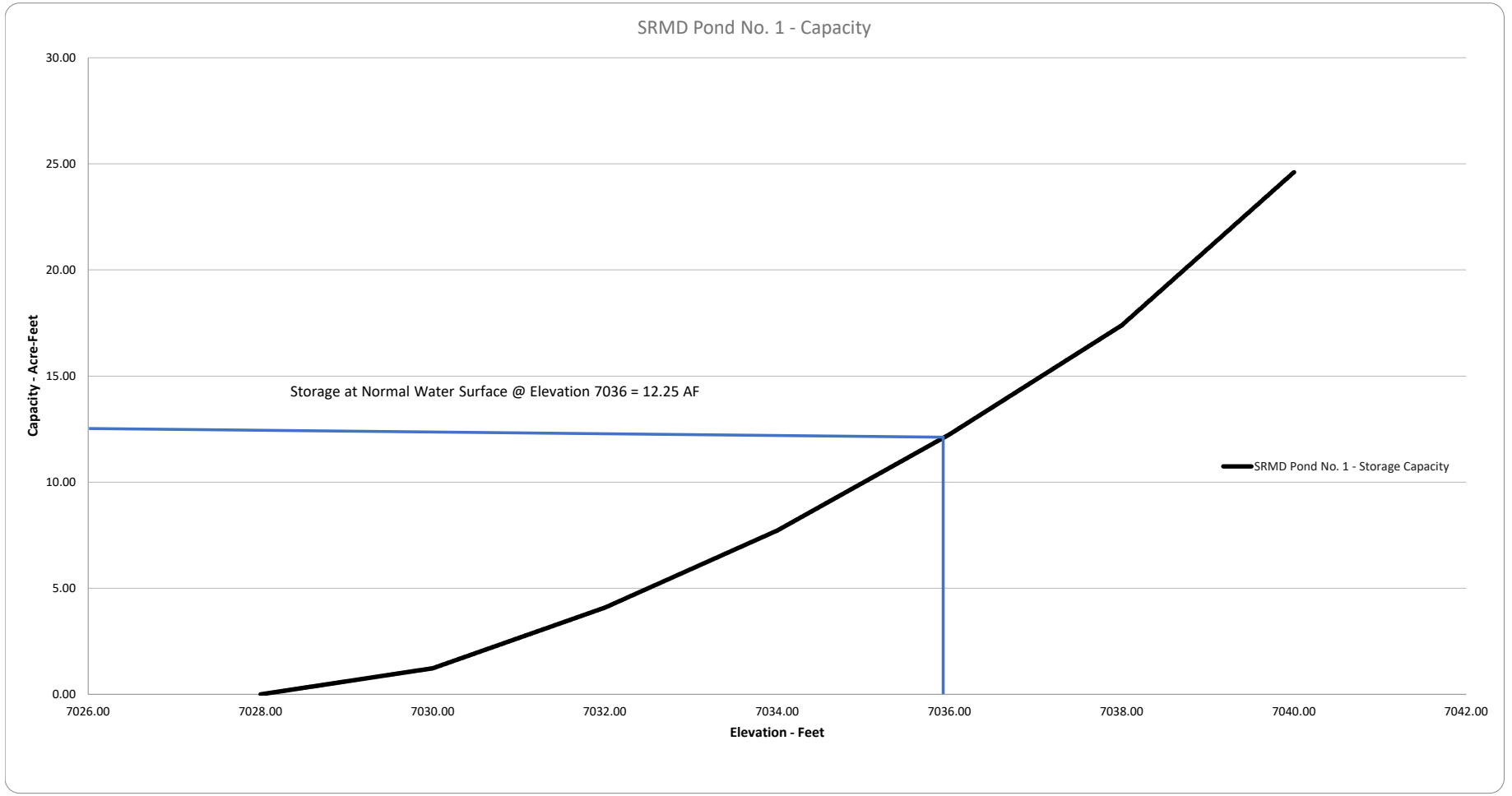
9.97	9.97	7123.97	2.533	9.912	
9.98	9.98	7123.98	2.538	9.928	
9.99	9.99	7123.99	2.543	9.944	
10.00	**10.00**	**7124.00**	**2.548**	**9.960**	**Dam Crest**

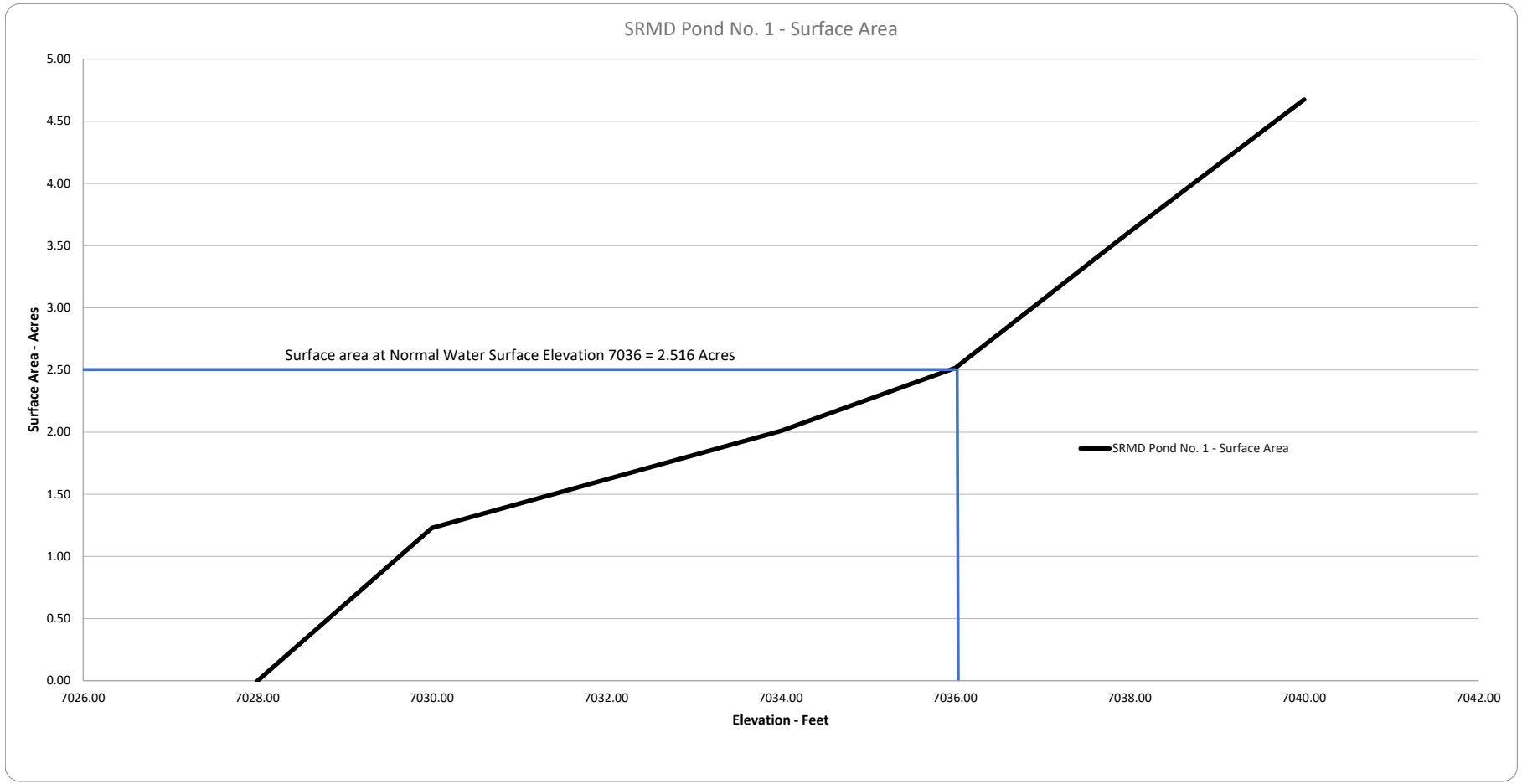
10.43	10.43	7038.43	3.841	18.942	
10.44	10.44	7038.44	3.846	18.978	
10.45	**10.45**	**7038.45**	**3.851**	**19.015**	
10.46	10.46	7038.46	3.857	19.051	
10.47	10.47	7038.47	3.862	19.087	
10.48	10.48	7038.48	3.867	19.123	
10.49	10.49	7038.49	3.873	19.159	
10.50	**10.50**	**7038.50**	**3.878**	**19.195**	
10.51	10.51	7038.51	3.883	19.231	
10.52	10.52	7038.52	3.889	19.267	
10.53	10.53	7038.53	3.894	19.303	
10.54	10.54	7038.54	3.899	19.339	
10.55	**10.55**	**7038.55**	**3.904**	**19.376**	
10.56	10.56	7038.56	3.910	19.412	
10.57	10.57	7038.57	3.915	19.448	
10.58	10.58	7038.58	3.920	19.484	
10.59	10.59	7038.59	3.926	19.520	
10.60	**10.60**	**7038.60**	**3.931**	**19.556**	
10.61	10.61	7038.61	3.936	19.592	
10.62	10.62	7038.62	3.942	19.628	
10.63	10.63	7038.63	3.947	19.664	
10.64	10.64	7038.64	3.952	19.700	
10.65	**10.65**	**7038.65**	**3.958**	**19.737**	
10.66	10.66	7038.66	3.963	19.773	
10.67	10.67	7038.67	3.968	19.809	
10.68	10.68	7038.68	3.974	19.845	
10.69	10.69	7038.69	3.979	19.881	
10.70	**10.70**	**7038.70**	**3.984**	**19.917**	
10.71	10.71	7038.71	3.990	19.953	
10.72	10.72	7038.72	3.995	19.989	
10.73	10.73	7038.73	4.000	20.025	
10.74	10.74	7038.74	4.006	20.061	
10.75	**10.75**	**7038.75**	**4.011**	**20.098**	
10.76	10.76	7038.76	4.016	20.134	
10.77	10.77	7038.77	4.022	20.170	
10.78	10.78	7038.78	4.027	20.206	
10.79	10.79	7038.79	4.032	20.242	
10.80	**10.80**	**7038.80**	**4.037**	**20.278**	
10.81	10.81	7038.81	4.043	20.314	
10.82	10.82	7038.82	4.048	20.350	
10.83	10.83	7038.83	4.053	20.386	
10.84	10.84	7038.84	4.059	20.422	
10.85	**10.85**	**7038.85**	**4.064**	**20.459**	
10.86	10.86	7038.86	4.069	20.495	
10.87	10.87	7038.87	4.075	20.531	
10.88	10.88	7038.88	4.080	20.567	

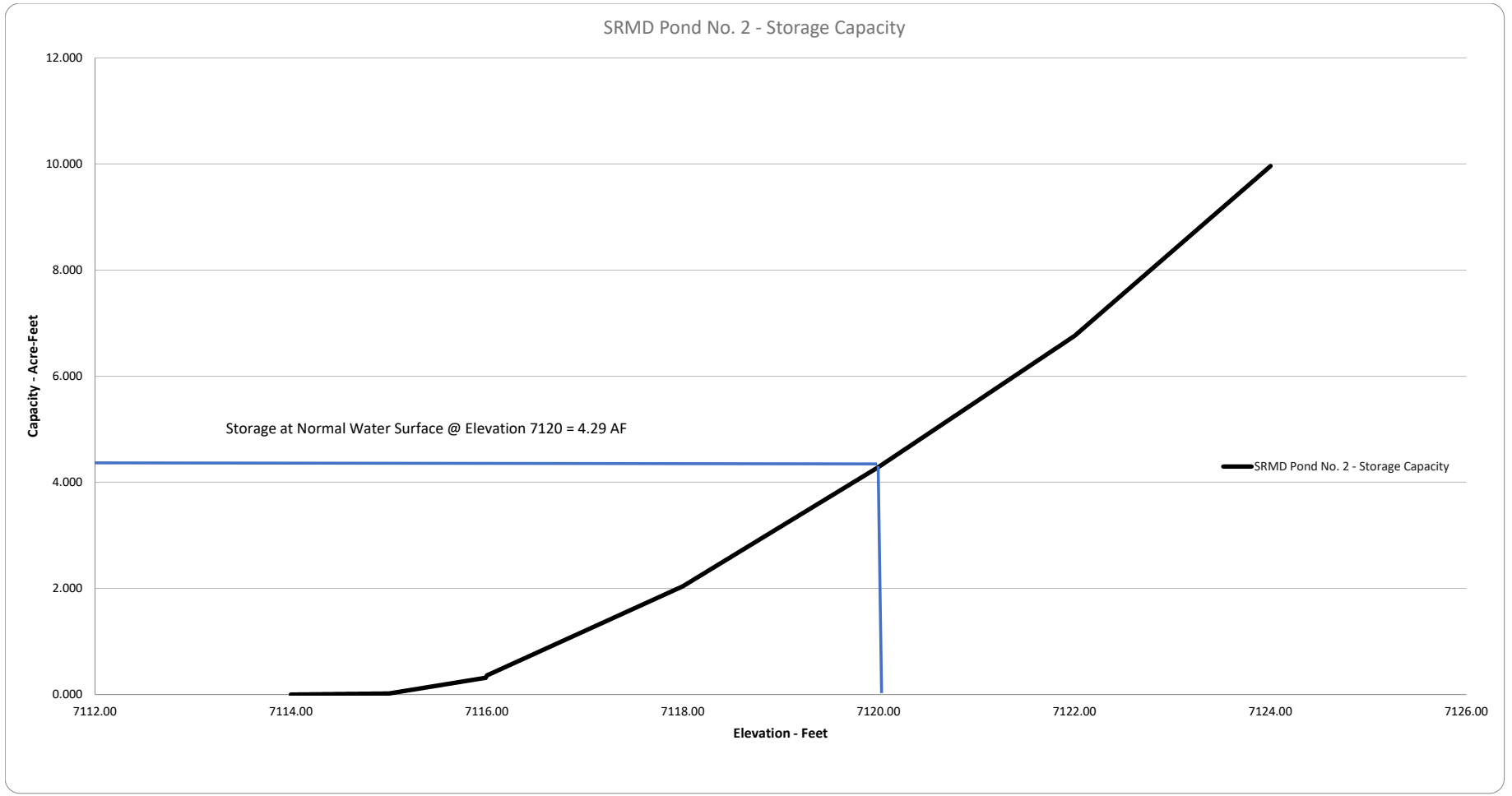
10.89	10.89	7038.89	4.085	20.603	
10.90	**10.90**	**7038.90**	**4.091**	**20.639**	
10.91	10.91	7038.91	4.096	20.675	
10.92	10.92	7038.92	4.101	20.711	
10.93	10.93	7038.93	4.107	20.747	
10.94	10.94	7038.94	4.112	20.783	
10.95	**10.95**	**7038.95**	**4.117**	**20.820**	
10.96	10.96	7038.96	4.123	20.856	
10.97	10.97	7038.97	4.128	20.892	
10.98	10.98	7038.98	4.133	20.928	
10.99	10.99	7038.99	4.139	20.964	
11.00	**11.00**	**7039.00**	**4.144**	**21.000**	
11.01	11.01	7039.01	4.149	21.036	
11.02	11.02	7039.02	4.155	21.072	
11.03	11.03	7039.03	4.160	21.108	
11.04	11.04	7039.04	4.165	21.144	
11.05	**11.05**	**7039.05**	**4.170**	**21.181**	
11.06	11.06	7039.06	4.176	21.217	
11.07	11.07	7039.07	4.181	21.253	
11.08	11.08	7039.08	4.186	21.289	
11.09	11.09	7039.09	4.192	21.325	
11.10	**11.10**	**7039.10**	**4.197**	**21.361**	
11.11	11.11	7039.11	4.202	21.397	
11.12	11.12	7039.12	4.208	21.433	
11.13	11.13	7039.13	4.213	21.469	
11.14	11.14	7039.14	4.218	21.505	
11.15	**11.15**	**7039.15**	**4.224**	**21.542**	
11.16	11.16	7039.16	4.229	21.578	
11.17	11.17	7039.17	4.234	21.614	
11.18	11.18	7039.18	4.240	21.650	
11.19	11.19	7039.19	4.245	21.686	
11.20	**11.20**	**7039.20**	**4.250**	**21.722**	
11.21	11.21	7039.21	4.256	21.758	
11.22	11.22	7039.22	4.261	21.794	
11.23	11.23	7039.23	4.266	21.830	
11.24	11.24	7039.24	4.272	21.866	
11.25	**11.25**	**7039.25**	**4.277**	**21.903**	
11.26	11.26	7039.26	4.282	21.939	
11.27	11.27	7039.27	4.288	21.975	
11.28	11.28	7039.28	4.293	22.011	
11.29	11.29	7039.29	4.298	22.047	
11.30	**11.30**	**7039.30**	**4.303**	**22.083**	
11.31	11.31	7039.31	4.309	22.119	
11.32	11.32	7039.32	4.314	22.155	
11.33	11.33	7039.33	4.319	22.191	
11.34	11.34	7039.34	4.325	22.227	

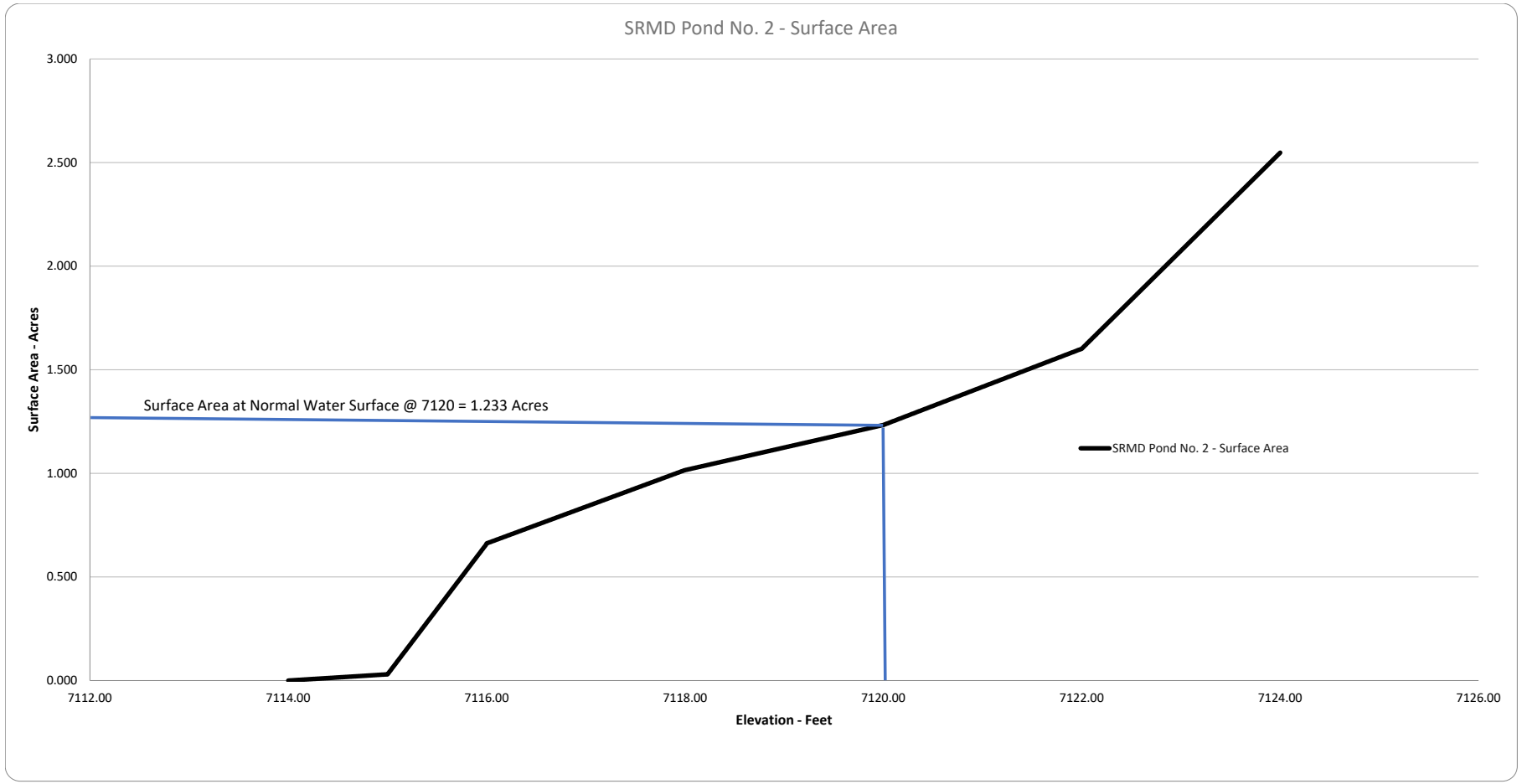
11.35	**11.35**	**7039.35**	**4.330**	**22.264**	
11.36	11.36	7039.36	4.335	22.300	
11.37	11.37	7039.37	4.341	22.336	
11.38	11.38	7039.38	4.346	22.372	
11.39	11.39	7039.39	4.351	22.408	
11.40	**11.40**	**7039.40**	**4.357**	**22.444**	
11.41	11.41	7039.41	4.362	22.480	
11.42	11.42	7039.42	4.367	22.516	
11.43	11.43	7039.43	4.373	22.552	
11.44	11.44	7039.44	4.378	22.588	
11.45	**11.45**	**7039.45**	**4.383**	**22.625**	
11.46	11.46	7039.46	4.389	22.661	
11.47	11.47	7039.47	4.394	22.697	
11.48	11.48	7039.48	4.399	22.733	
11.49	11.49	7039.49	4.405	22.769	
11.50	**11.50**	**7039.50**	**4.410**	**22.805**	
11.51	11.51	7039.51	4.415	22.841	
11.52	11.52	7039.52	4.421	22.877	
11.53	11.53	7039.53	4.426	22.913	
11.54	11.54	7039.54	4.431	22.949	
11.55	**11.55**	**7039.55**	**4.436**	**22.986**	
11.56	11.56	7039.56	4.442	23.022	
11.57	11.57	7039.57	4.447	23.058	
11.58	11.58	7039.58	4.452	23.094	
11.59	11.59	7039.59	4.458	23.130	
11.60	**11.60**	**7039.60**	**4.463**	**23.166**	
11.61	11.61	7039.61	4.468	23.202	
11.62	11.62	7039.62	4.474	23.238	
11.63	11.63	7039.63	4.479	23.274	
11.64	11.64	7039.64	4.484	23.310	
11.65	**11.65**	**7039.65**	**4.490**	**23.347**	
11.66	11.66	7039.66	4.495	23.383	
11.67	11.67	7039.67	4.500	23.419	
11.68	11.68	7039.68	4.506	23.455	
11.69	11.69	7039.69	4.511	23.491	
11.70	**11.70**	**7039.70**	**4.516**	**23.527**	
11.71	11.71	7039.71	4.522	23.563	
11.72	11.72	7039.72	4.527	23.599	
11.73	11.73	7039.73	4.532	23.635	
11.74	11.74	7039.74	4.538	23.671	
11.75	**11.75**	**7039.75**	**4.543**	**23.708**	
11.76	11.76	7039.76	4.548	23.744	
11.77	11.77	7039.77	4.554	23.780	
11.78	11.78	7039.78	4.559	23.816	
11.79	11.79	7039.79	4.564	23.852	
11.80	**11.80**	**7039.80**	**4.569**	**23.888**	

11.81	11.81	7039.81	4.575	23.924	
11.82	11.82	7039.82	4.580	23.960	
11.83	11.83	7039.83	4.585	23.996	
11.84	11.84	7039.84	4.591	24.032	
11.85	**11.85**	**7039.85**	**4.596**	**24.069**	
11.86	11.86	7039.86	4.601	24.105	
11.87	11.87	7039.87	4.607	24.141	
11.88	11.88	7039.88	4.612	24.177	
11.89	11.89	7039.89	4.617	24.213	
11.90	**11.90**	**7039.90**	**4.623**	**24.249**	
11.91	11.91	7039.91	4.628	24.285	
11.92	11.92	7039.92	4.633	24.321	
11.93	11.93	7039.93	4.639	24.357	
11.94	11.94	7039.94	4.644	24.393	
11.95	11.95	7039.95	**4.649**	**24.430**	
11.96	11.96	7039.96	4.655	24.466	
11.97	11.97	7039.97	4.660	24.502	
11.98	11.98	7039.98	4.665	24.538	
11.99	11.99	7039.99	4.671	24.574	
12.00	**12.00**	**7040.00**	**4.676**	**24.600**	**Dam Crest**


SRMD Pond No. 1 - Capacity
30.00
25.00
20.00
15.00
10.00
5.00
0.00
Capacity - Acre-Feet
Storage at Normal Water Surface @ Elevation 7036 = 12.25 AF
SRMD Pond No. 1 - Storage Capacity
7026.00
7028.00
7030.00
7032.00
7034.00
7036.00
7038.00
7040.00
7042.00
Elevation - Feet


SRMD Pond No. 1 - Surface Area
5.00
4.50
4.00
3.50
3.00
2.50
2.00
1.50
1.00
0.50
0.00
Surface Area - Acres
Surface area at Normal Water Surface Elevation 7036 = 2.516 Acres
SRMD Pond No. 1 - Surface Area
7026.00
7028.00
7030.00
7032.00
7034.00
7036.00
7038.00
7040.00
7042.00
Elevation - Feet


SRMD Pond No. 2 - Storage Capacity
12.000
10.000
8.000
6.000
4.000
2.000
0.000
Capacity - Acre-Feet
Storage at Normal Water Surface @ Elevation 7120 = 4.29 AF
SRMD Pond No. 2 - Storage Capacity
7112.00
7114.00
7116.00
7118.00
7120.00
7122.00
7124.00
7126.00
Elevation - Feet


SRMD Pond No. 2 - Surface Area
3.000
2.500
2.000
1.500
1.000
0.500
0.000
Surface Area - Acres
Surface Area at Normal Water Surface @ 7120 = 1.233 Acres
SRMD Pond No. 2 - Surface Area
7112.00
7114.00
7116.00
7118.00
7120.00
7122.00
7124.00
7126.00
Elevation - Feet

DISTRICT COURT, WATER DIVISION NO. 2, COLORADO

Case No. 91CW35

COPY RECEIVED

Filed in the office of the Clerk, District Court Water Division No. 2, State of Colorado

APR 10 '92

RULING OF REFEREE

CONCERNING THE APPLICATION FOR WATER RIGHTS OF:

COLACO, LTD.,

IN EL PASO COUNTY.

APR 9 1992

Clerk

Pursuant to Order of Referral filed and entered in the above case on October 24, 1991, the undersigned Water Referee, having investigated the matter of the Application on file herein, hereby makes the following findings and ruling thereon:

FINDINGS OF FACT

1. That the said Application was filed on October 24, 1991.

2. That the Water Clerk caused publication of such filing as provided by statute; that publication costs have been paid; that the time for filing Statements of Opposition expired on the last day of December, 1991, that one such has been filed by the City of Colorado Springs and that agreement has been reached by the parties on a proposed ruling.

3. That the said Application concerns a claim for four wells located in El Paso County, Colorado.

4. Name of Wells:

(a) Dawson Aquifer: Colaco DA-1.

(b) Denver Aquifer: Colaco DN-1.

(c) Arapahoe Aquifer: Colaco KA-1.

(d) Laramie-Fox Hills Aquifer: Colaco LFH-1.

5. Legal descriptions of locations of wells:

(a) Colaco DA-1: SE1/4 NE1/4, Section 34, T. 12 S. R. 65 W., 6th P.M., at a point 2780 feet from the south section line and 300 feet from the east section line.

(b) Colaco DN-1: SE1/4 NE1/4, Section 34, T. 12 S., R. 65 W., 6th P.M., at a point 2740 feet from the south section line and 300 feet from the east section line.

(c) Colaco KA-1: SE1/4 NE1/4, Section 34, T. 12 S., R. 65 W., 6th P.M. at a point 2690 feet from the south section line and 300 feet from the east section line.

(d) Colaco LFH-1: SE1/4 NE1/4, Section 34, T. 12 S., R. 65 W., 6th P.M., at a point 2640 feet from the south section line and 300 feet from the east section line.

6. Source of Water: Dawson, Denver, Arapahoe and Laramie-Fox Hills Aquifers.

7. Date of Appropriation: Not applicable pursuant to C.R.S. 37-92-305(11).

8. The amount of water:

The estimated depths, below land surface, estimated pumping rates and estimated annual withdrawals for each well are as follows:

Well Name	Estimated Depths Top	Bottom	Pumping Rate CFS	(GPM)	Annual Withdrawal Acre Feet
Colaco DA-1	43	324	0.67	300	34
Colaco DN-1	350	1,245	0.67	300	76
Colaco KA-1	1,283	1,785	1.79	800	49
Colaco LFH-1	2,054	2,334	0.67	300	36

9. The use of the water:

Colaco DA-1, Colaco DN-1, Colaco KA-1, Colaco LFH-1 Wells: water withdrawn from these wells may be used, reused and successively used and otherwise disposed of for all purposes including: municipal, domestic, industrial, commercial, irrigation, stockwater, recreation, fish and wildlife, fire protection, sanitary purposes, storage, exchange, and augmentation. Augmentation use cannot be made until a court approved plan for augmentation is obtained or the State Engineer has approved a substitute supply plan or exchange. All subject to provisions of Paragraph 14 and 15 herein. In accordance with C.R.S. 37-90-137(9)(c), judicial approval of a plan for augmentation shall be required prior to the use of ground water from the Dawson Aquifer or from the Denver Aquifer. In the case of the Dawson aquifer such

augmentation plan 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. In the case of the Denver Aquifer 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.).

10. Applicant claims all water under the 132 acres known as NE1/4 SE1/4, SE1/4 SE1/4, and SE1/4 NE1/4, Section 34, Township 12 South, Range 65 West of the 6th P.M., El Paso County, from the Dawson, Denver, Arapahoe and Laramie-Fox Hills Aquifers.

11. Allowed Average Annual Amount of Withdrawal

The criteria used in determining the allowed average annual amount of withdrawal of groundwater from each aquifer as specified in Paragraph 8, beneath the land described in Paragraph 10 are those criteria prescribed by C.R.S. 37-90-137(4) and the Rules and Regulations adopted by the State Engineer. The values used to calculate the allowed average annual amount of withdrawal are:

Aquifer	No. of Acres	Saturated Materials (feet)	Specific Yield	Acre-Feet Per Year
Dawson	132	128	20%	34
Denver	132	340	17%	76
Arapahoe	132	220	17%	49
Laramie-Fox Hills	132	183	15%	36

all in accordance with the Determinations of Facts issued by the State Engineer on January 15, 1992.

The values may be adjusted based on site specific data submitted pursuant to the Statewide Nontributary Groundwater Rules and subject to the retained jurisdiction provisions contained in Paragraph 17.

12. The ground water in the Arapahoe and Laramie-Fox Hills aquifers underlying the Subject Land is nontributary ground water as that term is defined in Section 37-90-103(10.5), 15 C.R.S. (as amended). The withdrawal of the total amount of nontributary ground water underlying the Subject Land will not cause material injury to any other vested water right, and will not, within one hundred years, deplete

the flow of a natural surface stream at an annual rate greater than one-tenth of one percent of the annual rate of withdrawal.

Pursuant to the State Engineer's Denver Basin Rules, the ground water underlying the Subject Land in the Dawson and Denver aquifers is "not nontributary" ground water as that term is used in Section 37-90-137(9)(c), C.R.S. Applicant is entitled to withdraw and use all previously unappropriated and legally available ground water from these aquifers. Well Colaco DN-1 is located more than one mile from the nearest point of contact between the Denver aquifer and any natural stream and its alluvium.

13. Construction of Wells

For all wells, applicants shall comply with the following conditions:

A. The entire length of the open bore hole except the surface casing shall be geophysically surveyed prior to casing and copies of the geophysical log submitted to the Division of Water Resources within 60 days of drilling. Applicant may provide a geophysical log from an adjacent well or test hole in accordance with the Statewide Rules and Regulations and acceptable to the State Engineer, which fully penetrates the formation, in satisfaction of the above requirement.

B. The ground water production shall be limited to the aquifers stated in Paragraph 8 herein as defined in the Denver Basin Rules and Regulations. Non-perforated casing must be installed and properly grouted to prevent withdrawal from or intermingling of water between other aquifers.

C. The permit number and name of the aquifer shall be permanently displayed on or near the well at a location easily accessible to water officials.

D. Applicant shall comply with C.R.S. Section 37-91-101, et seq. and the Rules and Regulations promulgated thereto and with such other requirements for constructing and equipping the well as the State Engineer may reasonably require.

E. Unless otherwise authorized by the Division Engineer, applicant shall install a totalizing flow meter on each well. The meter shall be installed according to the manufacturer's recommendations and shall be inspected at least annually, and promptly repaired or recalibrated as needed. If Applicant's meter becomes inoperable, it shall be repaired as soon as possible so that measurements can continue. Permission to operate the well without an operational meter must be obtained from the Division Engineer.

F. The Applicant shall keep records of the amount of water pumped and perform the calculations necessary to determine whether Applicant is in compliance with this decree. Applicant shall supply the Division Engineer with those records at least on an annual basis or upon request by the Division Engineer.

14. Limitation on Consumption of Nontributary Groundwater.

Applicant may not consume more than 98 percent of the annual quantity of the nontributary groundwater withdrawn from Colaco KA-1 Well and Colaco LFH-1 Well from the aquifer underlying the property in Paragraph 10. The relinquishment of 2 percent of the annual amount of water withdrawn to the stream system, as required by the Denver Basin Rules effective January 1, 1986, may be satisfied by any method selected by the Applicant, so long as Applicant can demonstrate to the reasonable satisfaction of the State Engineer prior to issuance of the permit that an amount equal to 2 percent of such annual withdrawals (by volume) will be relinquished to the stream system, by quantifiable return flows or otherwise.

15. Any right to reuse or successive use of water approved herein shall be in accordance with C.R.S. 37-82-106(2).

16. Well Permits

Well Permit No. 31778-F was issued to Colaco DN-1 Well on June 2, 1987. When the applicant is ready to construct Wells Colaco DA-1, Colaco KA-1, and Colaco LFH-1, an application for a well permit shall be filed pursuant to 37-90-137, C.R.S. The State Engineer shall consider the rights granted herein as valid. If Applicant fails to construct the well for which the permit was issued within the period of time authorized by statute, including legally authorized extension of any such time period, then when Applicant is ready to drill the well, Applicant shall file a second application for such well and the State Engineer may issue a well permit with restrictions no more burdensome than are found in this ruling.

17. Retained Jurisdiction.

The Court retains jurisdiction to provide for the adjustment of the annual amount of withdrawal to conform to actual local aquifer characteristics as determined from analyses of data obtained when the wells are constructed or test holes drilled. Within 60 days after the completion of such well(s) or test hole(s), the Applicant shall file with the State Engineer, and serve each of the parties who have appeared herein, copies of the well logs from such well(s) or test hole(s). Any person including the State Engineer can

invoke the Court's retained jurisdiction to make a Final Determination of Water Right. The State Engineer can invoke the Court's retained jurisdiction to make a Final Determination of Water Right. The State Engineer, upon notification of retained jurisdiction, shall utilize data available to him and make a final Determination of Water Rights Finding within 4 months and submit same to the Water Court. If no protest to such a filing is made within 60 days, the Final Determination of Water Right 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 4 months, such final determination shall be made by the Water Court after notice and hearing.

18. The rights to nontributary ground water sought by this Application are not "Conditional Water Rights" and Findings of Reasonable Diligence are not required. Pursuant to Section 37-90-305(11), 15 C.R.S. (as amended), the rights to nontributary ground water requested from the Arapahoe and Laramie-Fox Hills aquifers are vested property rights, not conditional water rights, and the requirements of Section 37-92-102(6), 301(4), and 601, 15 C.R.S. (as amended) pertaining to conditional water rights and the requirement for findings of reasonable diligence are inapplicable to rights to such ground water.

The "not nontributary" ground water in the Dawson and Denver aquifers is, pursuant to Section 37-90-137(4) and (9), to be administered over a one hundred year aquifer life and not pursuant to any doctrine of priority of appropriation. For that reason, none of the policies or purposes of conditional water rights and the filings of reasonable diligence associated with the priority of appropriation are applicable to the rights to the "not nontributary" ground water requested herein. As a matter of law, even though the ground water requested from the "not nontributary" Dawson and Denver aquifers has not been diverted and applied to beneficial use, it is a vested property right, and that the requirements of Sections 37-92-102(6), 301(4), and 601, C.R.S. pertaining to conditional water rights and findings of reasonable diligence are inapplicable to the "not nontributary" ground water. The failure to obtain periodic findings of reasonable diligence shall not result in a loss, forfeiture, or abandonment of Applicant's rights to "not nontributary" ground water from the Dawson or Denver aquifers.

19. That Applicant has furnished acceptable proof as to claims made.

IT IS, THEREFORE, ORDERED AS FOLLOWS: That Applicant be, and is hereby, awarded the underground water rights for Colaco DA-1, Colaco DN-1, Colaco KA-1, and Colaco LFH-1 Wells as set forth herein.

NAME AND ADDRESS: Colaco, Ltd., a Colorado Corporation
William A. Fischer, President
1790 Pinnacle Ridge Lane
Colorado Springs, CO 80919

IT IS FURTHER ORDERED that Applicant shall install and maintain such water measurement devices, recording devices, content gauges and inlet and outlet measurement and recording devices, as the case may be, as are deemed essential by the Office of the State Engineer, and the same shall be installed and operated in accordance with instructions from said Office.

IT IS FURTHER ORDERED that copies of this ruling shall be mailed as provided by statute.

Dated and filed with the Water Clerk this 9th day of April, 1992.

BY THE REFEREE:

Clyde B. Young, Jr., Water Referee
Water Division No. 2
State of Colorado

Filed in the office of the Clerk, District Court Water Division No. 2, State of Colorado

APR 9 1992

Clerk

COPY

Filed in the office of the Clerk, District Court, Water Division No. 2, State of Colorado

MAY 5 1992

Clerk

DISTRICT COURT, WATER DIVISION 2, COLORADO

CASE NO. 91CW35

JUDGMENT AND DECREE

CONCERNING THE APPLICATION FOR WATER RIGHTS OF:

COLACO, LTD. IN EL PASO County.

THE COURT FINDS That no protest has been filed to the Ruling of the Water Referee within the time provided by law, and that said Ruling should be confirmed, approved and adopted.

IT IS, THEREFORE, ORDERED, ADJUDGED AND DECREED That the Ruling of Referee entered on April 9, 1992, be and is incorporated herein by reference and is confirmed, approved and adopted as the judgment of this Court.

*Dated: May 5, 1992.

BY THE COURT:

JOHN R. TRACEY, WATER JUDGE

221231940 12/22/2021 9:57 AM
PGS 2 $18.00 DF $0.00
Electronically Recorded Official Records El Paso County CO
Chuck Broerman, Clerk and Recorder

D.F. NB

QUITCLAIM DEED
(Water Rights)

THIS DEED is dated December 20, 2021, and is made between Classic Investments, LLC, a Colorado limited liability company, the "Grantor," and Classic SRJ Land, LLC, a Colorado limited liability company, the "Grantee," whose legal address is 2138 Flying Horse Club Drive, Colorado Springs, CO 80921, of the County of El Paso and State of Colorado.

WITNESS, that the Grantor, for and in consideration of the sum of Ten Dollars ($10.00), the receipt and sufficiency of which is hereby acknowledged, does hereby remise, release, sell and QUITCLAIM unto the Grantee, and the Grantee's heirs and assigns, forever, all the right, title, interest, claim and demand which the Grantor has in and to the real property, together with any improvements thereon, located in the County of El Paso and State of Colorado, described as follows:

Any and all water rights underlying, adjudicated in favor of, associated with, which may be determined to be decreed, and otherwise are appurtenant to that real property legally described on the attached Exhibit A, including, without limitation, rights decreed in Case No. 91 CW35, Water Division 2, and any wells described therein

TO HAVE AND TO HOLD the same, together with all and singular the appurtenances and privileges thereunto belonging, or in anywise thereunto appertaining, and all the estate, right, title, interest and claim whatsoever of the Grantor, either in law or equity, to the only proper use, benefit and behoof of the Grantee, and the Grantee's heirs and assigns, forever.

IN WITNESS WHEREOF, the Grantor has caused its corporate name to be hereunto subscribed by its president, vice-president, or other head officer, and its corporate seal to be affixed, attested by its secretary or other appropriate officer, on the date set forth above.

GRANTOR:

By: _____
Douglas Stimple, Manager

STATE OF COLORADO)
) ss.
COUNTY OF EL PASO)

The foregoing instrument was acknowledged before me this 20th day of December, 2021, by Douglas Stimple as the Manager of the Grantor.

Witness my hand and official seal.
My commission expires: 12-02-2025

Christine L. Wise
Notary Public

CHRISTINE L WISE
NOTARY PUBLIC
STATE OF COLORADO
NOTARY ID 19974021715
MY COMMISSION EXPIRES DECEMBER 02, 2025

Land Title GUARANTEE COMPANY 55101998

Exhibit A
Overlying Real Property

THE SOUTHEAST QUARTER OF THE NORTHEAST QUARTER OF SECTION 34, TOWNSHIP 12 SOUTH, RANGE 65 WEST OF THE 6TH P.M., COUNTY OF EL PASO, STATE OF COLORADO, EXCEPT THAT PORTION THEREOF LYING WITHIN BOW VALLEY SUBDIVISION, RECORDED JANUARY 27, 1981 UNDER RECEPTION NO. 740847

INFORMATION NOTE:
APN: 52000-00-228

DISTRICT COURT, WATER DIVISION 1, COLORADO

Case No. 93-CW-018
(85CW445)

RULING AND DECREE OF THE WATER COURT

CONCERNING THE WATER RIGHTS OF NHK GROUP, LTD., a Colorado Limited Partnership,

IN THE NONTRIBUTARY DENVER, ARAPAHOE, AND LARAMIE-FOX HILLS AQUIFERS AND THE NOT NONTRIBUTARY UPPER DAWSON AQUIFER, in El Paso County.

THIS CLAIM to amend the existing decree in Case No. 85-CW-445, entered on December 12, 1988, was filed with the Water Division Water Clerk on February 26, 1993. This ruling and decree is designed to amend such existing decree, and paragraph numbers below correspond with the paragraph numbers in the original decree. All matters contained in the application having been reviewed, and testimony having been taken where such testimony is necessary, and such corrections made as are indicated by the evidence presented herein, IT IS HEREBY THE RULING OF THE WATER REFEREE:

FINDINGS OF FACT

1. Name, Address, and Telephone Number of Applicant:

NHK Group, Ltd., a Colorado Limited Partnership
N.B. Firley, General Partner
7111 West Alameda Avenue, Unit L
Lakewood, Colorado 80226

2. History of Case:

The Applicant is represented in this matter by Duncan, Ostrander & Dingess, P.C. (Robert E. Schween). The original application for underground water rights underlying the property described herein was filed with this Court of December 31, 1985. An amended application for under ground water rights from nontributary and not nontributary sources was filed with this Court on March 31, 1987 and published in the March 1987 Water Resume for Water Division 1. A timely statement of opposition was filed to the amended application by the City of Colorado Springs (Gregory L. Johnson). A decree in Case No 85-CW-445 was entered on December 12, 1988. An application to amend the decree was filed on February 26, 1993, by NHK Group, Ltd., (1) to change the ownership of the land and ground water rights decreed, (2) to indicate additional well sites in each aquifer, and (3) to vacate from the decree 60 acre-feet per year of Dawson aquifer ground water underlying a particular parcel. The City of Colorado Springs also filed a statement of opposition to this amended application (Wm. Kelly Dude). No other statements of

opposition or motions to intervene have been filed, and the time for filing such statements of opposition has expired.

3. Subject Matter Jurisdiction:

Timely and adequate notice of the pendency of these proceedings has been given in the manner required by law. The Water Court has jurisdiction over the subject matter of these proceedings and over all who have standing to appear as parties, whether they have appeared or not.

4. Aquifers and Location of Ground Water:

a. In this proceeding, Applicant seeks an amended decree confirming all previously decreed rights to all ground water recoverable from the nontributary Denver, Arapahoe, and Laramie-Fox Hills aquifers and the not nontributary Dawson aquifer, except as stated below, underlying Applicant's property in El Paso County, Colorado. The Applicant's property is described as follows: all of Section 16; the E1/2 of SW1/4 and the SE1/4 of Section 17; the E1/2 of the E1/2 W1/2 of Section 20; the NE1/4 and the W1/2, except for the east 30 feet of the SW1/4, of Section 21, all in Township 11 South, Range 65 West of the 6th P.M., consisting of 1840 acres, more or less. Applicant is the owner of the ground water rights underlying the above described land and no part of such land lies within a designated ground water basin. A general location map of the property is attached hereto as Exhibit "A."

b. Applicant seeks to vacate from the decree, as amended, the rights in 60 acre-feet per year in the Dawson aquifer, which 60 acre-feet per year shall be vacated from those Dawson aquifer ground water rights underlying a specified 480 acres of land, generally described as the W1/2 and the NE 1/4 of Section 21, Township 11 South, Range 65 West of the 6th P.M. Such land area, underlying which the 60 acre-feet per year has been vacated from the decree, is shown in the attached annotated location map, Exhibit "B."

5. Specific Wells Claimed:

The legal descriptions of the wells to be constructed under this decree, as amended, are as follows. Wells and well locations originally decreed in Case No. 85-CW-445 are shown with the suffix (A), and new wells and well locations pursuant to this application to amend such decree are indicated below by the suffix (B). All well locations are in Township 11 South, Range 65 West of the 6th P.M., in El Paso County, Colorado.

a. Dawson Aquifer:

Well No.	Quarter/Quarter	Section No.	Feet From Section Line	
DA-01(A)	SW,NE	16	2200 N	2200 E
DA-02(A)	NE,SE	17	1500 S	500 E
DA-03(A)	NW,NE	21	800 N	2200 E
DA-04(A)	NW,SW	21	1500 S	400 W
DA-01(B)	NW,NW	16	170 N	170 W
DA-02(B)	NE,NE	16	170 N	170 E
DA-03(B)	SW,NE	16	2640 N	2710 W
DA-04(B)	SW,SW	16	4200 N	170 W
DA-05(B)	SE,SE	16	3970 N	170 E
DA-06(B)	SW,NE	21	2310 N	1570 E
DA-07(B)	NE,SE	20	2630 N	170 E
DA-08(B)	SE,SW	21	270 S	2370 W
DA-09(B)	NE,SW	17	2479 S	1490 W
DA-10(B)	SE,NW	20	1570 N	1670 W
DA-11(B)	SE,SW	20	170 S	1570 W

b. Denver Aquifer:

Well No.	Quarter/Quarter	Section	Feet From Section Line	
D-01(A)	SW,NE	16	2000 N	2150 E
D-02(A)	NE,SE	17	1500 S	450 E
D-03(A)	NW,NE	21	800 N	2150 E
D-04(A)	NW,SW	21	1500 S	450 W
D-01(B)	NW,NW	16	100 N	100 W
D-02(B)	NE,NE	16	100 N	100 E
D-03(B)	NE,SW	16	2710 N	2640 W
D-04(B)	SW,SW	16	4270 N	100 W
D-05(B)	NE,SE	16	3900 N	100 E
D-06(B)	SW,NE	21	2240 N	1500 E
D-07(B)	NE,SE	20	2900 N	100 E
D-08(B)	SE,SW	21	200 S	2440 W
D-09(B)	NE,SW	17	2540 S	1420 W
D-10(B)	SE,NW	20	1500 N	1600 W
D-11(B)	SE,SW	20	100 S	1500 W

c. Arapahoe Aquifer:

Well No.	Quarter/Quarter	Section	Feet From Section Line	
A-01(A)	SW,NE	16	2050 N	2200 E
A-02(A)	NE,SE	17	1450 S	500 E
A-03(A)	NW,NE	21	850 N	2200 E
A-04(A)	NW,SW	21	1450 S	400 W
A-05(A)	SW,NE	20	1500 N	2500 E
A-01(B)	NW,NW	16	100 N	170 W
A-02(B)	NE,NE	16	100 N	170 E
A-03(B)	Center Point	16	2640 N	2640 W
A-04(B)	SW,SW	16	4200 N	100 W
A-05(B)	NE,SE	16	3900 N	170 E
A-06(B)	SW,NE	21	2240 N	1570 E
A-07(B)	NE,SE	20	2830 N	100 E
A-08(B)	SE,SW	21	270 S	2440 W
A-09(B)	NE,SW	17	2540 S	1480 W
A-10(B)	SE,NW	20	1500 N	1670 W
A-11(B)	SE,SW	20	170 S	1500 W

d. Laramie-Fox Hills Aquifer:

Well No.	Quarter/Quarter	Section	Feet From Section Line	
LFH-01(A)	SW,NE	16	2050 N	2150 E
LFH-02(A)	NE,SE	17	1450 S	450 E
LFH-03(A)	NW,NE	21	850 N	2150 E
LFH-04(A)	NW,SW	21	1450 S	450 W
LFH-01(B)	NW,NW	16	170 N	100 W
LFH-02(B)	NE,NE	16	170 N	100 E
LFH-03(B)	NE,SW	16	2710 N	2170 W
LFH-04(B)	SW,SW	16	4270 N	170 W
LFH-05(B)	NE,SE	16	3970 N	100 E
LFH-06(B)	SW,NE	21	2310 N	1500 E
LFH-07(B)	NE,SE	20	2910 N	170 E
LFH-08(B)	SE,SW	21	200 S	2370 W
LFH-09(B)	NE,SW	17	2470 S	1420 W
LFH-10(B)	SE,NW	20	1570 N	1600 W
LFH-11(B)	SE,SW	20	100 S	1570 W

7. Average Annual Amounts of Withdrawal Available:

a. Not Nontributary Dawson Aquifer:

Pursuant to the Denver Basin Rules, the ground water in the Dawson aquifer underlying Applicant's property is classified as not nontributary ground water. The hydrologic values and the average annual amount available for withdrawal from the Dawson aquifer are as follows:

Upper Dawson Aquifer

Acreage	Sand Thickness	Specified Yield	Average Annual Amt. in Acre-Feet
1840	490 feet	.20%	1743*

(1) The above average annual amount reflects a reduction of 60 acre-feet per year from the amount indicated in the original decree. Such 60 acre-feet per year is vacated from and no longer part of this decree, as amended

(2) By separate Stipulation, Applicant and Objector City of Colorado Springs, have agreed that any and all exempt wells which may be applied for or issued to overlying landowners shall be limited to production from the Dawson aquifer. Such Stipulation, dated July 22, 1993, is incorporated herein by this reference, and attached hereto as Exhibit "C".

b. Nontributary Denver, Arapahoe, and Laramie-Fox Hills Aquifers:

Values and average annual amounts for the Denver, Arapahoe, and Laramie-Fox Hills aquifers underlying Applicant's property remain as stated in the existing decree.

CONCLUSIONS OF LAW

16. The rights to nontributary and not nontributary ground water determined herein shall not be administered in accordance with priority of appropriation. Such rights are not "conditional water rights" as defined by § 37-92-103(6), C.R.S. The provisions of § 37-92-301(4), C.R.S., requiring findings of reasonable diligence are not applicable to the ground water rights determined herein. The determination of ground water rights herein need not include a date of initiation of the withdrawal project. See § 37-92-305(11), C.R.S. Ground water herein which is not nontributary shall be administered only pursuant to §§ 37-90-137(4) and 37-90-137(9), C.R.S.

17. Subject to paragraph 20 below, Applicant is entitled to permits to construct the wells described in paragraph 5 hereof which will withdraw nontributary and not nontributary ground water pursuant to § 37-90-137(4), C.R.S., and such additional wells as may be required in the future to withdraw such ground water pursuant to § 37-90-137(10), C.R.S.

IT IS THEREFORE ORDERED, ADJUDGED, AND DECREED THAT:

22. All provisions of the original decree in this matter, Case No. 85-CW-445, remain in effect unless specifically amended hereby.

RULING ENTERED this 11th day of August, 1993.

By Raymond S. Liesman
Raymond S. Liesman
Water Referee, Water Division 1
State of Colorado

THE COURT BOTH FIND THAT NO PROTEST TO THE RULING OF THE REFEREE HAS BEEN FILED. THE FOREGOING RULING IS CONFIRMED AND APPROVED, AND IS HEREBY MADE THE JUDGMENT AND DECREE OF THIS COURT.

DATED: AUG 31 1993

BY THE COURT:

Robert A. Behrman
Water Judge, Water Division 1
State of Colorado

APPROVED AS TO FORM AND CONTENT:

DUNCAN, OSTRANDER & DINGESS, P.C.

Date: July 2, 1993

By: Robert E. Schween

Robert E. Schween, #12923
7800 East Union Avenue, Suite 200
Denver, Colorado 80237
Telephone: (303) 779-0200

ATTORNEYS FOR APPLICANT
NHK GROUP, LTD.

ANDERSON, JOHNSON & GIANUNZIO

Date: July 22, 1993

By: See Verification attached as Exhibit "C"

Mark T. Pifher, #13629
William Kelly Dude, #13206
104 South Cascade Avenue, Suite 204
P. O. Box 240
Colorado Springs, Colorado 80901-0240
Telephone: (719) 632-3545

ATTORNEYS FOR OBJECTOR
CITY OF COLORADO SPRINGS

a: 93-CW-018A.DEC

DISTRICT COURT, WATER DIVISION 1, COLORADO

Case No. 93-CW-018 (85-CW-445)

AMENDED RULING AND DECREE OF THE WATER COURT

CONCERNING THE WATER RIGHTS OF: SHAMROCK INVESTMENTS, A WYOMING LIMITED LIABILITY COMPANY,

IN THE NONTRIBUTARY DENVER, ARAPAHOE, AND LARAMIE-FOX HILLS AQUIFERS AND THE NOT NONTRIBUTARY DAWSON AQUIFER,

IN EL PASO COUNTY.

THIS CLAIM to amend the existing decree in Case No. 85-CW-445, entered on December 12, 1988, was filed with the Water Division Water Clerk on February 26, 1993. A Motion to Amend Decree was filed on August 2, 1994, to correct the name of the owner of the decreed water rights and to vacate additional Dawson aquifer water rights. This amended ruling and decree is designed to restate such existing decree incorporating the amendments decreed in Case No. 93-CW-018 and granting the amendments requested in the Motion to Amend Decree. All matters contained in the application in Case No. 93-CW-018 and the Motion to Amend Decree having been reviewed, and testimony having been taken where such testimony is necessary, and such corrections made as are indicated by the evidence presented herein, IT IS HEREBY THE RULING OF THE WATER REFEREE:

FINDINGS OF FACT

1. Name, Address, and Telephone Number of Applicant:

Shamrock Investments,
a Wyoming Limited Liability Company
432 Happy Canyon Road
Castle Rock, Colorado 80104

Please direct all correspondence and inquiries to:

Robert E. Schweer, Esq.
7800 East Union Avenue, Suite 200
Denver, Colorado 80237
(303) 779-0200 (Telephone)
(303) 779-3662 (Telefax)

2. History of Case:

A. Original Decree.

The Applicant is represented in this matter by Robert E. Schween. The overlying land area subject to the original decree in Case No. 85-CW-445 is the Bar X Ranch, consisting of 1840 acres, more or less, located in Sections 16, 17, 20, and 21 in Township 11 South, Range 65 West of the 6th P.M., in El Paso County, Colorado. A General Location Map of the property is attached hereto as Exhibit A. The original application for underground water rights underlying the property was filed with this Court of December 31, 1985. An amended application for under ground water rights from nontributary and not nontributary sources was filed with this Court on March 31, 1987, and published in the March 1987 Water Resume for Water Division 1. A timely statement of opposition was filed to the amended application by the City of Colorado Springs. A decree in Case No. 85-CW-445 was entered on December 12, 1988.

B. Amendments to the Original Decree.

Case No. 93-CW-018

(1) An application to amend the decree was filed on February 26, 1993, by NHK Group, Ltd., a successor in interest to the original Applicants. A decree in Case No. 93-CW-018 was entered on August 31, 1993, which decree operates to amend the original decree for the following purposes:

(a) To indicate the owners of the land and ground water rights decreed in Case No. 85-CW-445 was NHK Group, Ltd.;

(b) To specify additional well sites for wells to be constructed into each aquifer, and

(c) To vacate from the decree 60 acre-feet of Dawson aquifer water underlying a specified 480 acres of land which had been conveyed to Aberdeen Investments, Inc.

Motion to Amend Decree

(2) Change in Ownership. In August, 1994, Shamrock Investments, a Wyoming Limited Liability Company, the successor in interest to the property and decreed water rights, moved to amend the original decree, as amended, to indicate that it is the present owner of the deep aquifer ground water underlying the 1840 acres of the original Bar X Ranch, except for the 60 acre-feet in the Dawson aquifer conveyed to Aberdeen Investments, Inc., and vacated from the original decree by the decree issued in Case No. 93-CW-018.

(3) Release of an Additional 80 Acre-Feet Per Year of Dawson Aquifer Ground Water. By deed, Movant Shamrock Investments conveyed 312 acres of its property to Aberdeen Investments, Inc., a Colorado corporation. Along with the 312 acres of land, generally described as the East 1/2 of Section 16, Range 65 West, Township 11 South of the 6th P.M., and shown on Exhibit B hereto, Shamrock Investments also conveyed to Aberdeen Investments, Inc., eighty (80) acre-feet annually of ground water from the Dawson aquifer underlying all of said Section 16. This additional 80 acre-feet per year of Dawson aquifer ground water must also be vacated from the decree, as amended.

C. Although it no longer owns the 60 acre-feet of Dawson aquifer ground water previously conveyed to Aberdeen Investments, Inc., and vacated from the decree in Case No. 93-CW-018, nor the 80 acre-feet of Dawson aquifer ground water subsequently conveyed to Aberdeen Investments, Inc., Shamrock Investments owns all remaining Dawson aquifer ground water and all other ground water in this decree underlying the entire 1840 acre Bar X Ranch property.

3. Subject Matter Jurisdiction:

Timely and adequate notice of the pendency of these proceedings has been given in the manner required by law. The Water Court has jurisdiction over the subject matter of these proceedings and over all who have standing to appear as parties, whether they have appeared or not.

4. Aquifers and Location of Ground Water:

A. Shamrock Investments seeks an amended decree confirming all previously decreed rights to all ground water recoverable from the nontributary Denver, Arapahoe, and Laramie-Fox Hills aquifers and the not nontributary Dawson aquifer, except as stated below, underlying the subject property in El Paso County, Colorado. The property is described as follows: all of Section 16; the E1/2 of SW1/4 and the SE1/4 of Section 17; the E1/2 of the E1/2 W1/2 of Section 20; the NE1/4 and the W1/2, except for the east 30 feet of the SW1/4, of Section 21, all in Township 11 South, Range 65 West of the 6th P.M., consisting of 1840 acres, more or less. Shamrock Investments is the owner of the ground water rights underlying the above-described land and no part of such land lies within a designated ground water basin.
See Exhibit A.

B. This amended ruling and decree will vacate from the decree the rights in a total of 140 acre-feet per year in the Dawson aquifer, of which 60 AF/Yr. shall be vacated from those Dawson aquifer ground water rights underlying a specified 480 acres of land, generally described as the W1/2 and the NE 1/4 of Section 21, and 80 AF/Yr. shall be vacated from those Dawson aquifer ground water rights underlying 640 acres of land in Section 16, both areas in Township 11 South, Range 65 West of the 6th P.M. Such land areas are shown in the attached annotated location map, Exhibit "B."

5. Specific Wells Claimed:

The legal descriptions of the wells to be constructed under this decree are as follows. Wells and well locations originally decreed in Case No. 85-CW-445 are shown with the suffix (A), and new wells and well locations decreed in Case No. 93-CW-018 are indicated below by the suffix (B). All well locations are in Township 11 South, Range 65 West of the 6th P.M., in El Paso County, Colorado.

A. Dawson Aquifer:

Well No.	Quarter/Quarter	Section No.	Feet From Section Line	
DA-01(A)	SW,NE	16	2200 N	2200 E
DA-02(A)	NE,SE	17	1900 S	500 E
DA-03(A)	NW,NE	21	800 N	2200 E
DA-04(A)	NW,SW	21	1500 S	400 W
DA-01(B)	NW,NW	16	170 N	170 W
DA-02(B)	NE,NE	16	170 N	170 E
DA-03(B)	SW,NE	16	2640 N	2710 W
DA-04(B)	SW,SW	16	4200 N	170 W
DA-05(B)	SE,SE	16	3970 N	170 E
DA-06(B)	SW,NE	21	3310 N	1570 E
DA-07(B)	NE,SE	20	2830 N	170 E
DA-08(B)	SE,SW	21	270 S	2370 W
DA-09(B)	NE,SW	17	2470 S	1490 W
DA-10(B)	SE,NW	20	1570 N	1670 W
DA-11(B)	SE,SW	20	170 S	1570 W

B. Denver Aquifer:

Well No.	Quarter/Quarter	Section	Feet From Section Line	
D-01(A)	SW,NE	16	2000 N	2150 E
D-02(A)	NE,SE	17	1500 S	450 E
D-03(A)	NW,NE	21	800 N	2150 E
D-04(A)	NW,SW	21	1500 S	450 W
D-01(B)	NW,NW	16	100 N	100 W
D-02(B)	NE,NE	16	100 N	100 E
D-03(B)	NE,SW	16	2710 N	2640 W
D-04(B)	SW,SW	16	4270 N	100 W
D-05(B)	NE,SE	16	3900 N	100 E
D-06(B)	SW,NE	21	2240 N	1500 E
D-07(B)	NE,SE	20	2900 N	100 E
D-08(B)	SE,SW	21	200 S	2440 W
D-09(B)	NE,SW	17	2540 S	1420 W
D-10(B)	SE,NW	20	1500 N	1600 W
D-11(B)	SE,SW	20	100 S	1500 W

C. Arapahoe Aquifer:

Well No.	Quarter/Quarter	Section	Feet From Section Line	
A-01(A)	SW,NE	16	2050 N	2200 E
A-02(A)	NE,SE	17	1450 S	500 E
A-03(A)	NW,NE	21	850 N	2200 E
A-04(A)	NW,SW	21	1450 S	430 W
A-05(A)	SW,NE	20	1500 N	2500 E
A-01(B)	NW,NW	16	100 N	170 W
A-02(B)	NE,NE	16	100 N	170 E
A-03(B)	Center Point	16	2640 N	2640 W
A-04(B)	SW,SW	16	4200 N	100 W
A-05(B)	NE,SE	16	3900 N	170 E
A-06(B)	SW,NE	21	2240 N	1570 E
A-07(B)	NE,SE	20	2830 N	100 E
A-08(B)	SE,SW	21	270 S	2440 W
A-09(B)	NE,SW	17	2540 S	1480 W
A-10(B)	SE,NW	20	1500 N	1670 W
A-11(B)	SE,SW	20	170 S	1500 W

D. Laramie-Fox Hills Aquifer:

Well No.	Quarter/Quarter	Section	Feet From Section Line	
LFH-01(A)	SW,NE	16	2050 N	2150 E
LFH-02(A)	NE,SE	17	1450 S	450 E
LFH-03(A)	NW,NE	21	850 N	2150 E
LFH-04(A)	NW,SW	21	1450 S	450 W
LFH-01(B)	NW,NW	16	170 N	100 W
LFH-02(B)	NE,NE	16	170 N	100 E
LFH-03(B)	NE,SW	16	2710 N	2170 W
LFH-04(B)	SW,SW	16	4270 N	170 W
LFH-05(B)	NE,SE	16	3970 N	100 E
LFH-06(B)	SW,NE	21	2310 N	1500 E
LFH-07(B)	NE,SE	20	2910 N	170 E
LFH-08(B)	SE,SW	21	200 S	2370 W
LFH-09(B)	NE,SW	17	2470 S	1420 W
LFH-10(B)	SE,NW	20	1570 N	1600 W
LFH-11(B)	SE,SW	20	100 S	1570 W

6. Well Permits:

A. Owner Shamrock Investments or any successor in interest may make application for permits for each well described herein at least 45 days in advance of such time as it is ready to construct each well or series of wells.

B. The State Engineer shall consider the rights granted herein as valid. Because a unified municipal water supply system is planned to serve this property, the system will be constructed pursuant to a phased development program over a considerable period of time. Each well will be drilled and completed as it is needed pursuant to such phased development program. Accordingly, the Court determines that if Applicant fails to construct any of said wells within the period of time specified in the corresponding well permits, it may reapply and the State Engineer shall promptly reissue that well permit for the amount of water determined herein with burdens no more restrictive than found herein.

7. Average Annual Amounts of Withdrawal Available:

A. Not Nontributary Dawson Aquifer.

Pursuant to the Denver Basin Rules, the ground water in the Dawson aquifer underlying Applicant's property is classified as not nontributary ground water. The hydrologic values and the average annual amount available for withdrawal from the Dawson aquifer are as follows:

Upper Dawson Aquifer

Acreage	Sand Thickness	Specified Yield	Average Annual Amt. in Acre-Feet
1840	490 feet	.20%	1663

(1) The above average annual amount figure represents the 1803 acre-feet per year originally decreed in Case No. 85-CW-445 less the 60 acre-feet vacated by the decree in Case No. 93-CW-018 and less the 80 acre-feet vacated as a result of the motion filed by Shamrock Investments in August, 1994.

(2) By separate Stipulation, Shamrock Investments and Objector City of Colorado Springs, have agreed that any and all exempt wells which may be applied for or issued to overlying landowners shall be limited to production from the Dawson aquifer. Such Stipulation, dated July 22, 1993, is incorporated herein by this reference, and attached hereto as Exhibit "C".

B. Nontributary Denver, Arapahoe, and Laramie-Fox Hills Aquifers.

Pursuant to the Denver Basin Rules, the ground water in the Denver, Arapahoe, and Laramie-Fox Hills aquifers underlying Applicant's property is classified as nontributary ground water, as defined in § 37-90-103(10.5), C.R.S. The hydrologic values and the average annual amounts available for withdrawal from the Denver, Arapahoe, and Laramie-Fox Hills aquifers are as follows:

Aquifer	Acreage	Sand Specific Thickness	Yield	Average Annual Amt. in Acre-Feet
Denver	1840	435 feet	17%	1360
Arapahoe	1840	260 feet	17%	813
Lar.-FH	1840	200 feet	15%	552

C. The above values and amounts are consistent with the Determinations of Facts issued by the Office of the State Engineer (April 29, 1986).

8. Nominal Pumping Rates and Estimated Average Well Depths:

Aquifer	Combined Rate	Individual Well Rate	Well Depth (Average)
Dawson	1500 gpm (3.3 cfs)	375 gpm (.84 cfs)	1,040 feet
Denver	1200 gpm (2.5 cfs)	300 gpm (.66 cfs)	1,930 feet
Arapahoe	750 gpm (1.6 cfs)	150 gpm (.33 cfs)	2,450 feet
Laramie-Fox Hills	480 gpm (1.0 cfs)	120 gpm (.26 cfs)	2,950 feet

9. Final Average Annual Amounts of Withdrawal:

A. Final determinations of the applicable average specified yields, saturated sand thicknesses, and resulting average annual amounts available to Applicant from each aquifer will be made pursuant to the retained jurisdiction of this Court, as described in paragraph 20 hereinbelow. In the event this decree is not reopened for a further quantitative determination, the findings herein are final and controlling.

B. The allowed annual amount of ground water which may be withdrawn from such aquifers through the wells specified above and any additional wells, pursuant to § 37-90-137(10), C.R.S., may exceed the average annual amount of withdrawal, as long as the total volume of water withdrawn through such wells and any additional wells therefor subsequent to the date of the original decree does not exceed the product of the number of years since the date of the issuance of such original decree, multiplied by the average annual amount of withdrawal, as specified above or as determined pursuant to the retained jurisdiction of the Court.

10. Source of Ground Water; Limitations on Consumption; Replacement Obligations and Requirements:

A. The ground water to be withdrawn from the Denver, Arapahoe, and Laramie-Fox Hills aquifers is "nontributary ground water" as defined in § 37-90-103(10.5), C.R.S., and in the Denver Basin Rules, the withdrawal of which will not, within 100 years, deplete the flow of a natural stream, including a natural steam as defined in §§ 37-82-101(2) and 37-92-102(1)(b), C.R.S., at an annual rate greater than 1/10 of 1% of the annual rate of withdrawal. The ground water to be withdrawn from the Dawson aquifer is "not nontributary ground water" as defined in the Denver Basin Rules, C.C.R. 402-6, Rule 5A.

B. Applicant may not consume more than 98% of the annual quantity of water withdrawn from the nontributary Denver, Arapahoe, and Laramie-Fox Hills aquifers. The relinquishment of 2% of the annual amount of water withdrawn to the stream system, as required by the Denver Basin Rules, may be satisfied by any method selected by the Applicant and satisfactory to the State Engineer, so long as Applicant can demonstrate that an amount equal to 2% of such withdrawals (by volume) has been relinquished to the stream system.

C. The ground water to be withdrawn from the Dawson aquifer is classified as not nontributary, requiring as a condition precedent to use that Applicant obtain a judicially approved augmentation plan for the replacement of depletions to the affected stream system. Pursuant to the statutory requirement at § 37-90-137(9)(c), C.R.S., the amount of the replacement must be the actual depletive effect caused by withdrawal of the resource to the extent necessary to prevent injury.

11. No Material Injury:

There is unappropriated ground water available for withdrawal from each aquifer beneath the land described herein, and the vested water rights of others will not be materially injured by such withdrawals as described hereby. The minimum useful life of each of the subject aquifers is at least 100 years, assuming no substantial artificial recharge within 100 years. No material injury to vested water rights of others will result from the issuance of permits for the subject wells or the exercise of the rights and limitations specified in this decree therefor.

12. Additional Wells and Well Fields:

A. Shamrock Investments proposes to build a unified municipal water system over the period of many years and will construct its wells as required by development. Any well drilled within 200 feet of a decreed location will be deemed to be constructed at the decreed well location pursuant to the permit and this decree.

B. In addition to the wells described in paragraph 5 above, Applicant may construct additional and replacement wells in order to maintain levels of production, to meet municipal water supply systems demands, or to recover the entire amount of ground water in the subject aquifers underlying the subject property, as described herein. As additional wells are planned, applications shall be filed in accordance with § 37-90-137(10), C.R.S.

C. So long as allowed annual amounts are not exceeded, the pumping rates for the wells may exceed the pumping rates specified herein in order to meet municipal water system supply requirements or to produce the full acre foot allocation of water from each aquifer. Two or more wells constructed into the same aquifer shall be considered a well field. In effecting production of water from such well field, Applicant may produce the entire amount which may be produced hereunder from the particular aquifer through any combination of wells within the well field for that particular aquifer.

D. In considering applications for permits for additional wells to withdraw the ground water which is the subject of this decree, the State Engineer shall be bound by this decree and shall issue said permits in accordance with provisions of § 37-90-137(4), C.R.S. Applicant shall not be required to submit any additional proof or evidence of matters finally determined herein when making application for permits for wells to withdraw the water which is the subject of this decree, except that the State Engineer may require revised land ownership or consent to use affidavits.

E. In the event that the allowed average annual amounts decreed herein are adjusted pursuant to the retained jurisdiction of the Court, any existing permit(s) for any well(s) decreed herein shall be amended to reflect such adjusted average annual amounts. New permits for any wells herein shall likewise reflect any such adjustment of the average annual amounts decreed herein.

13. Proposed Uses of Water:

The water withdrawn from any well may be used, reused, and successively used and otherwise disposed of for all municipal purposes including domestic, industrial, commercial, irrigation, stock watering, recreational, fish and wildlife, fire protection and sanitary purposes subject to the provisions of paragraph 19 herein. This water will be produced for immediate application to said uses, for storage and subsequent application to said uses, for exchange purposes, for replacement of depletions resulting from the use of this ground water or of water from other sources, and for augmentation purposes. Moreover, Applicant may use return flows of this ground water to replace stream depletions under a plan for augmentation approved in compliance with applicable law.

14. Conditions:

For each well constructed pursuant to this decree, Shamrock Investments or its successors shall comply with the following conditions:

A. A totalizing flow meter shall be installed on the well discharge prior to diverting any water therefrom. Applicant shall keep accurate records of all diversions by the well, make any calculations necessary, and submit such records to the Water Division No. 1 Engineer annually.

B. The entire length of the open bore hole shall be geophysically surveyed prior to casing and copies of the geophysical log submitted to the Division of Water Resources. Applicant may provide a geophysical log from an adjacent well or test hole, pursuant to Rule 8F of the Statewide Rules and acceptable to the State Engineer, which fully penetrates the aquifer, in satisfaction of the above requirement.

C. The ground water production shall be limited to the specific aquifer for which the well was designed. Plain, unperforated casing must be installed and properly grouted to prevent withdrawal from or intermingling of water from zones other than those for which the well was designed.

D. Each well shall be permanently identified by its permit number, this Water Court Case Number, and the name of the producing aquifer on the above-ground portion of the well casing or on the pumphouse.

CONCLUSIONS OF LAW

15. The rights to nontributary and not nontributary ground water determined herein shall not be administered in accordance with priority of appropriation. Such rights are not "conditional water rights" as defined by § 37-92-103(6), C.R.S. The provisions of § 37-92-301(4), C.R.S., requiring findings of reasonable diligence are not applicable to the ground water rights determined herein. The determination of ground water rights herein need not include a date of initiation of the withdrawal project. See § 37-92-305(11), C.R.S. Ground water herein which is not nontributary shall be administered only pursuant to §§ 37-90-137(4) and 37-90-137(9), C.R.S.

16. Subject to paragraph 19 below, Shamrock Investments is entitled to permits to construct the wells described in paragraph 5 hereof which will withdraw nontributary ground water pursuant to § 37-90-137(4), C.R.S., and such additional wells as may be required in the future to withdraw such ground water pursuant to § 37-90-137(10), C.R.S. Withdrawals of not nontributary ground water may be made only pursuant to a subsequently adjudicated plan for augmentation therefor.

17. Shamrock Investments' Motion to Amend Decree, incorporated herein by this reference, is granted. The Order granting such Motion is manifest in this ruling and decree.

IT IS THEREFORE ORDERED, ADJUDGED, AND DECREED THAT:

18. The Findings of Fact and Conclusions of Law are incorporated into this Decree of the Water Court.

19. Right to Withdraw Nontributary Ground Water:

The property owner, Shamrock Investments, may withdraw the nontributary ground water herein through the wells listed above at the locations listed above and in the average annual amounts and at the rates of flow specified therefor, subject to the limitations herein and the retained jurisdiction by this Court.

20. Replacement Obligation for Use of Not Nontributary Ground Water Rights:

By separate application, Applicant may seek a plan for the augmentation of depletions associated with the withdrawal of Dawson ground water subject to this decree. No such augmentation plan is granted by this ruling and decree. Judicial approval of such a plan for augmentation is a condition precedent to withdrawal and use of this resource.

21. Retained Jurisdiction:

A. The Court retains jurisdiction as necessary to adjust the average annual amounts of nontributary and not nontributary ground water available under the property to conform to actual local aquifer characteristics as determined from adequate information obtained from wells, pursuant to § 37-92-305(11), C.R.S. 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 obtain a geophysical log of said well(s) or test hole(s) and shall serve such log(s) upon the State Engineer and notify each of the parties who have appeared herein that copies of the log and well completion report, if the well is completed, are available for review.

B. At such time as adequate data are available and 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 finding. The State Engineer shall submit such finding to the Water Court and to the Applicant, and the Applicant shall serve a copy upon the other parties.

C. 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.

D. In the event Applicant fails to invoke retained jurisdiction, the State Engineer or any person may do so. In the interim, the Court retains jurisdiction in this matter pursuant to § 37-92-305(11), C.R.S.

E. Any final determination of quantity of water in the Dawson aquifer will reflect the conveyance of a total of 140 acre-feet per year of Shamrock Investment's water rights in such aquifer, and consequently, any final amount determined will be reduced by such 140 acre-feet per year.

22. All rights, privileges, and priorities obtained or granted by the original decree in this matter, Case No. 85-CW-445, are retained in the issuance of this amended ruling and decree.

HAVING BEEN NO OBJECTIONS, THE COURT HEREBY APPROVES THE RULING AS AMENDED.

DATED: March 17, 1995

BY THE COURT:

Jonathan W. Hays
Water Judge, Water Division 1
State of Colorado

APPROVED AS TO FORM AND CONTENT:

DUNCAN, OSTRANDER & DINGESS, P.C.

Date: 12 October 1994

By _____
Robert E. Schween, #12923
7800 East Union Avenue, Suite 200
Denver, Colorado 80237
Telephone: (303) 779-0200

ATTORNEYS FOR APPLICANT
SHAMROCK INVESTMENTS,
A WYOMING LIMITED LIABILITY COMPANY

s:\93CW018A.DEC

DISTRICT COURT, WATER DIVISION NO. 1, COLORADO

Case No. 85CW445

RULING AND DECREE OF THE WATER COURT

CONCERNING THE APPLICATION FOR WATER RIGHTS OF ED PENDLETON AND BEVERLY C. PENDLETON

IN THE NONTRIBUTARY DENVER, ARAPAHOE, AND LARAMIE-FOX HILLS AQUIFERS AND THE NOT NONTRIBUTARY UPPER DAWSON AQUIFER, in El Paso County.

THIS CLAIM, having been originally filed with the Water Division No. 1 Water Clerk on December 31, 1985, all matters contained in the application having been reviewed, and testimony having been taken where such testimony is necessary, and such corrections made as are indicated by the evidence presented herein, IT IS HEREBY THE RULING OF THE WATER REFEREE:

FINDINGS OF FACT

1. Name, Address, and Telephone Number of Applicants:

Ed Pendleton and Beverly C. Pendleton
c/o Mr. Merle McClung
8085 South Chester Street
Englewood, Colorado 80012
(303) 790-1776

Applicants shall be referred to hereafter singularly as the Applicant.

2. History of Case:

The Applicant is represented by Saunders, Snyder, Ross & Dickson, P.C. (William B. Tourtillott and Robert E. Schween). The original application for underground water rights from nontributary sources was filed with this Court on December 31, 1985. An amended application for underground water rights from nontributary and not nontributary sources was filed with this Court on March 31, 1987 and published in the March 1987 Water Resume for Water Division No. 1. A timely statement of opposition was filed to the amended application by the City of Colorado Springs (Gregory L. Johnson). No other statements of opposition or motions to intervene have been filed, and the period for filing of statements of opposition has expired.

3. Subject Matter Jurisdiction:

Timely and adequate notice of the pendency of these proceedings has been given in the manner required by law. The Water Court has jurisdiction over the subject matter of these proceedings and over all who have standing to appear as parties, whether they have appeared or not.

4. Aquifer and Location of Ground Water:

In this proceeding, Applicant seeks a ruling and decree for rights to all ground water recoverable from the nontributary Denver, Arapahoe, and Laramie-Fox Hills aquifers and the not nontributary Upper Dawson aquifer underlying Applicant's property in El Paso County, Colorado. The Applicant's property, which is subject to this case, is described as follows: all of Section 16; the E1/2 SW1/4 and the SE1/4 of Section 17; the E1/2 and the E1/2 W1/2 of Section 20; the NE 1/4 and the W1/2, except for the east 30 feet of the SW1/4, of Section 21, all in Township 11 South, Range 65 West of the 6th P.M., consisting of 1840 acres, more or less. Applicant is the owner of the ground water rights underlying the above-described land and no part of such land lies within a designated ground water basin. A general location map of the property is attached hereto as Exhibit "A."

5. Specific Wells Claimed:

The legal descriptions of the wells to be constructed under this decree are as follows:

A. Upper Dawson Aquifer

(1) Bar X DA-1: SW1/4 NE1/4, Section 16, Township 11 South, Range 65 West of the 6th P.M., at a point which is 2,200 feet from the East Section line and 2,000 feet from the North section line of said Section 16.

(2) Bar X DA-2: NE1/4 SE1/4, Section 17, Township 11 South, Range 65 West of the 6th P.M., at a point which is 500 feet from the East Section line and 1,500 feet from the South section line of said Section 17.

(3) Bar X DA-3: NW1/4 NE1/4, Section 21, Township 11 South, Range 65 West of the 6th P.M., at a point which is 2,200 feet from the East Section line and 800 feet from the North section line of said Section 21.

(4) Bar X DA-4: NW1/4 SW1/4, Section 21, Township 12 South, Range 65 West of the 6th P.M., at a point which is 400 feet from the West Section line and 1,500 feet from the South section line of said Section 21.

B. Denver Aquifer

(1) Bar X D-1: SW1/4 NE1/4, Section 16, Township 11 South, Range 65 West of the 6th P.M., at a point which is 2,150 feet from the East Section line and 2,000 feet from the North section line of said Section 16.

(2) Bar X D-2: NE1/4 SE1/4, Section 17, Township 11 South, Range 65 West of the 6th P.M., at a point which is 450 feet from the East Section line and 1,500 feet from the South section line of said Section 17.

(3) Bar X D-3: NW1/4 NE1/4, Section 21, Township 11 South, Range 65 West of the 6th P.M., at a point which is 2,150 feet from the East Section line and 800 feet from the North section line of said Section 21.

(4) Bar X D-4: NW1/4 SW1/4, Section 21, Township 11 South, Range 65 West of the 6th P.M., at a point which is 450 feet from the West Section line and 1,500 feet from the South section line of said Section 21.

C. Arapahoe Aquifer

(1) Bar X A-1: SW1/4 NE1/4, Section 16, Township 11 South, Range 65 West of the 6th P.M., at a point which is 2,200 feet from the East Section line and 2,050 feet from the North section line of said Section 16.

(2) Bar X A-2: NE1/4 SE1/4, Section 17, Township 11 South, Range 65 West of the 6th P.M., at a point which is 500 feet from the East Section line and 1,450 feet from the South section line of said Section 17.

(3) Bar X A-3: NW1/4 NE1/4, Section 21, Township 11 South, Range 65 West of the 6th P.M., at a point which is 2,200 feet from the East Section line and 850 feet from the North section line of said Section 21.

(4) Bar X A-4: NW1/4 SW1/4, Section 21, Township 11 South, Range 65 West of the 6th P.M., at a point which is 400 feet from the West Section line and 1,450 feet from the South section line of said Section 21.

(5) Bar X A-5: SW1/4 NE1/4, Section 20, Township 11 South, Range 65 West of the 6th P.M., at a point which is 2,500 feet from the East Section line and 1,500 feet from the North section line of said Section 20.

D. Laramie-Fox Hills Aquifer

(1) Bar X LFH-1: SW1/4 NE1/4, Section 16, Township 11 South, Range 65 West of the 6th P.M., at a point which is 2,150 feet from the East Section line and 2,050 feet from the North section line of said Section 16.

(2) Bar X LFH-2: NE1/4 SE1/4, Section 17, Township 11 South, Range 65 West of the 6th P.M., at a point which is 450 feet from the East Section line and 1,450 feet from the South section line of said Section 17.

(3) Bar X LFH-3: NW1/4 NE1/4, Section 21, Township 11 South, Range 65 West of the 6th P.M., at a point which is 2,150 feet from the East Section line and 850 feet from the North section line of said Section 21.

(4) Bar X LFH-4: NW1/4 SW1/4, Section 21, Township 11 South, Range 65 West of the 6th P.M., at a point which is 450 feet from the West Section line and 1,450 feet from the South section line of said Section 21.

6. Well Permits:

A. Applicant will make application for permits for each well described herein at such time as Applicant is ready to construct each well or series of wells.

B. The State Engineer shall consider the rights granted herein as valid. Because a unified municipal water supply system is planned to serve this property, the system will be constructed pursuant to a phased development program over a considerable period of time. Each well will be drilled and completed as it is needed pursuant to such phased development program. Accordingly, the Court determines that if Applicant fails to construct any of said wells within the period of time specified in the corresponding well permits, it may reapply and the State Engineer shall promptly reissue that well permit for the amount of water determined herein with burdens no more restrictive than found herein.

7. Average Annual Amounts of Withdrawal Available:

A. Not Nontributary Upper Dawson Aquifer:

Pursuant to the Denver Basin Rules, the ground water in the Upper Dawson aquifer underlying Applicant's property is classified as not nontributary ground water. The hydrologic values and the average annual amount available for withdrawal from the Upper Dawson aquifer are as follows:

Upper Dawson Aquifer			
Acreage	Sand Thickness	Specific Yield	Average Annual Amt. in Acre-Feet
1840	490 feet	.20%	1803

B. Nontributary Denver, Arapahoe, and Laramie-Fox Hills Aquifers:

Pursuant to the Denver Basin Rules, the ground water in the Denver, Arapahoe, and Laramie-Fox Hills aquifers underlying Applicant's property is classified as nontributary ground water, as defined in § 37-90-103(10.5), C.R.S. The hydrologic values and the average annual amounts available for withdrawal from the Denver, Arapahoe, and Laramie-Fox Hills aquifers are as follows:

Aquifer	Acreage	Sand Thickness	Specific Yield	Average Annual Amt. in Acre-Feet
Denver	1840	435 feet	.17%	1360
Arapahoe	1840	260 feet	.17%	813
Laramie-Fox Hills	1840	200 feet	.15%	552

C. The above values and amounts are consistent with the Determinations of Facts issued by the Office of the State Engineer (April 29, 1986).

8. Nominal Pumping Rates and Estimated Average Well Depths:

Aquifer	Combined Rate	Individual Well Rate	Well Depth (Average)
Upper Dawson	1500 gpm (3.3cfs)	375 gpm (.84cfs)	1,040 feet
Denver	1200 gpm (2.6cfs)	300 gpm (.66cfs)	1,930 feet
Arapahoe	750 gpm (1.6cfs)	150 gpm (.33cfs)	2,450 feet
Laramie-Fox Hills	480 gpm (1.0cfs)	120 gpm (.26cfs)	2,950 feet

9. Final Average Annual Amounts of Withdrawal:

A. Final determinations of the applicable average specific yields, saturated sand thicknesses, and resulting average annual amounts available to Applicant from each aquifer will be made pursuant to the retained jurisdiction of this Court, as described in paragraph 21 hereinbelow. In the event this decree is not reopened for a further quantitative determination, the findings herein are final and controlling.

B. The allowed annual amount of ground water which may be withdrawn from such aquifers through the wells specified above and any additional wells, pursuant to § 37-90-137(10), C.R.S. (1985 Supp.), may exceed the average annual amount of withdrawal, as long as the total volume of water withdrawn through such wells and any additional wells therefor subsequent to the date of this decree does not exceed the product of the number of years since the date of the issuance of the well permits or the date of this decree, whichever is earliest in time, multiplied by the average annual amount of withdrawal, as specified above or as determined pursuant to the retained jurisdiction of the Court.

10. Source of Ground Water; Limitations on Consumption; Replacement Obligations and Requirements:

A. The ground water to be withdrawn from the Denver, Arapahoe, and Laramie-Fox Hills aquifers is "nontributary ground water" as defined in § 37-90-103(10.5), C.R.S. (1985 Supp.), and in the Denver Basin Rules, the withdrawal of which will not, within 100 years, deplete the flow of a natural stream, including a natural stream as defined in §§ 37-82-101(2) and 37-92-102(1)(b), C.R.S., at an annual rate greater than 1/10 of 1% of the annual rate of withdrawal. The ground water to be withdrawn from the Upper Dawson aquifer is "not nontributary ground water" as described in the Denver Basin Rules, 2 C.C.R. 402-6, Rule 5A.

B. Applicant may not consume more than 98% of the annual quantity of water withdrawn from the nontributary Denver, Arapahoe, and Laramie-Fox Hills aquifers. The relinquishment of 2% of the annual amount of water withdrawn to the stream system, as required by the Denver Basin Rules effective January 1, 1986, may be satisfied by any method selected by the Applicant and satisfactory to the State Engineer, so long as Applicant can demonstrate that an amount equal to 2% of such withdrawals (by volume) has been relinquished to the stream system.

C. The ground water to be withdrawn from the Upper Dawson aquifer is classified as not nontributary, requiring as a condition precedent to use that Applicant obtain a judicially approved augmentation plan for the replacement of depletions to the affected stream system. Pursuant to the statutory requirement at § 37-90-137(9)(c), C.R.S. (1985 Supp.), the amount of the replacement must be the actual depletive effect caused by withdrawal of the resource to the extent necessary to prevent injury.

11. No Material Injury:

There is unappropriated ground water available for withdrawal from each aquifer beneath the land described herein, and the vested water rights of others will not be materially injured by such withdrawals as described hereby. The minimum useful life of each of the subject aquifers is at least 100 years, assuming no substantial artificial recharge within 100 years. No material injury to vested water rights of others will result from the issuance of permits for the subject wells or the exercise of the rights and limitations specified in this decree therefor.

12. Additional Wells and Well Fields:

A. The Applicant proposes to build a unified municipal water system over the period of many years and will construct its wells as required by development. Any well drilled within 200 feet of a decreed location will be deemed to be constructed at the decreed well location pursuant to the permit and this decree.

B. In addition to the wells described in paragraph 5 above, Applicant may construct additional and replacement wells in order to maintain levels of production, to meet municipal water supply systems demands, or to recover the entire amount of ground water in the subject aquifers underlying the subject property, as described herein. As additional wells are planned, applications shall be filed in accordance with § 37-90-137(10), C.R.S. (1985 Supp.).

C. So long as allowed annual amounts are not exceeded, the pumping rates for the wells may exceed the pumping rates specified herein in order to meet municipal water system supply requirements or to produce the full acre foot allocation of water from each aquifer. Two or more wells constructed into the same aquifer shall be considered a well field. In effecting production of water from such well field, Applicant may produce the entire amount which may be produced hereunder from the particular aquifer through any combination of wells within the well field for that particular aquifer.

D. In considering applications for permits for additional wells to withdraw the ground water which is the subject of this decree, the State Engineer shall be bound by this decree and shall issue said permits in accordance with provisions of § 37-90-137(4), C.R.S. (1985 Supp.). Applicant shall not be required to submit any additional proof or evidence of matters finally determined herein when making application for permits for wells to withdraw the water which is the subject of this decree, except that the State Engineer may require revised land ownership or consent to use affidavits.

E. In the event that the allowed average annual amounts decreed herein are adjusted pursuant to the retained jurisdiction of the Court, any existing permit(s) for any well(s) decreed herein shall be amended to reflect such adjusted average annual amounts. New permits for any wells herein shall likewise reflect any such adjustment of the average annual amounts decreed herein.

13. Proposed Uses of Water:

The water withdrawn from any well may be used, reused, and successively used and otherwise disposed of for all municipal purposes including domestic, industrial, commercial, irrigation, stock watering, recreational, fish and wildlife, fire protection and sanitary purposes subject to the provisions of paragraph 20 herein. This water will be produced for immediate application to said uses, for storage and subsequent application to said uses, for exchange purposes, for replacement of depletions resulting from the use of this ground water or of water from other sources, and for augmentation purposes. Moreover, Applicant may use return flows of this ground water to replace stream depletions under a plan for augmentation approved in compliance with applicable law.

14. Conditions:

For each well constructed pursuant to this decree, Applicant shall comply with the following conditions:

A. A totalizing flow meter shall be installed on the well discharge prior to diverting any water therefrom. Applicant shall keep accurate records of all diversions by the well, make any calculations necessary, and submit such records to the Water Division No. 1 Engineer annually.

B. The entire length of the open bore hole shall be geophysically surveyed prior to casing and copies of the geophysical log submitted to the Division of Water Resources. Applicant may provide a geophysical log from an adjacent well or test hole, pursuant to Rule 8F of the Statewide Rules and acceptable to the State Engineer, which fully penetrates the aquifer, in satisfaction of the above requirement.

C. The ground water production shall be limited to the specific aquifer for which the well was designed. Plain, unperforated casing must be installed and properly grouted to prevent withdrawal from or intermingling of water from zones other than those for which the well was designed.

D. Each well shall be permanently identified by its permit number, this Water Court Case Number, and the name of the producing aquifer on the above-ground portion of the well casing or on the pumphouse.

CONCLUSIONS OF LAW

15. The Water Court has jurisdiction over this proceeding pursuant to § 37-90-137(6), C.R.S. This Court concludes as a matter of law that the application herein is one contemplated by law. Section 37-90-137(4), C.R.S. The application for a decree confirming Applicant's right to withdraw and use all ground water from the named nontributary and not nontributary aquifers beneath its property as described herein pursuant to § 37-90-137(4), C.R.S. (1985 Supp.), should be granted, subject to the provisions of this decree. The nature and extent of the rights to nontributary and not nontributary ground water determined herein are defined by §§ 37-90-137(4) and 37-90-137(9), C.R.S. (1985 Supp.). The withdrawal of the ground water decreed herein in accordance with the terms of this decree will not result in material injury to vested water rights of others as a matter of law.

16. The rights to nontributary and not nontributary ground water determined herein shall not be administered in accordance with priority of appropriation. Such rights are not "conditional water rights" as defined by § 37-92-103(6), C.R.S. The provisions of § 37-92-301(4), C.R.S., requiring quadrennial findings of reasonable diligence are not applicable to the ground water rights determined herein. The determination of ground water rights herein need not include a date of initiation of the withdrawal project. See § 37-92-305(11), C.R.S. (1985 Supp.). Ground water herein which is not nontributary shall be administered only pursuant to §§ 37-90-137(4) and 37-90-137(9), C.R.S. (1985 Supp.).

17. Subject to paragraph 20, below, Applicant is entitled to permits to construct the wells described in paragraph 5 hereof which will withdraw nontributary and not nontributary ground water pursuant to § 37-90-137(4), C.R.S., and such additional wells as may be required in the future to withdraw such ground water pursuant to § 37-90-137(10), C.R.S. (1985 Supp.).

IT IS THEREFORE, ORDERED, ADJUDGED, AND DECREED THAT:

18. The Findings of Fact and Conclusions of Law are incorporated into this decree of the Water Court.

19. Right to Withdraw Nontributary Ground Water:

The Applicant may withdraw the nontributary ground water herein through the wells listed above at the locations listed above and in the average annual amounts and at the rates of flow specified therefor, subject to the limitations herein and the retained jurisdiction by this Court.

20. Replacement Obligation for Use of Not Nontributary Ground Water Rights:

By separate application, Applicant will seek a plan for augmentation of depletions associated with the withdrawal of Upper Dawson ground water decreed hereby. No such augmentation plan is sought in this case. Judicial approval of such a plan for augmentation is a condition precedent to withdrawal and use of this resource.

21. Retained Jurisdiction:

A. The Court retains jurisdiction as necessary to adjust the average annual amounts of nontributary and not nontributary ground water available under the property to conform to actual local aquifer characteristics as determined from adequate information obtained from wells, pursuant to § 37-92-305(11), C.R.S. (1985 Supp.). 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 obtain a geophysical log of said well(s) or test hole(s) and shall serve such log(s) upon the State Engineer and notify each of the parties who have appeared herein that copies of the log and well completion report, if the well is completed, are available for review.

B. At such time as adequate data are available and 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 finding. The State Engineer shall submit such finding to the Water Court and to the Applicant, and the Applicant shall serve a copy upon the other parties.

C. 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.

D. In the event Applicant fails to invoke retained jurisdiction, the State Engineer or any party hereto may do so. In the interim, the Court retains jurisdiction in this matter pursuant to § 37-92-305(11), C.R.S. (1985 Supp.).

RULING ENTERED this 9th day of November 1988.

Raymond S. Liesman
Water Referee
Water Division No. 1
State of Colorado

THE COURT DOTH FIND THAT NO PROTEST TO THE RULING OF THE REFEREE HAS BEEN FILED. THE FOREGOING RULING IS CONFIRMED AND APPROVED, AND IS HEREBY MADE THE JUDGMENT AND DECREE OF THIS COURT.

DATED: December 12, 1988

Robert A. Behrman
Water Judge
Water Division No. 1
State of Colorado

THE WATER RIGHT FOR
Dawson Aquifer
HAS BEEN MODIFIED SEE
CASE NO. 93CW016

APPROVED AS TO FORM AND CONTENT:

SAUNDERS, SNYDER, ROSS
& DICKSON, P.C.

Date: 15 Oct. 1987

By _____
William B. Tourtillott, Jr., #184
Robert E. Schween, #12923
707 17th Street
Suite 3500
Denver, Colorado 80202
(303) 292-6600

ATTORNEYS FOR APPLICANT
ED PENDLETON AND BEVERLY C. PENDLETON

ANDERSON, JOHNSON, & GIANUNZIO

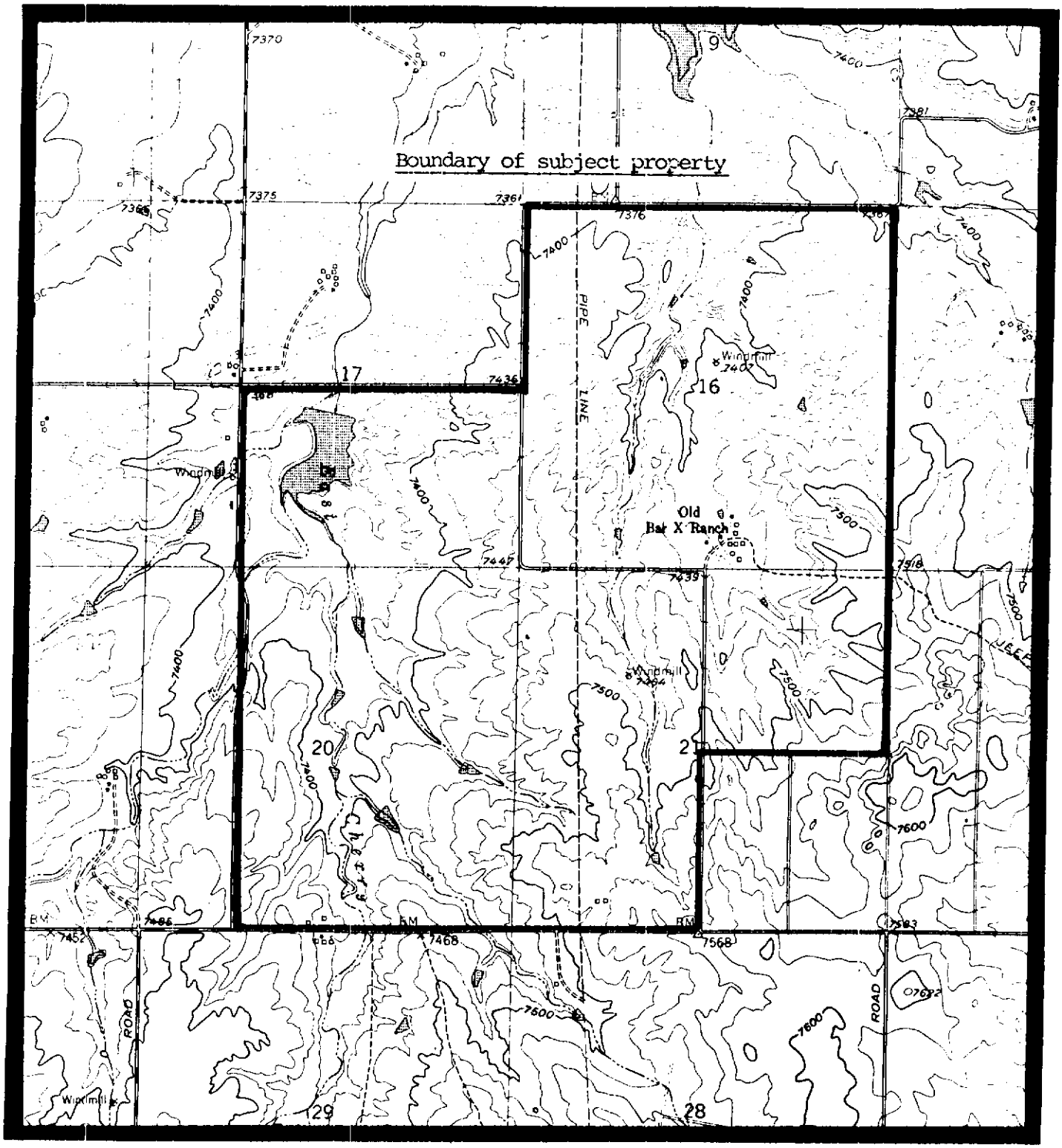
Date: 10-15-87

By _____
Gregory L. Johnson, #448
Mark T. Pifher, #12629
104 S. Cascade Ave., Suite 204
P.O. Box 240
Colorado Springs, Colorado 80901-0240
(303) 632-3545

ATTORNEYS FOR OBJECTOR
CITY OF COLORADO SPRINGS

EXHIBIT A
TO
RULING AND DECREE
CASE NO. 85CW445

R65W



T11S

Filed in the office of the Clerk, District Court, Water Division No. 2, State of Colorado

COPY

RES

DISTRICT COURT, WATER DIVISION No. 2, COLORADO

Case No. 85CW131

MAY 18 1988

DECREE OF THE WATER COURT

Clerk

ROSS & DICKSON

CONCERNING THE APPLICATION FOR WATER RIGHTS OF PENDLETON LAND AND EXPLORATION, INC.

IN THE NONTRIBUTARY DENVER, ARAPAHOE, AND LARAMIE-FOX HILLS AQUIFERS AND THE NOT NONTRIBUTARY DAWSON, DENVER, AND ARAPAHOE AQUIFERS, in El Paso County.

THIS CLAIM, having been originally filed with the Water Division No. 2 Water Clerk on December 31, 1985, all matters contained in the application having been reviewed, and testimony having been taken where such testimony is necessary, and such corrections made as are indicated by the evidence presented herein, the Court makes the following:

FINDINGS OF FACT

1. Name, Address, and Telephone Number of Applicant:

Pendleton Land and Exploration, Inc.
c/o Mr. Merle McClung
8085 S. Chester St.
Englewood, Colorado 80012
(303) 790-1776

2. History of Case:

The Applicant is represented by Saunders, Snyder, Ross & Dickson, P.C. (William B. Tourtillott and Robert E. Schween). The original application for underground water rights from nontributary sources was filed with this Court on December 31, 1985. An amended application for underground water rights from nontributary and not nontributary sources was filed with this Court on April 24, 1987 and published in the May 1987 Water Resume for Water Division No. 2. Timely statements of opposition were filed to the original and amended application by the City of Colorado Springs (Gregory L. Johnson), JVRC, Inc. (Michael D. Shimmin), Upper District 10 Water Users Association (Gregory L. Johnson), and Black Forest Land Use Committee (Barbara Hosmer). No other statements of opposition or motions to intervene have been filed, and the period for filing of statements of opposition has expired

3. Subject Matter Jurisdiction:

Timely and adequate notice of the pendency of these proceedings has been given in the manner required by law. The Water Court has jurisdiction over the subject matter of these proceedings and over all who have standing to appear as parties, whether they have appeared or not.

4. Aquifers and Location of Ground Water:

A. In this proceeding, Applicant seeks a decree for rights to all ground water recoverable from the nontributary Denver, Arapahoe, and Laramie-Fox Hills aquifers and the not nontributary Dawson, Denver, and Arapahoe aquifers underlying Applicant's property in El Paso County, Colorado.

B. The ground water rights are linked to different portions of Applicant's property as generally described below:

1. Dawson Aquifer

Applicant will withdraw not nontributary ground water from the Dawson aquifer underlying approximately 2280 acres of property as more particularly described on Exhibit "A" attached hereto and made a part hereof. A general location map of the property is attached as Exhibit "B."

2. Denver Aquifer

Applicant will withdraw not nontributary ground water from the Denver aquifer underlying approximately 2080 acres of property and nontributary ground water from the Denver aquifer underlying approximately 200 acres of property as more particularly described on Exhibit "C" attached hereto and made a part hereof. A general location map of the property designated as not nontributary and nontributary in the Denver aquifer is attached as Exhibit "D."

3. Arapahoe Aquifer

Applicant will withdraw not nontributary ground water from the Arapahoe aquifer underlying approximately 634 acres of property and nontributary ground water from the Arapahoe aquifer underlying approximately 1646 acres of property as more particularly described on Exhibit "E" attached hereto and made a part hereof. A general location map of the property designated as not nontributary and nontributary in the Arapahoe aquifer is attached as Exhibit "F "

4. Laramie-Fox Hills Aquifer

Applicant will withdraw nontributary ground water from the Laramie-Fox Hills aquifer underlying approximately 2280 acres of property as more particularly described on Exhibit "A." A general location map of the property is attached as Exhibit "B."

C. Applicant is the owner of the ground water rights underlying the above-described lands and no part of such lands lies within a designated ground water basin.

5. Specific Wells Claimed:

The legal descriptions of the wells to be constructed under this decree are as follows:

A. Dawson Aquifer

(1) West DA-1: SW1/4 NW1/4, Section 26, Township 11 South, Range 66 West of the 6th P.M., at a point which is 1,000 feet from the West Section line and 2,000 feet from the North section line of said Section 26.

(2) West DA-2: SW1/4 NW1/4, Section 25, Township 11 South, Range 66 West of the 6th P.M., at a point which is 300 feet from the West Section line and 1,500 feet from the North section line of said Section 25.

(3) West DA-3: NW1/4 NW1/4, Section 35, Township 11 South, Range 66 West of the 6th P.M., at a point which is 200 feet from the West Section line and 1,000 feet from the North section line of said Section 35.

(4) West DA-4: SE1/4 SE1/4, Section 26, Township 11 South, Range 66 West of the 6th P.M., at a point which is 1,000 feet from the East Section line and 500 feet from the South section line of said Section 26.

(5) West DA-5: NW1/4 SE1/4, Section 35, Township 11 South, Range 66 West of the 6th P.M., at a point which is 2,000 feet from the East Section line and 1,500 feet from the South section line of said Section 35.

(6) West DA-6: NE1/4 NE1/4, Section 3, Township 12 South, Range 66 West of the 6th P.M., at a point which is 1,200 feet from the East Section line and 300 feet from the North section line of said Section 3.

B. Denver Aquifer

(1) West D-1: SW1/4 NW1/4, Section 26, Township 11 South, Range 66 West of the 6th P.M., at a point which is 1,050 feet from the West Section line and 2,000 feet from the North section line of said Section 26.

(2) West D-2: SW1/4 NW1/4, section 25, Township 11 South, Range 66 West of the 6th P M., at a point which is 350 feet from the West line and 1500 feet from the North line of said Section 25.

(3) West D-3: NW1/4 NW1/4, Section 35, Township 11 South, Range 66 West of the 6th P.M., at a point which is 250 feet from the West Section line and 1,000 feet from the North section line of said Section 35.

(4) West D-4: SE1/4 SE1/4, Section 26, Township 11 South, Range 66 West of the 6th P.M., at a point which is 950 feet from the East Section line and 500 feet from the South section line of said Section 26.

(5) West D-5: NW1/4 SE1/4, Section 35, Township 11 South, Range 66 West of the 6th P.M., at a point which is 1,950 feet from the East Section line and 1,500 feet from the South section line of said Section 35.

(6) West D-6: NE1/4 NE1/4, Section 3, Township 12 South, Range 66 West of the 6th P.M., at a point which is 1,150 feet from the East Section line and 300 feet from the North section line of said Section 3.

C. Arapahoe Aquifer

(1) West A-1: SW1/4 NW1/4, Section 26, Township 11 South, Range 66 West of the 6th P M , at a point which is 1,000 feet from the West Section line and 2,050 feet from the North section line of said Section 26.

(2) West A-2: SW1/4 NW1/4, Section 25, Township 11 South, Range 66 West of the 6th P.M., at a point which is 300 feet from the West Section line and 1,550 feet from the North section line of said Section 25.

(3) West A-3: NW1/4 NW1/4, Section 35, Township 11 South, Range 66 West of the 6th P.M., at a point which is 200 feet from the West Section line and 1,050 feet from the North section line of said Section 35.

(4) West A-4: SE1/4 SE1/4, Section 26, Township 11 South, Range 66 West of the 6th P.M., at a point which is 1,000 feet from the East Section line and 450 feet from the South section line of said Section 26.

(5) West A-5: NW1/4 SE1/4, Section 35, Township 11 South, Range 66 West of the 6th P.M., at a point which is 2,000 feet from the East Section line and 1,450 feet from the South section line of said Section 35.

(6) West A-6: NE1/4 NE1/4, Section 3, Township 12 South, Range 66 West of the 6th P.M., at a point which is 1,200 feet from the East Section line and 350 feet from the North section line of said Section 3.

D. Laramie-Fox Hills Aquifer

(1) West LFH-1: SW1/4 NW1/4, Section 26, Township 11 South, Range 66 West of the 6th P.M., at a point which is 1,050 feet from the West Section line and 2,050 feet from the North section line of said Section 26.

(2) West LFH-3: NW1/4 NW1/4, Section 35, Township 11 South, Range 66 West of the 6th P.M., at a point which is 250 feet from the West Section line and 1,050 feet from the North section line of said Section 35.

(3) West LFH 4: SE1/4 SE1/4, Section 26, Township 11 South, Range 66 West of the 6th P.M., at a point which is 950 feet from the East Section line and 450 feet from the South section line of said Section 26

(4) West LFH-6: NE1/4 NE1/4, Section 3, Township 12 South, Range 66 West of the 6th P M., at a point which is 1,150 feet from the East Section line and 350 feet from the North section line of said Section 3

6. Well Permits:

A. Applicant will make application for permits for each well described herein at such time as Applicant is ready to construct each well or series of wells.

B. The State Engineer shall consider the rights granted herein as valid. Because a unified municipal water supply system is planned to serve this property, the system will be constructed pursuant to a phased development program over a considerable period of time. Each well will be drilled and completed as it is needed pursuant to such phased development program. Accordingly, the Court determines that if Applicant fails to construct any of said wells within the period of time specified in the corresponding well permits, it may reapply and the State Engineer shall promptly reissue that well permit for the amount of water determined herein with burdens no more restrictive than found herein.

7. Average Annual Amounts of Withdrawal Available:

A. Not Nontributary Dawson, Denver, and Arapahoe Aquifers:

Pursuant to the Denver Basin Rules, the ground water in the Dawson, Denver, and Arapahoe aquifers underlying all or part of Applicant's property, as described in Paragraph 4 herein, is classified as not nontributary ground water. The hydrologic values and the average annual amounts available for withdrawal from the not nontributary Dawson, Denver, and Arapahoe aquifers are as follows:

Aquifer	Acreage	Sand Thickness	Specific Yield	Ave. Ann. Amt. in Acre-Feet
Dawson	2280	375 feet	20%	1710
Denver	2080	550 feet	17%	1945
Arapahoe	634	220 feet	17%	237

B. Nontributary Denver, Arapahoe, and Laramie-Fox Hills Aquifers:

Pursuant to the Denver Basin Rules, the ground water in the Denver, Arapahoe, and Laramie-Fox Hills aquifers underlying all or part of Applicant's property, as described in Paragraph 4 herein, is classified as nontributary ground water, pursuant to § 37-90-137(9)(c), C.R.S. The hydrologic values and the average annual amounts available for withdrawal from the nontributary Denver, Arapahoe, and Laramie-Fox Hills aquifers are as follows:

Aquifer	Acreage	Sand Thickness	Specific Yield	Ave. Ann. Amt. in Acre-Feet
Denver	200	550 feet	17%	187
Arapahoe	1646	220 feet	17%	616
Laramie-Fox Hills	2280	200 feet	15%	684

C. The above values and amounts are consistent with the Findings of the State Engineer issued on March 25, 1986, and supplemented on November 5, 1987.

8. Final and Interim Average Annual Amounts of Withdrawal; and Allowed Amounts of Withdrawal Exceeding Average Annual Amounts:

A. Final determinations of the applicable average saturated sand thicknesses and resulting average annual amounts available to Applicant from each aquifer will be made pursuant to the retained jurisdiction of this Court, as described in paragraph 18 hereinbelow. In the event this decree is not reopened for a further quantitative determination, the findings herein are final and controlling.

B. The allowed annual amount of ground water which may be withdrawn from such aquifers through the wells specified above and any additional wells, pursuant to § 37-90-137(10), C.R.S. (1987 Supp.), may exceed the average annual amount of withdrawal, as long as the total volume of water withdrawn through such wells and any additional wells therefor subsequent to the date of this decree does not exceed the product of the number of years since

the date of the issuance of the well permits or the date of this decree, whichever is earliest in time, multiplied by the average annual amount of withdrawal, as specified above or as determined pursuant to the retained jurisdiction of the Court.

9. Source of Ground Water; Limitations on Consumption; Replacement Obligations and Requirements:

A. The ground water to be withdrawn from the Laramie-Fox Hills aquifer and the described portions of the Denver and Arapahoe aquifers is "nontributary ground water" as defined in § 37-90-103(10.5), C.R.S. (1987 Supp.), and in the Denver Basin Rules, the withdrawal of which will not, within 100 years, deplete the flow of a natural stream, including a natural stream as defined in §§ 37-82-101(2) and 37-92-102(1)(b), C.R.S., at an annual rate greater than 1/10 of 1% of the annual rate of withdrawal.

B. Applicant may not consume more than 98% of the annual quantity of water withdrawn from the nontributary Denver, Arapahoe, and Laramie-Fox Hills aquifers. The relinquishment of 2% of the annual amount of water withdrawn to the stream system, as required by the Denver Basin Rules effective January 1, 1986, may be satisfied by any method selected by the Applicant and satisfactory to the State Engineer, so long as Applicant can demonstrate that an amount equal to 2% of such withdrawals (by volume) has been relinquished to the stream system.

C. Withdrawal of ground water from the Dawson aquifer and the described portions of the Denver and Arapahoe aquifers will, within 100 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 therefrom. Such ground water is not nontributary and requires, as a condition precedent to use, that Applicant obtain a judicially approved augmentation plan for the replacement of depletions to the affected stream system, pursuant to the statutory requirements in effect at such time that the augmentation plan is prosecuted.

D. There is unappropriated ground water available for withdrawal from each aquifer beneath the land described herein, and the vested water rights of others will not be materially injured by such withdrawals as described hereby. The minimum useful life of each of the subject aquifers is at least 100 years, assuming no substantial artificial recharge within 100 years. No

material injury to vested water rights of others will result from the issuance of permits for the subject wells or the exercise of the rights and limitations specified in this decree therefor.

10. Additional Wells and Well Fields:

A. The Applicant proposes to build a unified municipal water system over the period of many years and will construct its wells as required by development. Any well drilled within 200 feet of a decreed location will be deemed to be constructed at the decreed well location pursuant to the permit and this decree.

B. In addition to the wells described in paragraph 5 above, Applicant may construct additional and replacement wells in order to maintain levels of production, to meet municipal water supply systems demands or to recover the entire amount of ground water in the subject aquifers underlying the subject property, as described herein. As additional wells are planned, applications shall be filed in accordance with § 37-90-137(10), C.R.S. (1987 Supp.).

C. The pumping rates for the wells may exceed the pumping rates specified in the State Engineer's Findings in order to meet municipal water supply requirements or to produce the full acre foot allocation of water from each aquifer. Two or more wells constructed into the same aquifer shall be considered a well field. Applicant may produce the entire amount which may be produced hereunder from the particular aquifer through any combination of wells within the well field for that particular aquifer; except that wells constructed in the land area overlying not nontributary ground water may produce only such not nontributary ground water. Moreover, Applicant's augmentation plan will have to separately account for nontributary and not nontributary ground water withdrawals from each aquifer.

D. In considering applications for permits for additional wells to withdraw the ground water which is the subject of this decree, the State Engineer shall be bound by this decree and shall issue said permits in accordance with provisions of § 37-90-137(10), C.R.S. (1987 Supp.). Applicant shall not be required to submit any additional proof or evidence of matters finally determined herein when making application for permits for wells to withdraw the water which is the subject of this decree, except that the State Engineer may require revised land ownership or consent to use affidavits and may require such additional information as specified in the Statewide Nontributary Ground Water Rules, 2 CCR 402-7.

E. In the event that the allowed average annual amounts decreed herein are adjusted pursuant to the retained jurisdiction of the Court, any existing permit(s) for any well(s) decreed herein shall be amended to reflect such adjusted average annual amounts. New permits for any wells herein shall likewise reflect any such adjustment of the average annual amounts decreed herein.

11. Proposed Uses of Water:

The water withdrawn from any well may be used, reused, and successively used and otherwise disposed of for all municipal purposes including domestic, industrial, commercial, irrigation, stock watering, recreational, fish and wildlife, fire protection and sanitary purposes subject to the provisions of paragraph 20 herein. This water will be produced for immediate application to said uses, for storage and subsequent application to said uses, for exchange purposes, for replacement of depletions resulting from the use of this ground water or of water from other sources, and for augmentation purposes. Moreover, Applicant may use return flows of this ground water to replace stream depletions under a plan for augmentation approved in compliance with applicable law.

12. Conditions:

For each well constructed pursuant to this decree, Applicant shall comply with the following conditions:

A. A totalizing flow meter shall be installed on the well discharge prior to diverting any water therefrom. Applicant shall keep accurate records of all diversions by the well, make any calculations necessary, and submit such records to the Water Division No. 2 Engineer annually.

B. The entire length of the open bore hole shall be geophysically surveyed prior to casing and copies of the geophysical log submitted to the Division of Water Resources. Applicant may provide a geophysical log from an adjacent well or test hole, pursuant to Rule 9A of the Statewide Rules and acceptable to the State Engineer, which fully penetrates the aquifer, in satisfaction of the above requirement.

C. The ground water production shall be limited to the specific aquifer for which the well was designed. Plain, unperforated casing must be installed and properly grouted to prevent withdrawal from or intermingling of water from zones other than those for which the well was designed.

D. Each well shall be permanently identified by its permit number, this Water Court Case Number, and the name of the producing aquifer on the above-ground portion of the well casing or on the pumphouse.

CONCLUSIONS OF LAW

13. The Water Court has jurisdiction over this proceeding pursuant to § 37-90-137(6), C.R.S. This Court concludes as a matter of law that the application herein is one contemplated by law. Section 37-90-137(4), C.R.S. The application for a decree confirming Applicant's right to withdraw and use all ground water from the named nontributary and not nontributary aquifers beneath its property as described herein pursuant to § 37-90-137(4), C.R.S. (1987 Supp.), should be granted, subject to the provisions of this decree. The nature and extent of the rights to nontributary and not nontributary ground water determined herein are defined by §§ 37-90-137(4) and 37-90-137(9), C.R.S. (1987 Supp.). The withdrawal of the ground water decreed herein in accordance with the terms of this decree will not result in material injury to vested water rights of others.

14. The rights to nontributary and not nontributary ground water determined herein shall not be administered in accordance with priority of appropriation. Such rights are not "conditional water rights" as defined by § 37-92-103(6), C.R.S. The provisions of § 37-92-301(4), C.R.S., requiring quadrennial findings of reasonable diligence are not applicable to the ground water rights determined herein. The determination of ground water rights herein need not include a date of initiation of the withdrawal project. See § 37-92-305(11), C.R.S. (1987 Supp.). Ground water herein which is not nontributary shall be administered only pursuant to §§ 37-90-137(4) and 37-90-137(9), C.R.S. (1987 Supp.).

IT IS THEREFORE, ORDERED, ADJUDGED, AND DECREED THAT:

15. The Findings of Fact and Conclusions of Law are incorporated into this decree of the Water Court.

16. Right to Withdraw Nontributary Ground Water:

The Applicant may withdraw the nontributary ground water herein through the wells listed above at the locations listed above and in the average annual amounts and at the rates of flow specified therefor, subject to the limitations herein and the retained jurisdiction by this Court.

17. Replacement Obligation for Use of Not Nontributary Ground Water Rights:

By separate application, Applicant will seek a plan for augmentation of depletions associated with the withdrawal of not nontributary Dawson, Denver, and Arapahoe ground water as described in Paragraph 7A herein and decreed hereby. No such augmentation plan is sought in this case. Judicial approval of such a plan for augmentation is a condition precedent to withdrawal and use of these resources.

18. Retained Jurisdiction:

A. The Court retains jurisdiction as necessary to adjust the average annual amounts of nontributary and not nontributary ground water available under the property to conform to actual local aquifer characteristics as determined from adequate information obtained from wells, pursuant to § 37-92-305(11), C.R.S. (1987 Supp.). 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 obtain a geophysical log of said well(s) or test hole(s) and shall serve such log(s) upon the State Engineer and notify each of the parties who have appeared herein that copies of the log and well completion report, if the well is completed, are available for review.

B. At such time as adequate data are available and 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 finding. The State Engineer shall submit such finding to the Water Court and to the Applicant, and the Applicant shall serve a copy upon the other parties.

C. 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.

D. In the event Applicant fails to invoke retained jurisdiction, the State Engineer or any party hereto may do so. In the interim, the Court retains jurisdiction in this matter pursuant to § 37-92-305(11), C.R.S. (1987 Supp.).

19. Upon obtaining an augmentation for the required replacement of not nontributary withdrawals, Applicant is entitled to permits

to construct the wells described in paragraph 5 hereof which will withdraw not nontributary ground water pursuant to § 37-90-137(4), C.R.S., and such additional wells as may be required in the future to withdraw such ground water pursuant to § 37-90-137(10), C.R.S. (1985 Supp.). With the entry of this decree, Applicant is entitled to permits to construct such wells which will withdraw nontributary ground water.

DECREE ENTERED this 18 day of May, 1988.

John R. Tracey
Water Judge
Water Division No. 2
State of Colorado

APPROVED AS TO FORM AND CONTENT:

SAUNDERS, SNYDER, ROSS
& DICKSON, P.C.

Date: 8 Feb. 1988

By _____
William B. Tourtillott, Jr., #184
Robert E. Schween, #12923
707 17th Street
Suite 3500
Denver, Colorado 80202
(303) 292-6600

ATTORNEYS FOR APPLICANT
PENDLETON LAND AND EXPLORATION, INC.

ANDERSON, JOHNSON, & GIANUNZIO

Date _____

By _____
Gregory L. Johnson, #448
Mark T. Pifher, #12629
104 S. Cascade Ave., Suite 204
P.O. Box 240
Colorado Springs, Colorado 80901-02
(303) 632-3545

ATTORNEYS FOR
CITY OF COLORADO SPRINGS
and UPPER DISTRICT 10 WATER
USERS ASSOCIATION

VRANESH AND RAISCH

Date: Jan 4, 1988

By Michael D. Shimmin
Michael D. Shimmin, #9182
P.O. Box 871
Boulder, Colorado 80306
(303) 443-6151

ATTORNEYS FOR JVRC, INC.

Date._____

By _____
Barbara Hosmer,
Committee Member
11755 Timberland Court
Colorado Springs, Colorado 80908
(303) 495-3948

REPRESENTATIVE OF
BLACK FOREST LAND USE COMMITTEE

ANDERSON, JOHNSON, & GIANUNZIO

Date: Feb 11 1988

By _____
Gregory L. Johnson, #448
Mark T. Pifher, #12629
104 S. Cascade Ave., Suite 204
P.O. Box 240
Colorado Springs, Colorado 80901-02
(303) 632-3545

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and UPPER DISTRICT 10 WATER
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VRANESH AND RAISCH

Date: _____

By _____
Michael D. Shimmin, #9182
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Boulder, Colorado 80306
(303) 443-6151

ATTORNEYS FOR JVRC, INC.

Date 05-13-88

By Barbara Hosmer
Barbara Hosmer,
Committee Member
11755 Timberland Court
Colorado Springs, Colorado 80908
(303) 495-3948

REPRESENTATIVE OF
BLACK FOREST LAND USE COMMITTEE

xc: Robert E. Schween
Michael D. Shimmin
Black Forest Land Use Committee, pro se
Gregory L. Johnson
Division Engineer
State Engineer

7270S

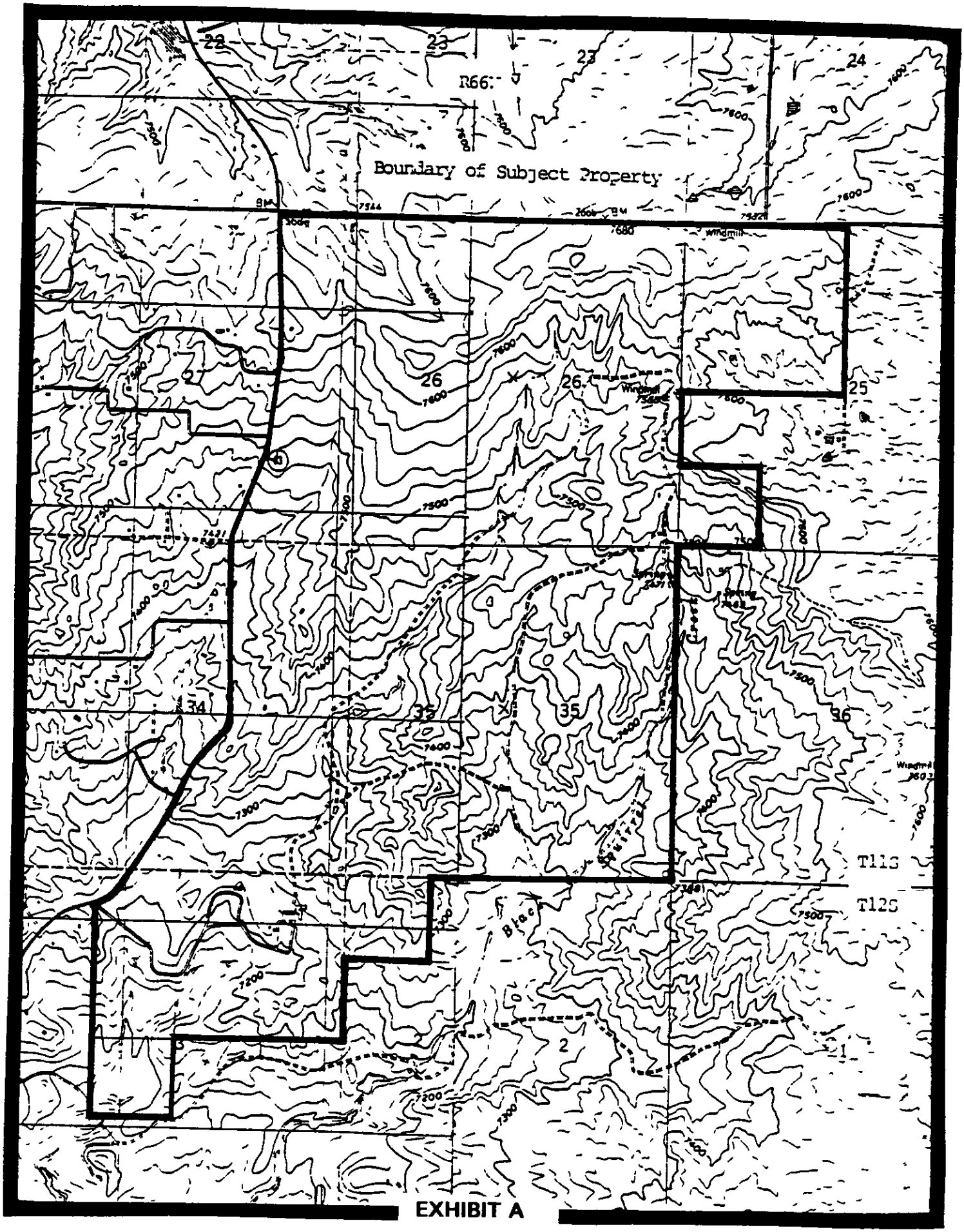


EXHIBIT A

GENERAL LOCATION MAP

Colorado Department of Natural Resources

Colorado.gov | Contact Us

Colorado Division of Water Resources

Colorado's Well Permit Search

THIS PAGE IS NOT THE ACTUAL PERMIT

The information contained on this page is a summary of the permit file and may not reflect all details of the well permit. (Full Disclaimer)

Permit Issued; Completion Status Unknown

Help Last Refresh: 12/6/2016 12:03:01 AM

Receipt:	3628088A	**Division:**	1
Permit #:	1689-BD -	**Water District:**	1
Well Name / #:		**County:**	EL PASO
Designated Basin:	KIOWA-BIJOU	**Management District:**	
Case Number:			
WDID:			

[-] Imaged Documents - Permit File

Document Name	Date Imaged	Annotated
Findings & Order for Determination	05/21/2009	No

[-] Applicant/Contact

Applicant/Contact Name	Mailing Address	City/State/Zip
MCCUNE GEORGE F & EVELYN	17480 MERIDIAN RD	ELBERT, CO 80106-8916

[-] Location Information

Approved Well Location:

Q40	Q160	Section	Township	Range	PM	Footage from Section Lines
		24	11.0S	65.0W	Sixth	

Northing (UTM y): 4325550.5 **Easting (UTM x):** 533176.3

Location Accuracy: Spotted from quarters

Subdivision Name

Filing Block Lot

Parcel ID: **Acres in Tract:** 900.52

[-] Permit Details

Date Issued: 06/25/2008 **Date Expires:**

Uses *(See Imaged Documents for more infomation)*

General Use(s): COMMERCIAL, DOMESTIC **Aquifer(s):** LARAMIE FOX HILLS

Special Use:

Area which may be irrigated:

Annual volume of appropriation:

Statute:

Cross Reference Permit(s): **Permit Number** **Receipt**

Comments: DETER ISSUED

[-] Construction/Usage Details

Well Construction Date: **Pump Installation Date:**

Well Plugged: **1st Beneficial Use:**

Elevation	Depth	Perforated Casing (Top)	Perforated Casing (Bottom)	Static Water Level	Pump Rate

[-] Application/Permit History

Permit Issued	06/25/2008
Application Received	04/17/2008

Disclaimer

***The information contained on this page is a summary of the permit file and may not reflect all details of the well permit. THIS PAGE IS NOT THE ACTUAL PERMIT.**

This page should not be used as a basis for any legal consideration, to determine the allowed uses of the well, to determine construction information, or to determine the terms and conditions under which the well can operate. The complete well permit file should be viewed to obtain details on the allowed uses and other relevant information. A complete copy of this file is available in the "Imaged Documents" section of this page, and can be viewed by opening all of the documents listed under that section (documents will open as pdf files).

Note that all of the terms and conditions under which a well can operate, particularly for non-exempt wells, may not be specified on the well permit. Wells may also be subject to relevant statutes, rules and decrees. To learn

more about well permitting in Colorado, please visit DWR's Well Permitting Page. If you have any questions about this well permit file, please contact the DWR Ground Water Information Desk.

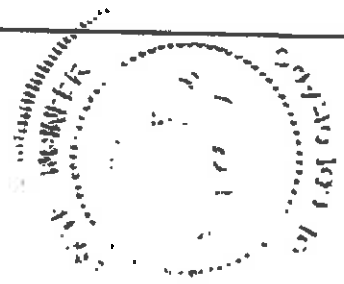
COLORADO GROUND WATER COMMISSION
FINDINGS AND ORDER

IN THE MATTER OF AN APPLICATION FOR DETERMINATION OF WATER RIGHT TO ALLOW THE WITHDRAWAL OF GROUND WATER IN THE KIOWA-BIJOU DESIGNATED GROUND WATER BASIN

APPLICANT: GEORGE F. MCCUNE AND EVELYN MCCUNE

AQUIFER: LARAMIE-FOX HILLS

DETERMINATION NO.: **1689-BD**



In compliance with Section 37-90-107(7), C.R.S., and the Designated Basin Rules, 2 CCR 410-1, George F. McCune and Evelyn McCune (hereinafter "applicant") submitted an application for determination of water right to allow the withdrawal of designated ground water from the Laramie-Fox Hills Aquifer.

FINDINGS

1. The application was received complete by the Colorado Ground Water Commission on April 17, 2008.

2. The applicant requests a determination of rights to designated ground water in the Laramie-Fox Hills Aquifer (hereinafter "aquifer") underlying 900.52 acres, generally described as the SW1/4 of the SW1/4, Section 18, the W1/2 of the NW1/4 and the W1/2 of the SW1/4, Section 19, Township 11 South, Range 64 West of the 6th PM and the S1/2 of the SE1/4, Section 13 and all of Section 24, Township 11 South, Range 65 West of the 6th Principal Meridian, in El Paso County. According to a signed statement dated April 17, 2008, the applicant owns the 900.52 acres of land, as further described in said affidavit which is attached hereto as Exhibit A, and claims control of the ground water in the aquifer underlying this land area.

3. The proposed annual amount of ground water to be allocated and withdrawn from the aquifer for intended beneficial uses is the maximum allowable amount.

4. The above described land area overlying the ground water claimed by the applicant is located within the boundaries of the Kiowa-Bijou Designated Ground Water Basin. The Colorado Ground Water Commission (hereinafter "Commission") has jurisdiction.

5. The applicant intends to apply the allocated ground water to the following beneficial uses: domestic, industrial, commercial, irrigation, augmentation, stock watering, recreational water feature ponds and piscatorial habitat less than 1000 square feet and wildlife, replacement and all other augmentation purposes. The applicant's proposed place of use of the allocated ground water is the above described 900.52 acre land area.

6. The quantity of water in the aquifer underlying the 900.52 acres of land claimed by the applicant is 26300 acre-feet. This determination was based on the following as specified in the Designated Basin Rules:

a. The average specific yield of the saturated permeable material of the aquifer underlying the land under consideration that could yield a sufficient quantity of water that may be extracted and applied to beneficial use is 15 percent.

b. The average thickness of the saturated permeable material of the aquifer underlying the land under consideration that could yield a sufficient quantity of water that may be extracted and applied to beneficial use is 195 feet.

7. At this time, there is no substantial artificial recharge that would affect the aquifer within a one hundred year period.

8. Pursuant to Section 37-90-107(7), C.R.S., and in accordance with the Designated Basin Rules, the Commission shall allocate ground water in the aquifer based on ownership of the overlying land and an aquifer life of one hundred years. Therefore, the maximum allowed average annual amount of ground water in the aquifer that may be allocated for withdrawal pursuant to the data in the paragraphs above for the 900.52 acres of overlying land claimed by the applicant is 263 acre-feet.

9. A review of the records in the Office of the State Engineer has disclosed that none of the water in the aquifer underlying the land claimed by the applicant has been previously allocated or permitted for withdrawal.

10. Pursuant to Section 37-90-107(7)(c)(III), C.R.S., an approved determination of water right shall be considered a final determination of the amount of ground water so determined; except that the Commission shall retain jurisdiction for subsequent adjustment of such amount to conform to the actual local aquifer characteristics from adequate information obtained from well drilling or test holes.

11. The ability of wells permitted to withdraw the authorized amount of water from this non-renewable aquifer may be less than the one hundred years upon which the amount of water in the aquifer is allocated, due to anticipated water level declines.

12. In accordance with Rule 5.3.6 of the Designated Basin Rules, it has been determined that withdrawal of ground water from the aquifer underlying the land claimed by the applicant will not, within one hundred years, deplete the flow of a natural steam or its alluvial aquifer 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 Rule 4.2.19 of the Designated Basin Rules. No more than 98% of the amount of ground water withdrawn annually shall be consumed, as required by the Designated Basin Rules.

13. In accordance with Section 37-90-107(7), C.R.S., upon Commission approval of a determination of water right, well permits for wells to withdraw the authorized amount of water from the aquifer shall be available upon application, subject to the conditions of this determination and the Designated Basin Rules and subject to approval by the Commission.

14. The Commission Staff has evaluated the application relying on the claims to control of the ground water in the aquifer made by the applicant.

15. In accordance with Sections 37-90-107(7) and 37-90-112, C.R.S., the application was published in the Ranchland News newspaper on May 8 and May 15, 2008.

16. No objections to the determination of water right and proposed allocation of ground water were received within the time limit set by statute.

17. In order to prevent unreasonable impairment to the existing water rights of others within the Kiowa-Bijou Designated Ground Water Basin it is necessary to impose conditions on the determination of water right and proposed allocation of ground water. Under conditions as stated in the following Order, no unreasonable impairment of existing water rights will occur from approval of this determination of water right or from the issuance of well permits for wells to withdraw the authorized amount of allocated ground water from the aquifer.

ORDER

In accordance with Section 37-90-107(7), C.R.S., and the Designated Basin Rules, the Colorado Ground Water Commission orders that the application for determination of rights to designated ground water in the Laramie-Fox Hills Aquifer underlying 900.52 acres of land, generally described as the SW1/4 of the SW1/4, Section 18, the W1/2 of the NW1/4 and the W1/2 of the SW1/4, Section 19, Township 11 South, Range 64 West of the 6th PM and the S1/2 of the SE1/4, Section 13 and all of Section 24, Township 11 South, Range 65 West of the 6th Principal Meridian, is approved subject to the following conditions:

18. The allowed average annual amount of withdrawal of ground water from the aquifer shall not exceed 263 acre-feet. The allowed maximum annual amount of withdrawal may exceed the allowed average annual amount of withdrawal as long as the total volume of water withdrawn does not exceed the product of the number of years since the date of approval of this determination times the allowed average annual amount of withdrawal.

19. To conform to actual aquifer characteristics, the Commission may adjust the allowed average annual amount of ground water to be withdrawn from the aquifer based on analysis of geophysical logs or other site-specific data if such analysis indicates that the initial estimate of the volume of water in the aquifer was incorrect.

20. The applicant may pump the allowed average annual amount of withdrawal and the allowed maximum annual amount of withdrawal from one or more wells of a well field in any combination, so long as the total combined withdrawal of the wells does not exceed the amounts described in this Order.

21. No more than 98% of the ground water withdrawn annually shall be consumed. The Commission may require well owners to demonstrate periodically that no more than 98% of the water withdrawn is being consumed.

22. The use of ground water from this allocation shall be limited to the following beneficial uses: domestic, industrial, commercial, irrigation, augmentation, stock watering, recreational water feature ponds and piscatorial habitat less than 1000 square feet and wildlife, replacement and all other augmentation purposes. The place of use shall be limited to the above described 900.52 acre land area.

23. The applicant, or subsequent persons controlling this water right, shall record in the public records of the county - in which the claimed overlying land is located - notice of transfer of any portion of this water right to another within sixty days after the transfer, so that a title examination of the above described 900.52 acre land area, or any part thereof, shall reveal the changes affecting this water right. Such notice shall consist of a signed and dated deed which indicates the determination number, the aquifer, a description of the above described land area, the annual amount of ground water (acre-feet) transferred, name of the recipient, and the date of transfer.

24. Subject to the above conditions, well permits for wells to withdraw the allocated annual amount of water from the aquifer shall be available upon application subject to approval by the Commission and the following conditions:

    a. The wells shall be located on the above described 900.52 acre overlying land area.

    b. The wells must be constructed to withdraw water from only the Laramie-Fox Hills Aquifer. Upon application for a well permit to construct such a well, the estimated top and base of the aquifer at the proposed well location will be determined by the Commission and indicated on the approved well permit. Plain non-perforated casing must be installed, grouted and sealed to prevent diversion of ground water from other aquifers and the movement of ground water between aquifers.

    c. The entire depth of each well must be geophysically logged prior to installing the casing as set forth in Rule 9 of the Statewide Nontributary Ground Water Rules, 2 CCR 402-7.

    d. Each well shall be constructed within 200 feet of the location specified on the approved well permit, but must be more than 600 feet from any existing large-capacity well completed in the same aquifer.

    e. A totalizing flow meter or other Commission approved measuring device shall be installed on each well and maintained in good working order by the well owner. Annual diversion records shall be collected and maintained by the well owner and submitted to the Commission upon their request.

    f. The well owner shall mark the well in a conspicuous place with the permit number and the name of the aquifer. The well owner shall take necessary means and precautions to preserve these markings.

25. A copy of this Findings and Order shall be recorded by the applicant in the public records of the county in which the claimed overlying land is located so that a title examination of the above described 900.52 acre overlying land area, or any part thereof, shall reveal the existence of this determination.

Dated this 25th day of June, 2008.

Dick Wolfe

Dick Wolfe, P.E
Executive Director
Colorado Ground Water Commission

By: Keith VanderHorst

Keith Vander Horst, P.E.
Water Resource Engineer

Prepared by: JPM

92GWS 1
03/2005

EXHIBIT A

1689-BD

STATE OF COLORADO
OFFICE OF THE STATE ENGINEER
DIVISION OF WATER RESOURCES
1313 Sherman St. Room 821
Denver, CO 80203
(303) 866-3581 Fax (303) 866-3589

RECEIVED
APR 17 2008
WATER RESOURCES
STATE ENGINEER
COLO.

NONTRIBUTARY GROUND WATER LANDOWNERSHIP STATEMENT

I (We) George F. McCune and Evelyn McCune
(Name(s))

claim and say that I (we) am (are) the owner(s) of the following described property consisting of 900.52 acres in the County of El Paso, State of Colorado:

(Insert the property legal description)

SW/4SW/4 Section 18 and W/2 of the W/2 Section19, T11S, R64W, and S/2SE/4 Section 13 and All of Section 24, T11S R65W, 6th PM, El Paso County, 900.52 acres

See attached Quitclaim Deed dated November 29, 1976, and map.

and, that the ground water sought to be withdrawn from the Laramie-Fox Hills aquifer underlying the above-described land has not been conveyed or reserved to another, nor has consent been given to its withdrawal by another.

Further, I (we) claim and say that I (we) have read the statements made herein; know the contents hereof; and that the same are true to my (our) knowledge.

Signature George F McCune Date

Signature Evelyn M McCune Date

INSTRUCTIONS:
Please type or print neatly in black or blue ink. This form may be reproduced by photocopy or word processing means. See additional information on the reverse side.

County of El Paso, State of Colorado [illegible] 2nd Best Copy Available BOOK 2877 PAGE 197
RECEIVED AT 9 o'clock A.M. NOV 29 1976
RECEPTION NO. 280497 HARRIET BEALS [illegible] DEPUTY

RECEIVED
APR 1 7 2008
WATER RESOURCES
STATE ENGINEER
COLO.

QUITCLAIM DEED

RAY C. McCUNE and GRETA C. McCUNE, as husband and wife, of the County of El Paso and State of Colorado, for the consideration of One Dollar ($1.00) and other good and valuable consideration, in hand paid, hereby sell and quit claim to GEORGE F. McCUNE and EVELYN M. McCUNE, husband and wife, in joint tenancy, of the County of Elbert and State of Colorado, a one-half interest in and to all minerals underlying the following described property, including oil and gas, said property lying and being in the County of El Paso and State of Colorado, to wit:

> The Southwest quarter of the Southwest quarter of Section Eighteen, Township Eleven, Range Sixty-four; the West half of the West half of Section Nineteen, Township Eleven, Range Sixty-four; the South half of the Southeast Quarter of Section Thirteen, Township Eleven, Range Sixty-five; All of Section Twenty-four, Township Eleven, Range Sixty-five, containing in all Nine hundred and fifty-two hundredths (900.52) acres, more or less, according to Government Survey,

with all its appurtenances.

No consideration

DATED and signed this 22 day of Nov., 1976.

STATE DOCUMENTARY
NOV 29 1976
FEE $ None

Ray C. McCune
Ray C. McCune

Greta C. McCune
Greta C. McCune

STATE OF COLORADO)
) ss.
COUNTY OF EL PASO)

The foregoing instrument was acknowledged before me this 22 day of Nov., 1976, by Ray C. McCune and Greta C. McCune.

Stephanie Young
Notary Public

My commission expires: 6/20/78

COLORADO GROUND WATER COMMISSION
DIVISION OF WATER RESOURCES
DEPARTMENT OF NATURAL RESOURCES
1313 Sherman St, Room 818, Denver, CO 80203

RECEIVED

APR 1 7 2008

WATER RESOURCES
STATE ENGINEER
COLO.

APPLICATION FOR DETERMINATION OF WATER RIGHT WITHIN A DESIGNATED GROUND WATER BASIN PURSUANT TO SECTION 37-90-107(7), C.R.S.

Please note: This application may only be used to apply for a determination of rights to ground water from the Dawson, Denver, Arapahoe or Laramie-Fox Hills aquifer underlying land areas located within a Designated Ground Water Basin. Review the instructions on the reverse of this form. This form must be completed, signed, dated and submitted to the Ground Water Commission with a non-refundable $60 filing fee. A separate form must be used for each aquifer determination. Type or print in black ink.

1. APPLICANT INFORMATION

Name of Applicant

George F. McCune and Evelyn McCune

Applicant Mailing Address

17480 Meridian Road, Elbert, CO 80106-8916
c/o Colorado Water Plans, P O Box 1855, Elbert, CO 80106

Applicant Telephone Number (include area code)

~~303-648-0000~~ Contact 303 646-4201 719-495-2562

2. AMOUNT OF OVERLYING LAND – the total and area claimed and described by the applicant in Item #8 below, consisting of 900.52 acres.

3. AQUIFER Laramie-Fox Hills NT

4. EXISTING WELLS – Are there any wells located on the claimed and described overlying land? Yes____ No X
If yes, provide a complete list of all wells located on the overlying land area as an attachment to this application.

5. ANNUAL AMOUNT OF GROUND WATER – to be withdrawn, for intended beneficial uses, from the aquifer underlying the described land area claimed by the applicant in Item #8 below. Please specify one of the following:

[X] Maximum allowable annual acre-feet [ ] ______ acre-feet annually [ ] Maximum allowable annual acre-feet, excluding ________ acre-feet from that amount

6. USE OF GROUND WATER – description of intended beneficial uses of the ground water to be withdrawn from the aquifer

All water withdrawn will be reused, successively used, leased, sold or otherwise disposed of for the following beneficial uses: domestic, industrial, commercial, irrigation, augmentation, stock watering, recreational water feature ponds and piscatorial habitat less than 1000 square feet and wildlife. The water will be produced for immediate application to said uses, for storage and subsequent application to said uses, for replacement of depletion's from the use of water from other sources and for all other augmentation purposes

7. PLACE OF USE – of the ground water shall be considered to be that overlying land area claimed and described by the applicant in Item #8 below, unless a legal description or accurate scale map is provided which describes an alternate/additional place of use.

8. REQUIRED LANDOWNERSHIP DOCUMENTATION - The Ground Water Commission shall allocate ground water from the Dawson, Denver, Arapahoe or Laramie-Fox Hills aquifer on the basis of ownership of overlying land. For this reason, a Nontributary Ground Water Landownership Statement (form GWS-1) or Nontributary Ground Water Consent Claim (form GWS-48), including a description of the overlying land area subject to this determination, must be submitted as an attachment to the application.

9. SIGNATURE OF APPLICANT - must be original signature – The making of false statements herein constitutes perjury in the second degree, which is punishable as a class 1 misdemeanor pursuant to C.R.S. 24-4-104(13)(a). I have read the statements herein, know the contents thereof, and state that they are true to my knowledge.

Signature George F McCune
Evelyn M. McCune
Date

- print name and title George F. McCune and Evelyn McCune, Owners

FOR OFFICE USE ONLY

Trans Number: 3628088 A
4/17/2008 1:34:24 PM
Geoff Davis (21)
Total Trans Amt: $240.00
CHECK
Check Number: 9724
Check Amount: $240.00

DIV 8 CO____ WD 1 BASIN 2 MD____

Form GWS-53 (8/2006)

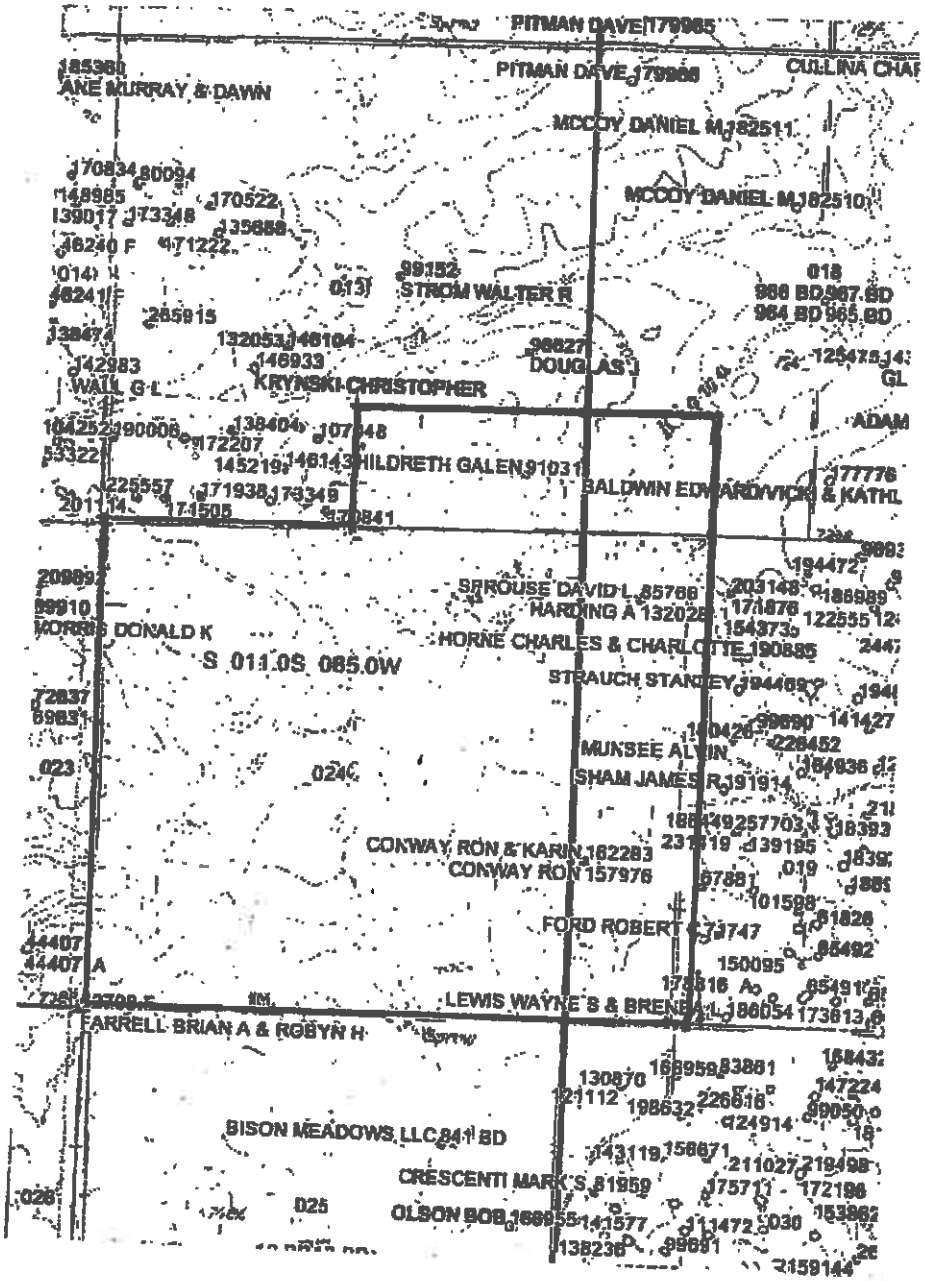
George F. McCune and Evelyn McCune
Subsurface Water Rights

RECEIVED

APR 1 7 2008

WATER RESOURCES
STATE ENGINEER
CCLO.

SW/4SW/4 Section 18 and W/2 of the W/2 Section19, T11S, R64W, and S/2SE/4 Section 13 and All of Section 24, T11S R65W, 6th PM,



THERE ARE NO WATER WELLS ON THE PROPERTY

LOCATION MAP from CDSS

RECEIVED

APR 17 2008

WATER RESOURCES
STATE ENGINEER
COLO.

COLORADO WATER PLANS

Water Consultants

Colorado Ground Water Commission
Division of Water Resources
Department Of Natural Resources
1313 Sherman Street - Room 818
Denver, Colorado 80203

Re: Application for Determination of Water Right
Client: **George F. McCune and Evelyn McCune**

Agent: Colorado Water Plans LLC

Colorado Water Plans LLC has prepared the Application for Determination of Water Right with my permission as Signatory and Landowner. Colorado Water Plans LLC shall have full representational power as "Agent" in regards to this **Application for Determination of Water Right**, water issues, water facts, water calculations, submittals to governmental agencies, reporting forms, newspaper public notifications, applications, or any other needs within the confines of the Contract for Services. This document shall authorize my "Agent" Colorado Water Plans LLC to manage and conduct all affairs and to exercise all my rights and powers within the enclosed Application for Determination of Water Right.

Colorado Water Plans has no rights, implied or warranted outside the affairs of this agreement, and subject to other provisions of this document, disclaim any interest which might otherwise be transferred or distributed to me from other person or entity.

Client:

By: George F McCune & Evelyn M. McCune

By: _____

Date: 4-14-08

Colorado Water Plans LLC
Craig L. Curl
Dr. W. Jerry Koch
Lisa S. Weinstein, Esq. #35688

By: _____
Date: 4-14-08

P.O. Box 1955 / Elizabeth / Colorado / 80107
Office: 303/646-3895 Fax: 303/646-9655

DETERMINATION OF WATER RIGHT
SECTION 37-90-107(7)

APPLICANT: George F. McCune and Evelyn McCune

BASIN: Kiowa-Bijou

COUNTY: El Paso

AQUIFER: Laramie-Fox Hills RECEIPT NO. 3628088A

NUMBER OF ACRES IN TRACT: 900.52 acres

GENERAL LOCATION: SW/4SW/4, Section 18 and W/2NW/4, W/2SW/4, Section 19, T11S, R64W, 6th PM, S/2SE/4, Section 13 and All of Section 24, T11S, R65W, 6th PM.

AQUIFER DATA

AMOUNT AVAILABLE FOR APPROPRIATION: (195 feet SS)(900.52 Acres)(0.15 SY) = 26340 AF 263.4 AFyr

ADJUSTMENTS: None

ANNUAL AMOUNT: 263.4 AFyr

PRE.NOV.19, 1973 WELLS (COMPLETED IN AQUIFER) IN VICINITY: N/A

OVERLAP AREA: N/A

AREA CHECKED: Sections 18, 19, and 30, T11S, R64W
Sections 13, 14, 23, 24, 25, and 26, T11S, R65W

SMALL-CAPACITY WELLS (COMPLETED IN AQUIFER) LOCATED ON CLAIMED TRACT: N/A

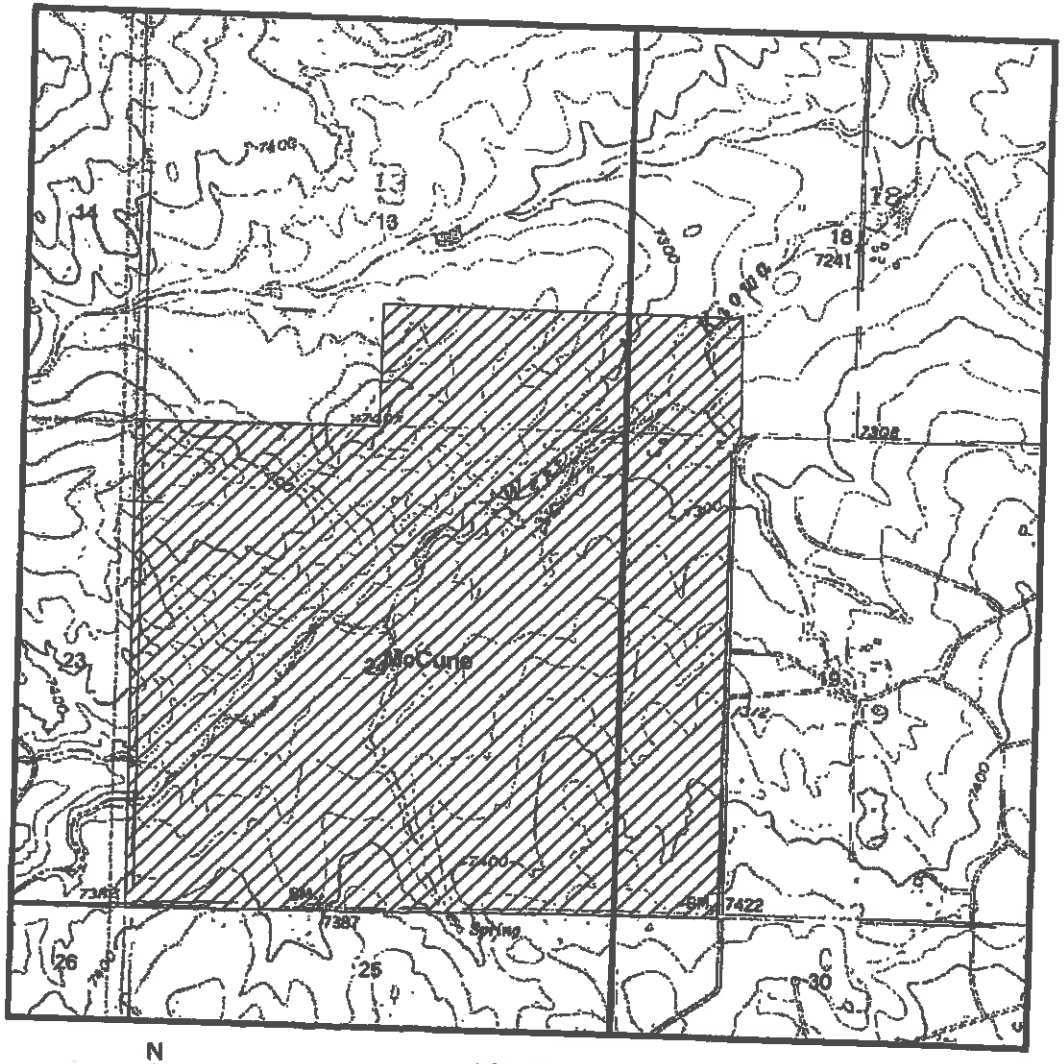
REPLACEMENT WATER STATUS OF CLAIMED LAND AREA: Nontributary

REPLACEMENT PLAN REQUIRED: Not Required

AQUIFER INTERVAL (CENTRAL DATA POINT): 2620 feet to 2940 feet below ground surface

COMMENTS: The SS was considered 195 feet based on the SS map for the Laramie-Fox Hills aquifer.

Evaluated by: Justina Mickelson, Ground Water Commission Staff
Reviewed by CBG



DIVISION OF WATER RESOURCES
STATE OF COLORADO

Receipt Number: 3628088A
Applicant: George F. McCune
and Evelyn McCune
Basin: Kiowa-Bijou
GWMD:
Aquifer: Laramie-Fox Hills

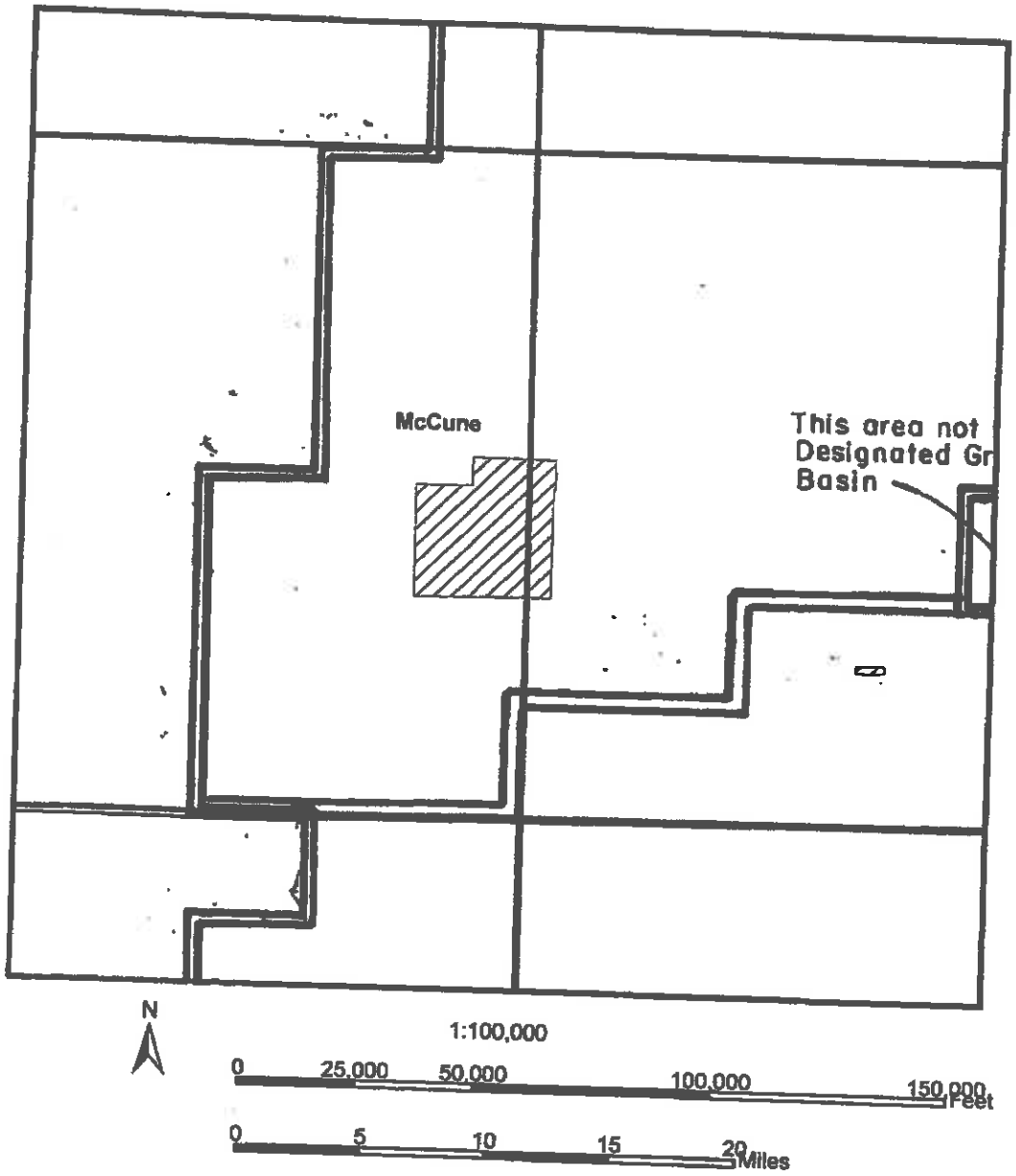
Sections: 13 and 24, T11S, R65W
Sections: 18 and 19, T11S, R64W
Meridian: 6

Area claimed: 900.52 acres
897 acres measured
Perimeter = 7,963 m

Legend
- Township
- Section
- jpm_work

Office of the State Engineer
Division of Water Resources
Department of Natural Resources

COLORADO DIVISION OF WATER RESOURCES



DIVISION OF WATER RESOURCES
STATE OF COLORADO

Receipt Number: 3628088A
Applicant: George F. McCune
and Evelyn McCune
Basin: Kiowa-Bijou
GWMD:
Aquifer: Laramie-Fox Hills

Sections: 13 and 24, T11S, R65W
Sections: 18 and 19, T11S, R64W
Meridian: 6

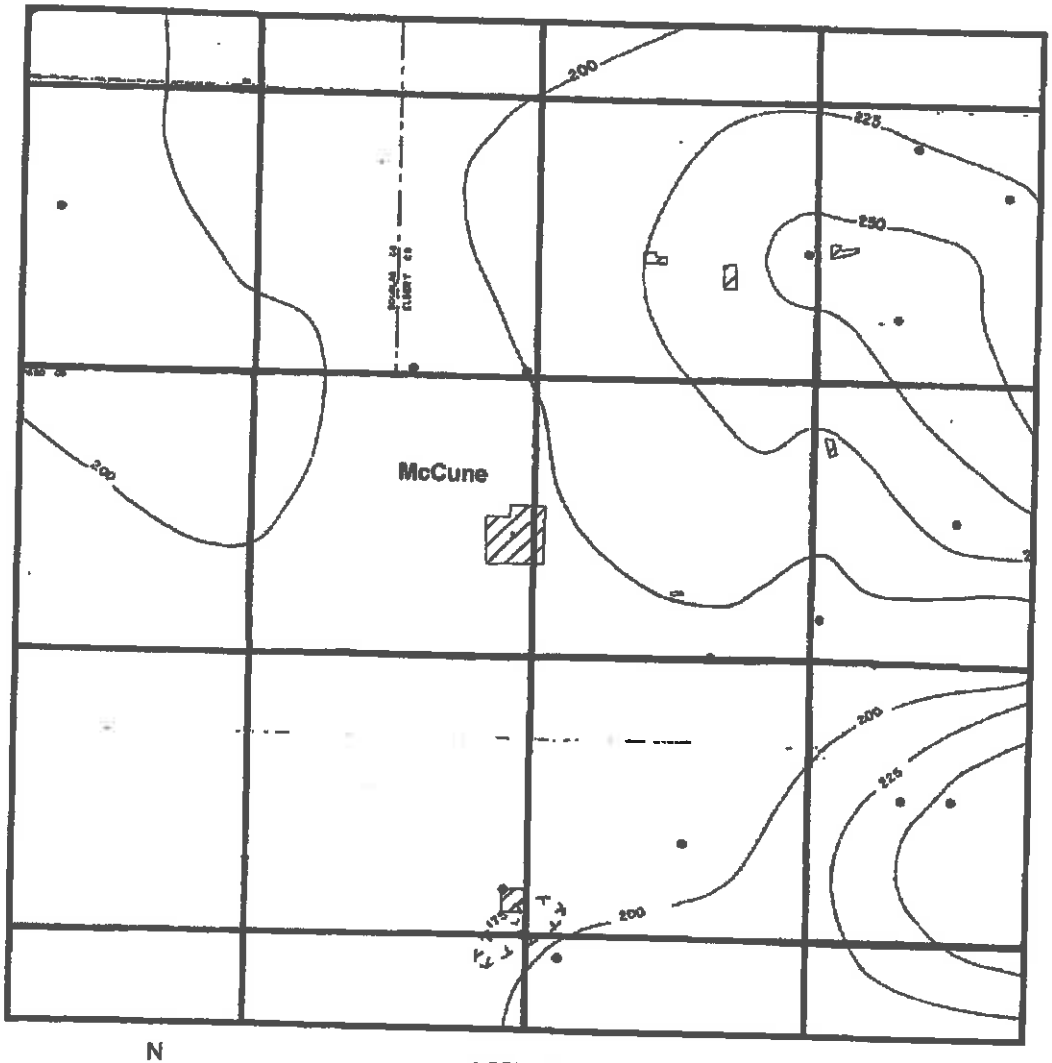
Area claimed: 900.52 acres
897.22 acres measured.
Perimeter = 7,963 m

Tributary Status NT

Legend
Township
jpm_work

Office of the State Engineer
Division of Water Resources
Department of Natural Resources

COLORADO DIVISION OF WATER RESOURCES



DIVISION OF WATER RESOURCES
STATE OF COLORADO

Receipt Number: 3628088A
Applicant: George F. McCune
and Evelyn McCune
Basin: Kiowa-Bijou
GWMD:
Aquifer: Laramie-Fox Hills

Sections: 13 and 24, T11S, R65W
Sections: 18 and 19, T11S, R64W
Meridian: 6

Area claimed: 900.52 acres
897.22 acres measured
Perimeter = 7,963 m

Saturated Sands

Legend
- Township
- jpm_work

Office of the State Engineer
Division of Water Resources
Department of Natural Resources

COLORADO DIVISION OF WATER RESOURCES

DEPARTMENT OF NATURAL RESOURCES

DIVISION OF WATER RESOURCES

Bill Ritter, Jr.
Governor

Harris D. Sherman
Executive Director

Dick Wolfe, P.E.
Director

May 1, 2008

George F. McCune and Evelyn McCune
c/o Colorado Water Plans
P.O. Box 1955
Elizabeth, CO 80107

RE: Applications for Determinations of Water Right to Appropriate Ground Water from the Laramie-Fox Hills, Arapahoe, Denver, and Dawson Aquifers Underlying a 900.52-Acre Tract,

Receipt Nos. 3628088A-D

Dear Mr. and Mrs. McCune:

Enclosed is a copy of the legal notice to be published in the Ranchland News newspaper as required for the above described applications. If you find any errors or omissions in the notice, please contact this office by phone as soon as possible so that corrections may be made prior to publication. This office will bill you at a later time for the actual cost of this publication.

If you have any questions concerning these applications, please contact me at this office.

Sincerely,

Justina Mickelson
Physical Science Researcher Scientist
Designated Basins Branch

Enclosures: a/s
cc: George and Evelyn McCune

OFFICE OF THE STATE ENGINEER
Division of Water Resources – Department of Natural Resources
1313 Sherman St, Room 818, Denver, Colorado 80203
Phone 303-866-3581 – FAX 303-866-3589 – www.water.state.co.us

May 1, 2008

Ranchland News
PO Box 307
Simla, CO 80835

Applicant: George F. McCune and Evelyn McCune

-EMAIL- DOCUMENT TRANSFER-

Please publish the enclosed legal notice in your editions of May 8, 2008 and May 15, 2008, or as close to these dates as possible. Please single-space all the enclosed material in your standard single column legal notice format. Font size shall not be less than six-point type and not more than nine-point in size.

Prior to publishing the legal notice, a proof copy must be submitted to this office for approval. The Ground Water Commission staff will inspect the proof copy and a reply as to its correctness will be made immediately by phone to your office. The proof copy must be directed to the attention of Justina Mickelson, Colorado Division of Water Resource at the above address, or by email justina.mickelson@state.co.us or fax 303-866-3589.

The state Controller and the State Purchasing Agent require that four copies of the billing and four copies of the proof of publication affidavit must be received in order to process billing invoices for legal notice publications. Two copies of the proof of publication must be notarized.

Since we must re-bill the applicant prior to the official action concerning their application request, please transmit the billing copies together with the proofs of publication as soon as possible.

Should you have any questions concerning publication of this notice, please contact this office.

Sincerely,

Justina Mickelson
Physical Science Researcher Scientist
Designated Basins Branch

Enclosure (a/s)

cc: Robert R. Loose, Commission Member

C:\Documents and Settings\jpm\My Documents\Water Right Aps\McCune\RanchlandNews - McCune.doc

BEFORE THE COLORADO GROUND WATER COMMISSION

KIOWA-BIJOU DESIGNATED GROUND WATER BASIN– EL PASO COUNTY

TAKE NOTICE that pursuant to Section 37-90-107(7), C.R.S., George F. McCune and Evelyn McCune (hereinafter "applicant") have applied for determinations of water right to allow the withdrawal of designated ground water from the Laramie-Fox Hills, Arapahoe, Denver, and Dawson aquifers underlying 900.52 acres generally described as the SW1/4 of the SW1/4, Section 18, the W1/2 of the NW1/4 and the W1/2 of the SW1/4, Section 19, Township 11 South, Range 64 West of the 6th PM and the S1/2 of the SE1/4, Section 13 and all of Section 24, Township 11 South, Range 65 West of the 6th PM. The applicant claims ownership of this land and control of the ground water in the above-described aquifers under this property. The ground water allocations from these aquifers will be used on the described property for the following beneficial uses: domestic, industrial, commercial, irrigation, augmentation, stock watering, recreational water feature ponds and piscatorial habitat less than 1000 square feet and wildlife, replacement and all other augmentation purposes. The maximum allowable annual amount of ground water in each aquifer underlying the described property will be allocated.

In accordance with Section 37-90-107(7), C.R.S., and the Designated Basin Rules, 2 CCR 410-1, the Colorado Ground Water Commission shall allocate ground water from the above-described aquifers based on ownership of the overlying land and an aquifer life of one hundred years. A preliminary evaluation of the applications by the Commission Staff finds the annual amount of water available for allocation from each of the described aquifers underlying the above-described property to be as follows: 263.4 acre-feet for the Laramie-Fox Hills, 398.0 acre-feet for the Arapahoe, 528.2 acre-feet for the Denver, and 819.5 for the Dawson subject to final staff evaluation. The estimated available annual acre-feet allocation amount for each aquifer indicated above may be increased or decreased by the Commission to conform to the actual aquifer characteristics, based upon site specific data.

In accordance with Rule 5.3.6 of the Designated Basin Rules, the Commission Staff's preliminary evaluation of the applications finds the replacement water requirement status for the above aquifers underlying the above-described property to be as follows: nontributary for the Laramie-Fox Hills, nontributary for the Arapahoe, nontributary for the Denver, and not-nontributary (actual impact replacement) for the Dawson.

Upon Commission approval of these determinations of water right, well permits for wells to withdraw the allowed allocation from a specific aquifer shall be available upon application, subject to the conditions of the determination and the Designated Basin Rules and subject to approval by the Commission. Such wells must be completed in the specified aquifer and located on the above described 900.52 acre property. Well permits for wells to withdraw ground water from the Dawson aquifer would also be subject to the conditions of a replacement plan to be approved by the Commission.

Any person wishing to object to the approval of these determinations of water right must do so in writing, briefly stating the nature of the objection and indicating the above applicant, property description and the specific aquifers that are the subject of the objection. The objection must be accompanied by a $10 per aquifer fee and must be received by the Commission Staff, Colorado Ground Water Commission, 818 Centennial Building, 1313 Sherman Street, Denver, Colorado 80203, by June 16, 2008.

PUBLISHER'S AFFIDAVIT

STATE OF COLORADO)
) ss.
COUNTY OF ELBERT)

I, Susan Lister, do solemnly affirm that I am the Publisher of RANCHLAND NEWS; that the same is a weekly newspaper published at Simla, County of Elbert, State of Colorado, and has a general circulation therein; that said newspaper has been continuously and uninterruptedly published in said County of Elbert for a period of at least 52 consecutive weeks next prior to the first publication of the annexed notice, that said newspaper is entered in the post office at Calhan, Colorado as second class mail matter and that said newspaper is a newspaper within the meaning of the Act of the General Assembly of the State of Colorado, approved March 30, 1923, and entitled "Legal Notices and Advertisements," with other Acts relating to the printing and publishing of legal notices and advertisements. That the annexed notice was published in the regular and entire issue of said newspaper, once each week for two successive weeks; that the first publication of said notice was in the issue of said newspaper dated:

May 8, 2008

and the last publication of said notice was in the issue of said newspaper dated:

May 15, 2008

and that copies of each number of said paper in which said notice and/or list was published were delivered by carriers or transmitted by mail to each of the subscribers of said newspaper, Ranchland News, according to the accustomed mode of business in this office.

Susan Lister
Publisher

The above certificate of publication was subscribed and affirmed to before me, a Notary Public, to be the identical person described in the above certificate, on the

15 day of May, 2008

Notary Public

1/22/12
(My Notary Public Commission Expiration Date)

Determinations of Water Right

BEFORE THE COLORADO GROUND WATER COMMISSION

KIOWA-BIJOU DESIGNATED GROUND WATER BASIN– EL PASO COUNTY

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First Publication May 8, 2008
Final Publication May 15, 2008
In Ranchland News
Legal No. 12,936

PUBLISHER'S AFFIDAVIT

STATE OF COLORADO)
) ss.
COUNTY OF ELBERT)

I, Susan Lister, do solemnly affirm that I am the Publisher of RANCHLAND NEWS; that the same is a weekly newspaper published at Simla, County of Elbert, State of Colorado, and has a general circulation therein; that said newspaper has been continuously and uninterruptedly published in said County of Elbert for a period of at least 52 consecutive weeks next prior to the first publication of the annexed notice, that said newspaper is entered in the post office at Calhan, Colorado as second class mail matter and that said newspaper is a newspaper within the meaning of the Act of the General Assembly of the State of Colorado, approved March 30, 1923, and entitled "Legal Notices and Advertisements," with other Acts relating to the printing and publishing of legal notices and advertisements. That the annexed notice was published in the regular and entire issue of said newspaper, once each week for two successive weeks; that the first publication of said notice was in the issue of said newspaper dated:

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15 day of May, 2008

Notary Public

1/22/12

(My Notary Public Commission Expiration Date)

Determinations of Water Right

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First Publication May 8, 2008
Final Publication May 15, 2008
In Ranchland News
Legal No. 12,936

Ranchland News
115 Sioux Avenue, PO Box 307
Simla CO 80835

Invoice	5/ 8/2008 DATE	3 NUMBER

RECEIVED

MAY 19 2008

WATER RESOURCES
STATE ENGINEER
COLO.

ID# 192

Colorado Ground Water Commission
1313 Sherman Street, Room 818
Denver CO 80203

Date	Description	Units	Amount
05/08/2008	Legal - 11.5 Picas McCune, legal 12,936	89.000	43.97
05/15/2008	Legal - Rerun - 11.5 Picas McCune, legal 12,936	89.000	30.71
	******** Total		74.68

RECEIVED
JUN 02 2008
WATER RESOURCES
STATE ENGINEER
COLO.

DEPARTMENT OF NATURAL RESOURCES

DIVISION OF WATER RESOURCES

May 21, 2008

George F. McCune and Evelyn McCune
c/o Colorado Water Plans
P.O. Box 1955
Elizabeth, CO 80107

Invoice No. 08-PUB-220

INVOICE

Pursuant to Section 37-90-116, C.R.S., applicants are required to pay for the actual expense of publication for determinations of water right, well permit and change of water right applications.

Your application for determinations of water right to appropriate ground water from the Laramie-Fox Hills, Arapahoe, Denver, and Dawson aquifers was published in the Ranchland News newspaper on May 8 and May 15, 2008.

The following cost was incurred:

1. Actual cost of publication: $74.68
2. Additional fees: none

PAYABLE TO: DIVISION OF WATER RESOURCES $74.68

Your application cannot be considered for approval until the charges are paid.
Please return the enclosed copy of this invoice with remittance within thirty (30) days.

(A copy of the publication affidavit is enclosed for your records.)

Sincerely,

Justina P. Mickelson
Physical Science Researcher Scientist
Designated Basins Branch

Trans Number: 3629687
6/2/2008 9:32:21 AM
Debbie Gonzales (20)
Total Trans Amt: $231.58
CHECK
Check Number: 9784
Check Amount: $231.58

Enclosures (a/s)

Office of the State Engineer
1313 Sherman Street, Suite 818 • Denver, CO 80203 • Phone: 303-866-3581 • Fax: 303-866-3589
www.water.state.co.us

DEPARTMENT OF NATURAL RESOURCES

DIVISION OF WATER RESOURCES

Bill Ritter, Jr.
Governor

Harris D. Sherman
Executive Director

Dick Wolfe, P.E.
Director

June 27, 2008

George F. and Evelyn McCune
17480 Meridian Road
Elbert, CO 80106-8916

RE: Determination of Water Right

Dear Mr. and Mrs. McCune:

Enclosed is a copy of the Colorado Ground Water Commission's Findings and Order for Determination of Water Right No. 1689-BD, for the allocation of ground water in the Laramie-Fox Hils aquifer. This Findings and Order is the Commission's approval of your application for determination of right to ground water in the above stated aquifer. This document contains important information about your water right and should be reviewed and retained for your records.

As indicated in the Order, a copy of this determination must be recorded by the applicant in the public records of the county – in which the overlying land is located – so that a title examination of the overlying land claimed in the application, or any part thereof, shall reveal this determination. An additional copy of the Findings and Order is enclosed for this purpose.

If you have any questions, please contact this office.

Sincerely,

Justina P. Mickelson
Physical Science Researcher Scientist
Designated Basins Branch

Enclosures: a/s

Colorado Department of Natural Resources

Colorado.gov | Contact Us

Colorado Division of Water Resources

Colorado's Well Permit Search

THIS PAGE IS NOT THE ACTUAL PERMIT

The information contained on this page is a summary of the permit file and may not reflect all details of the well permit. (Full Disclaimer)

Permit Issued: Completion Status Unknown

Help Last Refresh: 12/6/2016 12:03:01 AM

Receipt:	3628088B	**Division:**	1
Permit #:	1690-BD -	**Water District:**	1
Well Name / #:		**County:**	EL PASO
Designated Basin:	KIOWA-BIJOU	**Management District:**	
Case Number:			
WDID:			

[-] Imaged Documents - Permit File

Document Name	Date Imaged	Annotated
Findings & Order for Determination	05/21/2009	No

[-] Applicant/Contact

Applicant/Contact Name	Mailing Address	City/State/Zip
MCCUNE GEORGE F & EVELYN	17480 MERIDIAN RD	ELBERT, CO 80106-8916

[-] Location Information

Approved Well Location:

Q40	Q160	Section	Township	Range	PM	Footage from Section Lines
		24	11.0S	65.0W	Sixth	

Northing (UTM y): 4325550.5 **Easting (UTM x):** 533176.3

Location Accuracy: Spotted from quarters

Subdivision Name

Filing **Block** **Lot**

Parcel ID: **Acres in Tract:** 900.52

[-] Permit Details

Date Issued: 06/25/2008 **Date Expires:**

Uses *(See Imaged Documents for more information)*

General Use(s): COMMERCIAL, DOMESTIC **Aquifer(s):** ARAPAHOE

Special Use:

Area which may be irrigated:

Annual volume of appropriation:

Statute:

Cross Reference Permit(s): **Permit Number** **Receipt**

Comments: DETER ISSUED

[-] Construction/Usage Details

Well Construction Date: **Pump Installation Date:**

Well Plugged: **1st Beneficial Use:**

Elevation **Depth** **Perforated Casing (Top)** **Perforated Casing (Bottom)** **Static Water Level** **Pump Rate**

[-] Application/Permit History

Permit Issued	06/25/2008
Application Received	04/17/2008

Disclaimer

***The information contained on this page is a summary of the permit file and may not reflect all details of the well permit. THIS PAGE IS NOT THE ACTUAL PERMIT.**

This page should not be used as a basis for any legal consideration, to determine the allowed uses of the well, to determine construction information, or to determine the terms and conditions under which the well can operate. The complete well permit file should be viewed to obtain details on the allowed uses and other relevant information. A complete copy of this file is available in the "Imaged Documents" section of this page, and can be viewed by opening all of the documents listed under that section (documents will open as pdf files).

Note that all of the terms and conditions under which a well can operate, particularly for non-exempt wells, may not be specified on the well permit. Wells may also be subject to relevant statutes, rules and decrees. To learn

more about well permitting in Colorado, please visit DWR's Well Permitting Page. If you have any questions about this well permit file, please contact the DWR Ground Water Information Desk.

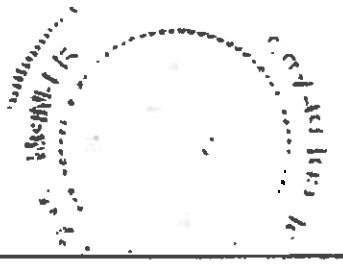
COLORADO GROUND WATER COMMISSION
FINDINGS AND ORDER

IN THE MATTER OF AN APPLICATION FOR DETERMINATION OF WATER RIGHT TO ALLOW THE WITHDRAWAL OF GROUND WATER IN THE KIOWA-BIJOU DESIGNATED GROUND WATER BASIN

APPLICANT: GEORGE F. MCCUNE AND EVELYN MCCUNE

AQUIFER: ARAPAHOE

DETERMINATION NO.: **1690-BD**



In compliance with Section 37-90-107(7), C.R.S., and the Designated Basin Rules, 2 CCR 410-1, George F. McCune and Evelyn McCune (hereinafter "applicant") submitted an application for determination of water right to allow the withdrawal of designated ground water from the Arapahoe Aquifer.

FINDINGS

1. The application was received complete by the Colorado Ground Water Commission on April 17, 2008.

2. The applicant requests a determination of rights to designated ground water in the Arapahoe Aquifer (hereinafter "aquifer") underlying 900.52 acres, generally described as the SW1/4 of the SW1/4, Section 18, the W1/2 of the NW1/4 and the W1/2 of the SW1/4, Section 19, Township 11 South, Range 64 West of the 6th PM and the S1/2 of the SE1/4, Section 13 and all of Section 24, Township 11 South, Range 65 West of the 6th Principal Meridian, in El Paso County. According to a signed statement dated April 17, 2008, the applicant owns the 900.52 acres of land, as further described in said affidavit which is attached hereto as Exhibit A, and claims control of the ground water in the aquifer underlying this land area.

3. The proposed annual amount of ground water to be allocated and withdrawn from the aquifer for intended beneficial uses is the maximum allowable amount.

4. The above described land area overlying the ground water claimed by the applicant is located within the boundaries of the Kiowa-Bijou Designated Ground Water Basin. The Colorado Ground Water Commission (hereinafter "Commission") has jurisdiction.

5. The applicant intends to apply the allocated ground water to the following beneficial uses: domestic, industrial, commercial, irrigation, augmentation, stock watering, recreational water feature ponds and piscatorial habitat less than 1000 square feet and wildlife, replacement and all other augmentation purposes. The applicant's proposed place of use of the allocated ground water is the above described 900.52 acre land area.

6. The quantity of water in the aquifer underlying the 900.52 acres of land claimed by the applicant is 39800 acre-feet. This determination was based on the following as specified in the Designated Basin Rules:

a. The average specific yield of the saturated permeable material of the aquifer underlying the land under consideration that could yield a sufficient quantity of water that may be extracted and applied to beneficial use is 17 percent.

b. The average thickness of the saturated permeable material of the aquifer underlying the land under consideration that could yield a sufficient quantity of water that may be extracted and applied to beneficial use is 260 feet.

7. At this time, there is no substantial artificial recharge that would affect the aquifer within a one hundred year period.

8. Pursuant to Section 37-90-107(7), C.R.S., and in accordance with the Designated Basin Rules, the Commission shall allocate ground water in the aquifer based on ownership of the overlying land and an aquifer life of one hundred years. Therefore, the maximum allowed average annual amount of ground water in the aquifer that may be allocated for withdrawal pursuant to the data in the paragraphs above for the 900.52 acres of overlying land claimed by the applicant is 398 acre-feet.

9. A review of the records in the Office of the State Engineer has disclosed that none of the water in the aquifer underlying the land claimed by the applicant has been previously allocated or permitted for withdrawal.

10. Pursuant to Section 37-90-107(7)(c)(III), C.R.S., an approved determination of water right shall be considered a final determination of the amount of ground water so determined; except that the Commission shall retain jurisdiction for subsequent adjustment of such amount to conform to the actual local aquifer characteristics from adequate information obtained from well drilling or test holes.

11. The ability of wells permitted to withdraw the authorized amount of water from this non-renewable aquifer may be less than the one hundred years upon which the amount of water in the aquifer is allocated, due to anticipated water level declines.

12. In accordance with Rule 5.3.6 of the Designated Basin Rules, it has been determined that withdrawal of ground water from the aquifer underlying the land claimed by the applicant will not, within one hundred years, deplete the flow of a natural steam or its alluvial aquifer 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 Rule 4.2.19 of the Designated Basin Rules. No more than 98% of the amount of ground water withdrawn annually shall be consumed, as required by the Designated Basin Rules.

13. In accordance with Section 37-90-107(7), C.R.S., upon Commission approval of a determination of water right, well permits for wells to withdraw the authorized amount of water from the aquifer shall be available upon application, subject to the conditions of this determination and the Designated Basin Rules and subject to approval by the Commission.

14. The Commission Staff has evaluated the application relying on the claims to control of the ground water in the aquifer made by the applicant.

15. In accordance with Sections 37-90-107(7) and 37-90-112, C.R.S., the application was published in the Ranchland News newspaper on May 8 and May 15, 2008.

16. No objections to the determination of water right and proposed allocation of ground water were received within the time limit set by statute.

17. In order to prevent unreasonable impairment to the existing water rights of others within the Kiowa-Bijou Designated Ground Water Basin it is necessary to impose conditions on the determination of water right and proposed allocation of ground water. Under conditions as stated in the following Order, no unreasonable impairment of existing water rights will occur from approval of this determination of water right or from the issuance of well permits for wells to withdraw the authorized amount of allocated ground water from the aquifer.

ORDER

In accordance with Section 37-90-107(7), C.R.S., and the Designated Basin Rules, the Colorado Ground Water Commission orders that the application for determination of rights to designated ground water in the Arapahoe Aquifer underlying 900.52 acres of land, generally described as the SW1/4 of the SW1/4, Section 18, the W1/2 of the NW1/4 and the W1/2 of the SW1/4, Section 19, Township 11 South, Range 64 West of the 6th PM and the S1/2 of the SE1/4, Section 13 and all of Section 24, Township 11 South, Range 65 West of the 6th Principal Meridian, is approved subject to the following conditions:

18. The allowed average annual amount of withdrawal of ground water from the aquifer shall not exceed 398 acre-feet. The allowed maximum annual amount of withdrawal may exceed the allowed average annual amount of withdrawal as long as the total volume of water withdrawn does not exceed the product of the number of years since the date of approval of this determination times the allowed average annual amount of withdrawal.

19. To conform to actual aquifer characteristics, the Commission may adjust the allowed average annual amount of ground water to be withdrawn from the aquifer based on analysis of geophysical logs or other site-specific data if such analysis indicates that the initial estimate of the volume of water in the aquifer was incorrect.

20. The applicant may pump the allowed average annual amount of withdrawal and the allowed maximum annual amount of withdrawal from one or more wells of a well field in any combination, so long as the total combined withdrawal of the wells does not exceed the amounts described in this Order.

21. No more than 98% of the ground water withdrawn annually shall be consumed. The Commission may require well owners to demonstrate periodically that no more than 98% of the water withdrawn is being consumed.

22. The use of ground water from this allocation shall be limited to the following beneficial uses: domestic, industrial, commercial, irrigation, augmentation, stock watering, recreational water feature ponds and piscatorial habitat less than 1000 square feet and wildlife, replacement and all other augmentation purposes. The place of use shall be limited to the above described 900.52 acre land area.

23. The applicant, or subsequent persons controlling this water right, shall record in the public records of the county - in which the claimed overlying land is located - notice of transfer of any portion of this water right to another within sixty days after the transfer, so that a title examination of the above described 900.52 acre land area, or any part thereof, shall reveal the changes affecting this water right. Such notice shall consist of a signed and dated deed which indicates the determination number, the aquifer, a description of the above described land area, the annual amount of ground water (acre-feet) transferred, name of the recipient, and the date of transfer.

24. Subject to the above conditions, well permits for wells to withdraw the allocated annual amount of water from the aquifer shall be available upon application subject to approval by the Commission and the following conditions:

    a. The wells shall be located on the above described 900.52 acre overlying land area.

    b. The wells must be constructed to withdraw water from only the Arapahoe Aquifer. Upon application for a well permit to construct such a well, the estimated top and base of the aquifer at the proposed well location will be determined by the Commission and indicated on the approved well permit. Plain non-perforated casing must be installed, grouted and sealed to prevent diversion of ground water from other aquifers and the movement of ground water between aquifers.

    c. The entire depth of each well must be geophysically logged prior to installing the casing as set forth in Rule 9 of the Statewide Nontributary Ground Water Rules, 2 CCR 402-7.

    d. Each well shall be constructed within 200 feet of the location specified on the approved well permit, but must be more than 600 feet from any existing large-capacity well completed in the same aquifer.

    e. A totalizing flow meter or other Commission approved measuring device shall be installed on each well and maintained in good working order by the well owner. Annual diversion records shall be collected and maintained by the well owner and submitted to the Commission upon their request.

    f. The well owner shall mark the well in a conspicuous place with the permit number and the name of the aquifer. The well owner shall take necessary means and precautions to preserve these markings.

25. A copy of this Findings and Order shall be recorded by the applicant in the public records of the county in which the claimed overlying land is located so that a title examination of the above described 900.52 acre overlying land area, or any part thereof, shall reveal the existence of this determination.

Dated this 25th day of June, 2008.

Dick Wolfe

Dick Wolfe, P.E
Executive Director
Colorado Ground Water Commission

By: Keith Vander Horst

Keith Vander Horst, P.E.
Water Resource Engineer

Prepared by: JPM

92GWS 1
03/2005

EXHIBIT A

1690-BD

Page 1 of 2

STATE OF COLORADO
OFFICE OF THE STATE ENGINEER
DIVISION OF WATER RESOURCES
1313 Sherman St. Room 821
Denver, CO 80203
(303) 866-3581 Fax (303) 866-3589

RECEIVED

APR 17 2008

WATER RESOURCES
STATE ENGINEER
COLO.

NONTRIBUTARY GROUND WATER LANDOWNERSHIP STATEMENT

I (We) **George F. McCune and Evelyn McCune**
(Name(s))

claim and say that I (we) am (are) the owner(s) of the following described property consisting of **900.52** acres in the County of **El Paso**, State of Colorado:

(Insert the property legal description)

SW/4SW/4 Section 18 and W/2 of the W/2 Section19, T11S, R64W, and S/2SE/4 Section 13 and All of Section 24, T11S R65W, 6th PM, El Paso County, 900.52 acres

See attached Quitclaim Deed dated November 29, 1976, and map.

and, that the ground water sought to be withdrawn from the **Arapahoe** aquifer underlying the above-described land has not been conveyed or reserved to another, nor has consent been given to its withdrawal by another.

Further, I (we) claim and say that I (we) have read the statements made herein; know the contents hereof; and that the same are true to my (our) knowledge.

Signature George F McCune 4/ Date

Signature Evelyn M. McCune Date

INSTRUCTIONS:
Please type or print neatly in black or blue ink. This form may be reproduced by photocopy or word processing means. See additional information on the reverse side.

EXHIBIT A

1690-BD

Page 2 of 2

Book 2077 Page 197

RECEIVED

APR 17 2008

WATER RESOURCES
STATE ENGINEER
COLO.

Sellers' Best Copy Available

QUITCLAIM DEED

RAY C. McCUNE and GRETA C. McCUNE, as husband and wife, of the County of El Paso and State of Colorado, for the consideration of One Dollar ($1.00) and other good and valuable consideration, in hand paid, hereby sell and quit claim to GEORGE F. McCUNE and EVELYN M. McCUNE, husband and wife, in joint tenancy, of the County of Elbert and State of Colorado, a one-half interest in and to all minerals underlying the following described property, including oil and gas, said property lying and being in the County of El Paso and State of Colorado, to wit:

The Southwest quarter of the Southwest quarter of Section Eighteen, Township Eleven, Range Sixty-four; the West half of the West half of Section Nineteen, Township Eleven, Range Sixty-four; the South half of the Southeast Quarter of Section Thirteen, Township Eleven, Range Sixty-five; All of Section Twenty-four, Township Eleven, Range Sixty-five, containing in all Nine hundred and fifty-two hundredths (900.52) acres, more or less, according to Government Survey,

with all its appurtenances.

No Consideration

DATED and signed this 22 day of Nov., 1976.

STATE DOCUMENTARY
NOV 29 1976
FEE $ None

Ray C. McCune
Ray C. McCune

Greta C. McCune
Greta C. McCune

STATE OF COLORADO)
) ss.
COUNTY OF EL PASO)

The foregoing instrument was acknowledged before me this 22 day of Nov., 1976, by Ray C. McCune and Greta C. McCune.

Witness my hand and official seal.

Stephanie Jenny
Notary Public

My commission expires: 6/20/78

COLORADO GROUND WATER COMMISSION
DIVISION OF WATER RESOURCES
DEPARTMENT OF NATURAL RESOURCES
1313 Sherman St, Room 818, Denver, CO 80203

RECEIVED

APR 17 2008

WATER RESOURCES
STATE ENGINEER
COLO.

APPLICATION FOR DETERMINATION OF WATER RIGHT WITHIN A DESIGNATED GROUND WATER BASIN PURSUANT TO SECTION 37-90-107(7), C.R.S.

Please note: This application may only be used to apply for a determination of rights to ground water from the Dawson, Denver, Arapahoe or Laramie-Fox Hills aquifer underlying land areas located within a Designated Ground Water Basin. Review the instructions on the reverse of this form. This form must be completed, signed, dated and submitted to the Ground Water Commission with a non-refundable $60 filing fee. A separate form must be used for each aquifer determination. Type or print in black ink.

1. APPLICANT INFORMATION

Name of Applicant

George F. McCune and Evelyn McCune

Applicant Mailing Address

17480 Meridian Road, Elbert, CO 80106-8916
c/o Colorado Water Plans, P O Box 1955, Elbert, CO 80106

Applicant Telephone Number (include area code)

~~303-646-9990~~ Contact 303 646-4201 719-495-2562

2. AMOUNT OF OVERLYING LAND – the total and area claimed and described by the applicant in Item #8 below, consisting of 900.52 acres.

3. AQUIFER Arapahoe NT

4. EXISTING WELLS – Are there any wells located on the claimed and described overlying land? Yes____ No X
If yes, provide a complete list of all wells located on the overlying land area as an attachment to this application.

5. ANNUAL AMOUNT OF GROUND WATER – to be withdrawn, for intended beneficial uses, from the aquifer underlying the described land area claimed by the applicant in Item #8 below. Please specify one of the following:

☒ Maximum allowable annual acre-feet ☐ _____ acre-feet annually ☐ Maximum allowable annual acre-feet, excluding _____ acre-feet from that amount

6. USE OF GROUND WATER – description of intended beneficial uses of the ground water to be withdrawn from the aquifer

All water withdrawn will be reused, successively used, leased, sold or otherwise disposed of for the following beneficial uses: domestic, industrial, commercial, irrigation, augmentation, stock watering, recreational water feature ponds and piscatorial habitat less than 1000 square feet and wildlife. The water will be produced for immediate application to said uses, for storage and subsequent application to said uses, for replacement of depletion's from the use of water from other sources and for all other augmentation purposes

7. PLACE OF USE – of the ground water shall be considered to be that overlying land area claimed and described by the applicant in Item #8 below, unless a legal description or accurate scale map is provided which describes an alternate/additional place of use.

8. REQUIRED LANDOWNERSHIP DOCUMENTATION - The Ground Water Commission shall allocate ground water from the Dawson, Denver, Arapahoe or Laramie-Fox Hills aquifer on the basis of ownership of overlying land. For this reason, a Nontributary Ground Water Landownership Statement (form GWS-1) or Nontributary Ground Water Consent Claim (form GWS-48), including a description of the overlying land area subject to this determination, must be submitted as an attachment to the application.

9. SIGNATURE OF APPLICANT - must be original signature – The making of false statements herein constitutes perjury in the second degree, which is punishable as a class 1 misdemeanor pursuant to C.R.S. 24-4-104(13)(a). I have read the statements herein, know the contents thereof, and state that they are true to my knowledge.

Signature George F McCune + Evelyn M. McCune Date April 14, 2008

- print name and title George F. McCune and Evelyn McCune, Owners

FOR OFFICE USE ONLY

DIV 8 CO_____ WD 1 BASIN 2 MD_____

Trans Number: 3628088
4/17/2008 1:34:24 PM
Geoff Davis (21)
Total Trans Amt: $240.00
CHECK
Check Number: 2724
Check Amount: $240.00

GWS-49 (6/2006)

COLORADO WATER PLANS

Water Consultants

Colorado Ground Water Commission
Division of Water Resources
Department Of Natural Resources
1313 Sherman Street - Room 818
Denver, Colorado 80203

Re: Application for Determination of Water Right
Client: **George F. McCune and Evelyn McCune**

Agent: Colorado Water Plans LLC

Colorado Water Plans LLC has prepared the Application for Determination of Water Right with my permission as Signatory and Landowner. Colorado Water Plans LLC shall have full representational power as "Agent" in regards to this Application for Determination of Water Right, water issues, water facts, water calculations, submittals to governmental agencies, reporting forms, newspaper public notifications, applications, or any other needs within the confines of the Contract for Services. This document shall authorize my "Agent" Colorado Water Plans LLC to manage and conduct all affairs and to exercise all my rights and powers within the enclosed Application for Determination of Water Right.

Colorado Water Plans has no rights, implied or warranted outside the affairs of this agreement, and subject to other provisions of this document, disclaim any interest which might otherwise be transferred or distributed to me from other person or entity.

Client:

By: George F McCune & Evelyn M. McCune

By: _____

Date: 4-14-08

Colorado Water Plans LLC
Craig L. Curl
Dr. W. Jerry Koch
Lisa S. Weinstein, Esq. #35688

By: _____
Date: 4-14-08

P.O. Box 1955 / Elizabeth / Colorado / 80107
Office: 303/646-3895 Fax: 303/646-9655

DETERMINATION OF WATER RIGHT
SECTION 37-90-107(7)

APPLICANT: **George F. McCune and Evelyn McCune**

BASIN: Kiowa-Bijou

COUNTY: El Paso

AQUIFER: **Arapahoe** RECEIPT NO. 3628088B

NUMBER OF ACRES IN TRACT: 900.52 acres

GENERAL LOCATION: SW/4SW/4, Section 18 and W/2NW/4, W/2SW/4, Section 19, T11S, R64W, 6th PM, S/2SE/4, Section 13 and All of Section 24, T11S, R65W, 6th PM.

AQUIFER DATA

AMOUNT AVAILABLE FOR APPROPRIATION: (260 feet SS)(900.52 Acres)(0.17 SY) = 39803 AF 398.0 AFyr

ADJUSTMENTS: None

ANNUAL AMOUNT: **398.0 AFyr**

PRE.NOV.19, 1973 WELLS (COMPLETED IN AQUIFER) IN VICINITY: N/A

OVERLAP AREA: N/A

AREA CHECKED: Sections 18, 19, and 30, T11S, R64W
Sections 13, 14, 23, 24, 25, and 26, T11S, R65W

SMALL-CAPACITY WELLS (COMPLETED IN AQUIFER) LOCATED ON CLAIMED TRACT: N/A

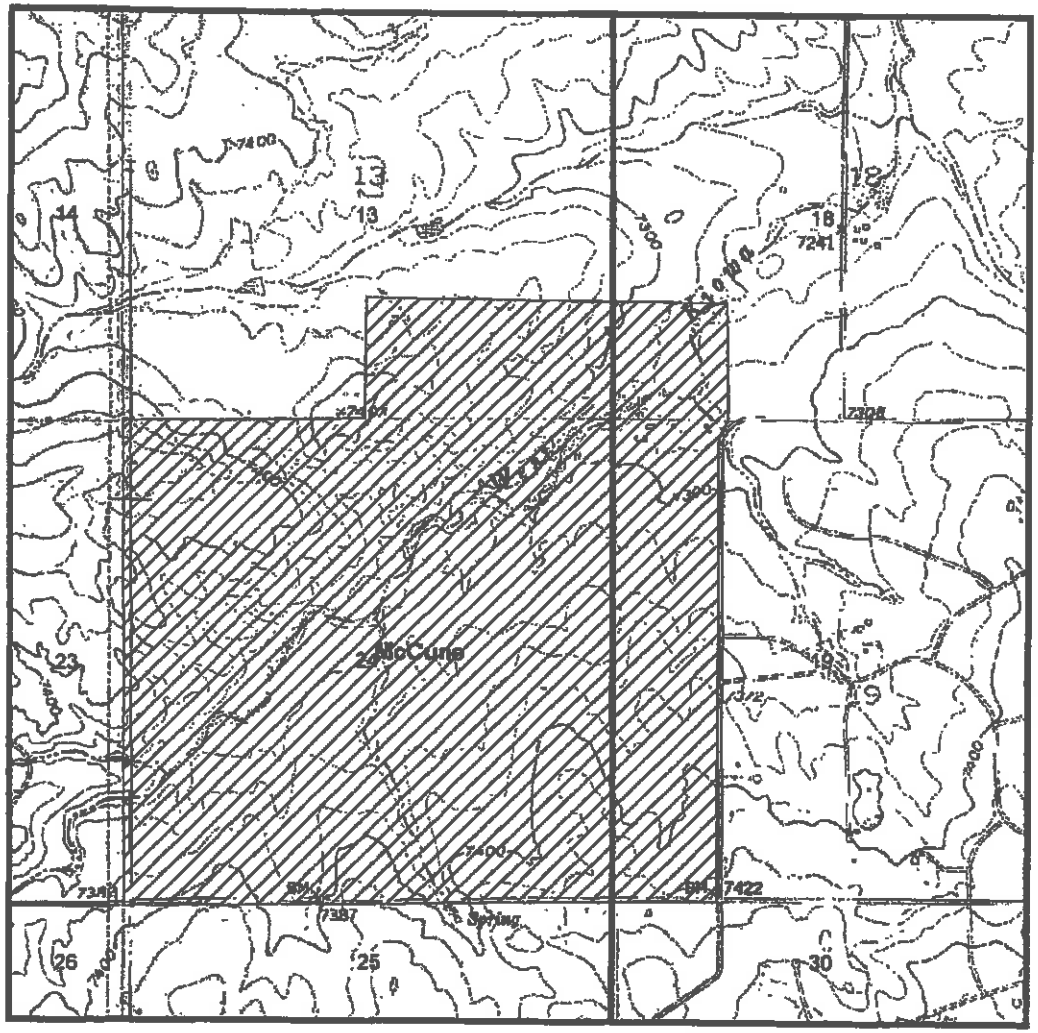
REPLACEMENT WATER STATUS OF CLAIMED LAND AREA: **Nontributary**

REPLACEMENT PLAN REQUIRED: Not Required

AQUIFER INTERVAL (CENTRAL DATA POINT): 1810 feet to 2310 feet below ground surface

COMMENTS: The SS was considered 260 feet based on the SS map for the Arapahoe aquifer.

Evaluated by: Justina Mickelson, Ground Water Commission Staff
Reviewed by CBG



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1:24,000

0 25,000 50,000 100,000 150,000 Feet

0 5 10 15 20 Miles

DIVISION OF WATER RESOURCES
STATE OF COLORADO

Receipt Number: 3628088B
Applicant: George F. McCune
and Evelyn McCune
Basin: Kiowa-Bijou
GWMD:
Aquifer: Arapahoe

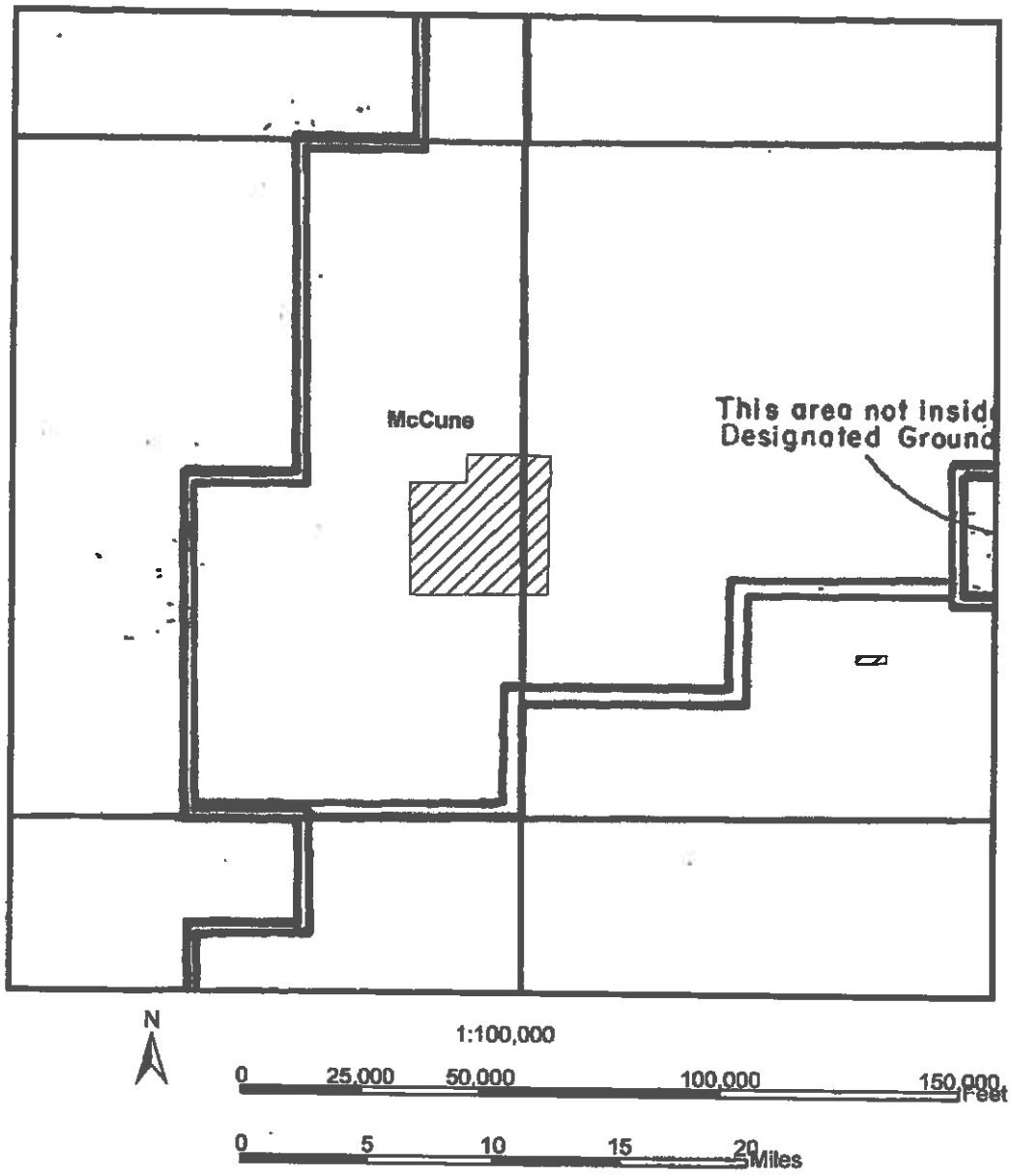
Sections: 13 and 24, T11S, R65W
Sections: 18 and 19, T11S, R64W
Meridian: 6

Area claimed: 900.52 acres
897 acres measured
Perimeter = 7,963 m

Legend
- Township
- Section
- jpm_work

Office of the State Engineer
Division of Water Resources
Department of Natural Resources

COLORADO DIVISION OF WATER RESOURCES



DIVISION OF WATER RESOURCES
STATE OF COLORADO

Receipt Number: 3628088B
Applicant: George F. McCune
and Evelyn McCune
Basin: Kiowa-Bijou
GWMD:
Aquifer: Arapahoe

Sections: 13 and 24, T11S, R65W
Sections: 18 and 19, T11S, R64W
Meridian: 6

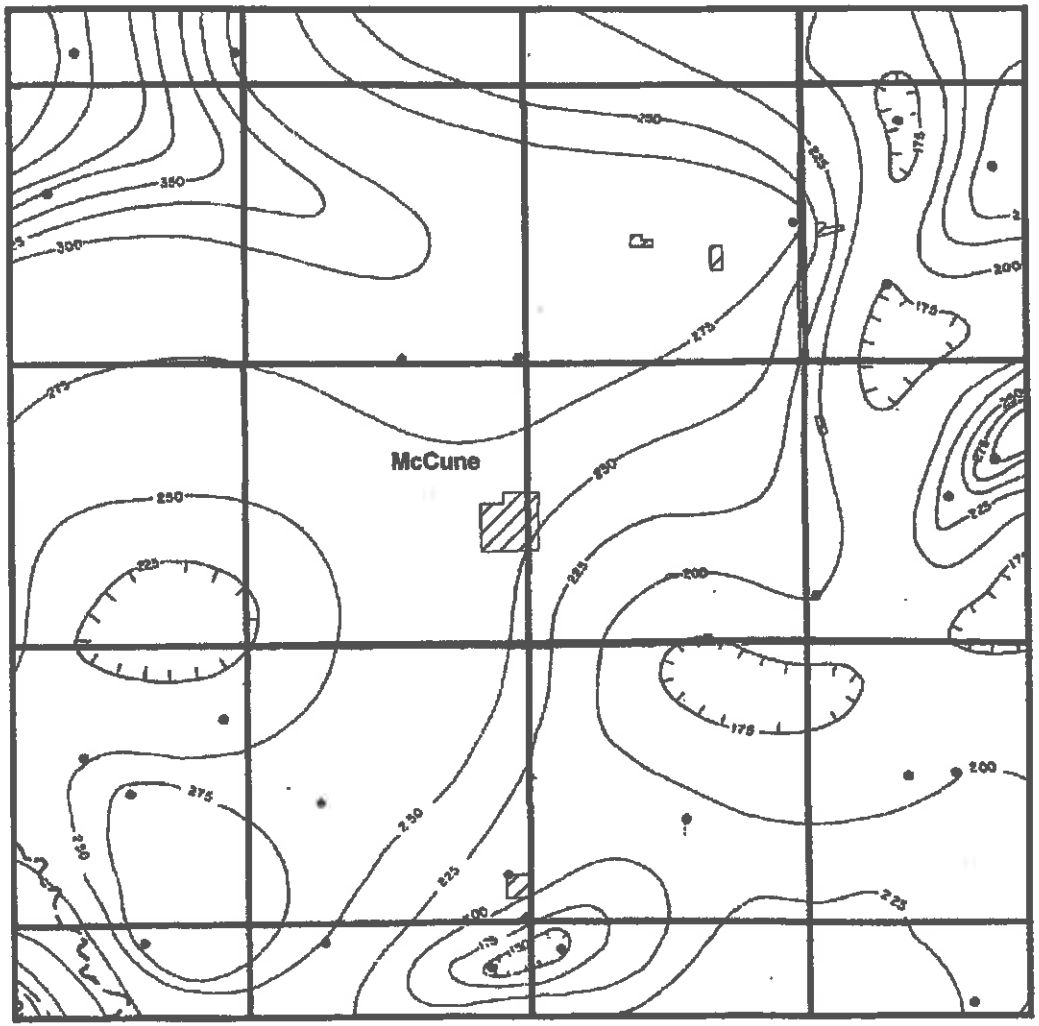
Area claimed: 900.52 acres
897.22 acres measured
Perimeter = 7,963 m

Tributary Status NT

Legend
Township
jprn_work

Office of the State Engineer
Division of Water Resources
Department of Natural Resources

COLORADO DIVISION OF WATER RESOURCES



DIVISION OF WATER RESOURCES
STATE OF COLORADO

Receipt Number: 3628088B
Applicant: George F. McCune
and Evelyn McCune
Basin: Kiowa-Bijou
GWMD:
Aquifer: Arapahoe

Sections: 13 and 24, T11S, R65W
Sections: 18 and 19, T11S, R64W
Meridian: 6

Area claimed: 900.52 acres
897.22 acres measured
Perimeter = 7,963 m

Saturated Sands

Legend
Township
jpm_work

Office of the State Engineer
Division of Water Resources
Department of Natural Resources

PUBLISHER'S AFFIDAVIT

STATE OF COLORADO)
) ss.
COUNTY OF ELBERT)

I, Susan Lister, do solemnly affirm that I am the Publisher of RANCHLAND NEWS; that the same is a weekly newspaper published at Simla, County of Elbert, State of Colorado, and has a general circulation therein; that said newspaper has been continuously and uninterruptedly published in said County of Elbert for a period of at least 52 consecutive weeks next prior to the first publication of the annexed notice, that said newspaper is entered in the post office at Calhan, Colorado as second class mail matter and that said newspaper is a newspaper within the meaning of the Act of the General Assembly of the State of Colorado, approved March 30, 1923, and entitled "Legal Notices and Advertisements," with other Acts relating to the printing and publishing of legal notices and advertisements. That the annexed notice was published in the regular and entire issue of said newspaper, once each week for two successive weeks; that the first publication of said notice was in the issue of said newspaper dated:

May 8, 2008

and the last publication of said notice was in the issue of said newspaper dated:

May 15, 2008

and that copies of each number of said paper in which said notice and/or list was published were delivered by carriers or transmitted by mail to each of the subscribers of said newspaper, Ranchland News, according to the customed mode of business in this office.

Susan Lister
Publisher

The above certificate of publication was subscribed and affirmed to before me, a Notary Public, to be the identical person described in the above certificate, on the

15 day of May, 2008

Notary Public

1/22/12

(My Notary Public Commission Expiration Date)

Determinations of Water Right

BEFORE THE COLORADO GROUND WATER COMMISSION

KIOWA-BIJOU DESIGNATED GROUND WATER BASIN– EL PASO COUNTY

TAKE NOTICE that pursuant to Section 37-90-107(7), C.R.S., George F. McCune and Evelyn McCune (hereinafter "applicant") have applied for determinations of water right to allow the withdrawal of designated ground water from the Laramie-Fox Hills, Arapahoe, Denver, and Dawson aquifers underlying 900.52 acres generally described as the SW1/4 of the SW1/4, Section 18, the W1/2 of the NW1/4 and the W1/2 of the SW1/4, Section 19, Township 11 South, Range 64 West of the 6th PM and the S1/2 of the SE1/4, Section 13 and all of Section 24, Township 11 South, Range 65 West of the 6th PM. The applicant claims ownership of this land and control of the ground water in the above-described aquifers under this property. The ground water allocations from these aquifers will be used on the described property for the following beneficial uses: domestic, industrial, commercial, irrigation, augmentation, stock watering; recreational water feature ponds and piscatorial habitat less than 1000 square feet and wildlife, replacement and all other augmentation purposes. The maximum allowable annual amount of ground water in each aquifer underlying the described property will be allocated.

In accordance with Section 37-90-107(7), C.R.S., and the Designated Basin Rules, 2 CCR 410-1, the Colorado Ground Water Commission shall allocate ground water from the above-described aquifers based on ownership of the overlying land and an aquifer life of one hundred years. A preliminary evaluation of the applications by the Commission Staff finds the annual amount of water available for allocation from each of the described aquifers underlying the above-described property to be as follows: 263.4 acre-feet for the Laramie-Fox Hills, 398.0 acre-feet for the Arapahoe, 528.2 acre-feet for the Denver, and 819.5 for the Dawson subject to final staff evaluation. The estimated available annual acre-feet allocation amount for each aquifer indicated above may be increased or decreased by the Commission to conform to the actual aquifer characteristics, based upon site specific data.

In accordance with Rule 5.3.6 of the Designated Basin Rules, the Commission Staff's preliminary evaluation of the applications finds the replacement water requirement status for the above aquifers underlying the above-described property to be as follows: nontributary for the Laramie-Fox Hills, nontributary for the Arapahoe, nontributary for the Denver, and not-nontributary (actual impact replacement) for the Dawson.

Upon Commission approval of these determinations of water right, well permits for wells to withdraw the allowed allocation from a specific aquifer shall be available upon application, subject to the conditions of the determination and the Designated Basin Rules and subject to approval by the Commission. Such wells must be completed in the specified aquifer and located on the above described 900.52 acre property. Well permits for wells to withdraw ground water from the Dawson aquifer would also be subject to the conditions of a replacement plan to be approved by the Commission.

Any person wishing to object to the approval of these determinations of water right must do so in writing, briefly stating the nature of the objection and indicating the above applicant, property description and the specific aquifers that are the subject of the objection. The objection must be accompanied by a $10 per aquifer fee and must be received by the Commission Staff, Colorado Ground Water Commission, 818 Centennial Building, 1313 Sherman Street, Denver, Colorado 80203, by June 16, 2008.

First Publication May 8, 2008
Final Publication May 15, 2008
In Ranchland News
Legal No. 12,936

RECEIVED

MAY 19 2008

WATER RESOURCES

DEPARTMENT OF NATURAL RESOURCES

DIVISION OF WATER RESOURCES

Bill Ritter, Jr.
Governor

Harris D. Sherman
Executive Director

Dick Wolfe, P.E.
Director

June 27, 2008

George F. and Evelyn McCune
17480 Meridian Road
Elbert, CO 80106-8916

RE: Determination of Water Right

Dear Mr. and Mrs. McCune:

Enclosed is a copy of the Colorado Ground Water Commission's Findings and Order for Determination of Water Right No. 1690-BD, for the allocation of ground water in the Arapahoe aquifer. This Findings and Order is the Commission's approval of your application for determination of right to ground water in the above stated aquifer. This document contains important information about your water right and should be reviewed and retained for your records.

As indicated in the Order, a copy of this determination must be recorded by the applicant in the public records of the county – in which the overlying land is located – so that a title examination of the overlying land claimed in the application, or any part thereof, shall reveal this determination. An additional copy of the Findings and Order is enclosed for this purpose.

If you have any questions, please contact this office.

Sincerely,

Justina P. Mickelson
Physical Science Researcher Scientist
Designated Basins Branch

Enclosures: a/s

Colorado Department of Natural Resources

Colorado.gov | Contact Us

Colorado Division of Water Resources

Colorado's Well Permit Search

THIS PAGE IS NOT THE ACTUAL PERMIT

The information contained on this page is a summary of the permit file and may not reflect all details of the well permit. (Full Disclaimer)

Permit Issued; Completion Status Unknown

Help Last Refresh: 12/6/2016 12:03:01 AM

Receipt:	3628088C	**Division:**	1
Permit #:	1691-BD -	**Water District:**	1
Well Name / #:		**County:**	EL PASO
Designated Basin:	KIOWA-BIJOU	**Management District:**	
Case Number:			
WDID:			

[-] Imaged Documents - Permit File

Document Name	Date Imaged	Annotated
Findings & Order for Determination	05/21/2009	No

[-] Applicant/Contact

Applicant/Contact Name	Mailing Address	City/State/Zip
MCCUNE GEORGE F & EVELYN	17480 MERIDIAN RD	ELBERT, CO 80106-8916

[-] Location Information

Approved Well Location:

Q40	Q160	Section	Township	Range	PM	Footage from Section Lines
		24	11.0S	65.0W	Sixth	

Northing (UTM y): 4325550.5 **Easting (UTM x):** 533176.3
Location Accuracy: Spotted from quarters

Subdivision Name

Filing Block Lot

Parcel ID: **Acres in Tract:** 900.52

[-] Permit Details

Date Issued: 06/25/2008 **Date Expires:**

Uses *(See Imaged Documents for more infomation)*
General Use(s): COMMERCIAL
DOMESTIC

Aquifer(s): DENVER

Special Use:

Area which may be irrigated:
Annual volume of appropriation:

Statute:

Cross Reference Permit(s): **Permit Number** **Receipt**

Comments: DETER ISSUED

[-] Construction/Usage Details

Well Construction Date: **Pump Installation Date:**
Well Plugged: **1st Beneficial Use:**

Elevation	Depth	Perforated Casing (Top)	Perforated Casing (Bottom)	Static Water Level	Pump Rate

[-] Application/Permit History

Permit Issued	06/25/2008
Application Received	04/17/2008

Disclaimer

***The information contained on this page is a summary of the permit file and may not reflect all details of the well permit. THIS PAGE IS NOT THE ACTUAL PERMIT.**

This page should not be used as a basis for any legal consideration, to determine the allowed uses of the well, to determine construction information, or to determine the terms and conditions under which the well can operate. The complete well permit file should be viewed to obtain details on the allowed uses and other relevant information. A complete copy of this file is available in the "Imaged Documents" section of this page, and can be viewed by opening all of the documents listed under that section (documents will open as pdf files).

Note that all of the terms and conditions under which a well can operate, particularly for non-exempt wells, may not be specified on the well permit. Wells may also be subject to relevant statutes, rules and decrees. To learn

more about well permitting in Colorado, please visit DWR's Well Permitting Page. If you have any questions about this well permit file, please contact the DWR Ground Water Information Desk.

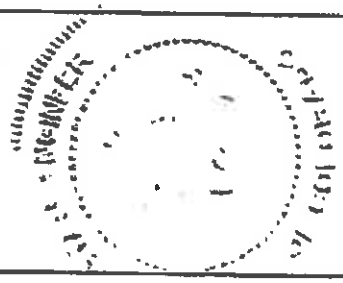
COLORADO GROUND WATER COMMISSION
FINDINGS AND ORDER

IN THE MATTER OF AN APPLICATION FOR DETERMINATION OF WATER RIGHT TO ALLOW THE WITHDRAWAL OF GROUND WATER IN THE KIOWA-BIJOU DESIGNATED GROUND WATER BASIN

APPLICANT: GEORGE F. MCCUNE AND EVELYN MCCUNE

AQUIFER: DENVER

DETERMINATION NO.: **1691-BD**



In compliance with Section 37-90-107(7), C.R.S., and the Designated Basin Rules, 2 CCR 410-1, George F. McCune and Evelyn McCune (hereinafter "applicant") submitted an application for determination of water right to allow the withdrawal of designated ground water from the Denver Aquifer.

FINDINGS

1. The application was received complete by the Colorado Ground Water Commission on April 17, 2008.

2. The applicant requests a determination of rights to designated ground water in the Denver Aquifer (hereinafter "aquifer") underlying 900.52 acres, generally described as the SW1/4 of the SW1/4, Section 18, the W1/2 of the NW1/4 and the W1/2 of the SW1/4, Section 19, Township 11 South, Range 64 West of the 6th PM and the S1/2 of the SE1/4, Section 13 and all of Section 24, Township 11 South, Range 65 West of the 6th Principal Meridian, in El Paso County. According to a signed statement dated April 17, 2008, the applicant owns the 900.52 acres of land, as further described in said affidavit which is attached hereto as Exhibit A, and claims control of the ground water in the aquifer underlying this land area.

3. The proposed annual amount of ground water to be allocated and withdrawn from the aquifer for intended beneficial uses is the maximum allowable amount.

4. The above described land area overlying the ground water claimed by the applicant is located within the boundaries of the Kiowa-Bijou Designated Ground Water Basin. The Colorado Ground Water Commission (hereinafter "Commission") has jurisdiction.

5. The applicant intends to apply the allocated ground water to the following beneficial uses: domestic, industrial, commercial, irrigation, augmentation, stock watering, recreational water feature ponds and piscatorial habitat less than 1000 square feet and wildlife, replacement and all other augmentation purposes. The applicant's proposed place of use of the allocated ground water is the above described 900.52 acre land area.

6. The quantity of water in the aquifer underlying the 900.52 acres of land claimed by the applicant is 52800 acre-feet. This determination was based on the following as specified in the Designated Basin Rules:

a. The average specific yield of the saturated permeable material of the aquifer underlying the land under consideration that could yield a sufficient quantity of water that may be extracted and applied to beneficial use is 17 percent.

b. The average thickness of the saturated permeable material of the aquifer underlying the land under consideration that could yield a sufficient quantity of water that may be extracted and applied to beneficial use is 345 feet.

7. At this time, there is no substantial artificial recharge that would affect the aquifer within a one hundred year period.

8. Pursuant to Section 37-90-107(7), C.R.S., and in accordance with the Designated Basin Rules, the Commission shall allocate ground water in the aquifer based on ownership of the overlying land and an aquifer life of one hundred years. Therefore, the maximum allowed average annual amount of ground water in the aquifer that may be allocated for withdrawal pursuant to the data in the paragraphs above for the 900.52 acres of overlying land claimed by the applicant is 528 acre-feet.

9. A review of the records in the Office of the State Engineer has disclosed that none of the water in the aquifer underlying the land claimed by the applicant has been previously allocated or permitted for withdrawal.

10. Pursuant to Section 37-90-107(7)(c)(III), C.R.S., an approved determination of water right shall be considered a final determination of the amount of ground water so determined; except that the Commission shall retain jurisdiction for subsequent adjustment of such amount to conform to the actual local aquifer characteristics from adequate information obtained from well drilling or test holes.

11. The ability of wells permitted to withdraw the authorized amount of water from this non-renewable aquifer may be less than the one hundred years upon which the amount of water in the aquifer is allocated, due to anticipated water level declines.

12. In accordance with Rule 5.3.6 of the Designated Basin Rules, it has been determined that withdrawal of ground water from the aquifer underlying the land claimed by the applicant will not, within one hundred years, deplete the flow of a natural steam or its alluvial aquifer 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 Rule 4.2.19 of the Designated Basin Rules. No more than 98% of the amount of ground water withdrawn annually shall be consumed, as required by the Designated Basin Rules.

13. In accordance with Section 37-90-107(7), C.R.S., upon Commission approval of a determination of water right, well permits for wells to withdraw the authorized amount of water from the aquifer shall be available upon application, subject to the conditions of this determination and the Designated Basin Rules and subject to approval by the Commission.

14. The Commission Staff has evaluated the application relying on the claims to control of the ground water in the aquifer made by the applicant.

15. In accordance with Sections 37-90-107(7) and 37-90-112, C.R.S., the application was published in the Ranchland News newspaper on May 8 and May 15, 2008.

16. No objections to the determination of water right and proposed allocation of ground water were received within the time limit set by statute.

17. In order to prevent unreasonable impairment to the existing water rights of others within the Kiowa-Bijou Designated Ground Water Basin it is necessary to impose conditions on the determination of water right and proposed allocation of ground water. Under conditions as stated in the following Order, no unreasonable impairment of existing water rights will occur from approval of this determination of water right or from the issuance of well permits for wells to withdraw the authorized amount of allocated ground water from the aquifer.

ORDER

In accordance with Section 37-90-107(7), C.R.S., and the Designated Basin Rules, the Colorado Ground Water Commission orders that the application for determination of rights to designated ground water in the Denver Aquifer underlying 900.52 acres of land, generally described as the SW1/4 of the SW1/4, Section 18, the W1/2 of the NW1/4 and the W1/2 of the SW1/4, Section 19, Township 11 South, Range 64 West of the 6th PM and the S1/2 of the SE1/4, Section 13 and all of Section 24, Township 11 South, Range 65 West of the 6th Principal Meridian, is approved subject to the following conditions:

18. The allowed average annual amount of withdrawal of ground water from the aquifer shall not exceed 528 acre-feet. The allowed maximum annual amount of withdrawal may exceed the allowed average annual amount of withdrawal as long as the total volume of water withdrawn does not exceed the product of the number of years since the date of approval of this determination times the allowed average annual amount of withdrawal.

19. To conform to actual aquifer characteristics, the Commission may adjust the allowed average annual amount of ground water to be withdrawn from the aquifer based on analysis of geophysical logs or other site-specific data if such analysis indicates that the initial estimate of the volume of water in the aquifer was incorrect.

20. The applicant may pump the allowed average annual amount of withdrawal and the allowed maximum annual amount of withdrawal from one or more wells of a well field in any combination, so long as the total combined withdrawal of the wells does not exceed the amounts described in this Order.

21. No more than 98% of the ground water withdrawn annually shall be consumed. The Commission may require well owners to demonstrate periodically that no more than 98% of the water withdrawn is being consumed.

22. The use of ground water from this allocation shall be limited to the following beneficial uses: domestic, industrial, commercial, irrigation, augmentation, stock watering, recreational water feature ponds and piscatorial habitat less than 1000 square feet and wildlife, replacement and all other augmentation purposes. The place of use shall be limited to the above described 900.52 acre land area.

23. The applicant, or subsequent persons controlling this water right, shall record in the public records of the county - in which the claimed overlying land is located - notice of transfer of any portion of this water right to another within sixty days after the transfer, so that a title examination of the above described 900.52 acre land area, or any part thereof, shall reveal the changes affecting this water right. Such notice shall consist of a signed and dated deed which indicates the determination number, the aquifer, a description of the above described land area, the annual amount of ground water (acre-feet) transferred, name of the recipient, and the date of transfer.

24. Subject to the above conditions, well permits for wells to withdraw the allocated annual amount of water from the aquifer shall be available upon application subject to approval by the Commission and the following conditions:

    a. The wells shall be located on the above described 900.52 acre overlying land area.

    b. The wells must be constructed to withdraw water from only the Denver Aquifer. Upon application for a well permit to construct such a well, the estimated top and base of the aquifer at the proposed well location will be determined by the Commission and indicated on the approved well permit. Plain non-perforated casing must be installed, grouted and sealed to prevent diversion of ground water from other aquifers and the movement of ground water between aquifers.

    c. The entire depth of each well must be geophysically logged prior to installing the casing as set forth in Rule 9 of the Statewide Nontributary Ground Water Rules, 2 CCR 402-7.

    d. Each well shall be constructed within 200 feet of the location specified on the approved well permit, but must be more than 600 feet from any existing large-capacity well completed in the same aquifer.

    e. A totalizing flow meter or other Commission approved measuring device shall be installed on each well and maintained in good working order by the well owner. Annual diversion records shall be collected and maintained by the well owner and submitted to the Commission upon their request.

    f. The well owner shall mark the well in a conspicuous place with the permit number and the name of the aquifer. The well owner shall take necessary means and precautions to preserve these markings.

25. A copy of this Findings and Order shall be recorded by the applicant in the public records of the county in which the claimed overlying land is located so that a title examination of the above described 900.52 acre overlying land area, or any part thereof, shall reveal the existence of this determination.

Dated this 25Th day of June, 2008.

Dick Wolfe

Dick Wolfe, P.E
Executive Director
Colorado Ground Water Commission

By: Keith Vander Horst

Keith Vander Horst, P.E.
Water Resource Engineer

Prepared by: JPM

92GWS 1
03/2005

EXHIBIT A

1691-BD

STATE OF COLORADO
OFFICE OF THE STATE ENGINEER
DIVISION OF WATER RESOURCES
1313 Sherman St. Room 821
Denver, CO 80203
(303) 866-3581 Fax (303) 866-3589

RECEIVED
APR 17 2008
WATER RESOURCES
STATE ENGINEER
COLO.

NONTRIBUTARY GROUND WATER LANDOWNERSHIP STATEMENT

I (We) George F. McCune and Evelyn McCune
(Name(s))

claim and say that I (we) am (are) the owner(s) of the following described property consisting of 900.52 acres in the County of El Paso, State of Colorado:

(Insert the property legal description)

SW/4SW/4 Section 18 and W/2 of the W/2 Section19, T11S, R64W, and S/2SE/4 Section 13 and All of Section 24, T11S R65W, 6th PM, El Paso County, 900.52 acres

See attached Quitclaim Deed dated November 29, 1976, and map.

and, that the ground water sought to be withdrawn from the Denver aquifer underlying the above-described land has not been conveyed or reserved to another, nor has consent been given to its withdrawal by another.

Further, I (we) claim and say that I (we) have read the statements made herein; know the contents hereof; and that the same are true to my (our) knowledge.

Signature George F McCune Date

Signature Evelyn M. McCune Date

INSTRUCTIONS:
Please type or print neatly in black or blue ink. This form may be reproduced by photocopy or word processing means. See additional information on the reverse side.

EXHIBIT A

1691-BD

Page 2 of 2

Book 2877 Page 197

RECEIVED

Best Copy Available

APR 17 2008

WATER RESOURCES STATE ENGINEER COLO.

QUITCLAIM DEED

RAY C. McCUNE and GRETA C. McCUNE, as husband and wife, of the County of El Paso and State of Colorado, for the consideration of One Dollar ($1.00) and other good and valuable consideration, in hand paid, hereby sell and quit claim to GEORGE F. McCUNE and EVELYN M. McCUNE, husband and wife, in joint tenancy, of the County of Elbert and State of Colorado, a one-half interest in and to all minerals underlying the following described property, including oil and gas, said property lying and being in the County of El Paso and State of Colorado, to wit:

The Southwest quarter of the Southwest quarter of Section Eighteen, Township Eleven, Range Sixty-four; the West half of the West half of Section Nineteen, Township Eleven, Range Sixty-four; the South half of the Southeast Quarter of Section Thirteen, Township Eleven, Range Sixty-five; All of Section Twenty-four, Township Eleven, Range Sixty-five, containing in all Nine hundred and fifty-two hundredths (900.52) acres, more or less, according to Government Survey,

with all its appurtenances.

No consideration

DATED and signed this 22 day of Nov., 1976.

STATE DOCUMENTARY
NOV 29 1976
FEE $ Done

Ray C. McCune
Ray C. McCune

Greta C. McCune
Greta C. McCune

STATE OF COLORADO)
) ss.
COUNTY OF EL PASO)

The foregoing instrument was acknowledged before me this 22 day of Nov., 1976, by Ray C. McCune and Greta C. McCune.

Notary Public

My commission expires: 6/20/78

COLORADO GROUND WATER COMMISSION
DIVISION OF WATER RESOURCES
DEPARTMENT OF NATURAL RESOURCES
1313 Sherman St, Room 818, Denver, CO 80203

RECEIVED

APR 17 2008

WATER RESOURCES
STATE ENGINEER
COLO.

APPLICATION FOR DETERMINATION OF WATER RIGHT WITHIN A DESIGNATED GROUND WATER BASIN PURSUANT TO SECTION 37-90-107(7), C.R.S.

Please note: This application may only be used to apply for a determination of rights to ground water from the Dawson, Denver, Arapahoe or Laramie-Fox Hills aquifer underlying land areas located within a Designated Ground Water Basin. Review the instructions on the reverse of this form. This form must be completed, signed, dated and submitted to the Ground Water Commission with a non-refundable $60 filing fee. A separate form must be used for each aquifer determination. Type or print in black ink.

1. APPLICANT INFORMATION

Name of Applicant

George F. McCune and Evelyn McCune

Applicant Mailing Address

17480 Meridian Road, Elbert, CO 80106-8916
c/o Colorado Water Plans, P O Box 1956, Elbert, CO 80106

Applicant Telephone Number (include area code)

~~303 648-9000~~ **Contact 303 646-4201** 719-495-2562

2. AMOUNT OF OVERLYING LAND – the total and area claimed and described by the applicant in Item #8 below, consisting of **900.52 acres.**

3. AQUIFER Denver NT

4. EXISTING WELLS – Are there any wells located on the claimed and described overlying land? Yes____ No__X__
If yes, provide a complete list of all wells located on the overlying land area as an attachment to this application.

5. ANNUAL AMOUNT OF GROUND WATER – to be withdrawn, for intended beneficial uses, from the aquifer underlying the described land area claimed by the applicant in Item #8 below. Please specify one of the following:

☒ Maximum allowable annual acre-feet ☐ _____ acre-feet annually ☐ Maximum allowable annual acre-feet, excluding _____ acre-feet from that amount

6. USE OF GROUND WATER – description of intended beneficial uses of the ground water to be withdrawn from the aquifer

All water withdrawn will be reused, successively used, leased, sold or otherwise disposed of for the following beneficial uses: domestic, industrial, commercial, irrigation, augmentation, stock watering, recreational water feature ponds and piscatorial habitat less than 1000 square feet and wildlife. The water will be produced for immediate application to said uses, for storage and subsequent application to said uses, for replacement of depletion's from the use of water from other sources and for all other augmentation purposes

7. PLACE OF USE – of the ground water shall be considered to be that overlying land area claimed and described by the applicant in Item #8 below, unless a legal description or accurate scale map is provided which describes an alternate/additional place of use.

8. REQUIRED LANDOWNERSHIP DOCUMENTATION - The Ground Water Commission shall allocate ground water from the Dawson, Denver, Arapahoe or Laramie-Fox Hills aquifer on the basis of ownership of overlying land. For this reason, a Nontributary Ground Water Landownership Statement (form GWS-1) or Nontributary Ground Water Consent Claim (form GWS-48), including a description of the overlying land area subject to this determination, must be submitted as an attachment to the application.

9. SIGNATURE OF APPLICANT - must be original signature – The making of false statements herein constitutes perjury in the second degree, which is punishable as a class 1 misdemeanor pursuant to C.R.S. 24-4-104(13)(a). I have read the statements herein, know the contents thereof, and state that they are true to my knowledge.

Signature George F McCune Date

Evelyn M. McCune

- print name and title **George F. McCune and Evelyn McCune, Owners**

FOR OFFICE USE ONLY

DIV 8 CO_____ WD 1 BASIN 2 MD_____

Trans Number: 3026088
4/17/2008 1:34:24 PM
Geoff Davis (21)
Total Trans Amt: $240.00
CHECK
Check Number: 8724
Check Amount: $240.00

COLORADO WATER PLANS

Water Consultants

Colorado Ground Water Commission
Division of Water Resources
Department Of Natural Resources
1313 Sherman Street - Room 818
Denver, Colorado 80203

Re: Application for Determination of Water Right
Client: George F. McCune and Evelyn McCune

Agent: Colorado Water Plans LLC

Colorado Water Plans LLC has prepared the Application for Determination of Water Right with my permission as Signatory and Landowner. Colorado Water Plans LLC shall have full representational power as "Agent" in regards to this Application for Determination of Water Right, water issues, water facts, water calculations, submittals to governmental agencies, reporting forms, newspaper public notifications, applications, or any other needs within the confines of the Contract for Services. This document shall authorize my "Agent" Colorado Water Plans LLC to manage and conduct all affairs and to exercise all my rights and powers within the enclosed Application for Determination of Water Right.

Colorado Water Plans has no rights, implied or warranted outside the affairs of this agreement, and subject to other provisions of this document, disclaim any interest which might otherwise be transferred or distributed to me from other person or entity.

Client:

By: George F McCune & Evelyn M. McCune

By: _____

Date: 4-14-08

Colorado Water Plans LLC
Craig L. Curl
Dr. W. Jerry Koch
Lisa S. Weinstein, Esq. #35688

By: _____
Date: 4-14-08

P.O. Box 1955 / Elizabeth / Colorado / 80107
Office: 303/646-3895 Fax: 303/646-9655

DETERMINATION OF WATER RIGHT
SECTION 37-90-107(7)

APPLICANT: **George F. McCune and Evelyn McCune**

BASIN: Kiowa-Bijou

COUNTY: El Paso

AQUIFER: **Denver** RECEIPT NO. 3628088C

NUMBER OF ACRES IN TRACT: 900.52 acres

GENERAL LOCATION: SW/4SW/4, Section 18 and W/2NW/4, W/2SW/4, Section 19, T11S, R64W, 6th PM, S/2SE/4, Section 13 and All of Section 24, T11S, R65W, 6th PM.

AQUIFER DATA

AMOUNT AVAILABLE FOR APPROPRIATION: (345 feet SS)(900.52 Acres)(0.17 SY) = 52816 AF 528.2 AFyr

ADJUSTMENTS: None

ANNUAL AMOUNT: **528.2 AFyr**

PRE.NOV.19, 1973 WELLS (COMPLETED IN AQUIFER) IN VICINITY: N/A

OVERLAP AREA: N/A

AREA CHECKED: Sections 18, 19, and 30, T11S, R64W
Sections 13, 14, 23, 24, 25, and 26, T11S, R65W

SMALL-CAPACITY WELLS (COMPLETED IN AQUIFER) LOCATED ON CLAIMED TRACT: N/A

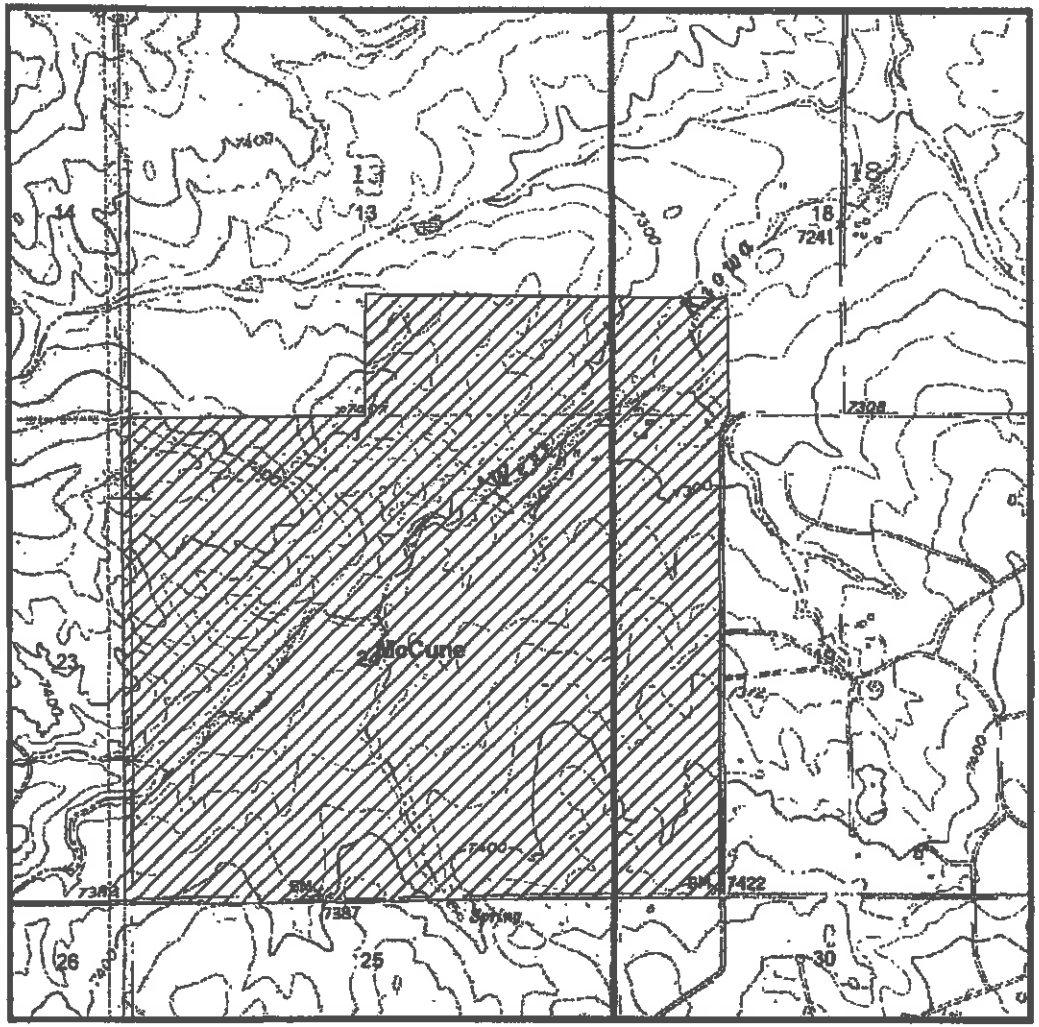
REPLACEMENT WATER STATUS OF CLAIMED LAND AREA: **Nontributary**

REPLACEMENT PLAN REQUIRED: Not Required

AQUIFER INTERVAL (CENTRAL DATA POINT): 970 feet to 1770 feet below ground surface

COMMENTS: The SS was considered 345 feet based on the SS map for the Denver aquifer.

Evaluated by: Justina Mickelson, Ground Water Commission Staff
Reviewed by CBG



DIVISION OF WATER RESOURCES
STATE OF COLORADO

Receipt Number: 3628088C
Applicant: George F. McCune
and Evelyn McCune
Basin: Kiowa-Bijou
GWMD:
Aquifer: Denver

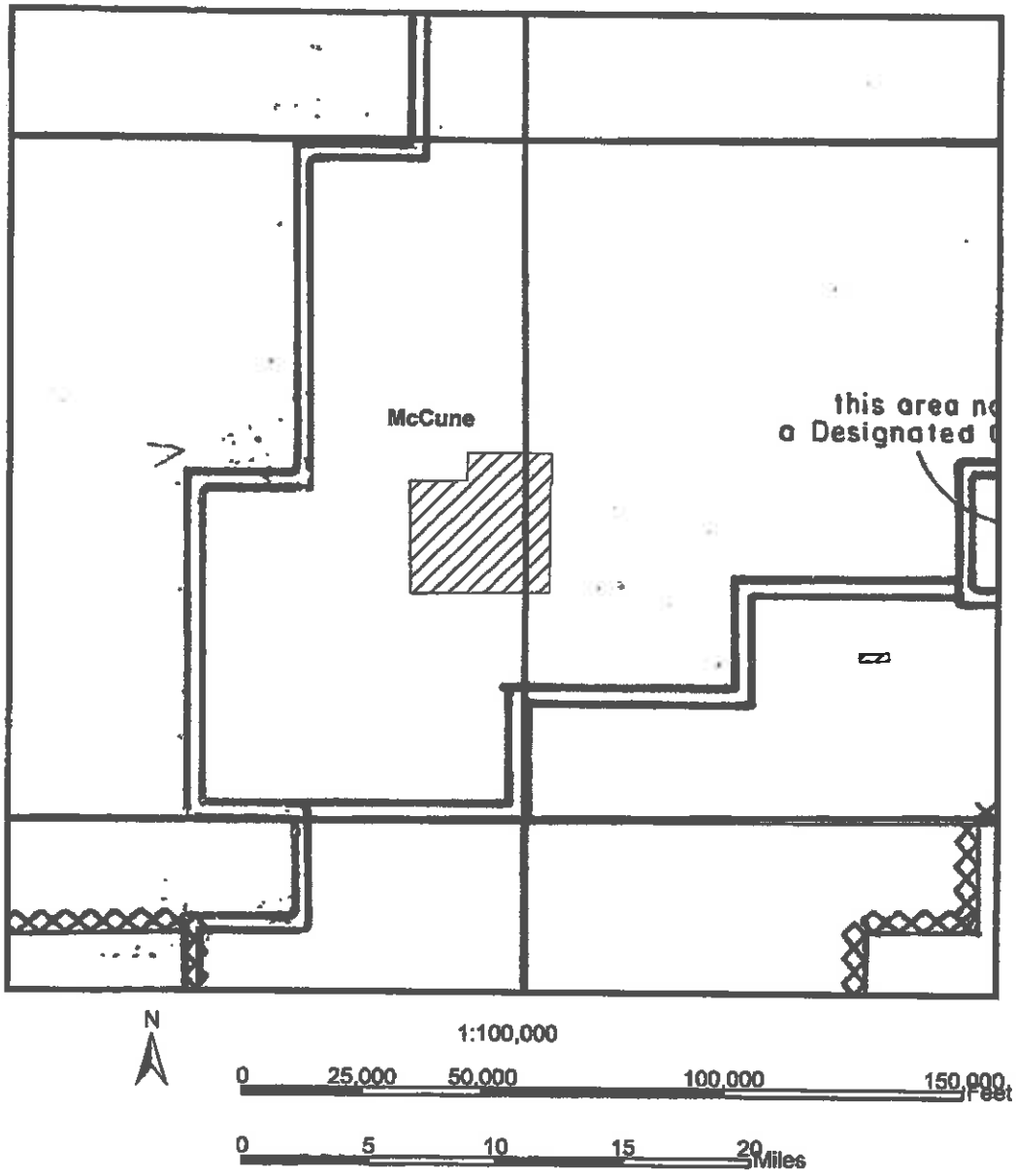
Sections: 13 and 24, T11S, R65W
Sections: 18 and 19, T11S, R64W
Meridian: 6

Area claimed: 900.52 acres
897 acres measured
Perimeter = 7,963 m

Legend
- Township
- Section
- jpm_work

Office of the State Engineer
Division of Water Resources
Department of Natural Resources

COLORADO DIVISION OF WATER RESOURCES



DIVISION OF WATER RESOURCES
STATE OF COLORADO

Receipt Number: 3628088C
Applicant: George F. McCune
and Evelyn McCune
Basin: Kiowa-Bijou
GWMD:
Aquifer: Denver

Sections: 13 and 24, T11S, R65W
Sections: 18 and 19, T11S, R64W
Meridian: 6

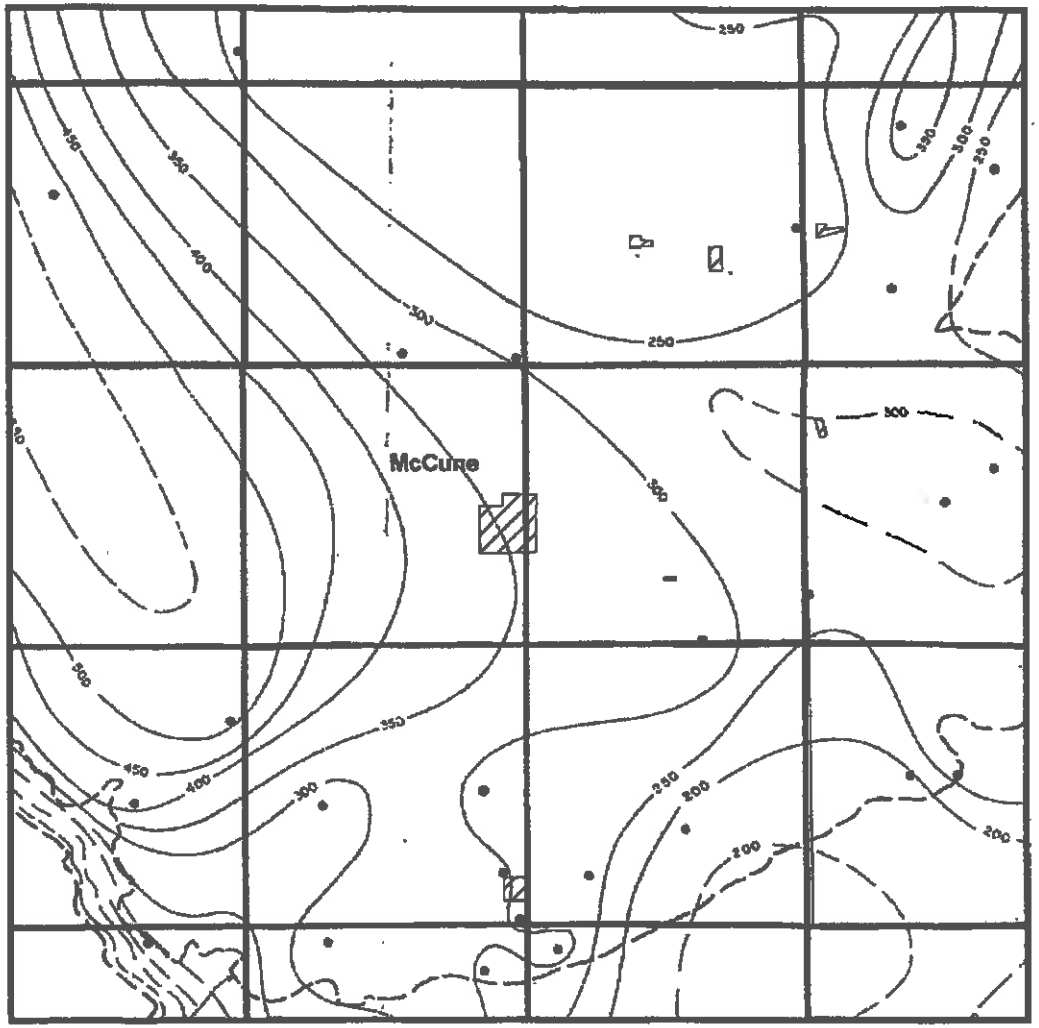
Area claimed: 900.52 acres
897.22 acres measured
Perimeter = 7,963 m

Tributary Status NT

Legend
Township
jpm_work

Office of the State Engineer
Division of Water Resources
Department of Natural Resources

COLORADO DIVISION OF WATER RESOURCES



N

1:250,000

0 25,000 50,000 100,000 150,000 Feet

0 5 10 15 20 Miles

DIVISION OF WATER RESOURCES
STATE OF COLORADO

Receipt Number: 3628088C
Applicant: George F. McCune
and Evelyn McCune
Basin: Kiowa-Bijou
GWMD:
Aquifer: Denver

Sections: 13 and 24, T11S, R65W
Sections: 18 and 19, T11S, R64W
Meridian: 6

Area claimed: 900.52 acres
897.22 acres measured
Perimeter = 7,963 m

Saturated Sands

Legend

Township
jpm_work

Office of the State Engineer
Division of Water Resources
Department of Natural Resources

COLORADO DIVISION OF WATER RESOURCES

PUBLISHER'S AFFIDAVIT

STATE OF COLORADO)
) ss.
COUNTY OF ELBERT)

I, Susan Lister, do solemnly affirm that I am the Publisher of RANCHLAND NEWS; that the same is a weekly newspaper published at Simla, County of Elbert, State of Colorado, and has a general circulation therein; that said newspaper has been continuously and uninterruptedly published in said County of Elbert for a period of at least 52 consecutive weeks next prior to the first publication of the annexed notice, that said newspaper is entered in the post office at Calhan, Colorado as second class mail matter and that said newspaper is a newspaper within the meaning of the Act of the General Assembly of the State of Colorado, approved March 30, 1923, and entitled "Legal Notices and Advertisements," with other Acts relating to the printing and publishing of legal notices and advertisements. That the annexed notice was published in the regular and entire issue of said newspaper, once each week for two successive weeks; that the first publication of said notice was in the issue of said newspaper dated:

May 8, 2008

and the last publication of said notice was in the issue of said newspaper dated:

May 15, 2008

and that copies of each number of said paper in which said notice and/or list was published were delivered by carriers or transmitted by mail to each of the subscribers of said newspaper, Ranchland News, according to the customed mode of business in this office.

Susan Lister
Publisher

The above certificate of publication was subscribed and affirmed to before me, a Notary Public, to be the identical person described in the above certificate, on the

15 day of May, 2008

Notary Public

1/22/12

(My Notary Public Commission Expiration Date)

Determinations of Water Right

BEFORE THE COLORADO GROUND WATER COMMISSION

KIOWA-BIJOU DESIGNATED GROUND WATER BASIN– EL PASO COUNTY

TAKE NOTICE that, pursuant to Section 37-90-107(7), C.R.S., George F. McCune and Evelyn McCune (hereinafter "applicant") have applied for determinations of water right to allow the withdrawal of designated ground water from the Laramie-Fox Hills, Arapahoe, Denver, and Dawson aquifers underlying 900.52 acres generally described as the SW1/4 of the SW1/4, Section 18, the W1/2 of the NW1/4 and the W1/2 of the SW1/4, Section 19, Township 11 South, Range 64 West of the 6th PM and the S1/2 of the SE1/4, Section 13 and all of Section 24, Township 11 South, Range 65 West of the 6th PM. The applicant claims ownership of this land and control of the ground water in the above-described aquifers under this property. The ground water allocations from these aquifers will be used on the described property for the following beneficial uses: domestic, industrial, commercial, irrigation, augmentation, stock watering, recreational water feature ponds and piscatorial habitat less than 1000 square feet and wildlife, replacement and all other augmentation purposes. The maximum allowable annual amount of ground water in each aquifer underlying the described property will be allocated.

In accordance with Section 37-90-107(7), C.R.S., and the Designated Basin Rules, 2 CCR 410-1, the Colorado Ground Water Commission shall allocate ground water from the above-described aquifers based on ownership of the overlying land and an aquifer life of one hundred years. A preliminary evaluation of the applications by the Commission Staff finds the annual amount of water available for allocation from each of the described aquifers underlying the above-described property to be as follows: 263.4 acre-feet for the Laramie-Fox Hills, 398.0 acre-feet for the Arapahoe, 528.2 acre-feet for the Denver, and 819.5 for the Dawson subject to final staff evaluation. The estimated available annual acre-feet allocation amount for each aquifer indicated above may be increased or decreased by the Commission to conform to the actual aquifer characteristics, based upon site specific data.

In accordance with Rule 5.3.6 of the Designated Basin Rules, the Commission Staff's preliminary evaluation of the applications finds the replacement water requirement status for the above aquifers underlying the above-described property to be as follows: nontributary for the Laramie-Fox Hills, nontributary for the Arapahoe, nontributary for the Denver, and not-nontributary (actual impact replacement) for the Dawson.

Upon Commission approval of these determinations of water right, well permits for wells to withdraw the allowed allocation from a specific aquifer shall be available upon application, subject to the conditions of the determination and the Designated Basin Rules and subject to approval by the Commission. Such wells must be completed in the specified aquifer and located on the above described 900.52 acre property. Well permits for wells to withdraw ground water from the Dawson aquifer would also be subject to the conditions of a replacement plan to be approved by the Commission.

Any person wishing to object to the approval of these determinations of water right must do so in writing, briefly stating the nature of the objection and indicating the above applicant, property description and the specific aquifers that are the subject of the objection. The objection must be accompanied by a $10 per aquifer fee and must be received by the Commission Staff, Colorado Ground Water Commission, 818 Centennial Building, 1313 Sherman Street, Denver, Colorado 80203, by June 16, 2008.

First Publication May 8, 2008
Final Publication May 15, 2008
In Ranchland News
Legal No. 12,936

DEPARTMENT OF NATURAL RESOURCES

DIVISION OF WATER RESOURCES

Bill Ritter, Jr.
Governor

Harris D. Sherman
Executive Director

Dick Wolfe, P.E.
Director

June 27, 2008

George F. and Evelyn McCune
17480 Meridian Road
Elbert, CO 80106-8916

RE: Determination of Water Right

Dear Mr. and Mrs. McCune:

Enclosed is a copy of the Colorado Ground Water Commission's Findings and Order for Determination of Water Right No. 1691-BD, for the allocation of ground water in the Denver aquifer. This Findings and Order is the Commission's approval of your application for determination of right to ground water in the above stated aquifer. This document contains important information about your water right and should be reviewed and retained for your records.

As indicated in the Order, a copy of this determination must be recorded by the applicant in the public records of the county – in which the overlying land is located – so that a title examination of the overlying land claimed in the application, or any part thereof, shall reveal this determination. An additional copy of the Findings and Order is enclosed for this purpose.

If you have any questions, please contact this office.

Sincerely,

Justina P. Mickelson
Physical Science Researcher Scientist
Designated Basins Branch

Enclosures: a/s

APPENDIX D

WELL PERMITS

JDS-HYDRO CONSULTANTS, INC.
A Division of RESPEC Company, LLC

RESPEC

Form No.
GWS-25

OFFICE OF THE STATE ENGINEER
COLORADO DIVISION OF WATER RESOURCES

818 Centennial Bldg., 1313 Sherman St., Denver, Colorado 80203
(303) 866-3581

LIC

WELL PERMIT NUMBER 77785 -F -
DIV. 2 WD 10 DES. BASIN MD

APPLICANT

MORLEY-BENTLEY INVESTMENTS LLC
20 BOULDER CRESCENT ST
COLORADO SPRINGS, CO 80903-

(719) 491-3024

APPROVED WELL LOCATION
EL PASO COUNTY
NE 1/4 NW 1/4 Section 27
Township 12 S Range 65 W Sixth P.M.

DISTANCES FROM SECTION LINES
324 Ft. from North Section Line
2632 Ft. from West Section Line

UTM COORDINATES (Meters,Zone:13,NAD83)
Easting: Northing:

PERMIT TO CONSTRUCT A 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) and the decree granted in case no. 86CW19 Division 2 Water Court. The operation of this well is subject to the terms and conditions of said decree.
4) The use of ground water from this well is limited to municipal, domestic, commercial, fire protection, industrial, residential, recreation, irrigation, augmentation, livestock watering and agricultural uses.
5) The pumping rate of this well shall not exceed 150 GPM.
6) The average annual amount of ground water to be appropriated shall not exceed 539 acre-feet.
7) Production is limited to the Laramie-Fox Hills aquifer which is located 2,345 feet below land surface and extends to a depth of 2,630 feet. Plain casing must be installed and grouted to prevent the withdrawal of ground water from other aquifers and the movement of ground water between aquifers.
8) 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) The owner shall mark the well in a conspicuous place 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.
10) 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.
11) This well shall be constructed at least 600 feet from any existing well, completed in the same aquifer, that is not owned by the applicant.
12) This well shall be constructed not more than 200 feet from the location specified on this permit.
13) Pursuant to CRS 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 well owner shall demonstrate to the reasonable satisfaction of the State Engineer that no more than 98% of the water withdrawn will be consumed.
14) This well is subject to administration by the Division Engineer in accordance with applicable decrees, statutes, rules, and regulations.

NOTE: The ability of this well to withdraw its authorized amount of water from this non-renewable aquifer may be less than the 100 years upon which the amount of water in the aquifer is allocated, due to anticipated water level declines.

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 Test Report (GWS-31) and Pump Installation and 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: http://www.water.state.co.us

APPROVED
IDC

State Engineer Dick Wolfe By

Receipt No. 3662756 DATE ISSUED 12-19-2013 EXPIRATION DATE 12-19-2014

Form No.
GWS-25

OFFICE OF THE STATE ENGINEER
COLORADO DIVISION OF WATER RESOURCES

818 Centennial Bldg., 1313 Sherman St., Denver, Colorado 80203
(303) 866-3581

LIC

WELL PERMIT NUMBER 77786 -F -
DIV. 2 WD 10 DES. BASIN MD

APPLICANT

MORLEY-BENTLEY INVESTMENTS LLC
20 BOULDER CRESCENT ST
COLORADO SPRINGS, CO 80903-

(719) 491-3024

APPROVED WELL LOCATION
EL PASO COUNTY
NE 1/4 NW 1/4 Section 27
Township 12 S Range 65 W Sixth P.M.

DISTANCES FROM SECTION LINES
304 Ft. from North Section Line
2632 Ft. from West Section Line

UTM COORDINATES (Meters,Zone:13,NAD83)
Easting: Northing:

PERMIT TO CONSTRUCT A 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) and the decree granted in case no. 86CW18 Division 2 Water Court. The operation of this well is subject to the terms and conditions of said decree.
4) The use of ground water from this well is limited to municipal, domestic, commercial, fire protection, industrial, residential, recreation, irrigation, augmentation, livestock watering and agricultural uses.
5) The pumping rate of this well shall not exceed 150 GPM.
6) The average annual amount of ground water to be appropriated shall not exceed 575 acre-feet.
7) Production is limited to the Arapahoe aquifer which is located 1,585 feet below land surface and extends to a depth of 2,070 feet. Plain casing must be installed and grouted to prevent the withdrawal of ground water from other aquifers and the movement of ground water between aquifers.
8) 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) The owner shall mark the well in a conspicuous place 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.
10) 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.
11) This well shall be constructed at least 600 feet from any existing well, completed in the same aquifer, that is not owned by the applicant.
12) This well shall be constructed not more than 200 feet from the location specified on this permit.
13) Pursuant to CRS 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 well owner shall demonstrate to the reasonable satisfaction of the State Engineer that no more than 98% of the water withdrawn will be consumed.
14) This well is subject to administration by the Division Engineer in accordance with applicable decrees, statutes, rules, and regulations.

NOTE: The ability of this well to withdraw its authorized amount of water from this non-renewable aquifer may be less than the 100 years upon which the amount of water in the aquifer is allocated, due to anticipated water level declines.

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 Test Report (GWS-31) and Pump Installation and 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: http://www.water.state.co.us

APPROVED
IDC

State Engineer _____ By _____

Receipt No. 3662757 DATE ISSUED 12-19-2013 EXPIRATION DATE 12-19-2014

APPENDIX E

WATER QUALITY FROM EXISTING WELLS

JDS-HYDRO CONSULTANTS, INC.
A Division of RESPEC Company, LLC

RESPEC

Colorado Department of Public Health and Environment

Inorganic Chemicals Certified Laboratory Report Form
WQCD - Drinking Water CAS
4300 Cherry Creek Drive South, Denver, CO 80246-1530
Fax: (303) 758-1398; cdphe.drinkingwater@state.co.us

Revised 6/13/2014

IOC

Section I (Supplied or Completed by Public Water System)		Section II (Supplied or Completed by Certified Laboratory)
Public Water System Information		**Certified Laboratory Information**
PWSID#: CO-0121724		Laboratory ID: CO 0015
System Name: LFH-1		Laboratory Name: Colorado Analytical Laboratory
Contact Person: Mark Volle	Phone #: 719-227-0072	Contact Person: Customer Service Phone: 303-659-2313
Comments:	Do Samples Need to be Composited BY THE LAB? ☐	Comments:

Section III (Supplied or Completed by Public Water System)			
Sample Date: 2/16/17	Collector: Stephanie Schwe	Facility ID (On Schedule):	Sample Pt ID (On Schedule):

Section IV Inorganic Chemicals (Completed by Certified Laboratory)

Lab Receipt Date	Lab Analysis Date	Lab Sample ID	Analyte Name	CAS No	Analytical Method	MCL (mg/L)	Lab MRL (mg/L)	Result (mg/L)
2/17/17	2/17/17	170217005-01	Fluoride	7681-49-4	EPA 300.0	4	0.09	1.07

NT: Not Tested
Lab MRL: Laboratory Minimum Reporting Level
BDL: Below Laboratory MRL. A less than (<) may also used.

mg/L: Milligrams per Liter
MCL: Maximum Contaminant Level

3/6/17
170217005-01
1/ 1

Drinking Water Chain of Custody

Colorado Analytical LABORATORIES, INC.

Brighton Lab
240 South Main Street
Brighton, CO 80601

Lakewood Lab
12860 W. Cedar Dr, Suite 100A
Lakewood CO 80228

Phone: 303-659-2313
Fax: 303-659-2315

www.coloradolab.com

Report To Information	Bill To Information (if different from report to)	State Form / Project Information
Company Name: JDS-Hydro	Company Name: SP Water	PWSID: Co. 0121724
Contact Name: Mark Volle	Contact Name: Jim Morley	System Name: LFH-1
Address: 545 E. Pikes Peak Ave Suite 300	Address: 20 Boulder Crescent St	Address: NE 1/4 NW 1/4 S27 T12S R65W 6th PM
City CS State CO Zip 80903	City Colo Spgs State CO Zip 80903	City Colo Spgs State CO Zip 80908
Phone: 719-227-0072 Fax:	Phone: Fax:	County: El Paso
Email: mvolle@jdshydro.com	Email: jmorley2870@aol.com	Compliance Samples: Yes [X] No [ ] Please report on state forms
Sampler Name: Stephanie Schwenke	PO No.:	Send Forms to State: Yes [ ] No [X]

CAL Task No. 170217005

ARF

Date	Time	Client Sample ID / EP Code	No. of Containers	Residual Chlorine (mg/L) P/A Samples Only	Total Coliform P/A	504.1 EDB/DBCP	505 Pests/PCBs	515.4 Herbicides	524.2 VOCs	525.2 SOCs-Pest	531.1 Carbamates	547 Glyphosate	548.1 Endothall	549.2 Diquat	524.2 TTHMs	552.2 HAA5s	Lead/Copper	Nitrate	Nitrite	Fluoride	Inorganics	Alk./Lang. Index	TOC/DOC (Circle)	SUVA, UV 254 (Circle)	Metals	Gross Alpha/Beta	Radium 226	Radium 228	Radon	Uranium
	7:31	#1	3			X																								
	7:42	#2	3				X																							
	9:30	#3	2								X																			
	9:54	#4	1																						X					
	10:53	#5	1															X	X	X		X								
	10:16	#6	2																											
	9:22	#7	2																									X		
	8:46	#8	2							X													X							
	9:54	#9	2		X																									
	8:52	#10	1										X																	

PHASE I, II, V Drinking Water Analyses (check analysis) | Subcontract Analyses

Instructions:

C/S Info: Fedex

Delivered Via:

C/S Charge [ ]

Seals Present Yes [ ] No [X] Headspace Yes [ ] No [ ]

Temp. 2 °C /Ice Y Sample Pres. Yes [X] No [ ]

Relinquished By:	Date/Time:	Received By:	Date/Time:
[signature]	02/16/17 12:15pm	[signature]	2/17/17 0800
Relinquished By:	Date/Time:	Received By:	Date/Time:

Drinking Water Chain of Custody

Colorado Analytical LABORATORIES, INC.

Brighton Lab
240 South Main Street
Brighton, CO 80601

Lakewood Lab
12860 W. Cedar Dr, Suite 100A
Lakewood CO 80228

Phone: 303-659-2313
Fax: 303-659-2315

www.coloradolab.com

Report To Information	Bill To Information (if different from report to)	State Form / Project Information
Company Name: JDS HYDRO	Company Name: SR WATER	PWSID: CO-0121724
Contact Name: MARK VOLLE	Contact Name: JIM MORLEY	System Name: LFH-1
Address: 545 E. PIKES PEAK AVE SUITE 300	Address: 20 BOULDER CRESCENT ST	Address: NE¼ NW¼ S27 T12S R65W 6TH PM
City COLO SPGS State CO Zip 80903	City COLO SPGS State CO Zip 80903	City COLO SPGS State CO Zip 80908
Phone: 719-227-0072 Fax:	Phone: Fax:	County: EL PASO
Email: mvolle@jdshydro.com	Email: jmorley4@3870@aol.com	Compliance Samples: Yes ☒ No ☐
Sampler Name: STEPH SCHWENKE	PO No.:	Send Forms to State: Yes ☐ No ☒

please report results on state forms

CAL Task No. 170217005

ARF

PHASE I, II, V Drinking Water Analyses (check analysis) / Subcontract Analyses

Date	Time	Client Sample ID / EP Code	No. of Containers	Residual Chlorine (mg/L) P/A Samples Only	Total Coliform P/A	504.1 EDB/DBCP	505 Pests/PCBs	515.4 Herbicides	~~524.2 VOCs~~ 624	525.2 SOCs-Pest	531.1 Carbamates	547 Glyphosate	548.1 Endothall	549.2 Diquat	524.2 TTHMs	552.2 HAA5s	Lead/Copper	Nitrate	Nitrite	~~Fluoride~~ Drinking Water TDS	Inorganics	Alk./Lang. Index	TOC, DOC (Circle)	SUVA, UV 254 (Circle)	1,4 Dioxane	Gross Alpha/Beta	Radium 226	Radium 228	~~Radon~~ Cyanide	Uranium
2/16	8:37	#11	3																								X	X		
	9:30	#12	3																						X					
	9:01	#13	2																											
	9:43	#14	1																										X	
2/16	8:40	#15	1																							X				
	8:44	#16	1					X																						
	9:00	#17	1																		X									
	9:42	#18	1												X															
	9:19	#19	3						X																					

Instructions: (34) + 504 Blank

VOA

C/S Info:

Delivered Via: fedex

C/S Charge ☐

Seals Present Yes ☐ No ☒ Headspace Yes ☐ No ☐

Temp. 2 °C/Ice Y Sample Pres. Yes ☒ No ☐

Relinquished By:	Date/Time:	Received By:	Date/Time:	Relinquished By:	Date/Time:	Received By:	Date/Time:
[signature]	2/16/17 12:15pm	Metzger	2/17/17 0800				

1-3

Colorado Department of Public Health and Environment

Inorganic Chemicals Certified Laboratory Report Form
WQCD - Drinking Water CAS
Submit Online at http://www.wqcdcompliance.com/login

Revised 4/13/2015

IOC

Section I (Supplied or Completed by Public Water System)		Section II (Supplied or Completed by Certified Laboratory)
Public Water System Information		**Certified Laboratory Information**
PWSID#: CO-0121724		Laboratory ID: CO 0015
System Name: LFH-1		Laboratory Name: Colorado Analytical Laboratory
Contact Person: Mark Volle	Phone #:	Contact Person: Customer Service Phone: 303-659-2313
Comments:	Do Samples Need to be Composited BY THE LAB? ☐	Comments:

Section III (Supplied or Completed by Public Water System)			
Sample Date: 2/16/17	Collector: Stephanie Schwe	Facility ID (On Schedule):	Sample Pt ID (On Schedule):

Section IV Inorganic Chemicals (Completed by Certified Laboratory)

Lab Receipt Date	Lab Analysis Date	Lab Sample ID	Analyte Name	CAS No	Analytical Method	MCL (mg/L)	Lab MRL (mg/L)	Result (mg/L)
2/17/17	2/22/17	170217005-01A	Antimony	7740-36-0	EPA 200.8	0.006	0.001	**BDL**
2/17/17	2/22/17	170217005-01A	Arsenic	7440-38-2	EPA 200.8	0.01	0.001	**0.002**
2/17/17	2/22/17	170217005-01A	Barium	7440-39-3	EPA 200.8	2	0.001	**0.015**
2/17/17	2/22/17	170217005-01A	Beryllium	7440-41-7	EPA 200.8	0.004	0.001	**BDL**
2/17/17	2/22/17	170217005-01A	Cadmium	7440-43-9	EPA 200.8	0.005	0.001	**BDL**
2/17/17	2/22/17	170217005-01A	Chromium	7440-47-3	EPA 200.8	0.1	0.001	**0.001**
2/17/17	2/22/17	170217005-01A	Mercury	7439-97-6	EPA 200.8	0.002	0.0001	**BDL**
2/17/17	2/22/17	170217005-01A	Nickel	7440-02-0	EPA 200.8	N/A	0.001	**0.001**
2/17/17	2/22/17	170217005-01A	Selenium	7782-49-2	EPA 200.8	0.05	0.001	**BDL**
2/17/17	2/24/17	170217005-01A	Sodium	7440-23-5	EPA 200.7	N/A	0.1	**142.7**
2/17/17	2/22/17	170217005-01A	Thallium	7440-28-0	EPA 200.8	0.002	0.001	**BDL**

NT: Not Tested
Lab MRL: Laboratory Minimum Reporting Level
BDL: Below Laboratory MRL. A less than (<) may also used.

mg/L: Milligrams per Liter
MCL: Maximum Contaminant Level

3/6/17
170217005-01A
1/ 1

Drinking Water Chain of Custody

Colorado Analytical LABORATORIES, INC.

Brighton Lab
240 South Main Street
Brighton, CO 80601

Lakewood Lab
12860 W. Cedar Dr, Suite 100A
Lakewood CO 80228

Phone: 303-659-2313
Fax: 303-659-2315

www.coloradolab.com

Report To Information	Bill To Information (if different from report to)	State Form / Project Information
Company Name: JDS-Hydro	Company Name: SP Water	PWSID: CO- 0121724
Contact Name: Mark Volle	Contact Name: Jim Morley	System Name: LFH-1
Address: 545 E. Pikes Peak Ave Suite 200	Address: 20 Boulder Crescent St	Address: NE 1/4 NW 1/4 S27 T12S R65W 6TH PM
City CS State CO Zip 80903	City Colo Spgs State CO Zip 80903	City Colo Spgs State CO Zip 80908
Phone: 719-227-0072 Fax:	Phone: Fax:	County: El Paso
Email: mvolle@jdshydro.com	Email: jmorley3870@aol.com	Compliance Samples: Yes [X] No [ ] Please report on state forms
Sampler Name: Stephanie Schwenke	PO No.:	Send Forms to State: Yes [ ] No [X]

CAL Task No. 170217005

ARF

Date	Time	Client Sample ID / EP Code	No. of Containers	Residual Chlorine (mg/L) P/A Samples Only	PHASE I, II, V Drinking Water Analyses (check analysis)																					Subcontract Analyses				
					Total Coliform P/A	504.1 EDB/DBCP	505 Pests/PCBs	515.4 Herbicides	524.2 VOCs	525.2 SOCs-Pest	531.1 Carbamates	547 Glyphosate	548.1 Endothall	549.2 Diquat	524.2 TTHMs	552.2 HAA5s	Lead/Copper	Nitrate	Nitrite	Fluoride	Inorganics	Alk./Lang. Index	TOC/DOC (Circle)	SUVA, UV 254 (Circle)	Metals	Gross Alpha/Beta	Radium 226	Radium 228	Radon	Uranium
	7:31	#1	3			X																								
	7:[illegible]	#2	3				X																							
	9:30	#3	1								X																			
	3:54	#4	1																					X						
	12:53	#5	1															X	X	X		X								
	1:56	#6	2																									X		
	9:22	#7	2																				X							
	8:46	#8	2							X																				
	9:54	#9	2		X																									
	8:52	#10	1										X																	

Instructions:

C/S Info: fedex

Delivered Via:

C/S Charge [X]

Seals Present Yes [ ] No [X] Headspace Yes [ ] No [ ]

Temp. 2 °C /Ice Y

Sample Pres. Yes [X] No [ ]

Relinquished By:	Date/Time:	Received By:	Date/Time:	Relinquished By:	Date/Time:	Received By:	Date/Time:
[signature]	2/16/17 12:15pm	[signature]	2/17/17 0800				

Drinking Water Chain of Custody

Colorado Analytical LABORATORIES, INC.

Brighton Lab
240 South Main Street
Brighton, CO 80601

Lakewood Lab
12860 W. Cedar Dr, Suite 100A
Lakewood CO 80228

Phone: 303-659-2313
Fax: 303-659-2315

www.coloradolab.com

Report To Information	Bill To Information (if different from report to)	State Form / Project Information
Company Name: JDS HYDRO	Company Name: SR WATER	PWSID: CO-0121724
Contact Name: MARK VOLLE	Contact Name: JIM MORLEY	System Name: LFH-1
Address: 545 E. PIKES PEAK AVE SUITE 300	Address: 20 BOULDER CRESCENT ST	Address: NE¼ NW¼ S27 T12S R65W 6TH PM
City COLO SPGS State CO Zip 80903	City COLO SPGS State CO Zip 80903	City COLO SPGS State CO Zip 80908
Phone: 719-227-0072 Fax:	Phone: Fax:	County: EL PASO
Email: mvolle@jdshydro.com	Email: jmorley3870@aol.com	Compliance Samples: Yes [X] No [ ]
Sampler Name: STEPH SCHWENKE	PO No.:	Send Forms to State: Yes [ ] No [X] Please report results on state forms

CAL Task No. 170217005

ARF

PHASE I, II, V Drinking Water Analyses (check analysis)

Date	Time	Client Sample ID / EP Code	No. of Containers	Residual Chlorine (mg/L) P/A Samples Only	Total Coliform P/A	504.1 EDB/DBCP	505 Pests/PCBs	515.4 Herbicides	~~524.2 VOCs~~ 624	525.2 SOCs-Pest	531.1 Carbamates	547 Glyphosate	548.1 Endothall	549.2 Diquat	524.2 TTHMs	552.2 HAASs	Lead/Copper	Nitrate	Nitrite	Primary Fluoride Water TDS	Inorganics	Alk./Lang. Index	TOC, DOC (Circle)	SUVA, UV 254 (Circle)	1,4 Dioxane	Subcontract Analyses: Gross Alpha/Beta	Radium 226	Radium 228	~~Radon~~ Cyanide	Uranium
9/16	8:37	#11	3																						X		X		
	9:50	#12	3																										
	9:01	#13	2																					X					
	9:43	#14	1																										
9/16	8:40	#15	1																									X	
	8:44	#16	1					X																	X				
	9:02	#17	1																	X									
	9:42	#18	1											X															
	9:19	#19	3						X																				

Instructions: 34 + 504 Blank

VOA

C/S Info: fedex

Delivered Via: C/S Charge ☐

Seals Present Yes ☐ No [X] Headspace Yes ☐ No ☐

Temp. 2 °C /Ice Y Sample Pres. Yes [X] No ☐

Relinquished By:	Date/Time:	Received By:	Date/Time:	Relinquished By:	Date/Time:	Received By:	Date/Time:
	9/16/17 12:15pm		9/17/17 0800				

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

Lab Control ID: B16917
Received: Feb 17, 2017
Reported: Mar 20, 2017
Purchase Order No.
None Received

Customer ID: 20040H
Account ID: Z01034
Project #: 009-616

ANALYTICAL REPORT

Stuart Nielson
Colorado Analytical Laboratories, Inc.

Lab Sample ID / Customer Sample ID			B16917-001 170217005-01 - Lfh-1 - PWSID: CO0121724 - LFH-1 sampled on 02/16/17 @ 0906 by Stephanie Schwenke					
Parameter	Units	Code	Result	Precision* +/-	Detection Limit	Method	Analysis Date / Time	Analyst
Gross Alpha	pCi/L	T	0.0	0.0	1.5	SM 7110 B	3/2/17 @ 0840	LD
Gross Beta	pCi/L	T	0.0	2.1	2.2	SM 7110 B	3/2/17 @ 0840	LD
Radium-226	pCi/L	T	0.0	0.2	0.1	SM 7500-Ra B	3/3/17 @ 0825	LD
Radium-228	pCi/L	T	0.0	0.8	0.8	EPA Ra-05	3/14/17 @ 1257	JR
Radon	pCi/L	T	345	25	13.9	SM 7500-Rn B	2/17/17 @ 1500	AN

Certification ID's: CO/EPA CO00008; CT PH-0152; KS E-10265; NJ CO008; NYSELAP (NELAC Certified) 11417; RI LAO00284; WI 998376610, TX T104704256-15-6

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

Codes: (T) = Total (D) = Dissolved (S) = Susspended (R) = Total Residual
(PD) = Potentially Dissolved < = Less Than

Colorado Department of Public Health and Environment

Radionuclides Certified Laboratory Report Form

WQCD – Drinking Water CAS
4300 Cherry Creek Drive South; Denver, CO 80246-1530
Fax: (303) 758-1398; cdphe.drinkingwater@state.co.us

Revision 6/13/2014

RAD

Section I (Supplied or Completed by Public Water System)		Section II (Supplied or Completed by Certified Laboratory)	
Public Water System Information		**Certified Laboratory Information**	
PWS ID: CO0121724		Laboratory ID: CO 00008	
System Name: Lfh-1		Laboratory Name: Hazen Research, Inc.	
Contact Person:	Phone #:	Contact Person: Jessica Axen	Phone #: 303-279-4501
Comments:	Do Samples Need to be Composited BY THE LAB? ☐	Comments:	

Section III (Supplied or Completed by Public Water System)

Sample Date: 02/16/2017	Collector: Stephanie Schwenke	Facility ID (On Schedule):	Sample Pt ID (On Schedule):

Section IV Radionuclides (Supplied or Completed by Certified Laboratory)

Lab Receipt Date	Lab Analysis Date	Lab Sample ID	Analyte Name (Code)	CAS No.	Analytical Method	MCL	Lab MRL	Result
02/17/2017	03/02/2017	B16917-001	Gross Alpha Including Uranium (4002)	12587-46-1	SM 7110 B	N/A	1.5	0.0(±0.0)
			Combined Uranium (4006)	7440-61-1	D2907-97	30 ug/L		
02/17/2017	03/03/2017	B16917-001	Radium -226 (4020)	13982-63-3	SM 7500-Ra B	N/A	0.1	0.0(±0.2)
02/17/2017	03/14/2017	B16917-001	Radium -228 (4030)	15262-20-1	EPA Ra-05	N/A	0.8	0.0(±0.8)
02/17/2017	03/02/2017	B16917-001	Gross Beta (4100)	12587-47-2	SM 7110 B	50 pCi/L*	2.2	0.0(±2.1)
			Total Dissolved Solids (1930)		EPA 160.3	N/A		

*The MCL for Gross Beta Particle Activity is 4 mrem/year. Since there is no simple conversion between mrem/year and pCi/L EPA considers 50 pCi/L to be the level of concern.

Section V Calculated Values

N/A	Gross Alpha Excluding Uranium (4000)	Calculated Value	15 pCi/L	N/A	
	Combined Radium {-226 & -228} (4010)	Calculated Value	5 pCi/L	N/A	

NT: Not Tested
Lab MRL: Laboratory Minimum Reporting Level
BDL: Below Laboratory MRL. A less than sign (<) may also be used

ug/L: Micrograms per Liter
pCi/L: Picocuries per Liter
MCL: Maximum Contaminant Level

FED Ex

Drinking Water Chain of Custody

Colorado Analytical Laboratories, Inc.

Brighton Lab
240 South Main Street
Brighton, CO 80601

Lakewood Lab
12860 W. Cedar Dr, Suite 101
Lakewood CO 80228

Phone: 303-659-2313
Fax: 303-659-2315

www.coloradolab.com

Report To Information	Bill To Information (If different from report to)	State Form / Project Information
Company Name: Colorado Analytical Contact Name: Stuart Nielson	Company Name: Same As Report To Contact Name:	PWSID: CO0121724 System Name: Lfh-1
Address: 240 S. Main St. City: Brighton State: CO Zip: 80601	Address: City: State: Zip:	System Address: Ne 1/4 Nw 1/4 527 T125 R65w 6th Pm City: Colorado Spgs State: CO Zip: 80908
Phone:303-659-2313 Fax:303-659-2315	Phone: Fax:	County: El Paso
Email: stuartnielson@coloradolab.com	Email:	Compliance Samples: Yes ☒ No ☐
Sampler Name: Stephanie Schwenke	PO No.:	Send Forms to State: Yes ☐ No ☒

Task Number

PHASE I, II, V Drinking Water Analyses (check analysis) — Subcontract Analyses

Date	Time	Client Sample ID / EP Code	No. of Containers	Residual Chlorine (mg/L) P/A Samples Only	Total Coliform P/A	504.1 EDB/DBCP	505 Pests/PCBs	515.4 Herbicides	524.2 VOCs	525.2 SOCs-Pest	531.1 Carbamates	547 Glyphosate	548.1 Endothall	549.2 Diquat	524.2 TTHMs	552.2 HAA5s	Lead/Copper	Nitrate	Nitrite	Fluoride	Inorganics	Alk./Lang. Index	TOC, DOC (Circle)	SUVA, UV 254 (Circle)		Gross Alpha/Beta	Radium 226	Radium 228	Radon	Uranium
02/16/17	0906	170217005-01 LFH-1	6																							X	X	X	X	
		L FROM BOTTLES																												

Instructions: Please print on state forms but do not submit to CDPHE. Thanks!

1.8

C/S Info: TO: Hazen

Delivered Via: FedEx SD C/S Charge ☐

Seals Present Yes ☐ No ☐ Headspace Yes ☐ No ☐

REC'D PRES @ HAZEN

Temp. °C /Ice Sample Pres. Yes ☐ No ☐

Relinquished By:	Date/Time:	Received By:	Date/Time:	Relinquished By:	Date/Time:	Received By:	Date/Time:
[signature] Adams	2/17/16 1100					[signature]	02/17/2017 1430

Colorado Analytical LABORATORIES, INC.

Analytical Results

TASK NO: 170217005

Report To: Mark Volle
Company: JDS Hydro Consultants
545 E. Pikes Peak Ave
Suite 300
Colorado Springs CO 80903

Bill To: Jim Morley
Company: SR Water
20 Boulder Crescent St.
Colorado Springs CO 80903

Task No.: 170217005
Client PO:
Client Project: LFH-1 CO-0121724

Date Received: 2/17/17
Date Reported: 3/6/17
Matrix: Water - Drinking

Customer Sample ID: LFH-1
Sample Date/Time: 2/16/17
Lab Number: 170217005-01

Test	Result	Method	ML	Date Analyzed	Analyzed By
Bicarbonate	155.5 mg/L as CaCO3	SM 2320-B	0.1	2/20/17	VDB
Calcium as CaCO3	6.3 mg/L	SM 3111-B	0.1	2/24/17	MBN
Carbonate	4.0 mg/L as CaCO3	SM 2320-B	0.1	2/20/17	VDB
Langelier Index	-0.43 units	SM 2330-B		2/24/17	SAN
pH	8.44 units	SM 4500-H-B	0.01	2/17/17	MBN
Temperature	20 °C	SM 4500-H-B	1	2/17/17	MBN
Total Alkalinity	159.5 mg/L as CaCO3	SM 2320-B	0.1	2/20/17	VDB
Total Dissolved Solids	458 mg/L	SM 2540-C	5	2/23/17	ISG

Abbreviations/ References:

ML = Minimum Level = LRL = RL
mg/L = Milligrams Per Liter or PPM
ug/L = Micrograms Per Liter or PPB
mpn/100 ml's = Most Probable Number Index/ 100 ml's
Date Analyzed = Date Test Completed

DATA APPROVED FOR RELEASE BY

Drinking Water Chain of Custody

Colorado Analytical LABORATORIES, INC.

Brighton Lab
240 South Main Street
Brighton, CO 80601

Lakewood Lab
12860 W. Cedar Dr, Suite 100A
Lakewood CO 80228

Phone: 303-659-2313
Fax: 303-659-2315

www.coloradolab.com

Report To Information	Bill To Information (If different from report to)	State Form / Project Information
Company Name: JDS-Hydro	Company Name: SR Water	PWSID: Co-0121724
Contact Name: Mark Valle	Contact Name: Jim Morley	System Name: LFH-1
Address: 545 E. Pikes Peak Ave Suite 300	Address: 20 Boulder Crescent St	Address: NE 1/4 NW 1/4 S27 T12S R65W 6th PM
City CS State CO Zip 80903	City ColoSpgs State CO Zip 80903	City ColoSpgs State CO Zip 80908
Phone: 719-227-0072 Fax:	Phone: Fax:	County: El Paso
Email: mvalle@jdshydro.com	Email: jmorley3870@aol.com	Compliance Samples: Yes [X] No [ ] Please report on state forms
Sampler Name: Stephanie Schwenke	PO No.:	Send Forms to State: Yes [ ] No [X]

CAL Task No. 170217005

ARF

Date	Time	Client Sample ID / EP Code	No. of Containers	Residual Chlorine (mg/L) P/A Samples Only	PHASE I, II, V Drinking Water Analyses (check analysis)																				Subcontract Analyses				
					Total Coliform P/A	504.1 EDB/DBCP	505 Pests/PCBs	515.4 Herbicides	524.2 VOCs	525.2 SOCs-Pest	531.1 Carbamates	547 Glyphosate	548.1 Endothall	549.2 Diquat	524.2 TTHMs	552.2 HAA5s	Lead/Copper	Nitrate	Nitrite	Fluoride	Inorganics	Alk./Lang. Index	TOC/DOC (Circle)	SUVA, UV 254 (Circle)	Metals	Gross Alpha/Beta	Radium 226	Radium 228	Radon	Uranium
	7:31	#1	3			X																							
	7:46	#2	3				X																						
	9:30	#3	3								X																		
	8:54	#4	1																					X					
	12:53	#5	3															X	X	X		X							
	12:46	#6	3																									X	
	9:22	#7	2																				X						
	8:46	#8	2							X																			
	9:54	#9	2		X																								
	8:52	#10	1										X																

Instructions:

C/S Info: Fedex

Delivered Via:

C/S Charge [X]

Temp. 2 °C /Ice Y

Seals Present Yes [ ] No [X] Headspace Yes [ ] No [ ]

Sample Pres. Yes [X] No [ ]

Relinquished By:	Date/Time:	Received By:	Date/Time:	Relinquished By:	Date/Time:	Received By:	Date/Time:
Stephanie	2/16/17 12:15pm	JWitzen	2/17/17 0800				

Drinking Water Chain of Custody

Colorado Analytical LABORATORIES, INC.

Brighton Lab
240 South Main Street
Brighton, CO 80601

Lakewood Lab
12860 W. Cedar Dr, Suite 100A
Lakewood CO 80228

Phone: 303-659-2313
Fax: 303-659-2315

www.coloradolab.com

Report To Information	Bill To Information (If different from report to)	State Form / Project Information
Company Name: JDS HYDRO	Company Name: SR WATER	PWSID: CO-0121724
Contact Name: MARK VOLLE	Contact Name: JIM MORLEY	System Name: LFH-1
Address: 545 E. PIKES PEAK AVE SUITE 300	Address: 20 BOULDER CRESCENT ST	Address: NE¼ NW¼ S27 T12S R65W 6TH PM
City COLO SPGS State CO Zip 80903	City COLO SPGS State CO Zip 80903	City COLO SPGS State CO Zip 80908
Phone: 719-227-0072 Fax:	Phone: Fax:	County: EL PASO
Email: mvolle@jdshydro.com	Email: jmorley4@3870@aol.com	Compliance Samples: Yes ☒ No
Sampler Name: STEPH SCHWENKE	PO No.:	Send Forms to State: Yes No ☒

please report results on state forms

CAL Task No. 170217005

ARF

PHASE I, II, V Drinking Water Analyses (check analysis) / Subcontract Analyses

Date	Time	Client Sample ID / EP Code	No. of Containers	Residual Chlorine (mg/L) P/A Samples Only	Total Coliform P/A	504.1 EDB/DBCP	505 Pests/PCBs	515.4 Herbicides	~~524.2 VOCs~~ 624	525.2 SOCs-Pest	531.1 Carbamates	547 Glyphosate	548.1 Endothall	549.2 Diquat	524.2 TTHMs	552.2 HAA5s	Lead/Copper	Nitrate	Nitrite	~~Fluoride~~ Drinking Water TDS	Inorganics	Alk./Lang. Index	TOC, DOC (Circle)	SUVA, UV 254 (Circle)	1,4 Dioxane	Gross Alpha/Beta	Radium 226	Radium 228	~~Radon~~ Cyanide	Uranium
2/16	8:37	#11	3																								X	X		
	9:30	#12	3																						X					
	9:01	#13	2																											
	9:43	#14	1																										X	
2/16	8:40	#15	1																							X				
	8:44	#16	1					X																						
	9:00	#17	1																			X								
	9:42	#18	1											X																
	9:19	#19	3						X																					

Instructions: (34) + 504 Blank

VOA

C/S Info: Delivered Via: fedex

C/S Charge ☐

Seals Present Yes ☐ No ☒ Headspace Yes ☐ No ☐

Temp. 2 °C/Ice Y Sample Pres. Yes ☒ No ☐

Relinquished By:	Date/Time:	Received By:	Date/Time:	Relinquished By:	Date/Time:	Received By:	Date/Time:
[signature]	2/16/17 12:15pm	Metzger	2/17/17 0800				

Colorado Department of Public Health and Environment

Nitrate and Nitrite as Nitrogen Certified Laboratory Report Form
WQCD - Drinking Water CAS
Submit Online at http://www.wqcdcompliance.com/login

Revised 4/13/2015

NOX

Section I (Supplied or Completed by Public Water System)		Section II (Supplied or Completed by Certified Laboratory)	
Public Water System Information		**Certified Laboratory Information**	
PWSID#: CO-0121724		Laboratory ID: CO 0015	
System Name: LFH-1		Laboratory Name: Colorado Analytical Laboratory	
Contact Person: Mark Volle	Phone #: 719-227-0072	Contact Person: Customer Service	Phone: 303-659-2313
Comments:		Comments:	

Section III (Supplied or Completed by Public Water System)					Section IV (Supplied or Completed by Certified Laboratory)							
Sample Date	Collector	Facility ID On Schedule	Sample Pt ID On Schedule	Confirmation?	Lab Receipt Date	Lab Analysis Date	Laboratory Sample ID #	Analyte	Analytical Method	MCL (mg/L)	Lab MRL (mg/L)	Result (mg/L)
2/16/17	tephanie Schwenk			☐	2/17/17	2/17/17	170217005-01	Nitrate Nitrogen	EPA 300.0	10	0.1	BDL
2/16/17	tephanie Schwenk			☐	2/17/17	2/17/17	170217005-01	Nitrite Nitrogen	EPA 300.0	1	0.1	BDL

NT: Not Tested
Lab MRL: Laboratory Minimum Reporting Level
BDL: Below Laboratory MRL. A less than (<) may also used.

mg/L: Milligrams per Liter
MCL: Maximum Contaminant Level

3/6/17
170217005-01
1/ 1

Drinking Water Chain of Custody

Colorado Analytical LABORATORIES, INC.

Brighton Lab
240 South Main Street
Brighton, CO 80601

Lakewood Lab
12860 W. Cedar Dr, Suite 100A
Lakewood CO 80228

Phone: 303-659-2313
Fax: 303-659-2315

www.coloradolab.com

Report To Information	Bill To Information (If different from report to)	State Form / Project Information
Company Name: JDS-Hydro	Company Name: SP Water	PWSID: CO-0121724
Contact Name: Mark Valle	Contact Name: Jim Morley	System Name: LFH-1
Address: 545 E. Pikes Peak Ave Suite 200	Address: 20 Boulder Crescent St	Address: NE 1/4 NW 1/4 S27 T12S R65W 6th PM
City CS State CO Zip 80903	City ColoSpgs State CO Zip 80903	City ColoSpgs State CO Zip 80908
Phone: 719-227-0072 Fax:	Phone: Fax:	County: El Paso
Email: mvalle@jdshydro.com	Email: jmorley2870@aol.com	Compliance Samples: Yes [X] No [ ]
Sampler Name: Stephanie Schwenke	PO No.:	Send Forms to State: Yes [ ] No [X]

Please report on state forms

CAL Task No. 170217005

ARF

Date	Time	Client Sample ID / EP Code	No. of Containers	Residual Chlorine (mg/L) P/A Samples Only	Total Coliform P/A	504.1 EDB/DBCP	505 Pests/PCBs	515.4 Herbicides	524.2 VOCs	525.2 SOCs-Pest	531.1 Carbamates	547 Glyphosate	548.1 Endothall	549.2 Diquat	524.2 TTHMs	552.2 HAA5s	Lead/Copper	Nitrate	Nitrite	Fluoride	Inorganics	Alk./Lang. Index	TOC/DOC (Circle)	SUVA, UV 254 (Circle)	Metals	Gross Alpha/Beta	Radium 226	Radium 228	Radon	Uranium
	7:31	#1	3			X																			X					
	7:40	#2	3				X																							
	9:30	#3	1								X																			
	3:54	#4	1																						X					
	2253	#5	1															X	X	X		X								
	1:06	#6	2																									X		
	9:22	#7	2																				X							
	8:46	#8	2							X																				
	9:54	#9	2		X																									
	8:52	#10	1										X																	

PHASE I, II, V Drinking Water Analyses (check analysis)

Subcontract Analyses

Instructions:

C/S Info: fedex

Seals Present Yes [ ] No [X] Headspace Yes [ ] No [ ]

Delivered Via:

C/S Charge [ ] Temp. 2 °C /Ice Y Sample Pres. Yes [X] No [ ]

Relinquished By:	Date/Time:	Received By:	Date/Time:	Relinquished By:	Date/Time:	Received By:	Date/Time:
[signature]	2/16/17 12:15pm	[signature]	2/17/17 0800				

Drinking Water Chain of Custody

Colorado Analytical LABORATORIES, INC.

Brighton Lab
240 South Main Street
Brighton, CO 80601

Lakewood Lab
12860 W. Cedar Dr, Suite 100A
Lakewood CO 80228

Phone: 303-659-2313
Fax: 303-659-2315

www.coloradolab.com

Report To Information	Bill To Information (If different from report to)	State Form / Project Information
Company Name: JDS HYDRO	Company Name: SR WATER	PWSID: CO-0121724
Contact Name: MARK VOLLE	Contact Name: JIM MORLEY	System Name: LFH-1
Address: 545 E. PIKES PEAK AVE SUITE 300	Address: 20 BOULDER CRESCENT ST	Address: NE¼ NW¼ S27 T12S R65W 6TH PM
City COLO SPGS State CO Zip 80903	City COLO SPGS State CO Zip 80903	City COLO SPGS State CO Zip 80908
Phone: 719-227-0072 Fax:	Phone: Fax:	County: EL PASO
Email: mvolle@jdshydro.com	Email: jmorley80903870@aol.com	Compliance Samples: Yes X No
Sampler Name: STEPH SCHWENKE	PO No.:	Send Forms to State: Yes No X

Please report results on state forms

CAL Task No. 170217005

ARF

Date	Time	Client Sample ID / EP Code	No. of Containers	Residual Chlorine (mg/L) P/A Samples Only	Total Coliform P/A	504.1 EDB/DBCP	505 Pests/PCBs	515.4 Herbicides	~~531.1 VOCs~~ 524.2	525.2 SOCs-Pest	531.1 Carbamates	547 Glyphosate	548.1 Endothall	549.2 Diquat	524.2 TTHMs	552.2 HAA5s	Lead/Copper	Nitrate	Nitrite	~~Fluoride~~ Drinking Water TDS	Inorganics	Alk./Lang. Index	TOC, DOC (Circle)	SUVA, UV 254 (Circle)	1,4 Dioxane	Gross Alpha/Beta	Radium 226	Radium 228	~~Radon~~ Cyanide	Uranium
2/16	8:31	#11	3																							X	X			
	9:50	#12	3																					X						
	9:01	#13	2																											
	9:43	#14	1																									X		
2/16	8:40	#15	1																							X				
	8:44	#16	1					X																						
	9:00	#17	1																	X										
	5:42	#18	1											X																
	9:19	#19	3						X																					

PHASE I, II, V Drinking Water Analyses (check analysis)

Subcontract Analyses

Instructions: 34 + 504 Blank

VOA

C/S Info: fedex

Delivered Via: C/S Charge ☐

Seals Present Yes ☐ No X Headspace Yes ☐ No ☐

Temp. 2 °C /Ice Y Sample Pres. Yes ☐ No X

Relinquished By:	Date/Time:	Received By:	Date/Time:	Relinquished By:	Date/Time:	Received By:	Date/Time:
	2/16/17 12:15pm		2/17/11 0800				

Page 3 of 3

Colorado Department of Public Health and Environment

Organic Chemicals Certified Laboratory Report Form
WQCD - Drinking Water CAS
Submit Online at http://www.wqcdcompliance.com/login

Revised 4/13/2015

VOC/SOC

Section I (Supplied or Completed by Public Water System)		Section II (Supplied or Completed by Certified Laboratory)	
Public Water System Information		**Certified Laboratory Information**	
PWSID#: CO-0121724		Laboratory ID: CO 00063	
System Name: LFH-1		Laboratory Name: Colorado Analytical Laboratory	
Contact Person: Mark Volle	Phone #: 719-227-0072	Contact Person: Customer Service	Phone: 303-659-2313
Comments:	Do Samples Need to be Composited BY THE LAB? ☐	Comments:	

PWSID#: CO-0121724	Section V (Supplied or Completed by Public Water System)					
Sample Date: 2/16/17	Collector: Stephanie Schwenk	Facility ID (On Schedule):		Sample Pt ID (On Schedule):		

Section VI Synthetic Organic Chemicals (Supplied or Completed by Certified Laboratory)

Lab Receipt Date	Lab Analysis Date	Lab Sample ID	Analyte Name	CAS No.	Analytical Method	MCL (ug/L)	Lab MRL (ug/L)	Result (ug/L)
2/17/17	2/24/17	170217005-01E	Dibromochloropropane	96-12-8	EPA 504.1	0.2	0.02	BDL
2/17/17	3/1/17	170217005-01G	2,4,-D	94-75-7	EPA 515.4	70	0.1	BDL
2/17/17	3/1/17	170217005-01G	2,4,5-TP	93-72-1	EPA 515.4	50	0.2	BDL
2/17/17	2/23/17	170217005-01H	Alachlor	15972-60-8	EPA 525.2	2	0.2	BDL
2/17/17	3/2/17	170217005-01I	Aldicarb	116-06-3	EPA 531.1	N/A	0.6	BDL
2/17/17	3/2/17	170217005-01I	Aldicarb sulfone	1646-88-4	EPA 531.1	N/A	1	BDL
2/17/17	3/2/17	170217005-01I	Aldicarb sulfoxide	1646-87-3	EPA 531.1	N/A	0.7	BDL
2/17/17	2/23/17	170217005-01H	Atrazine	1912-24-9	EPA 525.2	3	0.1	BDL
2/17/17	2/23/17	170217005-01H	Benzo(a)pyrene	50-32-8	EPA 525.2	0.2	0.02	BDL
2/17/17	3/2/17	170217005-01I	Carbofuran	1563-66-2	EPA 531.1	40	0.9	BDL
2/17/17	2/24/17	170217005-01F	Chlordane	57-74-9	EPA 505	2	0.2	BDL
2/17/17	3/1/17	170217005-01G	Dalapon	75-99-0	EPA 515.4	200	1	BDL
2/17/17	2/23/17	170217005-01H	Di(2-ethylhexyl)adipate	103-23-1	EPA 525.2	400	0.6	BDL
2/17/17	2/23/17	170217005-01H	Di(2-ethylhexyl)phthalate	117-81-7	EPA 525.2	6	0.6	BDL
2/17/17	3/1/17	170217005-01G	Dinoseb	85-85-7	EPA 515.4	7	0.2	BDL
2/17/17	2/23/17	170217005-01K	Diquat	85-00-7	EPA 549.2	20	0.4	BDL
2/17/17	2/23/17	170217005-01J	Endothall	145-73-3	EPA 548.1	100	9	BDL
2/17/17	2/24/17	170217005-01F	Endrin	72-20-8	EPA 505	2	0.01	BDL
2/17/17	2/24/17	170217005-01E	Ethylene dibromide	106-93-4	EPA 504.1	0.05	0.01	BDL
2/17/17	2/23/17	170217005-01H	Heptachlor	76-44-8	EPA 525.2	0.4	0.04	BDL
2/17/17	2/24/17	170217005-01F	Heptachlor epoxide	1024-57-3	EPA 505	0.2	0.02	BDL

NT: Not Tested ug/L: Micrograms per Liter MCL: Maximum Contaminant Level BDL Below Laboratory MRL A less than sign (<) may also be used.

170217005-01 1/2 3/6/17

PWSID#: CO-0121724		Section V (Supplied or Completed by Public Water System)							
Sample Date: 2/16/17		Collector:	Stephanie Schwenk	Facility ID (On Schedule):		Sample Pt ID (On Schedule):			
Section VI Synthetic Organic Chemicals (Supplied or Completed by Certified Laboratory)									
Lab Receipt Date	Lab Analysis Date	Lab Sample ID	Analyte Name	CAS No.	Analytical Method	MCL (ug/L)	Lab MRL (ug/L)	Result (ug/L)	
2/17/17	2/24/17	170217005-01F	Hexachlorobenzene	118-74-1	EPA 505	1	0.1	BDL	
2/17/17	2/24/17	170217005-01F	Hexachlorocyclopentadiene	77-47-4	EPA 505	50	0.1	BDL	
2/17/17	2/24/17	170217005-01F	Lindane	58-89-9	EPA 505	0.2	0.02	BDL	
2/17/17	2/24/17	170217005-01F	Methoxychlor	72-43-5	EPA 505	40	0.1	BDL	
2/17/17	3/2/17	170217005-01I	Oxamyl	23135-22-0	EPA 531.1	200	1	BDL	
2/17/17	3/1/17	170217005-01G	Pentachlorophenol	87-86-5	EPA 515.4	1	0.04	BDL	
2/17/17	3/1/17	170217005-01G	Picloram	1918-02-1	EPA 515.4	500	0.1	BDL	
2/17/17	2/24/17	170217005-01F	Polychlorinated biphenyl's	1336-36-3	EPA 505	0.5	0.1	BDL	
2/17/17	2/23/17	170217005-01H	Simazine	122-34-9	EPA 525.2	4	0.07	BDL	
2/17/17	2/24/17	170217005-01F	Toxaphene	8001-35-2	EPA 505	3	1	BDL	

NT: Not Tested ug/L: Micrograms per Liter MCL: Maximum Contaminant Level BDL Below Laboratory MRL A less than sign (<) may also be used.

Drinking Water Chain of Custody

Colorado Analytical LABORATORIES, INC.

Brighton Lab
240 South Main Street
Brighton, CO 80601

Lakewood Lab
12860 W. Cedar Dr, Suite 100A
Lakewood CO 80228

Phone: 303-659-2313
Fax: 303-659-2315

www.coloradolab.com

Report To Information	Bill To Information (If different from report to)	State Form / Project Information
Company Name: JDS-Hydro	Company Name: SP Water	PWSID: Co- 0121724
Contact Name: Mark Volle	Contact Name: Jim Morley	System Name: LFH-1
Address: 545 E. Pikes Peak Ave Suite 200	Address: 20 Boulder Crescent St	Address: NE 1/4 NW 1/4 S27 T12S R65W 6th PM
City CS State CO Zip 80903	City Colo Spgs State CO Zip 80903	City Colo Spgs State CO Zip 80908
Phone: 719-227-0072 Fax:	Phone: Fax:	County: El Paso
Email: mvolle@jdshydro.com	Email: jmorley2870@aol.com	Compliance Samples: Yes [X] No [ ] Please report on state forms
Sampler Name: Stephanie Schwenke	PO No.:	Send Forms to State: Yes [ ] No [X]

CAL Task No. 170217005

ARF

Date	Time	Client Sample ID / EP Code	No. of Containers	Residual Chlorine (mg/L) P/A Samples Only	Total Coliform P/A	504.1 EDB/DBCP	505 Pests/PCBs	515.4 Herbicides	524.2 VOCs	525.2 SOCs-Pest	531.1 Carbamates	547 Glyphosate	548.1 Endothall	549.2 Diquat	524.2 TTHMs	552.2 HAA5s	Lead/Copper	Nitrate	Nitrite	Fluoride	Inorganics	Alk./Lang. Index	TOC/DOC (Circle)	SUVA, UV 254 (Circle)	Metals	Gross Alpha/Beta	Radium 226	Radium 228	Radon	Uranium
	7:31	#1	3			X																			X					
	7:46	#2	3				X																							
	9:30	#3	1								X																			
	9:54	#4	1																						X					
	12:52	#5	1															X	X	X		X								X
	12:46	#6	2																									X		
	9:22	#7	2																				X							
	8:46	#8	2							X																				
	9:54	#9	2		X																									
	8:52	#10	1										X																	

Instructions:

C/S Info: Fedex

Seals Present Yes [ ] No [X] Headspace Yes [ ] No [ ]

Delivered Via: C/S Charge [ ] Temp. 2 °C /Ice Y Sample Pres. Yes [X] No [ ]

Relinquished By:	Date/Time:	Received By:	Date/Time:	Relinquished By:	Date/Time:	Received By:	Date/Time:
Stephanie	2/16/17 12:15pm	[signature]	2/17/17 0800				

Drinking Water Chain of Custody

Colorado Analytical LABORATORIES, INC.

Brighton Lab
240 South Main Street
Brighton, CO 80601

Lakewood Lab
12860 W. Cedar Dr, Suite 100A
Lakewood CO 80228

Phone: 303-659-2313
Fax: 303-659-2315

www.coloradolab.com

Report To Information	Bill To Information (If different from report to)	State Form / Project Information
Company Name: JDS HYDRO	Company Name: SR WATER	PWSID: CO-0121724
Contact Name: MARK VOLLE	Contact Name: JIM MORLEY	System Name: LFH-1
Address: 545 E. PIKES PEAK AVE SUITE 300	Address: 20 BOULDER CRESCENT ST	Address: NE¼ NW¼ S27 T12S R65W 6TH PM
City COLO SPGS State CO Zip 80903	City COLO SPGS State CO Zip 80903	City COLO SPGS State CO Zip 80908
Phone: 719-227-0072 Fax:	Phone: Fax:	County: EL PASO
Email: mvolle@jdshydro.com	Email: jmorley3870@aol.com	Compliance Samples: Yes [X] No [ ]
Sampler Name: STEPH SCHWENKE	PO No.:	Send Forms to State: Yes [ ] No [X]

Please report results on state forms

CAL Task No. 170217005

ARF

PHASE I, II, V Drinking Water Analyses (check analysis)

Date	Time	Client Sample ID / EP Code	No. of Containers	Residual Chlorine (mg/L) P/A Samples Only	Total Coliform P/A	504.1 EDB/DBCP	505 Pests/PCBs	515.4 Herbicides	~~Diquat~~ 549.2	525.2 SOCs-Pest	531.1 Carbamates	547 Glyphosate	548.1 Endothall	549.2 Diquat	524.2 TTHMs	552.2 HAA5s	Lead/Copper	Nitrate	Nitrite	Drinking Water ~~Fluoride~~ Metals	Inorganics	Alk./Lang. Index	TOC, DOC (Circle)	SUVA, UV 254 (Circle)	1,4 Dioxane	Subcontract Analyses: Gross Alpha/Beta	Radium 226	Radium 228	~~Radon~~ Cyanide	Uranium
2/16	8:37	#11	3																								X	X		
	9:50	#12	3																						X					
	9:01	#13	2																											
	9:43	#14	1																											
2/16	8:40	#15	1																										X	
	8:44	#16	1					X																		X				
	9:00	#17	1																	X										
	9:42	#18	1											X																
	9:19	#19	3						X																					

Instructions: 34 + 504 Blank

VOA

C/S Info:

Delivered Via: fedex

C/S Charge ☐

Seals Present Yes ☐ No ☐ Headspace Yes ☐ No ☐

Temp. 2 °C /Ice Y Sample Pres. Yes ☐ No ☐

Relinquished By:	Date/Time:	Received By:	Date/Time:	Relinquished By:	Date/Time:	Received By:	Date/Time:
	9/16/17 12:15pm		2/17/11 0800				

Page 1 of 1

Colorado Analytical LABORATORIES, INC.

Analytical Results

TASK NO: 170217005

Report To: Mark Voile
Company: JDS Hydro Consultants
545 E. Pikes Peak Ave
Suite 300
Colorado Springs CO 80903

Bill To: Jim Morley
Company: SR Water
20 Boulder Crescent St.
Colorado Springs CO 80903

Task No.: 170217005
Client PO:
Client Project: LFH-1 CO-0121724

Date Received: 2/17/17
Date Reported: 3/6/17
Matrix: Water - Drinking

Customer Sample ID LFH-1
Sample Date/Time: 2/16/17
Lab Number: 170217005-01

Test	Result	Method	ML	Date Analyzed	Analyzed By
Chloride	**5.8 mg/L**	EPA 300.0	0.1 mg/L	2/17/17	LJG
Cyanide-Free	**< 0.005 mg/L**	EPA 335.4	0.005 mg/L	2/24/17	VDB
E-Coli	**< 1 mpn/100ml**	Colilert	1 mpn/100ml	2/18/17	VDB
Sulfate	**142.1 mg/L**	EPA 300.0	0.1 mg/L	2/17/17	LJG
Total Coliform	**93 mpn/100ml**	Colilert	1 mpn/100ml	2/18/17	VDB
Total Organic Carbon	**0.8 mg/L**	SM 5310-C	0.5 mg/L	2/23/17	ISG
Turbidity	**2.49 NTU**	SM 2130-B	0.01 NTU	2/17/17	MBN
Total					
Aluminum	**0.053 mg/L**	EPA 200.8	0.001 mg/L	2/22/17	TCD
Calcium	**2.5 mg/L**	EPA 200.7	0.1 mg/L	2/22/17	MBN
Copper	**0.0026 mg/L**	EPA 200.8	0.0008 mg/L	2/22/17	TCD
Iron	**0.602 mg/L**	EPA 200.7	0.005 mg/L	2/24/17	MBN
Lead	**0.0005 mg/L**	EPA 200.8	0.0001 mg/L	2/22/17	TCD
Magnesium	**0.39 mg/L**	EPA 200.7	0.02 mg/L	2/22/17	MBN
Manganese	**0.0259 mg/L**	EPA 200.8	0.0008 mg/L	2/22/17	TCD
Potassium	**1.5 mg/L**	EPA 200.7	0.1 mg/L	2/22/17	MBN
Silver	**< 0.0001 mg/L**	EPA 200.8	0.0001 mg/L	2/22/17	TCD
Strontium	**0.037 mg/L**	EPA 200.8	0.005 mg/L	2/22/17	TCD
Total Hardness	**7.7 mg/L as CaCO3**	SM 2340-B	0.1 mg/L as CaCO3	2/24/17	MBN
Uranium	**< 0.0002 mg/L**	EPA 200.8	0.0002 mg/L	2/22/17	TCD
Zinc	**0.004 mg/L**	EPA 200.8	0.001 mg/L	2/22/17	TCD

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

Colorado Analytical LABORATORIES, INC.

Analytical Results

TASK NO: 170217005

Report To: Mark Volle
Company: JDS Hydro Consultants
545 E. Pikes Peak Ave
Suite 300
Colorado Springs CO 80903

Bill To: Jim Morley
Company: SR Water
20 Boulder Crescent St.
Colorado Springs CO 80903

Task No.: 170217005
Client PO:
Client Project: LFH-1 CO-0121724

Date Received: 2/17/17
Date Reported: 3/6/17
Matrix: Water - Drinking

Customer Sample ID LFH-1
Sample Date/Time: 2/16/17
Lab Number: 170217005-01

Test	Result	Method	ML	Date Analyzed	Analyzed By
Total					
Zinc	0.005 mg/L	EPA 200.8	0.001 mg/L	2/22/17	TCD

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

Drinking Water Chain of Custody

Colorado Analytical LABORATORIES, INC.

Brighton Lab
240 South Main Street
Brighton, CO 80601

Lakewood Lab
12860 W. Cedar Dr, Suite 100A
Lakewood CO 80228

Phone: 303-659-2313
Fax: 303-659-2315

www.coloradolab.com

Report To Information	Bill To Information (If different from report to)	State Form / Project Information
Company Name: JDS-Hydro	Company Name: SP Water	PWSID: Co- 0121724
Contact Name: Mark Volle	Contact Name: Jim Morley	System Name: LFH-1
Address: 545 E. Pikes Peak Ave Suite 300	Address: 20 Boulder Crescent St	Address: NE 1/4 NW 1/4 S27 T12S R65W 6th PM
City CS State CO Zip 80903	City ColoSpgs State CO Zip 80903	City ColoSpgs State CO Zip 80908
Phone: 719-227-0072 Fax:	Phone: Fax:	County: El Paso
Email: mvolle@jdshydro.com	Email: jmorley3870@aol.com	Compliance Samples: Yes [X] No [ ] Please report on state forms
Sampler Name: Stephanie Schwenke	PO No.:	Send Forms to State: Yes [ ] No [X]

CAL Task No. 170217005

ARF

Date	Time	Client Sample ID / EP Code	No. of Containers	Residual Chlorine (mg/L) P/A Samples Only	PHASE I, II, V Drinking Water Analyses (check analysis)																					Subcontract Analyses				
					Total Coliform P/A	504.1 EDB/DBCP	505 Pests/PCBs	515.4 Herbicides	524.2 VOCs	525.2 SOCs-Pest	531.1 Carbamates	547 Glyphosate	548.1 Endothall	549.2 Diquat	524.2 TTHMs	552.2 HAA5s	Lead/Copper	Nitrate	Nitrite	Fluoride	Inorganics	Alk./Lang. Index	TOC/DOC (Circle)	SUVA, UV 254 (Circle)	Metals	Gross Alpha/Beta	Radium 226	Radium 228	Radon	Uranium
	7:31	#1	3			X																								
	7:42	#2	3				X																							
	9:30	#3	2								X																			
	3:54	#4	1																					X						
	12:53	#5	1															X	X	X		X								
	10:16	#6	2																									X		
	9:22	#7	2																				X							
	8:46	#8	2							X																				
	9:54	#9	2		X																									
	8:52	#10	1										X																	

Instructions:

C/S Info: fedex

Seals Present Yes [ ] No [X] Headspace Yes [ ] No [ ]

Delivered Via: C/S Charge [ ] Temp. 2 °C /Ice [Y] Sample Pres. Yes [Y] No [ ]

Relinquished By:	Date/Time:	Received By:	Date/Time:	Relinquished By:	Date/Time:	Received By:	Date/Time:
Stephanie	2/16/17 12:15pm	[illegible]	2/17/17 0800				

Drinking Water Chain of Custody

Colorado Analytical LABORATORIES, INC.

Brighton Lab
240 South Main Street
Brighton, CO 80601

Lakewood Lab
12860 W. Cedar Dr, Suite 100A
Lakewood CO 80228

Phone: 303-659-2313
Fax: 303-659-2315

www.coloradolab.com

Report To Information	Bill To Information (if different from report to)	State Form / Project Information
Company Name: JDS HYDRO	Company Name: SR WATER	PWSID: CO-0121724
Contact Name: MARK VOLLE	Contact Name: JIM MORLEY	System Name: LFH-1
Address: 545 E. PIKES PEAK AVE SUITE 300	Address: 20 BOULDER CRESCENT ST	Address: NE¼ NW¼ S27 T12S R65W 6TH PM
City COLO SPGS State CO Zip 80903	City COLO SPGS State CO Zip 80903	City COLO SPGS State CO Zip 80908
Phone: 719-227-0072 Fax:	Phone: Fax:	County: EL PASO
Email: mvolle@jdshydro.com	Email: jmorley3870@aol.com	Compliance Samples: Yes [X] No [ ]
Sampler Name: STEPH SCHWENKE	PO No.:	Send Forms to State: Yes [ ] No [X] Please report results on state forms

CAL Task No. 170217005

ARF

Date	Time	Client Sample ID / EP Code	No. of Containers	Residual Chlorine (mg/L) P/A Samples Only	Total Coliform P/A	504.1 EDB/DBCP	505 Pests/PCBs	515.4 Herbicides	~~531.1 Carbamates~~ 6224	525.2 SOCs-Pest	531.1 Carbamates	547 Glyphosate	548.1 Endothall	549.2 Diquat	524.2 TTHMs	552.2 HAA5s	Lead/Copper	Nitrate	Nitrite	~~Fluoride~~ Drinking Water TDS	Inorganics	Alk./Lang. Index	TOC, DOC (Circle)	SUVA, UV 254 (Circle)	1,4 Dioxane	Gross Alpha/Beta	Radium 226	Radium 228	~~Radon~~ Cyanide	Uranium
2/16	8:37	#11	3																						X		X	X		
	9:50	#12	3																											
	9:26	#13	2																					X						
	9:43	#14	1																									X		
2/16	8:40	#15	1																						X					
	8:44	#16	1					X																						
	9:00	#17	1																	X										
	5:42	#18	1											X																
	9:19	#19	3						X																					

PHASE I, II, V Drinking Water Analyses (check analysis)

Subcontract Analyses

Instructions: (34+) 504 Blank

VOA

C/S Info: fedex

Delivered Via: C/S Charge ☐

Seals Present Yes ☐ No ☐ Headspace Yes ☐ No ☐

Temp. 2 °C /Ice Y Sample Pres. Yes ☐ No ☐

Relinquished By:	Date/Time:	Received By:	Date/Time:	Relinquished By:	Date/Time:	Received By:	Date/Time:
	2/16/17 12:15pm		2/17/11 0800				

Page 1 of 1

ANALYTICAL SUMMARY REPORT

March 02, 2017

Colorado Analytical Laboratories Inc
PO Drawer 507
Brighton, CO 80601

Work Order: C17020566 Quote ID: C4542 - 624, 625, 1,4-Dioxane

Project Name: 170217005 LFH-1 CO-0121724

Energy Laboratories, Inc. Casper WY received the following 1 sample for Colorado Analytical Laboratories Inc on 2/21/2017 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
C17020566-001	170217005-01 LFH-1	02/16/17 0:00	02/21/17	Drinking Water	Azeotropic Distillation Separatory Funnel Liquid-Liquid Ext. Semi-Volatile Organic Compounds 624-Purgeable Organics Volatile Compounds by Azeotropic Distillation

The results as reported relate only to the item(s) submitted for testing. The analyses presented in this report were performed at Energy Laboratories, Inc., 2393 Salt Creek Hwy., Casper, WY 82601, unless otherwise noted. Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

If you have any questions regarding these test results, please call.

Report Approved By:

Randy Horton, Project Manager

Digitally signed by
Randy Horton
Date: 2017.03.02 10:49:28 -07:00

CLIENT: Colorado Analytical Laboratories Inc
Project: 170217005 LFH-1 CO-0121724
Work Order: C17020566

Report Date: 03/02/17

CASE NARRATIVE

Tests associated with analyst identified as ELI-B were subcontracted to Energy Laboratories, 1120 S. 27th St., Billings, MT, EPA Number MT00005.

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Colorado Analytical Laboratories Inc
Project: 170217005 LFH-1 CO-0121724
Lab ID: C17020566-001
Client Sample ID: 170217005-01 LFH-1

Report Date: 03/02/17
Collection Date: 02/16/17
DateReceived: 02/21/17
Matrix: Drinking Water

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOCS BY AZEOTROPIC DISTILLATION							
1,4-Dioxane	ND	ug/L		1.0		SW8260M	02/27/17 11:16 / eli-b
- Analysis by direct aqueous injection of the sample distillate. A deuterated version of 1,4-Dioxane was added to the sample prior to distillation and used to quantitate the 1,4-Dioxane and account for any variations in the analysis or distillation.							
VOLATILE ORGANIC COMPOUNDS							
Acetone	ND	ug/L		20		E624	02/24/17 19:19 / eli-b
Acetonitrile	ND	ug/L		20		E624	02/24/17 19:19 / eli-b
Acrolein	ND	ug/L		20		E624	02/24/17 19:19 / eli-b
Acrylonitrile	ND	ug/L		20		E624	02/24/17 19:19 / eli-b
Benzene	ND	ug/L		1.0		E624	02/24/17 19:19 / eli-b
Bromobenzene	ND	ug/L		1.0		E624	02/24/17 19:19 / eli-b
Bromochloromethane	ND	ug/L		1.0		E624	02/24/17 19:19 / eli-b
Bromodichloromethane	ND	ug/L		1.0		E624	02/24/17 19:19 / eli-b
Bromoform	ND	ug/L		1.0		E624	02/24/17 19:19 / eli-b
Bromomethane	ND	ug/L		1.0		E624	02/24/17 19:19 / eli-b
Carbon disulfide	ND	ug/L		1.0		E624	02/24/17 19:19 / eli-b
Carbon tetrachloride	ND	ug/L		1.0		E624	02/24/17 19:19 / eli-b
Chlorobenzene	ND	ug/L		1.0		E624	02/24/17 19:19 / eli-b
Chlorodibromomethane	ND	ug/L		1.0		E624	02/24/17 19:19 / eli-b
Chloroethane	ND	ug/L		1.0		E624	02/24/17 19:19 / eli-b
2-Chloroethyl vinyl ether	ND	ug/L		1.0		E624	02/24/17 19:19 / eli-b
Chloroform	ND	ug/L		1.0		E624	02/24/17 19:19 / eli-b
Chloromethane	ND	ug/L		1.0		E624	02/24/17 19:19 / eli-b
2-Chlorotoluene	ND	ug/L		1.0		E624	02/24/17 19:19 / eli-b
4-Chlorotoluene	ND	ug/L		1.0		E624	02/24/17 19:19 / eli-b
1,2-Dibromoethane	ND	ug/L		1.0		E624	02/24/17 19:19 / eli-b
Dibromomethane	ND	ug/L		1.0		E624	02/24/17 19:19 / eli-b
1,2-Dichlorobenzene	ND	ug/L		1.0		E624	02/24/17 19:19 / eli-b
1,3-Dichlorobenzene	ND	ug/L		1.0		E624	02/24/17 19:19 / eli-b
1,4-Dichlorobenzene	ND	ug/L		1.0		E624	02/24/17 19:19 / eli-b
Dichlorodifluoromethane	ND	ug/L		1.0		E624	02/24/17 19:19 / eli-b
1,1-Dichloroethane	ND	ug/L		1.0		E624	02/24/17 19:19 / eli-b
1,2-Dichloroethane	ND	ug/L		1.0		E624	02/24/17 19:19 / eli-b
1,1-Dichloroethene	ND	ug/L		1.0		E624	02/24/17 19:19 / eli-b
cis-1,2-Dichloroethene	ND	ug/L		1.0		E624	02/24/17 19:19 / eli-b
trans-1,2-Dichloroethene	ND	ug/L		1.0		E624	02/24/17 19:19 / eli-b
1,2-Dichloropropane	ND	ug/L		1.0		E624	02/24/17 19:19 / eli-b
1,3-Dichloropropane	ND	ug/L		1.0		E624	02/24/17 19:19 / eli-b
2,2-Dichloropropane	ND	ug/L		1.0		E624	02/24/17 19:19 / eli-b
1,1-Dichloropropene	ND	ug/L		1.0		E624	02/24/17 19:19 / eli-b
cis-1,3-Dichloropropene	ND	ug/L		1.0		E624	02/24/17 19:19 / eli-b
trans-1,3-Dichloropropene	ND	ug/L		1.0		E624	02/24/17 19:19 / eli-b
Ethylbenzene	ND	ug/L		1.0		E624	02/24/17 19:19 / eli-b

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Colorado Analytical Laboratories Inc
Project: 170217005 LFH-1 CO-0121724
Lab ID: C17020566-001
Client Sample ID: 170217005-01 LFH-1

Report Date: 03/02/17
Collection Date: 02/16/17
DateReceived: 02/21/17
Matrix: Drinking Water

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		2.0		E624	02/24/17 19:19 / eli-b
Methyl ethyl ketone	ND	ug/L		20		E624	02/24/17 19:19 / eli-b
Methyl isobutyl ketone	ND	ug/L		10		E624	02/24/17 19:19 / eli-b
Methylene chloride	ND	ug/L		1.0		E624	02/24/17 19:19 / eli-b
Naphthalene	ND	ug/L		0.50		E624	02/24/17 19:19 / eli-b
Styrene	ND	ug/L		1.0		E624	02/24/17 19:19 / eli-b
Tetrachloroethene	ND	ug/L		1.0		E624	02/24/17 19:19 / eli-b
1,1,1,2-Tetrachloroethane	ND	ug/L		1.0		E624	02/24/17 19:19 / eli-b
1,1,2,2-Tetrachloroethane	ND	ug/L		1.0		E624	02/24/17 19:19 / eli-b
Toluene	ND	ug/L		1.0		E624	02/24/17 19:19 / eli-b
Trichloroethene	ND	ug/L		1.0		E624	02/24/17 19:19 / eli-b
1,1,1-Trichloroethane	ND	ug/L		1.0		E624	02/24/17 19:19 / eli-b
1,1,2-Trichloroethane	ND	ug/L		1.0		E624	02/24/17 19:19 / eli-b
Trichlorofluoromethane	ND	ug/L		1.0		E624	02/24/17 19:19 / eli-b
1,2,3-Trichloropropane	ND	ug/L		1.0		E624	02/24/17 19:19 / eli-b
Vinyl Acetate	ND	ug/L		1.0		E624	02/24/17 19:19 / eli-b
Vinyl chloride	ND	ug/L		1.0		E624	02/24/17 19:19 / eli-b
m+p-Xylenes	ND	ug/L		1.0		E624	02/24/17 19:19 / eli-b
o-Xylene	ND	ug/L		1.0		E624	02/24/17 19:19 / eli-b
Xylenes, Total	ND	ug/L		1.0		E624	02/24/17 19:19 / eli-b
Surr: 1,2-Dichloroethane-d4	76.0	%REC		71-139		E624	02/24/17 19:19 / eli-b
Surr: p-Bromofluorobenzene	92.0	%REC		80-127		E624	02/24/17 19:19 / eli-b
Surr: Toluene-d8	94.0	%REC		80-123		E624	02/24/17 19:19 / eli-b
SEMI-VOLATILE ORGANIC COMPOUNDS							
Acenaphthene	ND	ug/L		10		E625	02/27/17 19:27 / eli-b
Acenaphthylene	ND	ug/L		10		E625	02/27/17 19:27 / eli-b
Anthracene	ND	ug/L		10		E625	02/27/17 19:27 / eli-b
Azobenzene	ND	ug/L		10		E625	02/27/17 19:27 / eli-b
Benzidine	ND	ug/L		10		E625	02/28/17 13:13 / eli-b
Benzo(a)anthracene	ND	ug/L		10		E625	02/27/17 19:27 / eli-b
Benzo(a)pyrene	ND	ug/L		10		E625	02/27/17 19:27 / eli-b
Benzo(b)fluoranthene	ND	ug/L		10		E625	02/27/17 19:27 / eli-b
Benzo(g,h,i)perylene	ND	ug/L		10		E625	02/27/17 19:27 / eli-b
Benzo(k)fluoranthene	ND	ug/L		10		E625	02/27/17 19:27 / eli-b
4-Bromophenyl phenyl ether	ND	ug/L		10		E625	02/27/17 19:27 / eli-b
Butylbenzylphthalate	ND	ug/L		10		E625	02/27/17 19:27 / eli-b
4-Chloro-3-methylphenol	ND	ug/L		10		E625	02/27/17 19:27 / eli-b
bis(-2-chloroethoxy)Methane	ND	ug/L		10		E625	02/27/17 19:27 / eli-b
bis(-2-chloroethyl)Ether	ND	ug/L		10		E625	02/27/17 19:27 / eli-b
bis(2-chloroisopropyl)Ether	ND	ug/L		10		E625	02/27/17 19:27 / eli-b
2-Chloronaphthalene	ND	ug/L		10		E625	02/27/17 19:27 / eli-b
2-Chlorophenol	ND	ug/L		10		E625	02/27/17 19:27 / eli-b

Report Definitions: RL - Analyte reporting limit. QCL - Quality control limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Colorado Analytical Laboratories Inc
Project: 170217005 LFH-1 CO-0121724
Lab ID: C17020566-001
Client Sample ID: 170217005-01 LFH-1

Report Date: 03/02/17
Collection Date: 02/16/17
DateReceived: 02/21/17
Matrix: Drinking Water

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
SEMI-VOLATILE ORGANIC COMPOUNDS							
4-Chlorophenyl phenyl ether	ND	ug/L		10		E625	02/27/17 19:27 / eli-b
Chrysene	ND	ug/L		10		E625	02/27/17 19:27 / eli-b
Diethyl phthalate	ND	ug/L		10		E625	02/27/17 19:27 / eli-b
Di-n-butyl phthalate	ND	ug/L		10		E625	02/27/17 19:27 / eli-b
1,2-Dichlorobenzene	ND	ug/L		10		E625	02/27/17 19:27 / eli-b
1,3-Dichlorobenzene	ND	ug/L		10		E625	02/27/17 19:27 / eli-b
1,4-Dichlorobenzene	ND	ug/L		10		E625	02/27/17 19:27 / eli-b
3,3'-Dichlorobenzidine	ND	ug/L		10		E625	02/27/17 19:27 / eli-b
2,4-Dichlorophenol	ND	ug/L		10		E625	02/27/17 19:27 / eli-b
Dimethyl phthalate	ND	ug/L		10		E625	02/27/17 19:27 / eli-b
Di-n-octyl phthalate	ND	ug/L		10		E625	02/27/17 19:27 / eli-b
Dibenzo(a,h)anthracene	ND	ug/L		10		E625	02/27/17 19:27 / eli-b
2,4-Dimethylphenol	ND	ug/L		10		E625	02/27/17 19:27 / eli-b
4,6-Dinitro-2-methylphenol	ND	ug/L		50		E625	02/27/17 19:27 / eli-b
2,4-Dinitrophenol	ND	ug/L		50		E625	02/27/17 19:27 / eli-b
2,4-Dinitrotoluene	ND	ug/L		10		E625	02/27/17 19:27 / eli-b
2,6-Dinitrotoluene	ND	ug/L		10		E625	02/27/17 19:27 / eli-b
bis(2-ethylhexyl)Phthalate	ND	ug/L		10		E625	02/27/17 19:27 / eli-b
Fluoranthene	ND	ug/L		10		E625	02/27/17 19:27 / eli-b
Fluorene	ND	ug/L		10		E625	02/27/17 19:27 / eli-b
Hexachlorobenzene	ND	ug/L		10		E625	02/27/17 19:27 / eli-b
Hexachlorobutadiene	ND	ug/L		10		E625	02/27/17 19:27 / eli-b
Hexachlorocyclopentadiene	ND	ug/L		10		E625	02/27/17 19:27 / eli-b
Hexachloroethane	ND	ug/L		10		E625	02/27/17 19:27 / eli-b
Indeno(1,2,3-cd)pyrene	ND	ug/L		10		E625	02/27/17 19:27 / eli-b
Isophorone	ND	ug/L		10		E625	02/27/17 19:27 / eli-b
n-Nitrosodimethylamine	ND	ug/L		10		E625	02/27/17 19:27 / eli-b
n-Nitroso-di-n-propylamine	ND	ug/L		10		E625	02/27/17 19:27 / eli-b
n-Nitrosodiphenylamine	ND	ug/L		10		E625	02/27/17 19:27 / eli-b
2-Nitrophenol	ND	ug/L		10		E625	02/27/17 19:27 / eli-b
4-Nitrophenol	ND	ug/L		50		E625	02/27/17 19:27 / eli-b
Naphthalene	ND	ug/L		10		E625	02/27/17 19:27 / eli-b
Nitrobenzene	ND	ug/L		10		E625	02/27/17 19:27 / eli-b
Pentachlorophenol	ND	ug/L		50		E625	02/27/17 19:27 / eli-b
Phenanthrene	ND	ug/L		10		E625	02/27/17 19:27 / eli-b
Phenol	ND	ug/L		10		E625	02/27/17 19:27 / eli-b
Pyrene	ND	ug/L		10		E625	02/27/17 19:27 / eli-b
1,2,4-Trichlorobenzene	ND	ug/L		10		E625	02/27/17 19:27 / eli-b
2,4,6-Trichlorophenol	ND	ug/L		10		E625	02/27/17 19:27 / eli-b
Surr: 2-Fluorobiphenyl	59.0	%REC		28-107		E625	02/27/17 19:27 / eli-b
Surr: 2-Fluorophenol	34.0	%REC		20-56		E625	02/27/17 19:27 / eli-b
Surr: Nitrobenzene-d5	63.0	%REC		32-94		E625	02/27/17 19:27 / eli-b
Surr: Phenol-d5	33.0	%REC		19-45		E625	02/27/17 19:27 / eli-b

Report Definitions: RL - Analyte reporting limit. QCL - Quality control limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Colorado Analytical Laboratories Inc
Project: 170217005 LFH-1 CO-0121724
Lab ID: C17020566-001
Client Sample ID: 170217005-01 LFH-1

Report Date: 03/02/17
Collection Date: 02/16/17
DateReceived: 02/21/17
Matrix: Drinking Water

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
SEMI-VOLATILE ORGANIC COMPOUNDS							
Surr: Terphenyl-d14	69.0	%REC		32-122		E625	02/27/17 19:27 / eli-b
Surr: 2,4,6-Tribromophenol	60.0	%REC		21-130		E625	02/27/17 19:27 / eli-b

- The sample was received past the extraction prep hold time. The prep hold time was exceeded by 4.31 days.

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Colorado Analytical Laboratories Inc
Project: 170217005 LFH-1 CO-0121724

Report Date: 03/02/17
Work Order: C17020566

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E624									Analytical Run: R275391
Lab ID: ccv022417	Continuing Calibration Verification Standard								02/24/17 09:51
Acetone	40.8	ug/L	20	82	70	130			
Acetonitrile	60.0	ug/L	20	120	70	130			
Acrolein	59.2	ug/L	20	118	70	130			
Acrylonitrile	46.4	ug/L	20	93	70	130			
Benzene	4.80	ug/L	0.50	96	70	130			
Bromobenzene	4.56	ug/L	0.50	91	70	130			
Bromochloromethane	4.64	ug/L	0.50	93	70	130			
Bromodichloromethane	4.08	ug/L	0.50	82	70	130			
Bromoform	4.08	ug/L	0.50	82	70	130			
Bromomethane	5.56	ug/L	0.50	111	70	130			
Carbon disulfide	4.80	ug/L	0.50	96	70	130			
Carbon tetrachloride	3.70	ug/L	0.50	74	70	130			
Chlorobenzene	4.80	ug/L	0.50	96	70	130			
Chlorodibromomethane	4.32	ug/L	0.50	86	70	130			
Chloroethane	4.88	ug/L	0.50	98	70	130			
2-Chloroethyl vinyl ether	3.07	ug/L	1.0	61	70	130			S
Chloroform	4.36	ug/L	0.50	87	70	130			
Chloromethane	4.60	ug/L	0.50	92	70	130			
2-Chlorotoluene	4.84	ug/L	0.50	97	70	130			
4-Chlorotoluene	4.80	ug/L	0.50	96	70	130			
1,2-Dibromoethane	4.40	ug/L	0.50	88	70	130			
Dibromomethane	4.60	ug/L	0.50	92	70	130			
1,2-Dichlorobenzene	4.72	ug/L	0.50	94	70	130			
1,3-Dichlorobenzene	4.84	ug/L	0.50	97	70	130			
1,4-Dichlorobenzene	4.76	ug/L	0.50	95	70	130			
Dichlorodifluoromethane	3.87	ug/L	0.50	77	70	130			
1,1-Dichloroethane	4.40	ug/L	0.50	88	70	130			
1,2-Dichloroethane	3.78	ug/L	0.50	76	70	130			
1,1-Dichloroethene	4.20	ug/L	0.50	84	70	130			
cis-1,2-Dichloroethene	4.72	ug/L	0.50	94	70	130			
trans-1,2-Dichloroethene	4.64	ug/L	0.50	93	70	130			
1,2-Dichloropropane	5.20	ug/L	0.50	104	70	130			
1,3-Dichloropropane	4.64	ug/L	0.50	93	70	130			
2,2-Dichloropropane	3.92	ug/L	0.50	78	70	130			
1,1-Dichloropropene	4.40	ug/L	0.50	88	70	130			
cis-1,3-Dichloropropene	4.56	ug/L	0.50	91	70	130			
trans-1,3-Dichloropropene	4.04	ug/L	0.50	81	70	130			
Ethylbenzene	4.84	ug/L	0.50	97	70	130			
Methyl tert-butyl ether (MTBE)	3.68	ug/L	0.50	74	70	130			
Methyl ethyl ketone	42.8	ug/L	20	86	70	130			
Methyl isobutyl ketone	45.6	ug/L	20	91	70	130			
Methylene chloride	5.44	ug/L	0.50	109	70	130			
Naphthalene	4.88	ug/L	0.50	98	70	130			

Qualifiers:

RL - Analyte reporting limit.
ND - Not detected at the reporting limit.
S - Spike recovery outside of advisory limits.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Colorado Analytical Laboratories Inc
Report Date: 03/02/17
Project: 170217005 LFH-1 CO-0121724
Work Order: C17020566

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E624									Analytical Run: R275391
Lab ID: ccv022417	Continuing Calibration Verification Standard								02/24/17 09:51
Styrene	4.76	ug/L	0.50	95	70	130			
Tetrachloroethene	4.60	ug/L	0.50	92	70	130			
1,1,1,2-Tetrachloroethane	4.24	ug/L	0.50	85	70	130			
1,1,2,2-Tetrachloroethane	4.96	ug/L	0.50	99	70	130			
Toluene	4.96	ug/L	0.50	99	70	130			
Trichloroethene	4.80	ug/L	0.50	96	70	130			
1,1,1-Trichloroethane	3.75	ug/L	0.50	75	70	130			
1,1,2-Trichloroethane	4.76	ug/L	0.50	95	70	130			
Trichlorofluoromethane	3.34	ug/L	0.50	67	70	130			S
1,2,3-Trichloropropane	4.20	ug/L	0.50	84	70	130			
Vinyl Acetate	4.56	ug/L	1.0	91	70	130			
Vinyl chloride	4.84	ug/L	0.50	97	70	130			
m+p-Xylenes	9.76	ug/L	0.50	98	70	130			
o-Xylene	4.76	ug/L	0.50	95	70	130			
Xylenes, Total	14.5	ug/L	0.50	97	70	130			
Surr: 1,2-Dichloroethane-d4			0.50	74	71	139			
Surr: p-Bromofluorobenzene			0.50	88	80	127			
Surr: Toluene-d8			0.50	92	80	123			
Method: E624									Batch: R275391
Lab ID: lcs022417	Laboratory Control Sample				Run: 5971A.I_170224A				02/24/17 10:31
Acetone	41.6	ug/L	20	83	55	144			
Acetonitrile	60.4	ug/L	20	121	54	142			
Acrolein	49.6	ug/L	20	99	16	233			
Acrylonitrile	46.0	ug/L	20	92	76	127			
Benzene	4.96	ug/L	0.50	99	73	122			
Bromobenzene	4.76	ug/L	0.50	95	74	129			
Bromochloromethane	4.64	ug/L	0.50	93	66	120			
Bromodichloromethane	4.44	ug/L	0.50	89	74	128			
Bromoform	4.36	ug/L	0.50	87	66	128			
Bromomethane	5.76	ug/L	0.50	115	51	123			
Carbon disulfide	4.92	ug/L	0.50	98	46	145			
Carbon tetrachloride	3.80	ug/L	0.50	76	75	125			
Chlorobenzene	4.92	ug/L	0.50	98	80	123			
Chlorodibromomethane	4.64	ug/L	0.50	93	74	125			
Chloroethane	5.04	ug/L	0.50	101	59	142			
2-Chloroethyl vinyl ether	2.74	ug/L	1.0	55	36	144			
Chloroform	4.40	ug/L	0.50	88	68	124			
Chloromethane	4.64	ug/L	0.50	93	53	146			
2-Chlorotoluene	5.04	ug/L	0.50	101	75	131			
4-Chlorotoluene	4.68	ug/L	0.50	94	74	129			
1,2-Dibromoethane	4.40	ug/L	0.50	88	76	124			
Dibromomethane	4.76	ug/L	0.50	95	77	125			

Qualifiers:

RL - Analyte reporting limit.
ND - Not detected at the reporting limit.
S - Spike recovery outside of advisory limits.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Colorado Analytical Laboratories Inc
Project: 170217005 LFH-1 CO-0121724

Report Date: 03/02/17
Work Order: C17020566

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E624									Batch: R275391
Lab ID: lcs022417	Laboratory Control Sample				Run: 5971A.I_170224A				02/24/17 10:31
1,2-Dichlorobenzene	4.80	ug/L	0.50	96	74	124			
1,3-Dichlorobenzene	5.00	ug/L	0.50	100	77	122			
1,4-Dichlorobenzene	4.80	ug/L	0.50	96	76	126			
Dichlorodifluoromethane	4.36	ug/L	0.50	87	56	146			
1,1-Dichloroethane	4.56	ug/L	0.50	91	74	133			
1,2-Dichloroethane	3.76	ug/L	0.50	75	75	129			
1,1-Dichloroethene	4.28	ug/L	0.50	86	74	132			
cis-1,2-Dichloroethene	4.76	ug/L	0.50	95	81	122			
trans-1,2-Dichloroethene	5.08	ug/L	0.50	102	79	143			
1,2-Dichloropropane	5.20	ug/L	0.50	104	75	126			
1,3-Dichloropropane	4.32	ug/L	0.50	86	71	136			
2,2-Dichloropropane	4.00	ug/L	0.50	80	68	142			
1,1-Dichloropropene	4.16	ug/L	0.50	83	70	131			
cis-1,3-Dichloropropene	4.12	ug/L	0.50	82	74	135			
trans-1,3-Dichloropropene	3.96	ug/L	0.50	79	76	149			
Ethylbenzene	4.92	ug/L	0.50	98	72	130			
Methyl tert-butyl ether (MTBE)	3.71	ug/L	0.50	74	72	120			
Methyl ethyl ketone	45.2	ug/L	20	90	45	130			
Methyl isobutyl ketone	49.2	ug/L	20	98	58	135			
Methylene chloride	5.64	ug/L	0.50	113	66	142			
Naphthalene	5.44	ug/L	0.50	109	69	124			
Styrene	4.84	ug/L	0.50	97	80	124			
Tetrachloroethene	4.68	ug/L	0.50	94	72	131			
1,1,1,2-Tetrachloroethane	4.16	ug/L	0.50	83	78	124			
1,1,2,2-Tetrachloroethane	4.72	ug/L	0.50	94	68	137			
Toluene	5.16	ug/L	0.50	103	72	135			
Trichloroethene	4.80	ug/L	0.50	96	85	126			
1,1,1-Trichloroethane	3.73	ug/L	0.50	75	63	120			
1,1,2-Trichloroethane	4.68	ug/L	0.50	94	78	124			
Trichlorofluoromethane	3.30	ug/L	0.50	66	72	120			S
1,2,3-Trichloropropane	4.04	ug/L	0.50	81	64	138			
Vinyl Acetate	4.08	ug/L	1.0	82	31	124			
Vinyl chloride	5.12	ug/L	0.50	102	58	140			
m+p-Xylenes	9.84	ug/L	0.50	98	67	139			
o-Xylene	4.84	ug/L	0.50	97	74	135			
Xylenes, Total	14.7	ug/L	0.50	98	70	137			
Surr: 1,2-Dichloroethane-d4			0.50	72	71	139			
Surr: p-Bromofluorobenzene			0.50	87	80	127			
Surr: Toluene-d8			0.50	92	80	123			
Lab ID: blk022417	Method Blank				Run: 5971A.I_170224A				02/24/17 11:30
Acetone	ND	ug/L	20						
Acetonitrile	ND	ug/L	20						

Qualifiers:

RL - Analyte reporting limit.
ND - Not detected at the reporting limit.
S - Spike recovery outside of advisory limits.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Colorado Analytical Laboratories Inc
Project: 170217005 LFH-1 CO-0121724

Report Date: 03/02/17
Work Order: C17020566

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E624									Batch: R275391
Lab ID: blk022417	Method Blank				Run: 5971A.I_170224A				02/24/17 11:30
Acrolein	ND	ug/L	20						
Acrylonitrile	ND	ug/L	3.0						
Benzene	ND	ug/L	0.50						
Bromobenzene	ND	ug/L	0.50						
Bromochloromethane	ND	ug/L	0.50						
Bromodichloromethane	ND	ug/L	0.50						
Bromoform	ND	ug/L	0.50						
Bromomethane	ND	ug/L	0.50						
Carbon disulfide	ND	ug/L	0.50						
Carbon tetrachloride	ND	ug/L	0.50						
Chlorobenzene	ND	ug/L	0.50						
Chlorodibromomethane	ND	ug/L	0.50						
Chloroethane	ND	ug/L	0.50						
2-Chloroethyl vinyl ether	ND	ug/L	1.0						
Chloroform	ND	ug/L	0.50						
Chloromethane	ND	ug/L	0.50						
2-Chlorotoluene	ND	ug/L	0.50						
4-Chlorotoluene	ND	ug/L	0.50						
1,2-Dibromoethane	ND	ug/L	0.50						
Dibromomethane	ND	ug/L	0.50						
1,2-Dichlorobenzene	ND	ug/L	0.50						
1,3-Dichlorobenzene	ND	ug/L	0.50						
1,4-Dichlorobenzene	ND	ug/L	0.50						
Dichlorodifluoromethane	ND	ug/L	0.50						
1,1-Dichloroethane	ND	ug/L	0.50						
1,2-Dichloroethane	ND	ug/L	0.50						
1,1-Dichloroethene	ND	ug/L	0.50						
cis-1,2-Dichloroethene	ND	ug/L	0.50						
trans-1,2-Dichloroethene	ND	ug/L	0.50						
1,2-Dichloropropane	ND	ug/L	0.50						
1,3-Dichloropropane	ND	ug/L	0.50						
2,2-Dichloropropane	ND	ug/L	0.50						
1,1-Dichloropropene	ND	ug/L	0.50						
cis-1,3-Dichloropropene	ND	ug/L	0.30						
trans-1,3-Dichloropropene	ND	ug/L	0.30						
Ethylbenzene	ND	ug/L	0.50						
Methyl tert-butyl ether (MTBE)	ND	ug/L	0.50						
Methyl ethyl ketone	ND	ug/L	20						
Methyl isobutyl ketone	ND	ug/L	20						
Methylene chloride	ND	ug/L	0.50						
Naphthalene	ND	ug/L	0.50						
Styrene	ND	ug/L	0.50						
Tetrachloroethene	ND	ug/L	0.50						

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Colorado Analytical Laboratories Inc
Report Date: 03/02/17
Project: 170217005 LFH-1 CO-0121724
Work Order: C17020566

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E624									Batch: R275391
Lab ID: blk022417	Method Blank				Run: 5971A.I_170224A				02/24/17 11:30
1,1,1,2-Tetrachloroethane	ND	ug/L	0.50						
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50						
Toluene	ND	ug/L	0.50						
Trichloroethene	ND	ug/L	0.50						
1,1,1-Trichloroethane	ND	ug/L	0.50						
1,1,2-Trichloroethane	ND	ug/L	0.50						
Trichlorofluoromethane	ND	ug/L	0.50						
1,2,3-Trichloropropane	ND	ug/L	0.50						
Vinyl Acetate	ND	ug/L	1.0						
Vinyl chloride	ND	ug/L	0.40						
m+p-Xylenes	ND	ug/L	0.50						
o-Xylene	ND	ug/L	0.50						
Xylenes, Total	ND	ug/L	0.50						
Surr: 1,2-Dichloroethane-d4			0.50	74	71	139			
Surr: p-Bromofluorobenzene			0.50	90	80	127			
Surr: Toluene-d8			0.50	94	80	123			
Lab ID: b17021110-001bms	Sample Matrix Spike				Run: 5971A.I_170224A				02/24/17 20:47
Acrolein	ND	ug/L	20	0	16	233			S 1
Acrylonitrile	48.8	ug/L	20	98	76	127			
2-Chloroethyl vinyl ether	3.44	ug/L	1.0	69	36	144			
Surr: 1,2-Dichloroethane-d4			0.50	80	71	139			
Surr: p-Bromofluorobenzene			0.50	95	80	127			
Surr: Toluene-d8			0.50	100	80	123			
- 1 = This is a known very reactive compound. The recovery of this compound was normal in the Laboratory Control Sample (LCS). The compound appears to have reacted with the sample matrix.									
Lab ID: b17021110-001bmsd	Sample Matrix Spike Duplicate				Run: 5971A.I_170224A				02/24/17 21:16
Acrolein	ND	ug/L	20	0	16	233		20	S 1
Acrylonitrile	48.8	ug/L	20	98	76	127	0.0	20	
2-Chloroethyl vinyl ether	3.66	ug/L	1.0	73	36	144	6.1	20	
Surr: 1,2-Dichloroethane-d4			0.50	81	71	139			
Surr: p-Bromofluorobenzene			0.50	96	80	127			
Surr: Toluene-d8			0.50	99	80	123			
- 1 = This is a known very reactive compound. The recovery of this compound was normal in the Laboratory Control Sample (LCS). The compound appears to have reacted with the sample matrix.									
Lab ID: b17021110-001bms	Sample Matrix Spike				Run: 5971A.I_170224A				02/24/17 18:21
Acetone	40.4	ug/L	20	81	55	144			
Acetonitrile	66.0	ug/L	20	132	54	142			
Benzene	4.60	ug/L	0.50	92	73	122			
Bromobenzene	4.60	ug/L	0.50	92	74	129			
Bromochloromethane	4.56	ug/L	0.50	91	66	120			
Bromodichloromethane	4.36	ug/L	0.50	87	74	128			
Bromoform	4.40	ug/L	0.50	88	66	128			
Bromomethane	5.88	ug/L	0.50	118	51	123			

Qualifiers:

RL - Analyte reporting limit.
ND - Not detected at the reporting limit.
S - Spike recovery outside of advisory limits.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Colorado Analytical Laboratories Inc
Project: 170217005 LFH-1 CO-0121724

Report Date: 03/02/17
Work Order: C17020566

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E624									Batch: R275391
Lab ID: b17021110-001bms	Sample Matrix Spike				Run: 5971A.I_170224A				02/24/17 18:21
Carbon disulfide	5.12	ug/L	0.50	102	46	145			
Carbon tetrachloride	3.59	ug/L	0.50	72	75	125			S
Chlorobenzene	4.52	ug/L	0.50	90	80	123			
Chlorodibromomethane	4.52	ug/L	0.50	90	74	125			
Chloroethane	5.40	ug/L	0.50	108	59	142			
Chloroform	4.68	ug/L	0.50	82	68	124			
Chloromethane	4.64	ug/L	0.50	93	53	146			
2-Chlorotoluene	4.88	ug/L	0.50	98	75	131			
4-Chlorotoluene	4.68	ug/L	0.50	94	74	129			
1,2-Dibromoethane	4.16	ug/L	0.50	83	76	124			
Dibromomethane	4.64	ug/L	0.50	93	77	125			
1,2-Dichlorobenzene	4.64	ug/L	0.50	93	74	124			
1,3-Dichlorobenzene	4.88	ug/L	0.50	98	77	122			
1,4-Dichlorobenzene	4.76	ug/L	0.50	91	76	126			
Dichlorodifluoromethane	4.32	ug/L	0.50	86	56	146			
1,1-Dichloroethane	4.24	ug/L	0.50	85	74	133			
1,2-Dichloroethane	3.48	ug/L	0.50	70	75	129			S
1,1-Dichloroethene	4.12	ug/L	0.50	82	74	132			
cis-1,2-Dichloroethene	4.48	ug/L	0.50	90	81	122			
trans-1,2-Dichloroethene	4.64	ug/L	0.50	93	79	143			
1,2-Dichloropropane	4.92	ug/L	0.50	98	75	126			
1,3-Dichloropropane	4.24	ug/L	0.50	85	71	136			
2,2-Dichloropropane	3.60	ug/L	0.50	72	68	142			
1,1-Dichloropropene	4.04	ug/L	0.50	81	70	131			
cis-1,3-Dichloropropene	4.08	ug/L	0.50	82	74	135			
trans-1,3-Dichloropropene	3.97	ug/L	0.50	79	76	149			
Ethylbenzene	4.64	ug/L	0.50	93	72	130			
Methyl tert-butyl ether (MTBE)	3.63	ug/L	0.50	73	72	120			
Methyl ethyl ketone	44.4	ug/L	20	89	45	130			
Methyl isobutyl ketone	51.2	ug/L	20	102	58	135			
Methylene chloride	5.44	ug/L	0.50	109	66	142			
Naphthalene	4.84	ug/L	0.50	97	69	124			
Styrene	4.56	ug/L	0.50	91	80	124			
Tetrachloroethene	4.44	ug/L	0.50	89	72	131			
1,1,1,2-Tetrachloroethane	3.95	ug/L	0.50	79	78	124			
1,1,2,2-Tetrachloroethane	4.88	ug/L	0.50	98	68	137			
Toluene	4.88	ug/L	0.50	98	72	135			
Trichloroethene	4.56	ug/L	0.50	91	85	126			
1,1,1-Trichloroethane	3.51	ug/L	0.50	70	63	120			
1,1,2-Trichloroethane	4.52	ug/L	0.50	90	78	124			
Trichlorofluoromethane	3.29	ug/L	0.50	66	72	120			S
1,2,3-Trichloropropane	3.90	ug/L	0.50	78	64	138			
Vinyl Acetate	4.00	ug/L	1.0	80	31	124			

Qualifiers:

RL - Analyte reporting limit.
S - Spike recovery outside of advisory limits.
ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Colorado Analytical Laboratories Inc
Report Date: 03/02/17
Project: 170217005 LFH-1 CO-0121724
Work Order: C17020566

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E624									Batch: R275391
Lab ID: b17021110-001bms	Sample Matrix Spike				Run: 5971A.I_170224A				02/24/17 18:21
Vinyl chloride	5.12	ug/L	0.50	102	58	140			
m+p-Xylenes	9.32	ug/L	0.50	93	67	139			
o-Xylene	4.44	ug/L	0.50	89	74	135			
Xylenes, Total	13.8	ug/L	0.50	92	70	137			
Surr: 1,2-Dichloroethane-d4			0.50	80	71	139			
Surr: p-Bromofluorobenzene			0.50	94	80	127			
Surr: Toluene-d8			0.50	101	80	123			
Lab ID: b17021110-001bmsd	Sample Matrix Spike Duplicate				Run: 5971A.I_170224A				02/24/17 18:50
Acetone	44.0	ug/L	20	88	55	144	8.5	20	
Acetonitrile	65.6	ug/L	20	131	54	142	0.6	20	
Benzene	5.04	ug/L	0.50	101	73	122	9.1	20	
Bromobenzene	4.96	ug/L	0.50	99	74	129	7.5	20	
Bromochloromethane	4.80	ug/L	0.50	96	66	120	5.1	20	
Bromodichloromethane	4.60	ug/L	0.50	92	74	128	5.4	20	
Bromoform	4.80	ug/L	0.50	96	66	128	8.7	20	
Bromomethane	6.00	ug/L	0.50	120	51	123	2.0	20	
Carbon disulfide	5.20	ug/L	0.50	104	46	145	1.6	20	
Carbon tetrachloride	3.97	ug/L	0.50	79	75	125	10	20	
Chlorobenzene	4.88	ug/L	0.50	98	80	123	7.7	20	
Chlorodibromomethane	4.76	ug/L	0.50	95	74	125	5.2	20	
Chloroethane	5.32	ug/L	0.50	106	59	142	1.5	20	
Chloroform	4.96	ug/L	0.50	87	68	124	5.8	20	
Chloromethane	4.88	ug/L	0.50	98	53	146	5.0	20	
2-Chlorotoluene	5.20	ug/L	0.50	104	75	131	6.3	20	
4-Chlorotoluene	5.04	ug/L	0.50	101	74	129	7.4	20	
1,2-Dibromoethane	4.52	ug/L	0.50	90	76	124	8.3	20	
Dibromomethane	4.88	ug/L	0.50	98	77	125	5.0	20	
1,2-Dichlorobenzene	5.04	ug/L	0.50	101	74	124	8.3	20	
1,3-Dichlorobenzene	5.20	ug/L	0.50	104	77	122	6.3	20	
1,4-Dichlorobenzene	5.12	ug/L	0.50	98	76	126	7.3	20	
Dichlorodifluoromethane	4.36	ug/L	0.50	87	56	146	0.9	20	
1,1-Dichloroethane	4.68	ug/L	0.50	94	74	133	9.9	20	
1,2-Dichloroethane	3.76	ug/L	0.50	75	75	129	7.8	20	
1,1-Dichloroethene	4.44	ug/L	0.50	89	74	132	7.5	20	
cis-1,2-Dichloroethene	4.88	ug/L	0.50	98	81	122	8.5	20	
trans-1,2-Dichloroethene	5.12	ug/L	0.50	102	79	143	9.8	20	
1,2-Dichloropropane	5.24	ug/L	0.50	105	75	126	6.3	20	
1,3-Dichloropropane	4.64	ug/L	0.50	93	71	136	9.0	20	
2,2-Dichloropropane	3.96	ug/L	0.50	79	68	142	9.6	20	
1,1-Dichloropropene	4.44	ug/L	0.50	89	70	131	9.4	20	
cis-1,3-Dichloropropene	4.40	ug/L	0.50	88	74	135	7.5	20	
trans-1,3-Dichloropropene	4.24	ug/L	0.50	85	76	149	6.6	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Colorado Analytical Laboratories Inc
Report Date: 03/02/17
Project: 170217005 LFH-1 CO-0121724
Work Order: C17020566

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E624								Batch: R275391	
Lab ID: b17021110-001bmsd	Sample Matrix Spike Duplicate				Run: 5971A.I_170224A			02/24/17 18:50	
Ethylbenzene	5.00	ug/L	0.50	100	72	130	7.5	20	
Methyl tert-butyl ether (MTBE)	3.83	ug/L	0.50	77	72	120	5.5	20	
Methyl ethyl ketone	46.0	ug/L	20	92	45	130	3.5	20	
Methyl isobutyl ketone	51.2	ug/L	20	102	58	135	0.0	20	
Methylene chloride	5.72	ug/L	0.50	114	66	142	5.0	20	
Naphthalene	5.56	ug/L	0.50	111	69	124	14	20	
Styrene	4.84	ug/L	0.50	97	80	124	6.0	20	
Tetrachloroethene	4.72	ug/L	0.50	94	72	131	6.1	20	
1,1,1,2-Tetrachloroethane	4.20	ug/L	0.50	84	78	124	6.1	20	
1,1,2,2-Tetrachloroethane	5.20	ug/L	0.50	104	68	137	6.3	20	
Toluene	5.12	ug/L	0.50	102	72	135	4.8	20	
Trichloroethene	4.80	ug/L	0.50	96	85	126	5.1	20	
1,1,1-Trichloroethane	3.94	ug/L	0.50	79	63	120	12	20	
1,1,2-Trichloroethane	4.76	ug/L	0.50	95	78	124	5.2	20	
Trichlorofluoromethane	3.36	ug/L	0.50	67	72	120	2.3	20	S
1,2,3-Trichloropropane	4.20	ug/L	0.50	84	64	138	7.4	20	
Vinyl Acetate	4.20	ug/L	1.0	84	31	124	4.9	20	
Vinyl chloride	5.08	ug/L	0.50	102	58	140	0.8	20	
m+p-Xylenes	9.92	ug/L	0.50	99	67	139	6.2	20	
o-Xylene	4.80	ug/L	0.50	96	74	135	7.8	20	
Xylenes, Total	14.7	ug/L	0.50	98	70	137			
Surr: 1,2-Dichloroethane-d4			0.50	81	71	139			
Surr: p-Bromofluorobenzene			0.50	94	80	127			
Surr: Toluene-d8			0.50	100	80	123			

Qualifiers:

RL - Analyte reporting limit.
ND - Not detected at the reporting limit.
S - Spike recovery outside of advisory limits.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Colorado Analytical Laboratories Inc
Report Date: 03/02/17
Project: 170217005 LFH-1 CO-0121724
Work Order: C17020566

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E625									Batch: 107004
Lab ID: MB-107004	Method Blank				Run: SV5973N2.I_170227B				02/27/17 18:24
Acenaphthene	ND	ug/L	10						
Acenaphthylene	ND	ug/L	10						
Anthracene	ND	ug/L	10						
Azobenzene	ND	ug/L	10						
Benzo(a)anthracene	ND	ug/L	10						
Benzo(a)pyrene	ND	ug/L	10						
Benzo(b)fluoranthene	ND	ug/L	10						
Benzo(g,h,i)perylene	ND	ug/L	10						
Benzo(k)fluoranthene	ND	ug/L	10						
4-Bromophenyl phenyl ether	ND	ug/L	10						
Butylbenzylphthalate	ND	ug/L	10						
4-Chloro-3-methylphenol	ND	ug/L	10						
bis(-2-chloroethoxy)Methane	ND	ug/L	10						
bis(-2-chloroethyl)Ether	ND	ug/L	10						
bis(2-chloroisopropyl)Ether	ND	ug/L	10						
2-Chloronaphthalene	ND	ug/L	10						
2-Chlorophenol	ND	ug/L	10						
4-Chlorophenyl phenyl ether	ND	ug/L	10						
Chrysene	ND	ug/L	10						
Diethyl phthalate	ND	ug/L	10						
Di-n-butyl phthalate	ND	ug/L	10						
1,2-Dichlorobenzene	ND	ug/L	10						
1,3-Dichlorobenzene	ND	ug/L	10						
1,4-Dichlorobenzene	ND	ug/L	10						
3,3'-Dichlorobenzidine	ND	ug/L	10						
2,4-Dichlorophenol	ND	ug/L	10						
Dimethyl phthalate	ND	ug/L	10						
Di-n-octyl phthalate	ND	ug/L	10						
Dibenzo(a,h)anthracene	ND	ug/L	10						
2,4-Dimethylphenol	ND	ug/L	10						
4,6-Dinitro-2-methylphenol	ND	ug/L	50						
2,4-Dinitrophenol	ND	ug/L	50						
2,4-Dinitrotoluene	ND	ug/L	10						
2,6-Dinitrotoluene	ND	ug/L	10						
bis(2-ethylhexyl)Phthalate	ND	ug/L	10						
Fluoranthene	ND	ug/L	10						
Fluorene	ND	ug/L	10						
Hexachlorobenzene	ND	ug/L	10						
Hexachlorobutadiene	ND	ug/L	10						
Hexachlorocyclopentadiene	ND	ug/L	10						
Hexachloroethane	ND	ug/L	10						
Indeno(1,2,3-cd)pyrene	ND	ug/L	10						
Isophorone	ND	ug/L	10						

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Colorado Analytical Laboratories Inc
Project: 170217005 LFH-1 CO-0121724

Report Date: 03/02/17
Work Order: C17020566

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E625									Batch: 107004
Lab ID: MB-107004	Method Blank				Run: SV5973N2.I_170227B				02/27/17 18:24
n-Nitrosodimethylamine	ND	ug/L	10						
n-Nitroso-di-n-propylamine	ND	ug/L	10						
n-Nitrosodiphenylamine	ND	ug/L	10						
2-Nitrophenol	ND	ug/L	10						
4-Nitrophenol	ND	ug/L	50						
Naphthalene	ND	ug/L	10						
Nitrobenzene	ND	ug/L	10						
Pentachlorophenol	ND	ug/L	50						
Phenanthrene	ND	ug/L	10						
Phenol	ND	ug/L	10						
Pyrene	ND	ug/L	10						
1,2,4-Trichlorobenzene	ND	ug/L	10						
2,4,6-Trichlorophenol	ND	ug/L	10						
Surr: 2-Fluorobiphenyl			10	55	28	107			
Surr: 2-Fluorophenol			10	36	20	56			
Surr: Nitrobenzene-d5			10	58	32	94			
Surr: Phenol-d5			10	35	19	45			
Surr: Terphenyl-d14			10	77	32	122			
Surr: 2,4,6-Tribromophenol			10	58	21	130			
Lab ID: LCS-107004	Laboratory Control Sample				Run: SV5973N2.I_170227B				02/27/17 18:55
Acenaphthene	81.2	ug/L	10	81	58	99			
Acenaphthylene	76.5	ug/L	10	77	57	96			
Anthracene	79.5	ug/L	10	80	60	107			
Azobenzene	79.3	ug/L	10	79	56	100			
Benzo(a)anthracene	84.1	ug/L	10	84	62	114			
Benzo(a)pyrene	80.1	ug/L	10	80	62	108			
Benzo(b)fluoranthene	88.6	ug/L	10	89	48	127			
Benzo(g,h,i)perylene	81.6	ug/L	10	82	62	121			
Benzo(k)fluoranthene	79.2	ug/L	10	79	55	111			
4-Bromophenyl phenyl ether	83.0	ug/L	10	83	58	105			
Butylbenzylphthalate	91.6	ug/L	10	92	60	113			
4-Chloro-3-methylphenol	65.7	ug/L	10	66	53	92			
bis(-2-chloroethoxy)Methane	73.9	ug/L	10	74	50	92			
bis(-2-chloroethyl)Ether	63.4	ug/L	10	63	44	82			
bis(2-chloroisopropyl)Ether	61.2	ug/L	10	61	56	87			
2-Chloronaphthalene	74.9	ug/L	10	75	56	95			
2-Chlorophenol	60.1	ug/L	10	60	47	76			
4-Chlorophenyl phenyl ether	75.8	ug/L	10	76	58	99			
Chrysene	81.9	ug/L	10	82	63	106			
Diethyl phthalate	78.6	ug/L	10	79	58	103			
Di-n-butyl phthalate	87.6	ug/L	10	88	61	110			
1,2-Dichlorobenzene	61.5	ug/L	10	62	43	81			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Colorado Analytical Laboratories Inc
Report Date: 03/02/17
Project: 170217005 LFH-1 CO-0121724
Work Order: C17020566

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E625									Batch: 107004
Lab ID: LCS-107004	Laboratory Control Sample				Run: SV5973N2.I_170227B				02/27/17 18:55
1,3-Dichlorobenzene	60.2	ug/L	10	60	41	79			
1,4-Dichlorobenzene	61.4	ug/L	10	61	42	79			
3,3'-Dichlorobenzidine	66.6	ug/L	10	69	51	93			
2,4-Dichlorophenol	64.7	ug/L	10	65	49	90			
Dimethyl phthalate	76.4	ug/L	10	76	58	104			
Di-n-octyl phthalate	88.3	ug/L	10	88	56	110			
Dibenzo(a,h)anthracene	80.4	ug/L	10	80	61	111			
2,4-Dimethylphenol	61.8	ug/L	10	62	45	89			
4,6-Dinitro-2-methylphenol	48.2	ug/L	50	48	37	105			
2,4-Dinitrophenol	39.7	ug/L	50	40	27	81			
2,4-Dinitrotoluene	87.7	ug/L	10	88	63	110			
2,6-Dinitrotoluene	75.5	ug/L	10	76	60	107			
bis(2-ethylhexyl)Phthalate	88.6	ug/L	10	89	56	108			
Fluoranthene	83.8	ug/L	10	84	63	110			
Fluorene	77.4	ug/L	10	77	60	99			
Hexachlorobenzene	78.2	ug/L	10	78	57	103			
Hexachlorobutadiene	67.5	ug/L	10	67	39	83			
Hexachlorocyclopentadiene	68.4	ug/L	10	68	39	91			
Hexachloroethane	59.6	ug/L	10	60	37	75			
Indeno(1,2,3-cd)pyrene	82.0	ug/L	10	82	59	109			
Isophorone	67.1	ug/L	10	67	42	102			
n-Nitrosodimethylamine	36.9	ug/L	10	37	20	45			
n-Nitroso-di-n-propylamine	71.5	ug/L	10	71	49	98			
n-Nitrosodiphenylamine	90.0	ug/L	10	90	61	108			
2-Nitrophenol	68.0	ug/L	10	68	51	96			
4-Nitrophenol	18.3	ug/L	50	18	15	36			
Naphthalene	71.6	ug/L	10	72	48	96			
Nitrobenzene	65.0	ug/L	10	65	51	91			
Pentachlorophenol	70.6	ug/L	50	71	53	109			
Phenanthrene	80.5	ug/L	10	81	58	104			
Phenol	35.4	ug/L	10	35	27	45			
Pyrene	89.3	ug/L	10	89	64	108			
1,2,4-Trichlorobenzene	67.3	ug/L	10	67	49	85			
2,4,6-Trichlorophenol	64.9	ug/L	10	65	47	99			
Surr: 2-Fluorobiphenyl			10	63	28	107			
Surr: 2-Fluorophenol			10	35	20	56			
Surr: Nitrobenzene-d5			10	68	32	94			
Surr: Phenol-d5			10	42	19	45			
Surr: Terphenyl-d14			10	87	32	122			
Surr: 2,4,6-Tribromophenol			10	70	21	130			
Lab ID: B17021688-001CMS	Sample Matrix Spike				Run: SV5973N2.I_170227B				02/27/17 20:29
Acenaphthene	86.4	ug/L	10	86	58	99			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Colorado Analytical Laboratories Inc
Report Date: 03/02/17
Project: 170217005 LFH-1 CO-0121724
Work Order: C17020566

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E625									Batch: 107004
Lab ID: B17021688-001CMS	Sample Matrix Spike				Run: SV5973N2.I_170227B				02/27/17 20:29
Acenaphthylene	83.0	ug/L	10	83	57	96			
Anthracene	86.4	ug/L	10	86	60	107			
Azobenzene	84.3	ug/L	10	84	56	100			
Benzo(a)anthracene	90.3	ug/L	10	90	62	114			
Benzo(a)pyrene	80.9	ug/L	10	81	62	108			
Benzo(b)fluoranthene	80.4	ug/L	10	80	48	127			
Benzo(g,h,i)perylene	80.5	ug/L	10	81	62	121			
Benzo(k)fluoranthene	83.5	ug/L	10	83	55	111			
4-Bromophenyl phenyl ether	80.4	ug/L	10	80	58	105			
Butylbenzylphthalate	99.7	ug/L	10	100	60	113			
4-Chloro-3-methylphenol	77.0	ug/L	10	77	53	92			
bis(-2-chloroethoxy)Methane	77.3	ug/L	10	77	50	92			
bis(-2-chloroethyl)Ether	66.7	ug/L	10	67	44	82			
bis(2-chloroisopropyl)Ether	66.6	ug/L	10	67	56	87			
2-Chloronaphthalene	79.8	ug/L	10	80	56	95			
2-Chlorophenol	64.1	ug/L	10	64	47	76			
4-Chlorophenyl phenyl ether	84.5	ug/L	10	85	58	99			
Chrysene	85.9	ug/L	10	86	63	106			
Diethyl phthalate	85.4	ug/L	10	85	58	103			
Di-n-butyl phthalate	96.0	ug/L	10	96	61	110			
1,2-Dichlorobenzene	66.1	ug/L	10	66	43	81			
1,3-Dichlorobenzene	61.9	ug/L	10	62	41	79			
1,4-Dichlorobenzene	61.8	ug/L	10	62	42	79			
3,3'-Dichlorobenzidine	69.1	ug/L	10	69	51	93			
2,4-Dichlorophenol	68.4	ug/L	10	68	49	90			
Dimethyl phthalate	81.4	ug/L	10	81	58	104			
Di-n-octyl phthalate	90.6	ug/L	10	91	56	110			
Dibenzo(a,h)anthracene	80.0	ug/L	10	80	61	111			
2,4-Dimethylphenol	69.2	ug/L	10	69	45	87			
4,6-Dinitro-2-methylphenol	58.9	ug/L	50	59	37	105			
2,4-Dinitrophenol	54.8	ug/L	50	55	27	81			
2,4-Dinitrotoluene	82.5	ug/L	10	83	63	110			
2,6-Dinitrotoluene	80.8	ug/L	10	81	60	107			
bis(2-ethylhexyl)Phthalate	92.0	ug/L	10	92	56	108			
Fluoranthene	88.0	ug/L	10	88	63	110			
Fluorene	80.1	ug/L	10	80	60	99			
Hexachlorobenzene	82.5	ug/L	10	83	57	103			
Hexachlorobutadiene	69.0	ug/L	10	69	39	83			
Hexachlorocyclopentadiene	68.1	ug/L	10	68	39	91			
Hexachloroethane	65.6	ug/L	10	66	37	75			
Indeno(1,2,3-cd)pyrene	82.3	ug/L	10	82	59	109			
Isophorone	71.3	ug/L	10	71	42	102			
n-Nitrosodimethylamine	41.5	ug/L	10	41	20	45			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Colorado Analytical Laboratories Inc
Report Date: 03/02/17
Project: 170217005 LFH-1 CO-0121724
Work Order: C17020566

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E625									Batch: 107004
Lab ID: B17021688-001CMS	Sample Matrix Spike				Run: SV5973N2.I_170227B				02/27/17 20:29
n-Nitroso-di-n-propylamine	76.9	ug/L	10	77	49	98			
n-Nitrosodiphenylamine	93.7	ug/L	10	94	61	108			
2-Nitrophenol	69.9	ug/L	10	70	51	96			
4-Nitrophenol	24.6	ug/L	50	25	15	36			
Naphthalene	76.0	ug/L	10	76	48	96			
Nitrobenzene	72.5	ug/L	10	73	51	91			
Pentachlorophenol	89.2	ug/L	50	89	53	109			
Phenanthrene	85.1	ug/L	10	85	58	104			
Phenol	36.7	ug/L	10	37	27	45			
Pyrene	89.8	ug/L	10	90	64	108			
1,2,4-Trichlorobenzene	70.9	ug/L	10	71	49	85			
2,4,6-Trichlorophenol	67.7	ug/L	10	68	47	99			
Surr: 2-Fluorobiphenyl			10	62	28	107			
Surr: 2-Fluorophenol			10	39	20	56			
Surr: Nitrobenzene-d5			10	72	32	94			
Surr: Phenol-d5			10	35	19	45			
Surr: Terphenyl-d14			10	87	32	122			
Surr: 2,4,6-Tribromophenol			10	75	21	130			
Lab ID: B17021688-003CMS	Sample Matrix Spike				Run: SV5973N2.I_170227B				02/27/17 21:31
Acenaphthene	89.8	ug/L	10	90	58	99			
Acenaphthylene	82.2	ug/L	10	82	57	96			
Anthracene	73.2	ug/L	10	73	60	107			
Azobenzene	80.2	ug/L	10	80	56	100			
Benzo(a)anthracene	85.1	ug/L	10	85	62	114			
Benzo(a)pyrene	77.0	ug/L	10	77	62	108			
Benzo(b)fluoranthene	73.3	ug/L	10	73	48	127			
Benzo(g,h,i)perylene	78.5	ug/L	10	79	62	121			
Benzo(k)fluoranthene	83.1	ug/L	10	83	55	111			
4-Bromophenyl phenyl ether	78.1	ug/L	10	78	58	105			
Butylbenzylphthalate	92.9	ug/L	10	93	60	113			
4-Chloro-3-methylphenol	69.5	ug/L	10	69	53	92			
bis(-2-chloroethoxy)Methane	69.6	ug/L	10	70	50	92			
bis(-2-chloroethyl)Ether	58.4	ug/L	10	58	44	82			
bis(2-chloroisopropyl)Ether	57.7	ug/L	10	58	56	87			
2-Chloronaphthalene	77.7	ug/L	10	78	56	95			
2-Chlorophenol	56.6	ug/L	10	57	47	76			
4-Chlorophenyl phenyl ether	82.9	ug/L	10	83	58	99			
Chrysene	82.0	ug/L	10	82	63	106			
Diethyl phthalate	80.2	ug/L	10	80	58	103			
Di-n-butyl phthalate	86.9	ug/L	10	87	61	110			
1,2-Dichlorobenzene	61.5	ug/L	10	62	43	81			
1,3-Dichlorobenzene	59.3	ug/L	10	59	41	79			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Colorado Analytical Laboratories Inc
Report Date: 03/02/17
Project: 170217005 LFH-1 CO-0121724
Work Order: C17020566

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E625									Batch: 107004
Lab ID: B17021688-003CMS	Sample Matrix Spike				Run: SV5973N2.I_170227B				02/27/17 21:31
1,4-Dichlorobenzene	57.9	ug/L	10	58	42	79			
3,3'-Dichlorobenzidine	52.9	ug/L	10	53	51	93			
2,4-Dichlorophenol	61.5	ug/L	10	62	49	90			
Dimethyl phthalate	74.3	ug/L	10	74	58	104			
Di-n-octyl phthalate	82.5	ug/L	10	83	56	110			
Dibenzo(a,h)anthracene	75.9	ug/L	10	76	61	111			
2,4-Dimethylphenol	60.0	ug/L	10	60	45	87			
4,6-Dinitro-2-methylphenol	41.6	ug/L	50	42	37	105			
2,4-Dinitrophenol	30.1	ug/L	50	30	27	81			
2,4-Dinitrotoluene	86.9	ug/L	10	87	63	110			
2,6-Dinitrotoluene	75.9	ug/L	10	76	60	107			
bis(2-ethylhexyl)Phthalate	81.5	ug/L	10	82	56	108			
Fluoranthene	82.0	ug/L	10	82	63	110			
Fluorene	81.9	ug/L	10	82	60	99			
Hexachlorobenzene	75.8	ug/L	10	76	57	103			
Hexachlorobutadiene	69.3	ug/L	10	69	39	83			
Hexachlorocyclopentadiene	69.5	ug/L	10	70	39	91			
Hexachloroethane	57.7	ug/L	10	58	37	75			
Indeno(1,2,3-cd)pyrene	73.4	ug/L	10	73	59	109			
Isophorone	68.4	ug/L	10	68	42	102			
n-Nitrosodimethylamine	27.8	ug/L	10	28	20	45			
n-Nitroso-di-n-propylamine	68.7	ug/L	10	69	49	98			
n-Nitrosodiphenylamine	84.0	ug/L	10	84	61	106			
2-Nitrophenol	61.8	ug/L	10	62	51	96			
4-Nitrophenol	27.7	ug/L	50	28	15	36			
Naphthalene	72.4	ug/L	10	72	48	96			
Nitrobenzene	69.7	ug/L	10	70	51	91			
Pentachlorophenol	66.8	ug/L	50	67	53	109			
Phenanthrene	79.7	ug/L	10	80	58	104			
Phenol	33.9	ug/L	10	34	27	45			
Pyrene	81.2	ug/L	10	81	64	108			
1,2,4-Trichlorobenzene	71.3	ug/L	10	71	49	85			
2,4,6-Trichlorophenol	63.8	ug/L	10	64	47	99			
Surr: 2-Fluorobiphenyl			10	45	28	107			
Surr: 2-Fluorophenol			10	37	20	56			
Surr: Nitrobenzene-d5			10	62	32	94			
Surr: Phenol-d5			10	31	19	45			
Surr: Terphenyl-d14			10	64	32	122			
Surr: 2,4,6-Tribromophenol			10	55	21	130			
Lab ID: MB-107004	Method Blank				Run: SV5973N2.I_170228A				02/28/17 12:11
Benzidine	ND	ug/L	10						

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Colorado Analytical Laboratories Inc
Project: 170217005 LFH-1 CO-0121724

Report Date: 03/02/17
Work Order: C17020566

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E625									Batch: 107004
Lab ID: LCS-107004	Laboratory Control Sample				Run: SV5973N2.I_170228A				02/28/17 12:42
Benzidine	63.4	ug/L	10	63	10	100			
Lab ID: B17021688-001CMS	Sample Matrix Spike				Run: SV5973N2.I_170228A				02/28/17 14:16
Benzidine	25.8	ug/L	20	26	10	100			
Lab ID: B17021688-003CMS	Sample Matrix Spike				Run: SV5973N2.I_170228A				02/28/17 15:18
Benzidine	28.5	ug/L	20	28	10	100			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Colorado Analytical Laboratories Inc
Project: 170217005 LFH-1 CO-0121724

Report Date: 03/02/17
Work Order: C17020566

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E625									Analytical Run: R275528
Lab ID: 27-Feb-17_CCV_2	Continuing Calibration Verification Standard								02/27/17 15:18
Acenaphthene	75.7	ug/L	10	101	80	120			
Acenaphthylene	75.2	ug/L	10	100	80	120			
Anthracene	78.7	ug/L	10	105	80	120			
Azobenzene	79.8	ug/L	10	106	80	120			
Benzo(a)anthracene	78.0	ug/L	10	104	80	120			
Benzo(a)pyrene	78.0	ug/L	10	104	80	120			
Benzo(b)fluoranthene	78.6	ug/L	10	105	80	120			
Benzo(g,h,i)perylene	75.3	ug/L	10	100	80	120			
Benzo(k)fluoranthene	73.2	ug/L	10	98	80	120			
4-Bromophenyl phenyl ether	74.4	ug/L	10	99	80	120			
Butylbenzylphthalate	84.4	ug/L	10	113	80	120			
4-Chloro-3-methylphenol	77.2	ug/L	10	103	80	120			
bis(-2-chloroethoxy)Methane	79.4	ug/L	10	106	80	120			
bis(-2-chloroethyl)Ether	80.8	ug/L	10	108	80	120			
bis(2-chloroisopropyl)Ether	77.8	ug/L	10	104	80	120			
2-Chloronaphthalene	70.3	ug/L	10	94	80	120			
2-Chlorophenol	80.3	ug/L	10	107	80	120			
4-Chlorophenyl phenyl ether	72.9	ug/L	10	97	80	120			
Chrysene	75.0	ug/L	10	100	80	120			
Diethyl phthalate	75.7	ug/L	10	101	80	120			
Di-n-butyl phthalate	81.6	ug/L	10	109	80	120			
1,2-Dichlorobenzene	72.7	ug/L	10	97	80	120			
1,3-Dichlorobenzene	77.8	ug/L	10	104	80	120			
1,4-Dichlorobenzene	74.9	ug/L	10	100	80	120			
3,3'-Dichlorobenzidine	75.8	ug/L	10	101	80	120			
2,4-Dichlorophenol	74.8	ug/L	10	100	80	120			
Dimethyl phthalate	75.3	ug/L	10	100	80	120			
Di-n-octyl phthalate	83.5	ug/L	10	111	80	120			
Dibenzo(a,h)anthracene	74.8	ug/L	10	100	80	120			
2,4-Dimethylphenol	73.0	ug/L	10	97	80	120			
4,6-Dinitro-2-methylphenol	71.3	ug/L	50	95	80	120			
2,4-Dinitrophenol	69.4	ug/L	50	93	80	120			
2,4-Dinitrotoluene	79.4	ug/L	10	106	80	120			
2,6-Dinitrotoluene	78.1	ug/L	10	104	80	120			
bis(2-ethylhexyl)Phthalate	84.4	ug/L	10	112	80	120			
Fluoranthene	76.0	ug/L	10	101	80	120			
Fluorene	77.8	ug/L	10	104	80	120			
Hexachlorobenzene	73.8	ug/L	10	98	80	120			
Hexachlorobutadiene	71.9	ug/L	10	96	80	120			
Hexachlorocyclopentadiene	73.1	ug/L	10	97	80	120			
Hexachloroethane	77.6	ug/L	10	103	80	120			
Indeno(1,2,3-cd)pyrene	75.6	ug/L	10	101	80	120			
Isophorone	78.1	ug/L	10	104	80	120			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Colorado Analytical Laboratories Inc
Report Date: 03/02/17
Project: 170217005 LFH-1 CO-0121724
Work Order: C17020566

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E625									Analytical Run: R275528
Lab ID: 27-Feb-17_CCV_2	Continuing Calibration Verification Standard								02/27/17 15:18
n-Nitrosodimethylamine	75.3	ug/L	10	100	80	120			
n-Nitroso-di-n-propylamine	77.8	ug/L	10	104	80	120			
n-Nitrosodiphenylamine	78.9	ug/L	10	105	80	120			
2-Nitrophenol	75.8	ug/L	10	101	80	120			
4-Nitrophenol	69.6	ug/L	50	93	80	120			
Naphthalene	79.8	ug/L	10	106	80	120			
Nitrobenzene	76.8	ug/L	10	102	80	120			
Pentachlorophenol	73.3	ug/L	50	98	80	120			
Phenanthrene	74.0	ug/L	10	99	80	120			
Phenol	79.2	ug/L	10	106	80	120			
Pyrene	75.2	ug/L	10	100	80	120			
1,2,4-Trichlorobenzene	72.6	ug/L	10	97	80	120			
2,4,6-Trichlorophenol	73.6	ug/L	10	98	80	120			
Surr: 2-Fluorobiphenyl			10	100	80	120			
Surr: 2-Fluorophenol			10	113	80	120			
Surr: Nitrobenzene-d5			10	105	80	120			
Surr: Phenol-d5			10	121	80	120			S
Surr: Terphenyl-d14			10	101	80	120			
Surr: 2,4,6-Tribromophenol			10	102	80	120			
Method: E625									Analytical Run: R275577
Lab ID: 28-Feb-17_CCV_2	Continuing Calibration Verification Standard								02/28/17 11:39
Benzidine	89.5	ug/L	10	119	80	120			

Qualifiers:

RL - Analyte reporting limit.
ND - Not detected at the reporting limit.
S - Spike recovery outside of advisory limits.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Colorado Analytical Laboratories Inc
Project: 170217005 LFH-1 CO-0121724

Report Date: 03/02/17
Work Order: C17020566

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260M									Analytical Run: 107003
Lab ID: CCV-107003	Continuing Calibration Verification Standard								02/27/17 08:30
1,4-Dioxane	105	ug/L	1.0	105	80	120			
Method: SW8260M									Batch: 107003
Lab ID: LCS-107003	Laboratory Control Sample				Run: VOA5973A.I_170227A				02/27/17 09:22
1,4-Dioxane	106	ug/L	1.0	106	70	130			
Lab ID: MB-107003	Method Blank				Run: VOA5973A.I_170227A				02/27/17 09:44
1,4-Dioxane	ND	ug/L	1.0						
Lab ID: C17020566-001BMS	Sample Matrix Spike				Run: VOA5973A.I_170227A				02/27/17 11:37
1,4-Dioxane	200	ug/L	2.0	100	70	130			
Lab ID: C17020566-001BMSD	Sample Matrix Spike Duplicate				Run: VOA5973A.I_170227A				02/27/17 11:59
1,4-Dioxane	206	ug/L	2.0	103	70	130	3.0	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

Work Order Receipt Checklist

Colorado Analytical Laboratories Inc

C17020566

Login completed by: Dorian Quis
Reviewed by: Kasey Vidick
Reviewed Date: 2/21/2017

Date Received: 2/21/2017
Received by: dcq
Carrier name: Ground

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all shipping container(s)/cooler(s)?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on all sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes ☑	No ☐	
Temp Blank received in all shipping container(s)/cooler(s)?	Yes ☐	No ☑	Not Applicable ☐
Container/Temp Blank temperature:	6.8°C Blue Ice		
Water - VOA vials have zero headspace?	Yes ☑	No ☐	No VOA vials submitted ☐
Water - pH acceptable upon receipt?	Yes ☐	No ☐	Not Applicable ☑

Standard Reporting Procedures:

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as –dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

Contact and Corrective Action Comments:

None

Chain of Custody Form

Report To Information	Bill To Information (If different from report to)	Project Name
Company Name: Colorado Analytical	Company Name: Same As Report To	170217005
Contact Name: Stuart Nielson	Contact Name: ____	Lfh-1 Co-0121724
Address: 240 S. Main St.	Address:	Task Number (Lab Use Only)
City Brighton State CO Zip80601	City ____ State __ Zip ____	
Phone:3036592313 Fax:3036592315	Phone: Fax:	
Email: stuartnielson@coloradolab.com	Email:	Disposal Date(Lab Use Only)
Sample Collector: Stephanie Schwenke	PO No.:	

Colorado Analytical Laboratories, Inc.

Brighton Lab
240 South Main Street
Brighton, CO 80601
Lakewood Lab
12860 W. Cedar Dr, Suite 100A
Lakewood CO 80228

Phone: 303-659-2313
Fax: 303-659-2315

www.coloradolab.com

C17D2056

Waste Water ☐	Soil ☐	Plant Tissue ☐
Ground Water ☐	Sludge ☐	Other ☒
Surface Water ☐	Compost ☐	Drinking Water

Date	Time	Sample ID	No. of Containers	Grab	or (Check One Only) Composite	624 VOC Long List	625 SOCs	1,4 Dioxane
2/16/17		170217005-01 LFH-1	7	☐	☐	☒	☒	☒

Instructions: *Send via UPS to Energy Labs*

3.2

C/S Info:

Deliver Via:

C/S Charge ☐

Seals Present Yes ☐ No ☒

Temp. 6.8 °C/Ice Blue   Sample Pres. Yes ☐ No ☐

Relinquished By:	Date/Time:	Received By:	Date/Time:	Relinquished By:	Date/Time:	Received By:	Date/Time:
S Adams	2/20/17 1600					Darian Dias	2/21/17 1150

Colorado Department of Public Health and Environment

Inorganic Chemicals Certified Laboratory Report Form
WQCD - Drinking Water CAS
4300 Cherry Creek Drive South, Denver, CO 80246-1530
Fax: (303) 758-1398; cdphe.drinkingwater@state.co.us

Revised 6/13/2014

IOC

Section I (Supplied or Completed by Public Water System)		Section II (Supplied or Completed by Certified Laboratory)	
Public Water System Information		**Certified Laboratory Information**	
PWSID#: CO0121724		Laboratory ID: CO 0015	
System Name: Sterling Ranch MD		Laboratory Name: Colorado Analytical Laboratory	
Contact Person: Mark Volle	Phone #: 719-227-0072	Contact Person: Customer Service	Phone: 303-659-2313
Comments:	Do Samples Need to be Composited BY THE LAB? ☐	Comments:	

Section III (Supplied or Completed by Public Water System)			
Sample Date: 3/23/17	Collector: Stephanie Schwe	Facility ID (On Schedule): New Well	Sample Pt ID (On Schedule): **New Well**

Section IV Inorganic Chemicals (Completed by Certified Laboratory)

Lab Receipt Date	Lab Analysis Date	Lab Sample ID	Analyte Name	CAS No.	Analytical Method	MCL (mg/L)	Lab MRL (mg/L)	Result (mg/L)
3/24/17	3/24/17	170324007-01	Fluoride	7681-49-4	EPA 300.0	4	0.09	**1.22**

NT: Not Tested
Lab MRL: Laboratory Minimum Reporting Level
BDL: Below Laboratory MRL. A less than (<) may also used.

mg/L: Milligrams per Liter
MCL: Maximum Contaminant Level

4/21/17
170324007-01
1/1
N

Drinking Water Chain of Custody

page 1 of 2

Colorado Analytical LABORATORIES, INC.

Brighton Lab
240 South Main Street
Brighton, CO 80601

Lakewood Lab
12860 W. Cedar Dr, Suite 100A
Lakewood CO 80228

Phone: 303-659-2313
Fax: 303-659-2315

www.coloradolab.com

Report To Information	Bill To Information (if different from report to)	State Form / Project Information
Company Name: JDS-Hydro Consultants	Company Name: SR WATER	PWSID: CO 0121724
Contact Name: Mark Tolle	Contact Name: JIM MORLEY	System Name: STERLING RANCH MD
Address: 545 E. Pikes Peak Ave Suite 300	Address: 20 BOULDER CRESCENT	Address: 20 BOULDER CRESCENT
City CS State CO Zip 80903	City COLORADO SPRINGS State CO Zip 80903	City COLO SPGS State CO Zip 80903
Phone: 719-227-0072 Fax:	Phone: Fax:	County: El Paso
Email: mtolle@jdshydro.com	Email: jmorley3870@aol.com	Compliance Samples: Yes ☒ No ☐
Sampler Name: Stephanie Schwenke	PO No.:	Send Forms to State: Yes ☐ No ☒

CAL Task No. 170324007

ARF

PHASE I, II, V Drinking Water Analyses (check analysis)

Date	Time	Client Sample ID / EP Code	No. of Containers	Residual Chlorine (mg/L) P/A Samples Only	Total Coliform P/A	504.1 EDB/DBCP	505 Pests/PCBs	515.4 Herbicides	524.2 VOCs	525.2 SOCs-Pest	531.1 Carbamates	547 Glyphosate	548.1 Endothall	549.2 Diquat	524.2 TTHMs	552.2 HAA5s	Lead/Copper	Nitrate	Nitrite	Fluoride	Inorganics	Alk./Lang. Index	TOC, DOC (Circle)	SUVA, UV 254 (Circle)	525-SOC	Gross Alpha/Beta	Radium 226	Radium 228	Radon	Uranium
3-23	7:55	#1	1					X																						
	7:57	#2	1										X																	
	[redacted]	#3 8:05	2							X																				
	8:11	#4	1		X																									
	7:52	#5	1																							X				
	7:50am	#6	3																								X	X		
	7:53	#7	2																						X					
	7:58	#8 – no H_2SO_4 included in shipment	1											X																
	7:59	#9	1																		X									
	8:03	#10	1															X	X	X		X								

Page 2 of 3

Instructions: No H_2SO_4 preservative was included with the bottle shipment. Please preserve Diquot Sample #8 as soon as you receive this shipment.

C/S Info:

Delivered Via: Fed Ex C/S Charge ☐

Seals Present Yes ☐ No ☑ Headspace Yes ☐ No ☒

Temp. 3.3 °C /Ice Y Sample Pres. Yes ☒ No ☐

Relinquished By:	Date/Time:	Received By:	Date/Time:	Relinquished By:	Date/Time:	Received By:	Date/Time:
	3-23 11:30am	Elise Nelson	3/24/17 1010				

Drinking Water Chain of Custody

page 2 of 2

Colorado Analytical LABORATORIES, INC.

Brighton Lab
240 South Main Street
Brighton, CO 80601

Lakewood Lab
12860 W. Cedar Dr, Suite 100A
Lakewood CO 80228

Phone: 303-659-2313
Fax: 303-659-2315

www.coloradolab.com

Report To Information	Bill To Information (If different from report to)	State Form / Project Information
Company Name: JDS-Hydro Consultants	Company Name: SR Water	PWSID: CO 0121724
Contact Name: Mark Volle	Contact Name: Jim Morley	System Name: Sterling Ranch MD
Address: 545 E. Pikes Peak Ave Suite 300	Address: 20 Boulder Cresent	Address: 20 Boulder Cresent
City CS State CO Zip 80903	City ColoSpg State CO Zip 80903	City CS State CO Zip 80903
Phone: 719-227-0072 Fax:	Phone: Fax:	County: El Paso
Email: mvolle@jdshydro.com	Email: jmorley3870@aol.com	Compliance Samples: Yes ☑ No ☐
Sampler Name: Stephanie Schwenke	PO No.:	Send Forms to State: Yes ☐ No ☒

CAL Task No.
170324007

ARF

PHASE I, II, V Drinking Water Analyses (check analysis) / Subcontract Analyses

Date	Time	Client Sample ID / EP Code	No. of Containers	Residual Chlorine (mg/L) P/A Samples Only	Total Coliform P/A	504.1 EDB/DBCP	505 Pests/PCBs	515.4 Herbicides	~~524.2 VOC~~ 624 VOA	525.2 SOCs-Pest	531.1 Carbamates	547 Glyphosate	548.1 Endothall	549.2 Diquat	524.2 TTHMs	552.2 HAA5s	Lead/Copper	Nitrate	Nitrite	Fluoride	Inorganics	Alk./Lang. Index	(TOC), DOC (Circle)	SUVA, UV 254 (Circle)	Cyanide	Gross Alpha/Beta	Radium 226	Radium 228	Radon	Uranium
3-23	8:01	#11	1																						X					
↓	8:00 am	#12	1X																											
		~~#13~~	~~3~~																											
	8:26	#14	3			X																								
	8:18	#15	2																											
	8:12	#16 (1,4 Dioxane)	3																										X	
	8:23	#17	2																				X							
	8:21	#18	~~3~~ 2								X																			
	8:15	#19	3				X																							
↓	8:29	#20	3						X																					

Instructions:

C/S Info:

Delivered Via: C/S Charge ☐

Seals Present Yes ☐ No ☐ Headspace Yes ☐ No ☐

Temp. °C /Ice Sample Pres. Yes ☐ No ☐

Relinquished By:	Date/Time:	Received By:	Date/Time:	Relinquished By:	Date/Time:	Received By:	Date/Time:
[signature]	3-23 11:30am						

Colorado Department of Public Health and Environment

Inorganic Chemicals Certified Laboratory Report Form
WQCD - Drinking Water CAS
Submit Online at http://www.wqcdcompliance.com/login

Revised 4/13/2015

IOC

Section I (Supplied or Completed by Public Water System)		Section II (Supplied or Completed by Certified Laboratory)	
Public Water System Information		**Certified Laboratory Information**	
PWSID#: CO0121724		Laboratory ID: CO 0015	
System Name: Sterling Ranch MD		Laboratory Name: Colorado Analytical Laboratory	
Contact Person: Mark Volle	Phone #:	Contact Person: Customer Service	Phone: 303-659-2313
Comments:	Do Samples Need to be Composited BY THE LAB? ☐	Comments:	

Section III (Supplied or Completed by Public Water System)			
Sample Date: 3/23/17	Collector: Stephanie Schwe	Facility ID (On Schedule): New Well	Sample Pt ID (On Schedule): **New Well**

Section IV Inorganic Chemicals (Completed by Certified Laboratory)

Lab Receipt Date	Lab Analysis Date	Lab Sample ID	Analyte Name	CAS No.	Analytical Method	MCL (mg/L)	Lab MRL (mg/L)	Result (mg/L)
3/24/17	3/29/17	170324007-01A	Antimony	7740-36-0	EPA 200.8	0.006	0.001	**BDL**
3/24/17	3/29/17	170324007-01A	Arsenic	7440-38-2	EPA 200.8	0.01	0.001	**0.002**
3/24/17	3/29/17	170324007-01A	Barium	7440-39-3	EPA 200.8	2	0.001	**0.003**
3/24/17	3/29/17	170324007-01A	Beryllium	7440-41-7	EPA 200.8	0.004	0.001	**BDL**
3/24/17	3/29/17	170324007-01A	Cadmium	7440-43-9	EPA 200.8	0.005	0.001	**BDL**
3/24/17	3/29/17	170324007-01A	Chromium	7440-47-3	EPA 200.8	0.1	0.001	**BDL**
3/24/17	3/29/17	170324007-01A	Mercury	7439-97-6	EPA 200.8	0.002	0.0001	**BDL**
3/24/17	3/29/17	170324007-01A	Nickel	7440-02-0	EPA 200.8	N/A	0.001	**0.001**
3/24/17	3/29/17	170324007-01A	Selenium	7782-49-2	EPA 200.8	0.05	0.001	**BDL**
3/24/17	3/30/17	170324007-01A	Sodium	7440-23-5	EPA 200.7	N/A	0.1	**52.8**
3/24/17	3/29/17	170324007-01A	Thallium	7440-28-0	EPA 200.8	0.002	0.001	**BDL**

NT: Not Tested
Lab MRL: Laboratory Minimum Reporting Level
BDL: Below Laboratory MRL. A less than (<) may also used.

mg/L: Milligrams per Liter
MCL: Maximum Contaminant Level

4/21/17
170324007-01A
1/ 1
N

Drinking Water Chain of Custody

page 1 of 2

Colorado Analytical LABORATORIES, INC.

Brighton Lab
240 South Main Street
Brighton, CO 80601

Lakewood Lab
12860 W. Cedar Dr, Suite 100A
Lakewood CO 80228

Phone: 303-659-2313
Fax: 303-659-2315

www.coloradolab.com

Report To Information	Bill To Information (if different from report to)	State Form / Project Information
Company Name: JDS-Hydro Consultants	Company Name: SR WATER	PWSID: CO 0121724
Contact Name: Mark Tolle	Contact Name: JIM MORLEY	System Name: STERLING RANCH MD
Address: 545 E. Pikes Peak Ave Suite 300	Address: 20 BOULDER CRESCENT	Address: 20 BOULDER CRESCENT
City CS State CO Zip 80903	City COLORADO SPRINGS State CO Zip 80903	City COLO SPGS State CO Zip 80903
Phone: 719-227-0072 Fax:	Phone: Fax:	County: El Paso
Email: mtolle@jdshydro.com	Email: jmorley3870@aol.com	Compliance Samples: Yes [X] No [ ]
Sampler Name: Stephanie Schwenke	PO No.:	Send Forms to State: Yes [ ] No [X]

CAL Task No. 170324007

ARF

Page 2 of 3

Date	Time	Client Sample ID / EP Code	No. of Containers	Residual Chlorine (mg/L) P/A Samples Only	PHASE I, II, V Drinking Water Analyses (check analysis): Total Coliform P/A	504.1 EDB/DBCP	505 Pests/PCBs	515.4 Herbicides	524.2 VOCs	525.2 SOCs-Pest	531.1 Carbamates	547 Glyphosate	548.1 Endothall	549.2 Diquat	524.2 TTHMs	552.2 HAA5s	Lead/Copper	Nitrate	Nitrite	Fluoride	Inorganics	Alk./Lang. Index	TOC, DOC (Circle)	SUVA, UV 254 (Circle)	525-SOC	Subcontract Analyses: Gross Alpha/Beta	Radium 226	Radium 228	Radon	Uranium
3-23	7:55	#1	1					X																						
	7:57	#2	1										X																	
	[redacted]	#3 8:05	2							X			X																	
	8:11	#4	1		X																									
	7:52	#5	1																							X				
	7:50am	#6	3																								X	X		
	7:53	#7	2																						X					
	7:58	#8 – no H_2SO_4 included in shipment	1											X																
	7:59	#9	1																		X									
	8:03	#10	1															X	X	X		X								

Instructions: No H_2SO_4 preservative was included with the bottle shipment. Please preserve Diquot Sample #8 as soon as you receive this shipment.

C/S Info: Delivered Via: Fed Ex C/S Charge [ ]

Seals Present Yes [ ] No [ ] Headspace Yes [ ] No [X]

Temp. 3.3 °C /Ice Y Sample Pres. Yes [X] No [ ]

Relinquished By:	Date/Time:	Received By:	Date/Time:	Relinquished By:	Date/Time:	Received By:	Date/Time:
	3-23 11:30am	Elise Nelson	3/24/17 1010				

Drinking Water Chain of Custody

page 2 of 2

Colorado Analytical LABORATORIES, INC.

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Lakewood Lab
12860 W. Cedar Dr, Suite 100A
Lakewood CO 80228

Phone: 303-659-2313
Fax: 303-659-2315

www.coloradolab.com

Report To Information	Bill To Information (If different from report to)	State Form / Project Information
Company Name: JDS-Hydro Consultants	Company Name: SR Water	PWSID: CO 0121724
Contact Name: Mark Volle	Contact Name: Jim Morley	System Name: Sterling Ranch MD
Address: 545 E. Pikes Peak Ave Suite 300	Address: 20 Boulder Cresent	Address: 20 Boulder Cresent
City CS State CO Zip 80903	City Colo Spgs State CO Zip 80903	City CS State CO Zip 80903
Phone: 719-227-0072 Fax:	Phone: Fax:	County: El Paso
Email: mvolle@jdshydro.com	Email: jmorley3870@aol.com	Compliance Samples: Yes ☒ No ☐
Sampler Name: Stephanie Schwenke	PO No.:	Send Forms to State: Yes ☐ No ☒

CAL Task No. 170324007

ARF

PHASE I, II, V Drinking Water Analyses (check analysis) / Subcontract Analyses

Date	Time	Client Sample ID / EP Code	No. of Containers	Residual Chlorine (mg/L) P/A Samples Only	Total Coliform P/A	504.1 EDB/DBCP	505 Pests/PCBs	515.4 Herbicides	~~524.2 VOCs~~ 524 VOA	525.2 SOCs-Pest	531.1 Carbamates	547 Glyphosate	548.1 Endothall	549.2 Diquat	524.2 TTHMs	552.2 HAA5s	Lead/Copper	Nitrate	Nitrite	Fluoride	Inorganics	Alk./Lang. Index	TOC, DOC (Circle)	SUVA, UV 254 (Circle)	Cyanide	Gross Alpha/Beta	Radium 226	Radium 228	Radon	Uranium
3-23	8:01	#11	1																						X					
↓	8:00 am	#12	1X																											
		~~#13~~	~~3~~																											
	8:26	#14	3			X																								
	8:18	#15	2																											
↓	8:12	#16 (1,4 Dioxane)	3																										X	
	8:23	#17	2																				X							
	8:21	#18	~~3~~ 2								X																			
↓	8:15	#19	3				X																							
	8:29	#20	3						X																					

Instructions:

C/S Info:

Seals Present Yes ☐ No ☐ Headspace Yes ☐ No ☐

Delivered Via: C/S Charge ☐ Temp. °C /Ice Sample Pres. Yes ☐ No ☐

Relinquished By:	Date/Time:	Received By:	Date/Time:	Relinquished By:	Date/Time:	Received By:	Date/Time:
[signature]	3-23 11:30am						

Colorado Analytical LABORATORIES, INC.

Analytical Results

TASK NO: 170324007

Report To: Mark Volle
Company: JDS Hydro Consultants
545 E. Pikes Peak Ave
Suite 300
Colorado Springs CO 80903

Bill To: Jim Morley
Company: SR Water
20 Boulder Crescent St.
Colorado Springs CO 80903

Task No.: 170324007
Client PO:
Client Project: Sterling Ranch MD CO0121724

Date Received: 3/24/17
Date Reported: 4/21/17
Matrix: Water - Drinking

Customer Sample ID Sterling Ranch MD
Sample Date/Time: 3/23/17 8:03 AM
Lab Number: 170324007-01

Test	Result	Method	ML	Date Analyzed	Analyzed By
Bicarbonate	99.7 mg/L as CaCO3	SM 2320-B	0.1	3/28/17	VDB
Calcium as CaCO3	2.6 mg/L	SM 3111-B	0.1	3/30/17	MBN
Carbonate	< 0.1 mg/L as CaCO3	SM 2320-B	0.1	3/28/17	VDB
Langelier Index	-1.23 units	SM 2330-B		3/31/17	LJG
pH	8.16 units	SM 4500-H-B	0.01	3/24/17	MBN
Temperature	20 °C	SM 4500-H-B	1	3/24/17	MBN
Total Alkalinity	99.7 mg/L as CaCO3	SM 2320-B	0.1	3/28/17	VDB
Total Dissolved Solids	143 mg/L	SM 2540-C	5	3/29/17	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

Drinking Water Chain of Custody

page 1 of 2

Colorado Analytical LABORATORIES, INC.

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Brighton, CO 80601

Lakewood Lab
12860 W. Cedar Dr, Suite 100A
Lakewood CO 80228

Phone: 303-659-2313
Fax: 303-659-2315

www.coloradolab.com

Report To Information	Bill To Information (if different from report to)	State Form / Project Information
Company Name: JDS-Hydro Consultants	Company Name: SR WATER	PWSID: CO 0121724
Contact Name: Mark Tolle	Contact Name: JIM MORLEY	System Name: STERLING RANCH MD
Address: 545 E. Pikes Peak Ave Suite 300	Address: 20 BOULDER CRESCENT	Address: 20 BOULDER CRESCENT
City CS State CO Zip 80903	City COLORADO SPRINGS State CO Zip 80905	City COLO SPGS State CO Zip 80903
Phone: 719-227-0072 Fax:	Phone: Fax:	County: El Paso
Email: mtolle@jdshydro.com	Email: jmorley3870@aol.com	Compliance Samples: Yes [X] No [ ]
Sampler Name: Stephanie Schwenke	PO No.:	Send Forms to State: Yes [ ] No [X]

CAL Task No. 170324007

ARF

Page 2 of 3

PHASE I, II, V Drinking Water Analyses (check analysis)

Date	Time	Client Sample ID / EP Code	No. of Containers	Residual Chlorine (mg/L) P/A Samples Only	Total Coliform P/A	504.1 EDB/DBCP	505 Pests/PCBs	515.4 Herbicides	524.2 VOCs	525.2 SOCs-Pest	531.1 Carbamates	547 Glyphosate	548.1 Endothall	549.2 Diquat	524.2 TTHMs	552.2 HAA5s	Lead/Copper	Nitrate	Nitrite	Fluoride	Inorganics	Alk./Lang. Index	TOC, DOC (Circle)	SUVA, UV 254 (Circle)	525-SOC	Gross Alpha/Beta	Radium 226	Radium 228	Radon	Uranium
3-23	7:55	#1	1					X																						
	7:57	#2	1										X																	
	[redacted]	#3 8:05	2							X																				
	8:11	#4	1		X																									
	7:52	#5	1																							X				
	7:50am	#6	3																								X	X		
	7:53	#7	2																						X					
	7:58	#8 – No H_2SO_4 included in shipment	1											X																
	7:59	#9	1																		X									
	8:03	#10	1															X	X	X		X								

Instructions: No H_2SO_4 preservative was included with the bottle shipment. Please preserve Diquot Sample #8 as soon as you receive this shipment.

C/S Info:

Delivered Via: Fed Ex C/S Charge [ ]

Seals Present Yes [ ] No [✓] Headspace Yes [ ] No [✓]

Temp. 3.3 °C /Ice Y Sample Pres. Yes [X] No [ ]

Relinquished By:	Date/Time:	Received By:	Date/Time:	Relinquished By:	Date/Time:	Received By:	Date/Time:
	3-23 11:30am	Elise Nelson	3/24/17 1010				

Drinking Water Chain of Custody

page 2 of 2

Colorado Analytical LABORATORIES, INC.

Brighton Lab
240 South Main Street
Brighton, CO 80601

Lakewood Lab
12860 W. Cedar Dr, Suite 100A
Lakewood CO 80228

Phone: 303-659-2313
Fax: 303-659-2315

www.coloradolab.com

Report To Information	Bill To Information (If different from report to)	State Form / Project Information
Company Name: JDS-Hydro Consultants	Company Name: SR Water	PWSID: CO 0121724
Contact Name: Mark Volle	Contact Name: Jim Morley	System Name: Sterling Ranch MD
Address: 545 E. Pikes Peak Ave Suite 300	Address: 20 Boulder Cresent	Address: 20 Boulder Cresent
City CS State CO Zip 80903	City Colo Spgs State CO Zip 80903	City CS State CO Zip 80903
Phone: 719-227-0072 Fax:	Phone: Fax:	County: El Paso
Email: mvolle@jdshydro.com	Email: jmorley3870@aol.com	Compliance Samples: Yes ☒ No ☐
Sampler Name: Stephanie Schwenke	PO No.:	Send Forms to State: Yes ☐ No ☒

CAL Task No. 170324007

ARF

PHASE I, II, V Drinking Water Analyses (check analysis) / Subcontract Analyses

Date	Time	Client Sample ID / EP Code	No. of Containers	Residual Chlorine (mg/L) P/A Samples Only	Total Coliform P/A	504.1 EDB/DBCP	505 Pests/PCBs	515.4 Herbicides	~~525.3 SVOC~~ 624 VOA	525.2 SOCs-Pest	531.1 Carbamates	547 Glyphosate	548.1 Endothall	549.2 Diquat	524.2 TTHMs	552.2 HAA5s	Lead/Copper	Nitrate	Nitrite	Fluoride	Inorganics	Alk./Lang. Index	(TOC), DOC (Circle)	SUVA, UV 254 (Circle)	Cyanide	Gross Alpha/Beta	Radium 226	Radium 228	Radon	Uranium
3-23	8:01	#11	1																						X					
↓	8:00 am	#12	1X																											
		~~#13~~	~~3~~																											
	8:26	#14	3			X																								
	8:18	#15	2																											
	8:12	#16 (1,4 Dioxane)	3																										X	
	8:23	#17	2																				X							
	8:21	#18	~~3~~ 2								X																			
	8:15	#19	3				X																							
↓	8:29	#20	3						X																					

Instructions:

C/S Info:

Delivered Via: C/S Charge ☐

Seals Present Yes ☐ No ☐ Headspace Yes ☐ No ☐

Temp. °C /Ice Sample Pres. Yes ☐ No ☐

Relinquished By:	Date/Time:	Received By:	Date/Time:	Relinquished By:	Date/Time:	Received By:	Date/Time:
[signature]	3-23 11:30am						

Colorado Department of Public Health and Environment

Nitrate and Nitrite as Nitrogen Certified Laboratory Report Form
WQCD - Drinking Water CAS
Submit Online at http://www.wqcdcompliance.com/login

Revised 4/13/2015

NOX

Section I (Supplied or Completed by Public Water System)		Section II (Supplied or Completed by Certified Laboratory)	
Public Water System Information		**Certified Laboratory Information**	
PWSID#: CO0121724		Laboratory ID: CO 0015	
System Name: Sterling Ranch MD		Laboratory Name: Colorado Analytical Laboratory	
Contact Person: Mark Volle	Phone #: 719-227-0072	Contact Person: Customer Service	Phone: 303-659-2313
Comments:		Comments:	

Section III (Supplied or Completed by Public Water System)					Section IV (Supplied or Completed by Certified Laboratory)							
Sample Date	Collector	Facility ID On Schedule	Sample Pt ID On Schedule	Confirmation?	Lab Receipt Date	Lab Analysis Date	Laboratory Sample ID #	Analyte	Analytical Method	MCL (mg/L)	Lab MRL (mg/L)	Result (mg/L)
3/23/17	tephanie Schwenk	New Well	New Well	☐	3/24/17	3/24/17	170324007-01	Nitrate Nitrogen	EPA 300.0	10	0.1	**BDL**
3/23/17	tephanie Schwenk	New Well	New Well	☐	3/24/17	3/24/17	170324007-01	Nitrite Nitrogen	EPA 300.0	1	0.1	**BDL**

NT: Not Tested
Lab MRL: Laboratory Minimum Reporting Level
BDL: Below Laboratory MRL. A less than (<) may also used.

mg/L: Milligrams per Liter
MCL: Maximum Contaminant Level

4/21/17
170324007-01
1/1
N

Drinking Water Chain of Custody

page 1 of 2

Colorado Analytical LABORATORIES, INC.

Brighton Lab
240 South Main Street
Brighton, CO 80601

Lakewood Lab
12860 W. Cedar Dr, Suite 100A
Lakewood CO 80228

Phone: 303-659-2313
Fax: 303-659-2315

www.coloradolab.com

Report To Information	Bill To Information (If different from report to)	State Form / Project Information
Company Name: JDS-Hydro Consultants	Company Name: SR WATER	PWSID: CO 0121724
Contact Name: Mark Tolle	Contact Name: JIM MORLEY	System Name: STERLING RANCH MD
Address: 545 E. Pikes Peak Ave Suite 300	Address: 20 BOULDER CRESCENT	Address: 20 BOULDER CRESCENT
City CS State CO Zip 80903	City COLORADO SPRINGS State CO Zip 80903	City COLO SPGS State CO Zip 80903
Phone: 719-227-0072 Fax:	Phone: Fax:	County: El Paso
Email: mtolle@jdshydro.com	Email: jmorley3870@aol.com	Compliance Samples: Yes [X] No [ ]
Sampler Name: Stephanie Schwenke	PO No.:	Send Forms to State: Yes [ ] No [X]

CAL Task No. 170324007

ARF

Page 2 of 3

Date	Time	Client Sample ID / EP Code	No. of Containers	Residual Chlorine (mg/L) P/A Samples Only	PHASE I, II, V Drinking Water Analyses (check analysis)																					Subcontract Analyses				
					Total Coliform P/A	504.1 EDB/DBCP	505 Pests/PCBs	515.4 Herbicides	524.2 VOCs	525.2 SOCs-Pest	531.1 Carbamates	547 Glyphosate	548.1 Endothall	549.2 Diquat	524.2 TTHMs	552.2 HAA5s	Lead/Copper	Nitrate	Nitrite	Fluoride	Inorganics	Alk./Lang. Index	TOC, DOC (Circle)	SUVA, UV 254 (Circle)	6025-SOC	Gross Alpha/Beta	Radium 226	Radium 228	Radon	Uranium
3-23	7:55	#1	1					X																						
	7:57	#2	1										X																	
	[redacted]	#3 8:05	2							X																				
	8:11	#4	1		X																									
	7:52	#5	1																						X					
	7:50am	#6	3																							X	X			
	7:53	#7	2																					X						
	7:58	#8 – no H_2SO_4 included in shipment	1											X																
	7:59	#9	1																	X										
	8:03	#10	1														X	X	X		X									

Instructions: No H_2SO_4 preservative was included with the bottle shipment. Please preserve Diquot Sample #8 as soon as you receive this shipment.

C/S Info:

Delivered Via: Fed Ex C/S Charge [ ]

Seals Present Yes [ ] No [X] Headspace Yes [X] No [X]

Temp. 3.3 °C /Ice Y Sample Pres. Yes [X] No [ ]

Relinquished By:	Date/Time:	Received By:	Date/Time:	Relinquished By:	Date/Time:	Received By:	Date/Time:
	3-23 11:30am	Elise Nelson	3/24/17 1010				

Drinking Water Chain of Custody

page 2 of 2

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Lakewood CO 80228

Phone: 303-659-2313
Fax: 303-659-2315

www.coloradolab.com

Report To Information	Bill To Information (If different from report to)	State Form / Project Information
Company Name: JDS-Hydro Consultants Contact Name: Mark Volle	Company Name: SR Water Contact Name: Jim Morley	PWSID: CO 0121724 System Name: Sterling Ranch MD
Address: 545 E. Pikes Peak Ave Suite 300	Address: 20 Boulder Cresent	Address: 20 Boulder Cresent
City CS State CO Zip 80903	City ColoSpgs State CO Zip 80903	City CS State CO Zip 80903
Phone: 719-227-0072 Fax:	Phone: Fax:	County: El Paso
Email: mvolle@jdshydro.com	Email: jmorley3870@aol.com	Compliance Samples: Yes ☒ No ☐
Sampler Name: Stephanie Schwenke	PO No.:	Send Forms to State: Yes ☐ No ☒

CAL Task No. 170324007

ARF

PHASE I, II, V Drinking Water Analyses (check analysis) / Subcontract Analyses

Date	Time	Client Sample ID / EP Code	No. of Containers	Residual Chlorine (mg/L) P/A Samples Only	Total Coliform P/A	504.1 EDB/DBCP	505 Pests/PCBs	515.4 Herbicides	~~524.2~~ 524 VOA	525.2 SOCs-Pest	531.1 Carbamates	547 Glyphosate	548.1 Endothall	549.2 Diquat	524.2 TTHMs	552.2 HAA5s	Lead/Copper	Nitrate	Nitrite	Fluoride	Inorganics	Alk./Lang. Index	(TOC), DOC (Circle)	SUVA, UV 254 (Circle)	Cyanide	Gross Alpha/Beta	Radium 226	Radium 228	Radon	Uranium
3-23	8:01	#11	1																						X					
↓	8:00am	#12	1X																											
		~~#13~~	~~3~~																											
	8:26	#14	3			X																								
	8:18	#15	2																										X	
	8:12	#16 (1,4 Dioxane)	3																											
	8:23	#17	2																				X							
	8:21	#18	~~3~~ 2								X																			
	8:15	#19	3				X																							
↓	8:29	#20	3						X																					

Instructions:

C/S Info:

Seals Present Yes ☐ No ☐ Headspace Yes ☐ No ☐

Delivered Via: C/S Charge ☐ Temp. °C /Ice Sample Pres. Yes ☐ No ☐

Relinquished By:	Date/Time:	Received By:	Date/Time:	Relinquished By:	Date/Time:	Received By:	Date/Time:
[signature]	3-23 11:30am						

Colorado Department of Public Health and Environment

Organic Chemicals Certified Laboratory Report Form
WQCD - Drinking Water CAS
Submit Online at http://www.wqcdcompliance.com/login

Revised 4/13/2015

VOC/SOC

Section I (Supplied or Completed by Public Water System)		Section II (Supplied or Completed by Certified Laboratory)	
Public Water System Information		**Certified Laboratory Information**	
PWSID#: CO0121724		Laboratory ID: CO 00063	
System Name: Sterling Ranch MD		Laboratory Name: Colorado Analytical Laboratory	
Contact Person: Mark Volle	Phone #: 719-227-0072	Contact Person: Customer Service	Phone: 303-659-2313
Comments:	Do Samples Need to be Composited BY THE LAB? ☐	Comments:	

PWSID#: CO0121724							
Section V (Supplied or Completed by Public Water System)							
Sample Date: 3/23/17	Collector: Stephanie Schwenk	Facility ID (On Schedule): New Well	Sample Pt ID (On Schedule): New Well				
Section VI Synthetic Organic Chemicals (Supplied or Completed by Certified Laboratory)							
Lab Receipt Date	Lab Analysis Date	Lab Sample ID	Analyte Name	CAS No	Analytical Method	MCL (ug/L)	Lab MRL (ug/L)	Result (ug/L)
3/24/17	4/3/17	170324007-01E	Dibromochloropropane	96-12-8	EPA 504.1	0.2	0.02	BDL
3/24/17	3/29/17	170324007-01G	2,4,-D	94-75-7	EPA 515.4	70	0.1	BDL
3/24/17	3/29/17	170324007-01G	2,4,5-TP	93-72-1	EPA 515.4	50	0.2	BDL
3/24/17	3/31/17	170324007-01I	Alachlor	15972-60-8	EPA 525.2	2	0.2	BDL
3/24/17	3/31/17	170324007-01J	Aldicarb	116-06-3	EPA 531.1	N/A	0.6	BDL
3/24/17	3/31/17	170324007-01J	Aldicarb sulfone	1646-88-4	EPA 531.1	N/A	1	BDL
3/24/17	3/31/17	170324007-01J	Aldicarb sulfoxide	1646-87-3	EPA 531.1	N/A	0.7	BDL
3/24/17	3/31/17	170324007-01I	Atrazine	1912-24-9	EPA 525.2	3	0.1	BDL
3/24/17	3/31/17	170324007-01I	Benzo(a)pyrene	50-32-8	EPA 525.2	0.2	0.02	BDL
3/24/17	3/31/17	170324007-01J	Carbofuran	1563-66-2	EPA 531.1	40	0.9	BDL
3/24/17	3/30/17	170324007-01F	Chlordane	57-74-9	EPA 505	2	0.2	BDL
3/24/17	3/29/17	170324007-01G	Dalapon	75-99-0	EPA 515.4	200	1	BDL
3/24/17	3/31/17	170324007-01I	Di(2-ethylhexyl)adipate	103-23-1	EPA 525.2	400	0.6	BDL
3/24/17	3/31/17	170324007-01I	Di(2-ethylhexyl)phthalate	117-81-7	EPA 525.2	6	0.6	BDL
3/24/17	3/29/17	170324007-01G	Dinoseb	85-85-7	EPA 515.4	7	0.2	BDL
3/24/17	3/24/17	170324007-01L	Diquat	85-00-7	EPA 549.2	20	0.4	BDL
3/24/17	3/29/17	170324007-01K	Endothall	145-73-3	EPA 548.1	100	9	BDL
3/24/17	3/30/17	170324007-01F	Endrin	72-20-8	EPA 505	2	0.01	BDL
3/24/17	4/3/17	170324007-01E	Ethylene dibromide	106-93-4	EPA 504.1	0.05	0.01	BDL
3/24/17	3/31/17	170324007-01I	Heptachlor	76-44-8	EPA 525.2	0.4	0.04	BDL
3/24/17	3/30/17	170324007-01F	Heptachlor epoxide	1024-57-3	EPA 505	0.2	0.02	BDL

NT: Not Tested ug/L: Micrograms per Liter MCL: Maximum Contaminant Level BDL Below Laboratory MRL A less than sign (<) may also be used.

170324007-01 N 1/2
4/21/17

PWSID#: CO0121724		Section V (Supplied or Completed by Public Water System)							
Sample Date:	3/23/17	Collector:	Stephanie Schwenk	Facility ID (On Schedule):	New Well	Sample Pt ID (On Schedule):	New Well		
Section VI Synthetic Organic Chemicals (Supplied or Completed by Certified Laboratory)									
Lab Receipt Date	Lab Analysis Date	Lab Sample ID	Analyte Name	CAS No.	Analytical Method	MCL (ug/L)	Lab MRL (ug/L)	Result (ug/L)	
3/24/17	3/30/17	170324007-01F	Hexachlorobenzene	118-74-1	EPA 505	1	0.1	BDL	
3/24/17	3/30/17	170324007-01F	Hexachlorocyclopentadiene	77-47-4	EPA 505	50	0.1	BDL	
3/24/17	3/30/17	170324007-01F	Lindane	58-89-9	EPA 505	0.2	0.02	BDL	
3/24/17	3/30/17	170324007-01F	Methoxychlor	72-43-5	EPA 505	40	0.1	BDL	
3/24/17	3/31/17	170324007-01J	Oxamyl	23135-22-0	EPA 531.1	200	1	BDL	
3/24/17	3/29/17	170324007-01G	Pentachlorophenol	87-86-5	EPA 515.4	1	0.04	BDL	
3/24/17	3/29/17	170324007-01G	Picloram	1918-02-1	EPA 515.4	500	0.1	BDL	
3/24/17	3/30/17	170324007-01F	Polychlorinated biphenyl's	1336-36-3	EPA 505	0.5	0.1	BDL	
3/24/17	3/31/17	170324007-01I	Simazine	122-34-9	EPA 525.2	4	0.07	BDL	
3/24/17	3/30/17	170324007-01F	Toxaphene	8001-35-2	EPA 505	3	1	BDL	

NT: Not Tested ug/L: Micrograms per Liter MCL: Maximum Contaminant Level BDL Below Laboratory MRL A less than sign (<) may also be used.

170324007-01 N 2/2
4/21/17

Drinking Water Chain of Custody

page 1 of 2

Colorado Analytical LABORATORIES, INC.

Brighton Lab
240 South Main Street
Brighton, CO 80601

Lakewood Lab
12860 W. Cedar Dr, Suite 100A
Lakewood CO 80228

Phone: 303-659-2313
Fax: 303-659-2315

www.coloradolab.com

Report To Information	Bill To Information (if different from report to)	State Form / Project Information
Company Name: JDS-Hydro Consultants	Company Name: SR WATER	PWSID: CO 0121724
Contact Name: Mark Volle	Contact Name: JIM MORLEY	System Name: STERLING RANCH MD
Address: 545 E. Pikes Peak Ave Suite 300	Address: 20 BOULDER CRESCENT	Address: 20 BOULDER CRESCENT
City CS State CO Zip 80903	City COLORADO SPRINGS State CO Zip 80905	City COLO SPGS State CO Zip 80905
Phone: 719-227-0072 Fax:	Phone: Fax:	County: El Paso
Email: mvolle@jdshydro.com	Email: jmorley3870@aol.com	Compliance Samples: Yes ☒ No ☐
Sampler Name: Stephanie Schwenke	PO No.:	Send Forms to State: Yes ☐ No ☒

CAL Task No. 170324007

ARF

Page 3 of 4

Date	Time	Client Sample ID / EP Code	No. of Containers	Residual Chlorine (mg/L) P/A Samples Only	PHASE I, II, V Drinking Water Analyses (check analysis)																				Subcontract Analyses				
					Total Coliform P/A	504.1 EDB/DBCP	505 Pests/PCBs	515.4 Herbicides	524.2 VOCs	525.2 SOCs-Pest	531.1 Carbamates	547 Glyphosate	548.1 Endothall	549.2 Diquat	524.2 TTHMs	552.2 HAA5s	Lead/Copper	Nitrate	Nitrite	Fluoride	Inorganics	Alk./Lang. Index	TOC, DOC (Circle)	SUVA, UV 254 (Circle)	525-SOC	Gross Alpha/Beta	Radium 226	Radium 228	Radon	Uranium
3-23	7:55	#1	1					X																					
	7:57	#2	1										X																
	[redacted]	#3 8:05	2							X																			
	8:11	#4	1		X																								
	7:52	#5	1																						X				
	7:50am	#6	3																							X	X		
	7:53	#7	2																					X					
	7:58	#8 – no H2SO4 included in shipment	1											X															
	7:59	#9	1																	X									
	8:03	#10	1														X	X	X		X								

Instructions: No H_2SO_4 preservative was included with the bottle shipment. Please preserve Diquot sample #8 as soon as you receive this shipment.

C/S Info:

Delivered Via: Fed Ex C/S Charge ☐

Seals Present Yes ☐ No ☒ Headspace Yes ☐ No ☒

Temp. 3.3 °C /Ice Y Sample Pres. Yes ☒ No ☐

Relinquished By:	Date/Time:	Received By:	Date/Time:	Relinquished By:	Date/Time:	Received By:	Date/Time:
	3-23 11:30am	Elise Nielsen	3/24/17 1010				

Drinking Water Chain of Custody

page 2 of 2

Colorado Analytical LABORATORIES, INC.

Brighton Lab
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Brighton, CO 80601

Lakewood Lab
12860 W. Cedar Dr, Suite 100A
Lakewood CO 80228

Phone: 303-659-2313
Fax: 303-659-2315

www.coloradolab.com

Report To Information	Bill To Information (If different from report to)	State Form / Project Information
Company Name: JDS-Hydro Consultants	Company Name: SR Water	PWSID: CO 0121724
Contact Name: Mark Volle	Contact Name: Jim Morley	System Name: Sterling Ranch MD
Address: 545 E. Pikes Peak Ave Suite 300	Address: 20 Boulder Cresent	Address: 20 Boulder Cresent
City CS State CO Zip 80903	City ColoSpg State CO Zip 80903	City CS State CO Zip 80903
Phone: 719-227-0072 Fax:	Phone: Fax:	County: El Paso
Email: mvolle@jdshydro.com	Email: jmorley3870@aol.com	Compliance Samples: Yes ☒ No ☐
Sampler Name: Stephanie Schwenke	PO No.:	Send Forms to State: Yes ☐ No ☒

CAL Task No. 170324007

ARF

PHASE I, II, V Drinking Water Analyses (check analysis) / Subcontract Analyses

Date	Time	Client Sample ID / EP Code	No. of Containers	Residual Chlorine (mg/L) P/A Samples Only	Total Coliform P/A	504.1 EDB/DBCP	505 Pests/PCBs	515.4 Herbicides	~~524.2 VOCs~~ 524 VOA	525.2 SOCs-Pest	531.1 Carbamates	547 Glyphosate	548.1 Endothall	549.2 Diquat	524.2 TTHMs	552.2 HAA5s	Lead/Copper	Nitrate	Nitrite	Fluoride	Inorganics	Alk./Lang. Index	(TOC), DOC (Circle)	SUVA, UV 254 (Circle)	Cyanide	Gross Alpha/Beta	Radium 226	Radium 228	Radon	Uranium
3-23	8:01	#11	1																						X					
↓	8:00 am	#12	1X																											
		~~#13~~	~~3~~																											
	8:26	#14	3			X																								
	8:18	#15	2																											
	8:12	#16 (1,4 Dioxane)	3																										X	
	8:23	#17	2																				X							
	8:21	#18	~~3~~ 2								X																			
	8:15	#19	3				X																							
↓	8:29	#20	3						X																					

Instructions:

C/S Info:

Delivered Via: C/S Charge ☐

Seals Present Yes ☐ No ☐ Headspace Yes ☐ No ☐

Temp. °C /Ice Sample Pres. Yes ☐ No ☐

Relinquished By:	Date/Time:	Received By:	Date/Time:	Relinquished By:	Date/Time:	Received By:	Date/Time:
[signature]	3-23 11:30am						

Colorado Department of Public Health and Environment

Radionuclides Certified Laboratory Report Form

WQCD – Drinking Water CAS
4300 Cherry Creek Drive South; Denver, CO 80246-1530
Fax: (303) 758-1398; cdphe.drinkingwater@state.co.us

Revision 6/13/2014

RAD

Section I (Supplied or Completed by Public Water System)		Section II (Supplied or Completed by Certified Laboratory)	
Public Water System Information		**Certified Laboratory Information**	
PWS ID: CO0121724		Laboratory ID: CO 00008	
System Name: Sterling Ranch MD		Laboratory Name: Hazen Research, Inc.	
Contact Person:	Phone #:	Contact Person: Jessica Axen	Phone #: 303-279-4501
Comments:	Do Samples Need to be Composited BY THE LAB?	Comments:	

Section III (Supplied or Completed by Public Water System)

Sample Date: 03/23/2017	Collector:	Facility ID (On Schedule):	Sample Pt ID (On Schedule):

Section IV Radionuclides (Supplied or Completed by Certified Laboratory)

Lab Receipt Date	Lab Analysis Date	Lab Sample ID	Analyte Name (Code)	CAS No.	Analytical Method	MCL	Lab MRL	Result
03/24/2017	04/18/2017	C27017-001	Gross Alpha Including Uranium (4002)	12587-46-1	SM 7110 B	N/A	1.5	0.0(±1.5)
			Combined Uranium (4006)	7440-61-1	D2907-97	30 ug/L		
03/24/2017	04/07/2017	C27017-001	Radium -226 (4020)	13982-63-3	SM 7500-Ra B	N/A	0.1	0.4(±0.3)
03/24/2017	03/30/2017	C27017-001	Radium -228 (4030)	15262-20-1	EPA Ra-05	N/A	0.6	0.2(±0.6)
03/24/2017	04/18/2017	C27017-001	Gross Beta (4100)	12587-47-2	SM 7110 B	50 pCi/L*	2.1	0.0(±2.0)
			Total Dissolved Solids (1930)		EPA 160.3	N/A		

*The MCL for Gross Beta Particle Activity is 4 mrem/year. Since there is no simple conversion between mrem/year and pCi/L EPA considers 50 pCi/L to be the level of concern.

Section V Calculated Values

N/A	Gross Alpha Excluding Uranium (4000)	Calculated Value	15 pCi/L	N/A	
	Combined Radium {-226 & -228} (4010)	Calculated Value	5 pCi/L	N/A	

NT: Not Tested
Lab MRL: Laboratory Minimum Reporting Level
BDL: Below Laboratory MRL. A less than sign (<) may also be used

ug/L: Micrograms per Liter
pCi/L: Picocuries per Liter
MCL: Maximum Contaminant Level

Drinking Water Chain of Custody

Colorado Analytical Laboratories, Inc.

Brighton Lab
240 South Main Street
Brighton, CO 80601

Lakewood Lab
12860 W. Cedar Dr, Suite 101
Lakewood CO 80228

Phone: 303-659-2313
Fax: 303-659-2315

www.coloradolab.com

Report To Information	Bill To Information (If different from report to)	State Form / Project Information
Company Name: Colorado Analytical Labs Contact Name: Stuart Nielson	Company Name: same Contact Name:	PWSID: CO0121724 System Name: Sterling Ranch MD
Address: P.O. Box 507 City: Brighton State: CO Zip: 80601	Address: City: State: Zip:	System Address: 20 Boulder Crescent City: Colo Spgs State: CO Zip: 80903
Phone:303-659-2313 Fax:303-659-2315	Phone: Fax:	County: El Paso
Email: stuartnielson@coloradolab.com	Email:	Compliance Samples: Yes ☒ No ☐
Sampler Name:	PO No.:	Send Forms to State: Yes ☐ No ☒

CAL Task No.
170324007

ARF

Date	Time	Client Sample ID / EP Code	No. of Containers	Residual Chlorine (mg/L) P/A Samples Only	Total Coliform P/A	504.1 EDB/DBCP	505 Pests/PCBs	515.4 Herbicides	524.2 VOCs	525.2 SOCs-Pest	531.1 Carbamates	547 Glyphosate	548.1 Endothall	549.2 Diquat	524.2 TTHMs	552.2 HAA5s	Lead/Copper	Nitrate	Nitrite	Fluoride	Inorganics	Alk./Lang. Index	TOC, DOC (Circle)	SUVA, UV 254 (Circle)		Gross Alpha /Beta	Radium 226	Radium 228	Radon	Uranium
3/23/17	08:03	170324007 Sterling Ranch MD	6		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☒	☒	☒	☒	☐
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(Column headers: PHASE I, II, V Drinking Water Analyses (check analysis) — Total Coliform P/A through the unlabelled column; Subcontract Analyses — Gross Alpha /Beta through Uranium.)

Instructions:Gross Alpha, without Radon & Uranium. ** Combined Radium -226 & -228.
Please print results on Colorado State form but do not submit to CDPHE. Thank you.

C/S Info:

Delivered Via: HD

C/S Charge ☐

Seals Present Yes ☐ No ☐ Headspace Yes ☐ No ☐

Temp. °C /Ice Sample Pres. Yes ☐ No ☐

Relinquished By:	Date/Time:	Received By:	Date/Time:	Relinquished By:	Date/Time:	Received By:	Date/Time:
PMcClell[illegible]	3/24/17 1150					[signature]	03/24/2017 1152

Colorado Analytical LABORATORIES, INC.

Analytical Results

TASK NO: 170324007

Report To: Mark Volle
Company: JDS Hydro Consultants
545 E. Pikes Peak Ave
Suite 300
Colorado Springs CO 80903

Bill To: Jim Morley
Company: SR Water
20 Boulder Crescent St.
Colorado Springs CO 80903

Task No.: 170324007
Client PO:
Client Project: Sterling Ranch MD CO0121724

Date Received: 3/24/17
Date Reported: 4/21/17
Matrix: Water - Drinking

Customer Sample ID Sterling Ranch MD
Sample Date/Time: 3/23/17 8:03 AM
Lab Number: 170324007-01

Facility ID: New Well
Sample Point ID: New Well

Test	Result	Method	ML	Date Analyzed	Analyzed By
Chloride	**1.3 mg/L**	EPA 300.0	0.1 mg/L	3/24/17	LJG
Cyanide-Free	**< 0.005 mg/L**	EPA 335.4	0.005 mg/L	3/28/17	VDB
E-Coli	**< 1 mpn/100ml**	Colilert	1 mpn/100ml	3/25/17	VDB
Sulfate	**10.7 mg/L**	EPA 300.0	0.1 mg/L	3/24/17	LJG
Total Coliform	**68 mpn/100ml**	Colilert	1 mpn/100ml	3/25/17	VDB
Total Organic Carbon	**< 0.5 mg/L**	SM 5310-C	0.5 mg/L	3/28/17	ISG
Turbidity	**1.08 NTU**	SM 2130-B	0.01 NTU	3/24/17	MBN
Total					
Aluminum	**0.032 mg/L**	EPA 200.8	0.001 mg/L	3/29/17	TCD
Calcium	**1.0 mg/L**	EPA 200.7	0.1 mg/L	3/29/17	MBN
Copper	**< 0.0008 mg/L**	EPA 200.8	0.0008 mg/L	3/29/17	TCD
Iron	**0.180 mg/L**	EPA 200.7	0.005 mg/L	3/30/17	MBN
Lead	**0.0002 mg/L**	EPA 200.8	0.0001 mg/L	3/29/17	TCD
Magnesium	**0.06 mg/L**	EPA 200.7	0.02 mg/L	3/29/17	MBN
Manganese	**0.0071 mg/L**	EPA 200.8	0.0008 mg/L	3/29/17	TCD
Potassium	**1.0 mg/L**	EPA 200.7	0.1 mg/L	3/29/17	MBN
Silver	**< 0.0001 mg/L**	EPA 200.8	0.0001 mg/L	3/29/17	TCD
Strontium	**0.009 mg/L**	EPA 200.8	0.005 mg/L	3/29/17	TCD
Total Hardness	**2.7 mg/L as CaCO3**	SM 2340-B	0.1 mg/L as CaCO3	3/30/17	MBN
Uranium	**< 0.0002 mg/L**	EPA 200.8	0.0002 mg/L	3/29/17	TCD
Zinc	**0.002 mg/L**	EPA 200.8	0.001 mg/L	3/29/17	TCD

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

Colorado Analytical LABORATORIES, INC.

Analytical Results

TASK NO: 170324007

Report To: Mark Volle
Company: JDS Hydro Consultants
545 E. Pikes Peak Ave
Suite 300
Colorado Springs CO 80903

Bill To: Jim Morley
Company: SR Water
20 Boulder Crescent St.
Colorado Springs CO 80903

Task No.: 170324007
Client PO:
Client Project: Sterling Ranch MD CO0121724

Date Received: 3/24/17
Date Reported: 4/21/17
Matrix: Water - Drinking

Customer Sample ID Sterling Ranch MD
Sample Date/Time: 3/23/17 8:03 AM
Lab Number: 170324007-01

Facility ID: New Well
Sample Point ID: New Well

Test	Result	Method	ML	Date Analyzed	Analyzed By
Total					
Zinc	0.002 mg/L	EPA 200.8	0.001 mg/L	3/29/17	TCD

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

Drinking Water Chain of Custody

page 1 of 2

Colorado Analytical LABORATORIES, INC.

Brighton Lab
240 South Main Street
Brighton, CO 80601

Lakewood Lab
12860 W. Cedar Dr, Suite 100A
Lakewood CO 80228

Phone: 303-659-2313
Fax: 303-659-2315

www.coloradolab.com

Report To Information	Bill To Information (if different from report to)	State Form / Project Information
Company Name: JDS-Hydro Consultants	Company Name: SR WATER	PWSID: CO 0121724
Contact Name: Mark Volle	Contact Name: JIM MORLEY	System Name: STERLING RANCH MD
Address: 545 E. Pikes Peak Ave Suite 300	Address: 20 BOULDER CRESCENT	Address: 20 BOULDER CRESCENT
City CS State CO Zip 80903	City COLORADO SPRINGS State CO Zip 80905	City COLO SPGS State CO Zip 80903
Phone: 719-227-0072 Fax:	Phone: Fax:	County: El Paso
Email: mvolle@jdshydro.com	Email: jmorley3870@aol.com	Compliance Samples: Yes [X] No [ ]
Sampler Name: Stephanie Schwenke	PO No.:	Send Forms to State: Yes [ ] No [X]

CAL Task No. 170324007

ARF

Page 3 of 4

Date	Time	Client Sample ID / EP Code	No. of Containers	Residual Chlorine (mg/L) P/A Samples Only	PHASE I, II, V Drinking Water Analyses (check analysis): Total Coliform P/A	504.1 EDB/DBCP	505 Pests/PCBs	515.4 Herbicides	524.2 VOCs	525.2 SOCs-Pest	531.1 Carbamates	547 Glyphosate	548.1 Endothall	549.2 Diquat	524.2 TTHMs	552.2 HAA5s	Lead/Copper	Nitrate	Nitrite	Fluoride	Inorganics	Alk./Lang. Index	TOC, DOC (Circle)	SUVA, UV 254 (Circle)	525-SOC	Subcontract Analyses: Gross Alpha/Beta	Radium 226	Radium 228	Radon	Uranium
3-23	7:55	#1	1					X																						
	7:57	#2	1										X																	
	[redacted]	#3 8:05	2							X																				
	8:11	#4	1		X																									
	7:52	#5	1																							X				
	7:50am	#6	3																								X	X		
	7:53	#7	2																						X					
	7:58	#8 – no H_2SO_4 included in shipment	1											X																
	7:59	#9	1																		X									
	8:03	#10	1															X	X	X		X								

Instructions: No H_2SO_4 preservative was included with the bottle shipment. Please preserve Diquot Sample #8 as soon as you receive this shipment.

C/S Info:

Delivered Via: Fed Ex C/S Charge [ ]

Seals Present Yes [ ] No [ ] Headspace Yes [ ] No [X]

Temp. 3.3 °C /Ice Y Sample Pres. Yes [X] No [ ]

Relinquished By:	Date/Time:	Received By:	Date/Time:	Relinquished By:	Date/Time:	Received By:	Date/Time:
	3-23 11:30am	Eloise Nielsen	3/24/17 1010				

Drinking Water Chain of Custody

page 2 of 2

Colorado Analytical LABORATORIES, INC.

Brighton Lab
240 South Main Street
Brighton, CO 80601

Lakewood Lab
12860 W. Cedar Dr, Suite 100A
Lakewood CO 80228

Phone: 303-659-2313
Fax: 303-659-2315

www.coloradolab.com

Report To Information	Bill To Information (If different from report to)	State Form / Project Information
Company Name: JDS-Hydro Consultants	Company Name: SR Water	PWSID: CO 0121724
Contact Name: Mark Volle	Contact Name: Jim Morley	System Name: Sterling Ranch MD
Address: 545 E. Pikes Peak Ave Suite 300	Address: 20 Boulder Cresent	Address: 20 Boulder Cresent
City CS State CO Zip 80903	City ColoSpgs State CO Zip 80903	City CS State CO Zip 80903
Phone: 719-227-0072 Fax:	Phone: Fax:	County: El Paso
Email: mvolle@jdshydro.com	Email: jmorley3870@aol.com	Compliance Samples: Yes ☒ No ☐
Sampler Name: Stephanie Schwenke	PO No.:	Send Forms to State: Yes ☐ No ☒

CAL Task No. 170324007

ARF

PHASE I, II, V Drinking Water Analyses (check analysis) / Subcontract Analyses

Date	Time	Client Sample ID / EP Code	No. of Containers	Residual Chlorine (mg/L) P/A Samples Only	Total Coliform P/A	504.1 EDB/DBCP	505 Pests/PCBs	515.4 Herbicides	~~525.2~~ 624 VOA	525.2 SOCs-Pest	531.1 Carbamates	547 Glyphosate	548.1 Endothall	549.2 Diquat	524.2 TTHMs	552.2 HAA5s	Lead/Copper	Nitrate	Nitrite	Fluoride	Inorganics	Alk./Lang. Index	(TOC), DOC (Circle)	SUVA, UV 254 (Circle)	Cyanide	Gross Alpha/Beta	Radium 226	Radium 228	Radon	Uranium
3-23	8:01	#11	1																						X					
↓	8:00 am	#12	1 ~~X~~																											
		~~#13~~	~~3~~																											
	8:26	#14	3			X																								
	8:18	#15	2																										X	
	8:12	#16 (1,4 Dioxane)	3																											
	8:23	#17	2																				X							
	8:21	#18	~~3~~ 2								X																			
	8:15	#19	3				X																							
↓	8:29	#20	3						X																					

Instructions:

C/S Info:

Delivered Via: C/S Charge ☐

Seals Present Yes ☐ No ☐ Headspace Yes ☐ No ☐

Temp. °C /Ice Sample Pres. Yes ☐ No ☐

Relinquished By:	Date/Time:	Received By:	Date/Time:	Relinquished By:	Date/Time:	Received By:	Date/Time:
[signature]	3-23 11:30am						

ANALYTICAL SUMMARY REPORT

April 06, 2017

Colorado Analytical Laboratories Inc
PO Drawer 507
Brighton, CO 80601

Work Order: C17030850 Quote ID: C4542 - 624, 625, 1,4-Dioxane

Project Name: 170324007 Sterling Ranch MD

Energy Laboratories, Inc. Casper WY received the following 1 sample for Colorado Analytical Laboratories Inc on 3/28/2017 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
C17030850-001	170324007 Sterling Ranch MD	03/23/17 8:03	03/28/17	Groundwater	Azeotropic Distillation Separatory Funnel Liquid-Liquid Ext. Semi-Volatile Organic Compounds 624-Purgeable Organics Volatile Compounds by Azeotropic Distillation

The results as reported relate only to the item(s) submitted for testing. The analyses presented in this report were performed at Energy Laboratories, Inc., 2393 Salt Creek Hwy., Casper, WY 82601, unless otherwise noted. Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

If you have any questions regarding these test results, please call.

Report Approved By: Randy Horton, Project Manager

Digitally signed by
Randy Horton
Date: 2017.04.06 16:31:29 -06:00

CLIENT: Colorado Analytical Laboratories Inc
Project: 170324007 Sterling Ranch MD
Work Order: C17030850

Report Date: 04/06/17

CASE NARRATIVE

Tests associated with analyst identified as ELI-B were subcontracted to Energy Laboratories, 1120 S. 27th St., Billings, MT, EPA Number MT00005.

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Colorado Analytical Laboratories Inc
Project: 170324007 Sterling Ranch MD
Lab ID: C17030850-001
Client Sample ID: 170324007 Sterling Ranch MD

Report Date: 04/06/17
Collection Date: 03/23/17 08:03
DateReceived: 03/28/17
Matrix: Groundwater

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOCS BY AZEOTROPIC DISTILLATION							
1,4-Dioxane	ND	ug/L		1.0		SW8260M	04/06/17 09:34 / eli-b
- Analysis by direct aqueous injection of the sample distillate. A deuterated version of 1,4-Dioxane was added to the sample prior to distillation and used to quantitate the 1,4-Dioxane and account for any variations in the analysis or distillation.							
VOLATILE ORGANIC COMPOUNDS							
Acetone	ND	ug/L		20		E624	03/31/17 16:09 / eli-b
Acetonitrile	ND	ug/L		20		E624	03/31/17 16:09 / eli-b
Acrolein	ND	ug/L		20		E624	03/31/17 16:09 / eli-b
Acrylonitrile	ND	ug/L		20		E624	03/31/17 16:09 / eli-b
Benzene	ND	ug/L		1.0		E624	03/31/17 16:09 / eli-b
Bromobenzene	ND	ug/L		1.0		E624	03/31/17 16:09 / eli-b
Bromochloromethane	ND	ug/L		1.0		E624	03/31/17 16:09 / eli-b
Bromodichloromethane	ND	ug/L		1.0		E624	03/31/17 16:09 / eli-b
Bromoform	ND	ug/L		1.0		E624	03/31/17 16:09 / eli-b
Bromomethane	ND	ug/L		1.0		E624	03/31/17 16:09 / eli-b
Carbon disulfide	ND	ug/L		1.0		E624	03/31/17 16:09 / eli-b
Carbon tetrachloride	ND	ug/L		1.0		E624	03/31/17 16:09 / eli-b
Chlorobenzene	ND	ug/L		1.0		E624	03/31/17 16:09 / eli-b
Chlorodibromomethane	ND	ug/L		1.0		E624	03/31/17 16:09 / eli-b
Chloroethane	ND	ug/L		1.0		E624	03/31/17 16:09 / eli-b
2-Chloroethyl vinyl ether	ND	ug/L		1.0		E624	03/31/17 16:09 / eli-b
Chloroform	ND	ug/L		1.0		E624	03/31/17 16:09 / eli-b
Chloromethane	ND	ug/L		1.0		E624	03/31/17 16:09 / eli-b
2-Chlorotoluene	ND	ug/L		1.0		E624	03/31/17 16:09 / eli-b
4-Chlorotoluene	ND	ug/L		1.0		E624	03/31/17 16:09 / eli-b
1,2-Dibromoethane	ND	ug/L		1.0		E624	03/31/17 16:09 / eli-b
Dibromomethane	ND	ug/L		1.0		E624	03/31/17 16:09 / eli-b
1,2-Dichlorobenzene	ND	ug/L		1.0		E624	03/31/17 16:09 / eli-b
1,3-Dichlorobenzene	ND	ug/L		1.0		E624	03/31/17 16:09 / eli-b
1,4-Dichlorobenzene	ND	ug/L		1.0		E624	03/31/17 16:09 / eli-b
Dichlorodifluoromethane	ND	ug/L		1.0		E624	03/31/17 16:09 / eli-b
1,1-Dichloroethane	ND	ug/L		1.0		E624	03/31/17 16:09 / eli-b
1,2-Dichloroethane	ND	ug/L		1.0		E624	03/31/17 16:09 / eli-b
1,1-Dichloroethene	ND	ug/L		1.0		E624	03/31/17 16:09 / eli-b
cis-1,2-Dichloroethene	ND	ug/L		1.0		E624	03/31/17 16:09 / eli-b
trans-1,2-Dichloroethene	ND	ug/L		1.0		E624	03/31/17 16:09 / eli-b
1,2-Dichloropropane	ND	ug/L		1.0		E624	03/31/17 16:09 / eli-b
1,3-Dichloropropane	ND	ug/L		1.0		E624	03/31/17 16:09 / eli-b
2,2-Dichloropropane	ND	ug/L		1.0		E624	03/31/17 16:09 / eli-b
1,1-Dichloropropene	ND	ug/L		1.0		E624	03/31/17 16:09 / eli-b
cis-1,3-Dichloropropene	ND	ug/L		1.0		E624	03/31/17 16:09 / eli-b
trans-1,3-Dichloropropene	ND	ug/L		1.0		E624	03/31/17 16:09 / eli-b
Ethylbenzene	ND	ug/L		1.0		E624	03/31/17 16:09 / eli-b

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Colorado Analytical Laboratories Inc
Project: 170324007 Sterling Ranch MD
Lab ID: C17030850-001
Client Sample ID: 170324007 Sterling Ranch MD

Report Date: 04/06/17
Collection Date: 03/23/17 08:03
DateReceived: 03/28/17
Matrix: Groundwater

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		2.0		E624	03/31/17 16:09 / eli-b
Methyl ethyl ketone	ND	ug/L		20		E624	03/31/17 16:09 / eli-b
Methyl isobutyl ketone	ND	ug/L		10		E624	03/31/17 16:09 / eli-b
Methylene chloride	ND	ug/L		1.0		E624	03/31/17 16:09 / eli-b
Naphthalene	ND	ug/L		0.50		E624	03/31/17 16:09 / eli-b
Styrene	ND	ug/L		1.0		E624	03/31/17 16:09 / eli-b
Tetrachloroethene	ND	ug/L		1.0		E624	03/31/17 16:09 / eli-b
1,1,1,2-Tetrachloroethane	ND	ug/L		1.0		E624	03/31/17 16:09 / eli-b
1,1,2,2-Tetrachloroethane	ND	ug/L		1.0		E624	03/31/17 16:09 / eli-b
Toluene	ND	ug/L		1.0		E624	03/31/17 16:09 / eli-b
Trichloroethene	ND	ug/L		1.0		E624	03/31/17 16:09 / eli-b
1,1,1-Trichloroethane	ND	ug/L		1.0		E624	03/31/17 16:09 / eli-b
1,1,2-Trichloroethane	ND	ug/L		1.0		E624	03/31/17 16:09 / eli-b
Trichlorofluoromethane	ND	ug/L		1.0		E624	03/31/17 16:09 / eli-b
1,2,3-Trichloropropane	ND	ug/L		1.0		E624	03/31/17 16:09 / eli-b
Vinyl Acetate	ND	ug/L		1.0		E624	03/31/17 16:09 / eli-b
Vinyl chloride	ND	ug/L		1.0		E624	03/31/17 16:09 / eli-b
m+p-Xylenes	ND	ug/L		1.0		E624	03/31/17 16:09 / eli-b
o-Xylene	ND	ug/L		1.0		E624	03/31/17 16:09 / eli-b
Xylenes, Total	ND	ug/L		1.0		E624	03/31/17 16:09 / eli-b
Surr: 1,2-Dichloroethane-d4	105	%REC		71-139		E624	03/31/17 16:09 / eli-b
Surr: p-Bromofluorobenzene	102	%REC		80-127		E624	03/31/17 16:09 / eli-b
Surr: Toluene-d8	92.0	%REC		80-123		E624	03/31/17 16:09 / eli-b
SEMI-VOLATILE ORGANIC COMPOUNDS							
Acenaphthene	ND	ug/L		10		E625	03/30/17 17:14 / eli-b
Acenaphthylene	ND	ug/L		10		E625	03/30/17 17:14 / eli-b
Anthracene	ND	ug/L		10		E625	03/30/17 17:14 / eli-b
Azobenzene	ND	ug/L		10		E625	03/30/17 17:14 / eli-b
Benzidine	ND	ug/L		10		E625	03/30/17 17:14 / eli-b
Benzo(a)anthracene	ND	ug/L		10		E625	03/30/17 17:14 / eli-b
Benzo(a)pyrene	ND	ug/L		10		E625	03/30/17 17:14 / eli-b
Benzo(b)fluoranthene	ND	ug/L		10		E625	03/30/17 17:14 / eli-b
Benzo(g,h,i)perylene	ND	ug/L		10		E625	03/30/17 17:14 / eli-b
Benzo(k)fluoranthene	ND	ug/L		10		E625	03/30/17 17:14 / eli-b
4-Bromophenyl phenyl ether	ND	ug/L		10		E625	03/30/17 17:14 / eli-b
Butylbenzylphthalate	ND	ug/L		10		E625	03/30/17 17:14 / eli-b
4-Chloro-3-methylphenol	ND	ug/L		10		E625	03/30/17 17:14 / eli-b
bis(-2-chloroethoxy)Methane	ND	ug/L		10		E625	03/30/17 17:14 / eli-b
bis(-2-chloroethyl)Ether	ND	ug/L		10		E625	03/30/17 17:14 / eli-b
bis(2-chloroisopropyl)Ether	ND	ug/L		10		E625	03/30/17 17:14 / eli-b
2-Chloronaphthalene	ND	ug/L		10		E625	03/30/17 17:14 / eli-b
2-Chlorophenol	ND	ug/L		10		E625	03/30/17 17:14 / eli-b

Report Definitions: RL - Analyte reporting limit. QCL - Quality control limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Colorado Analytical Laboratories Inc
Project: 170324007 Sterling Ranch MD
Lab ID: C17030850-001
Client Sample ID: 170324007 Sterling Ranch MD

Report Date: 04/06/17
Collection Date: 03/23/17 08:03
DateReceived: 03/28/17
Matrix: Groundwater

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
SEMI-VOLATILE ORGANIC COMPOUNDS							
4-Chlorophenyl phenyl ether	ND	ug/L		10		E625	03/30/17 17:14 / eli-b
Chrysene	ND	ug/L		10		E625	03/30/17 17:14 / eli-b
Diethyl phthalate	ND	ug/L		10		E625	03/30/17 17:14 / eli-b
Di-n-butyl phthalate	ND	ug/L		10		E625	03/30/17 17:14 / eli-b
1,2-Dichlorobenzene	ND	ug/L		10		E625	03/30/17 17:14 / eli-b
1,3-Dichlorobenzene	ND	ug/L		10		E625	03/30/17 17:14 / eli-b
1,4-Dichlorobenzene	ND	ug/L		10		E625	03/30/17 17:14 / eli-b
3,3'-Dichlorobenzidine	ND	ug/L		10		E625	03/30/17 17:14 / eli-b
2,4-Dichlorophenol	ND	ug/L		10		E625	03/30/17 17:14 / eli-b
Dimethyl phthalate	ND	ug/L		10		E625	03/30/17 17:14 / eli-b
Di-n-octyl phthalate	ND	ug/L		10		E625	03/30/17 17:14 / eli-b
Dibenzo(a,h)anthracene	ND	ug/L		10		E625	03/30/17 17:14 / eli-b
2,4-Dimethylphenol	ND	ug/L		10		E625	03/30/17 17:14 / eli-b
4,6-Dinitro-2-methylphenol	ND	ug/L		50		E625	03/30/17 17:14 / eli-b
2,4-Dinitrophenol	ND	ug/L		50		E625	03/30/17 17:14 / eli-b
2,4-Dinitrotoluene	ND	ug/L		10		E625	03/30/17 17:14 / eli-b
2,6-Dinitrotoluene	ND	ug/L		10		E625	03/30/17 17:14 / eli-b
bis(2-ethylhexyl)Phthalate	ND	ug/L		10		E625	03/30/17 17:14 / eli-b
Fluoranthene	ND	ug/L		10		E625	03/30/17 17:14 / eli-b
Fluorene	ND	ug/L		10		E625	03/30/17 17:14 / eli-b
Hexachlorobenzene	ND	ug/L		10		E625	03/30/17 17:14 / eli-b
Hexachlorobutadiene	ND	ug/L		10		E625	03/30/17 17:14 / eli-b
Hexachlorocyclopentadiene	ND	ug/L		10		E625	03/30/17 17:14 / eli-b
Hexachloroethane	ND	ug/L		10		E625	03/30/17 17:14 / eli-b
Indeno(1,2,3-cd)pyrene	ND	ug/L		10		E625	03/30/17 17:14 / eli-b
Isophorone	ND	ug/L		10		E625	03/30/17 17:14 / eli-b
n-Nitrosodimethylamine	ND	ug/L		10		E625	03/30/17 17:14 / eli-b
n-Nitroso-di-n-propylamine	ND	ug/L		10		E625	03/30/17 17:14 / eli-b
n-Nitrosodiphenylamine	ND	ug/L		10		E625	03/30/17 17:14 / eli-b
2-Nitrophenol	ND	ug/L		10		E625	03/30/17 17:14 / eli-b
4-Nitrophenol	ND	ug/L		50		E625	03/30/17 17:14 / eli-b
Naphthalene	ND	ug/L		10		E625	03/30/17 17:14 / eli-b
Nitrobenzene	ND	ug/L		10		E625	03/30/17 17:14 / eli-b
Pentachlorophenol	ND	ug/L		50		E625	03/30/17 17:14 / eli-b
Phenanthrene	ND	ug/L		10		E625	03/30/17 17:14 / eli-b
Phenol	ND	ug/L		10		E625	03/30/17 17:14 / eli-b
Pyrene	ND	ug/L		10		E625	03/30/17 17:14 / eli-b
1,2,4-Trichlorobenzene	ND	ug/L		10		E625	03/30/17 17:14 / eli-b
2,4,6-Trichlorophenol	ND	ug/L		10		E625	03/30/17 17:14 / eli-b
Surr: 2-Fluorobiphenyl	61.0	%REC		28-107		E625	03/30/17 17:14 / eli-b
Surr: 2-Fluorophenol	39.0	%REC		20-56		E625	03/30/17 17:14 / eli-b
Surr: Nitrobenzene-d5	63.0	%REC		32-94		E625	03/30/17 17:14 / eli-b
Surr: Phenol-d5	27.0	%REC		19-45		E625	03/30/17 17:14 / eli-b

Report Definitions: RL - Analyte reporting limit. QCL - Quality control limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Colorado Analytical Laboratories Inc
Project: 170324007 Sterling Ranch MD
Lab ID: C17030850-001
Client Sample ID: 170324007 Sterling Ranch MD

Report Date: 04/06/17
Collection Date: 03/23/17 08:03
DateReceived: 03/28/17
Matrix: Groundwater

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
SEMI-VOLATILE ORGANIC COMPOUNDS							
Surr: Terphenyl-d14	70.0	%REC		32-122		E625	03/30/17 17:14 / eli-b
Surr: 2,4,6-Tribromophenol	68.0	%REC		21-130		E625	03/30/17 17:14 / eli-b

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Colorado Analytical Laboratories Inc
Report Date: 04/06/17
Project: 170324007 Sterling Ranch MD
Work Order: C17030850

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E624									Analytical Run: R277281
Lab ID: ccv033117	Continuing Calibration Verification Standard								03/31/17 08:45
Acetone	58.0	ug/L	20	116	70	130			
Acetonitrile	56.4	ug/L	20	113	70	130			
Acrolein	56.4	ug/L	20	113	70	130			
Acrylonitrile	49.6	ug/L	20	99	70	130			
Benzene	5.08	ug/L	0.50	102	70	130			
Bromobenzene	5.04	ug/L	0.50	101	70	130			
Bromochloromethane	5.36	ug/L	0.50	107	70	130			
Bromodichloromethane	4.92	ug/L	0.50	98	70	130			
Bromoform	5.04	ug/L	0.50	101	70	130			
Bromomethane	4.28	ug/L	0.50	86	70	130			
Carbon disulfide	5.32	ug/L	0.50	106	70	130			
Carbon tetrachloride	5.80	ug/L	0.50	116	70	130			
Chlorobenzene	4.56	ug/L	0.50	91	70	130			
Chlorodibromomethane	5.04	ug/L	0.50	101	70	130			
Chloroethane	4.80	ug/L	0.50	96	70	130			
2-Chloroethyl vinyl ether	2.90	ug/L	1.0	58	70	130			S
Chloroform	5.60	ug/L	0.50	112	70	130			
Chloromethane	3.82	ug/L	0.50	76	70	130			
2-Chlorotoluene	5.00	ug/L	0.50	100	70	130			
4-Chlorotoluene	5.44	ug/L	0.50	109	70	130			
1,2-Dibromoethane	4.68	ug/L	0.50	94	70	130			
Dibromomethane	4.96	ug/L	0.50	99	70	130			
1,2-Dichlorobenzene	5.04	ug/L	0.50	101	70	130			
1,3-Dichlorobenzene	5.16	ug/L	0.50	103	70	130			
1,4-Dichlorobenzene	5.00	ug/L	0.50	100	70	130			
Dichlorodifluoromethane	5.20	ug/L	0.50	104	70	130			
1,1-Dichloroethane	4.96	ug/L	0.50	99	70	130			
1,2-Dichloroethane	6.24	ug/L	0.50	125	70	130			
1,1-Dichloroethene	5.12	ug/L	0.50	102	70	130			
cis-1,2-Dichloroethene	4.76	ug/L	0.50	95	70	130			
trans-1,2-Dichloroethene	5.00	ug/L	0.50	100	70	130			
1,2-Dichloropropane	4.88	ug/L	0.50	98	70	130			
1,3-Dichloropropane	4.88	ug/L	0.50	98	70	130			
2,2-Dichloropropane	5.72	ug/L	0.50	114	70	130			
1,1-Dichloropropene	5.44	ug/L	0.50	109	70	130			
cis-1,3-Dichloropropene	4.80	ug/L	0.50	96	70	130			
trans-1,3-Dichloropropene	4.84	ug/L	0.50	97	70	130			
Ethylbenzene	4.88	ug/L	0.50	98	70	130			
Methyl tert-butyl ether (MTBE)	5.20	ug/L	0.50	104	70	130			
Methyl ethyl ketone	54.0	ug/L	20	108	70	130			
Methyl isobutyl ketone	50.4	ug/L	20	101	70	130			
Methylene chloride	5.88	ug/L	0.50	118	70	130			
Naphthalene	5.08	ug/L	0.50	102	70	130			

Qualifiers:

RL - Analyte reporting limit.
ND - Not detected at the reporting limit.
S - Spike recovery outside of advisory limits.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Colorado Analytical Laboratories Inc
Report Date: 04/06/17
Project: 170324007 Sterling Ranch MD
Work Order: C17030850

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E624									Analytical Run: R277281
Lab ID: ccv033117	Continuing Calibration Verification Standard								03/31/17 08:45
Styrene	4.52	ug/L	0.50	90	70	130			
Tetrachloroethene	4.68	ug/L	0.50	94	70	130			
1,1,1,2-Tetrachloroethane	4.72	ug/L	0.50	94	70	130			
1,1,2,2-Tetrachloroethane	4.96	ug/L	0.50	99	70	130			
Toluene	4.76	ug/L	0.50	95	70	130			
Trichloroethene	4.92	ug/L	0.50	98	70	130			
1,1,1-Trichloroethane	5.72	ug/L	0.50	114	70	130			
1,1,2-Trichloroethane	4.72	ug/L	0.50	94	70	130			
Trichlorofluoromethane	4.88	ug/L	0.50	98	70	130			
1,2,3-Trichloropropane	5.24	ug/L	0.50	105	70	130			
Vinyl Acetate	5.32	ug/L	1.0	106	70	130			
Vinyl chloride	4.60	ug/L	0.50	92	70	130			
m+p-Xylenes	9.32	ug/L	0.50	93	70	130			
o-Xylene	4.52	ug/L	0.50	90	70	130			
Xylenes, Total	13.8	ug/L	0.50	92	70	130			
Surr: 1,2-Dichloroethane-d4			0.50	107	71	139			
Surr: p-Bromofluorobenzene			0.50	102	80	127			
Surr: Toluene-d8			0.50	91	80	123			
Method: E624									Batch: R277281
Lab ID: lcs033117	Laboratory Control Sample				Run: 5971A.I_170331A				03/31/17 09:19
Acetone	56.0	ug/L	20	112	55	144			
Acetonitrile	56.8	ug/L	20	114	54	142			
Acrolein	42.4	ug/L	20	85	16	233			
Acrylonitrile	48.4	ug/L	20	97	76	127			
Benzene	4.92	ug/L	0.50	98	73	122			
Bromobenzene	4.96	ug/L	0.50	99	74	129			
Bromochloromethane	5.16	ug/L	0.50	103	66	120			
Bromodichloromethane	5.16	ug/L	0.50	103	74	128			
Bromoform	5.12	ug/L	0.50	102	66	128			
Bromomethane	4.76	ug/L	0.50	95	51	123			
Carbon disulfide	5.36	ug/L	0.50	107	46	145			
Carbon tetrachloride	5.72	ug/L	0.50	114	75	125			
Chlorobenzene	4.64	ug/L	0.50	93	80	123			
Chlorodibromomethane	5.32	ug/L	0.50	106	74	125			
Chloroethane	4.48	ug/L	0.50	90	59	142			
2-Chloroethyl vinyl ether	2.62	ug/L	1.0	52	36	144			
Chloroform	5.52	ug/L	0.50	110	68	124			
Chloromethane	3.77	ug/L	0.50	75	53	146			
2-Chlorotoluene	5.08	ug/L	0.50	102	75	131			
4-Chlorotoluene	5.36	ug/L	0.50	107	74	129			
1,2-Dibromoethane	4.64	ug/L	0.50	93	76	124			
Dibromomethane	5.16	ug/L	0.50	103	77	125			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Colorado Analytical Laboratories Inc
Report Date: 04/06/17
Project: 170324007 Sterling Ranch MD
Work Order: C17030850

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E624									Batch: R277281
Lab ID: lcs033117	Laboratory Control Sample				Run: 5971A.I_170331A				03/31/17 09:19
1,2-Dichlorobenzene	4.96	ug/L	0.50	99	74	124			
1,3-Dichlorobenzene	5.12	ug/L	0.50	102	77	122			
1,4-Dichlorobenzene	4.96	ug/L	0.50	99	76	126			
Dichlorodifluoromethane	5.60	ug/L	0.50	112	56	146			
1,1-Dichloroethane	4.72	ug/L	0.50	94	74	133			
1,2-Dichloroethane	5.76	ug/L	0.50	115	75	129			
1,1-Dichloroethene	5.16	ug/L	0.50	103	74	132			
cis-1,2-Dichloroethene	4.88	ug/L	0.50	98	81	122			
trans-1,2-Dichloroethene	5.12	ug/L	0.50	102	79	143			
1,2-Dichloropropane	4.60	ug/L	0.50	92	75	126			
1,3-Dichloropropane	4.68	ug/L	0.50	94	71	136			
2,2-Dichloropropane	5.68	ug/L	0.50	114	68	142			
1,1-Dichloropropene	5.00	ug/L	0.50	100	70	131			
cis-1,3-Dichloropropene	4.40	ug/L	0.50	88	74	135			
trans-1,3-Dichloropropene	4.84	ug/L	0.50	97	76	149			
Ethylbenzene	4.96	ug/L	0.50	99	72	130			
Methyl tert-butyl ether (MTBE)	5.12	ug/L	0.50	102	72	120			
Methyl ethyl ketone	52.0	ug/L	20	104	45	130			
Methyl isobutyl ketone	50.8	ug/L	20	102	58	135			
Methylene chloride	6.08	ug/L	0.50	122	66	142			
Naphthalene	5.60	ug/L	0.50	112	69	124			
Styrene	4.56	ug/L	0.50	91	80	124			
Tetrachloroethene	4.72	ug/L	0.50	94	72	131			
1,1,1,2-Tetrachloroethane	4.64	ug/L	0.50	93	78	124			
1,1,2,2-Tetrachloroethane	4.76	ug/L	0.50	95	68	137			
Toluene	4.76	ug/L	0.50	95	72	135			
Trichloroethene	4.80	ug/L	0.50	96	85	126			
1,1,1-Trichloroethane	5.40	ug/L	0.50	108	63	120			
1,1,2-Trichloroethane	4.48	ug/L	0.50	90	78	124			
Trichlorofluoromethane	4.52	ug/L	0.50	90	72	120			
1,2,3-Trichloropropane	4.68	ug/L	0.50	94	64	138			
Vinyl Acetate	4.76	ug/L	1.0	95	31	124			
Vinyl chloride	4.76	ug/L	0.50	95	58	140			
m+p-Xylenes	9.08	ug/L	0.50	91	67	139			
o-Xylene	4.48	ug/L	0.50	90	74	135			
Xylenes, Total	13.6	ug/L	0.50	90	70	137			
Surr: 1,2-Dichloroethane-d4			0.50	109	71	139			
Surr: p-Bromofluorobenzene			0.50	102	80	127			
Surr: Toluene-d8			0.50	92	80	123			
Lab ID: blk033117	Method Blank				Run: 5971A.I_170331A				03/31/17 10:18
Acetone	ND	ug/L	20						
Acetonitrile	ND	ug/L	20						

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Colorado Analytical Laboratories Inc
Report Date: 04/06/17
Project: 170324007 Sterling Ranch MD
Work Order: C17030850

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E624									Batch: R277281
Lab ID: blk033117	Method Blank				Run: 5971A.I_170331A				03/31/17 10:18
Acrolein	ND	ug/L	20						
Acrylonitrile	ND	ug/L	20						
Benzene	ND	ug/L	0.50						
Bromobenzene	ND	ug/L	0.50						
Bromochloromethane	ND	ug/L	0.50						
Bromodichloromethane	ND	ug/L	0.50						
Bromoform	ND	ug/L	0.50						
Bromomethane	ND	ug/L	0.50						
Carbon disulfide	ND	ug/L	0.50						
Carbon tetrachloride	ND	ug/L	0.50						
Chlorobenzene	ND	ug/L	0.50						
Chlorodibromomethane	ND	ug/L	0.50						
Chloroethane	ND	ug/L	0.50						
2-Chloroethyl vinyl ether	ND	ug/L	1.0						
Chloroform	ND	ug/L	0.50						
Chloromethane	ND	ug/L	0.50						
2-Chlorotoluene	ND	ug/L	0.50						
4-Chlorotoluene	ND	ug/L	0.50						
1,2-Dibromoethane	ND	ug/L	0.50						
Dibromomethane	ND	ug/L	0.50						
1,2-Dichlorobenzene	ND	ug/L	0.50						
1,3-Dichlorobenzene	ND	ug/L	0.50						
1,4-Dichlorobenzene	ND	ug/L	0.50						
Dichlorodifluoromethane	ND	ug/L	0.50						
1,1-Dichloroethane	ND	ug/L	0.50						
1,2-Dichloroethane	ND	ug/L	0.50						
1,1-Dichloroethene	ND	ug/L	0.50						
cis-1,2-Dichloroethene	ND	ug/L	0.50						
trans-1,2-Dichloroethene	ND	ug/L	0.50						
1,2-Dichloropropane	ND	ug/L	0.50						
1,3-Dichloropropane	ND	ug/L	0.50						
2,2-Dichloropropane	ND	ug/L	0.50						
1,1-Dichloropropene	ND	ug/L	0.50						
cis-1,3-Dichloropropene	ND	ug/L	0.50						
trans-1,3-Dichloropropene	ND	ug/L	0.50						
Ethylbenzene	ND	ug/L	0.50						
Methyl tert-butyl ether (MTBE)	ND	ug/L	0.50						
Methyl ethyl ketone	ND	ug/L	20						
Methyl isobutyl ketone	ND	ug/L	20						
Methylene chloride	ND	ug/L	0.50						
Naphthalene	ND	ug/L	0.50						
Styrene	ND	ug/L	0.50						
Tetrachloroethene	ND	ug/L	0.50						

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Colorado Analytical Laboratories Inc
Report Date: 04/06/17
Project: 170324007 Sterling Ranch MD
Work Order: C17030850

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E624									Batch: R277281
Lab ID: blk033117	Method Blank				Run: 5971A.I_170331A				03/31/17 10:18
1,1,1,2-Tetrachloroethane	ND	ug/L	0.50						
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50						
Toluene	ND	ug/L	0.50						
Trichloroethene	ND	ug/L	0.50						
1,1,1-Trichloroethane	ND	ug/L	0.50						
1,1,2-Trichloroethane	ND	ug/L	0.50						
Trichlorofluoromethane	ND	ug/L	0.50						
1,2,3-Trichloropropane	ND	ug/L	0.50						
Vinyl Acetate	ND	ug/L	1.0						
Vinyl chloride	ND	ug/L	0.50						
m+p-Xylenes	ND	ug/L	0.50						
o-Xylene	ND	ug/L	0.50						
Xylenes, Total	ND	ug/L	0.50						
Surr: 1,2-Dichloroethane-d4			0.50	105	71	139			
Surr: p-Bromofluorobenzene			0.50	104	80	127			
Surr: Toluene-d8			0.50	92	80	123			
Lab ID: b17031875-001dms	Sample Matrix Spike				Run: 5971A.I_170331A				03/31/17 14:12
Acetone	378	ug/L	100	109	55	144			
Acetonitrile	274	ug/L	100	110	54	142			
Benzene	24.6	ug/L	2.5	98	73	122			
Bromobenzene	24.8	ug/L	2.5	99	74	129			
Bromochloromethane	25.2	ug/L	2.5	101	66	120			
Bromodichloromethane	26.2	ug/L	2.5	105	74	128			
Bromoform	27.0	ug/L	2.5	108	66	128			
Bromomethane	18.8	ug/L	2.5	75	51	123			
Carbon disulfide	26.4	ug/L	2.5	106	46	145			
Carbon tetrachloride	28.2	ug/L	2.5	113	75	125			
Chlorobenzene	22.8	ug/L	2.5	91	80	123			
Chlorodibromomethane	26.8	ug/L	2.5	107	74	125			
Chloroethane	20.2	ug/L	2.5	81	59	142			
Chloroform	33.2	ug/L	2.5	110	68	124			
Chloromethane	18.6	ug/L	2.5	74	53	146			
2-Chlorotoluene	24.8	ug/L	2.5	99	75	131			
4-Chlorotoluene	25.8	ug/L	2.5	103	74	129			
1,2-Dibromoethane	24.0	ug/L	2.5	96	76	124			
Dibromomethane	26.2	ug/L	2.5	105	77	125			
1,2-Dichlorobenzene	24.6	ug/L	2.5	98	74	124			
1,3-Dichlorobenzene	24.6	ug/L	2.5	98	77	122			
1,4-Dichlorobenzene	24.6	ug/L	2.5	98	76	126			
Dichlorodifluoromethane	27.0	ug/L	2.5	108	56	146			
1,1-Dichloroethane	24.2	ug/L	2.5	97	74	133			
1,2-Dichloroethane	29.2	ug/L	2.5	117	75	129			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Colorado Analytical Laboratories Inc
Report Date: 04/06/17
Project: 170324007 Sterling Ranch MD
Work Order: C17030850

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E624									Batch: R277281
Lab ID: b17031875-001dms	Sample Matrix Spike				Run: 5971A.I_170331A				03/31/17 14:12
1,1-Dichloroethene	26.6	ug/L	2.5	106	74	132			
cis-1,2-Dichloroethene	24.4	ug/L	2.5	98	81	122			
trans-1,2-Dichloroethene	25.8	ug/L	2.5	103	79	143			
1,2-Dichloropropane	23.0	ug/L	2.5	92	75	126			
1,3-Dichloropropane	22.4	ug/L	2.5	90	71	136			
2,2-Dichloropropane	28.0	ug/L	2.5	112	68	142			
1,1-Dichloropropene	25.2	ug/L	2.5	101	70	131			
cis-1,3-Dichloropropene	22.2	ug/L	2.5	89	74	135			
trans-1,3-Dichloropropene	24.6	ug/L	2.5	98	76	149			
Ethylbenzene	23.6	ug/L	2.5	94	72	130			
Methyl tert-butyl ether (MTBE)	25.6	ug/L	2.5	102	72	120			
Methyl ethyl ketone	268	ug/L	100	107	45	130			
Methyl isobutyl ketone	258	ug/L	100	103	58	135			
Methylene chloride	32.2	ug/L	2.5	129	66	142			
Naphthalene	27.6	ug/L	2.5	110	69	124			
Styrene	22.4	ug/L	2.5	90	80	124			
Tetrachloroethene	22.8	ug/L	2.5	91	72	131			
1,1,1,2-Tetrachloroethane	23.0	ug/L	2.5	92	78	124			
1,1,2,2-Tetrachloroethane	26.0	ug/L	2.5	104	68	137			
Toluene	24.4	ug/L	2.5	95	72	135			
Trichloroethene	23.8	ug/L	2.5	95	85	126			
1,1,1-Trichloroethane	26.8	ug/L	2.5	107	63	120			
1,1,2-Trichloroethane	23.4	ug/L	2.5	94	78	124			
Trichlorofluoromethane	21.2	ug/L	2.5	85	72	120			
1,2,3-Trichloropropane	26.2	ug/L	2.5	105	64	138			
Vinyl Acetate	24.4	ug/L	5.0	98	31	124			
Vinyl chloride	22.6	ug/L	2.5	90	58	140			
m+p-Xylenes	44.8	ug/L	2.5	90	67	139			
o-Xylene	22.6	ug/L	2.5	90	74	135			
Xylenes, Total	67.4	ug/L	2.5	90	70	137			
Surr: 1,2-Dichloroethane-d4			2.5	110	71	139			
Surr: p-Bromofluorobenzene			2.5	102	80	127			
Surr: Toluene-d8			2.5	93	80	123			
Lab ID: b17031875-001dmsd	Sample Matrix Spike Duplicate				Run: 5971A.I_170331A				03/31/17 15:11
Acetone	410	ug/L	100	122	55	144	8.1	20	
Acetonitrile	262	ug/L	100	105	54	142	4.5	20	
Benzene	25.0	ug/L	2.5	100	73	122	1.6	20	
Bromobenzene	25.6	ug/L	2.5	102	74	129	3.2	20	
Bromochloromethane	25.2	ug/L	2.5	101	66	120	0.0	20	
Bromodichloromethane	27.2	ug/L	2.5	109	74	128	3.7	20	
Bromoform	28.4	ug/L	2.5	114	66	128	5.1	20	
Bromomethane	20.8	ug/L	2.5	83	51	123	10	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Colorado Analytical Laboratories Inc
Report Date: 04/06/17
Project: 170324007 Sterling Ranch MD
Work Order: C17030850

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E624									Batch: R277281
Lab ID: b17031875-001dmsd	Sample Matrix Spike Duplicate				Run: 5971A.I_170331A				03/31/17 15:11
Carbon disulfide	25.6	ug/L	2.5	102	46	145	3.1	20	
Carbon tetrachloride	28.6	ug/L	2.5	114	75	125	1.4	20	
Chlorobenzene	23.6	ug/L	2.5	94	80	123	3.4	20	
Chlorodibromomethane	28.0	ug/L	2.5	112	74	125	4.4	20	
Chloroethane	20.6	ug/L	2.5	82	59	142	2.0	20	
Chloroform	33.6	ug/L	2.5	111	68	124	1.2	20	
Chloromethane	19.3	ug/L	2.5	77	53	146	3.8	20	
2-Chlorotoluene	26.4	ug/L	2.5	106	75	131	6.2	20	
4-Chlorotoluene	27.2	ug/L	2.5	109	74	129	5.3	20	
1,2-Dibromoethane	24.0	ug/L	2.5	96	76	124	0.0	20	
Dibromomethane	26.8	ug/L	2.5	107	77	125	2.3	20	
1,2-Dichlorobenzene	25.8	ug/L	2.5	103	74	124	4.8	20	
1,3-Dichlorobenzene	26.0	ug/L	2.5	104	77	122	5.5	20	
1,4-Dichlorobenzene	25.4	ug/L	2.5	102	76	126	3.2	20	
Dichlorodifluoromethane	25.8	ug/L	2.5	103	56	146	4.5	20	
1,1-Dichloroethane	24.8	ug/L	2.5	99	74	133	2.4	20	
1,2-Dichloroethane	29.2	ug/L	2.5	117	75	129	0.0	20	
1,1-Dichloroethene	26.8	ug/L	2.5	107	74	132	0.7	20	
cis-1,2-Dichloroethene	25.2	ug/L	2.5	101	81	122	3.2	20	
trans-1,2-Dichloroethene	26.4	ug/L	2.5	106	79	143	2.3	20	
1,2-Dichloropropane	23.6	ug/L	2.5	94	75	126	2.6	20	
1,3-Dichloropropane	23.8	ug/L	2.5	95	71	136	6.1	20	
2,2-Dichloropropane	28.6	ug/L	2.5	114	68	142	2.1	20	
1,1-Dichloropropene	25.8	ug/L	2.5	103	70	131	2.4	20	
cis-1,3-Dichloropropene	23.2	ug/L	2.5	93	74	135	4.4	20	
trans-1,3-Dichloropropene	25.4	ug/L	2.5	102	76	149	3.2	20	
Ethylbenzene	25.0	ug/L	2.5	100	72	130	5.8	20	
Methyl tert-butyl ether (MTBE)	26.6	ug/L	2.5	106	72	120	3.8	20	
Methyl ethyl ketone	292	ug/L	100	117	45	130	8.6	20	
Methyl isobutyl ketone	286	ug/L	100	114	58	135	10	20	
Methylene chloride	31.4	ug/L	2.5	126	66	142	2.5	20	
Naphthalene	27.8	ug/L	2.5	111	69	124	0.7	20	
Styrene	22.8	ug/L	2.5	91	80	124	1.8	20	
Tetrachloroethene	23.8	ug/L	2.5	95	72	131	4.3	20	
1,1,1,2-Tetrachloroethane	23.2	ug/L	2.5	93	78	124	0.9	20	
1,1,2,2-Tetrachloroethane	27.4	ug/L	2.5	110	68	137	5.2	20	
Toluene	24.4	ug/L	2.5	95	72	135	0.0	20	
Trichloroethene	25.0	ug/L	2.5	100	85	126	4.9	20	
1,1,1-Trichloroethane	27.4	ug/L	2.5	110	63	120	2.2	20	
1,1,2-Trichloroethane	24.8	ug/L	2.5	99	78	124	5.8	20	
Trichlorofluoromethane	22.4	ug/L	2.5	90	72	120	5.5	20	
1,2,3-Trichloropropane	26.8	ug/L	2.5	107	64	138	2.3	20	
Vinyl Acetate	24.4	ug/L	5.0	98	31	124	0.0	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Colorado Analytical Laboratories Inc
Report Date: 04/06/17
Project: 170324007 Sterling Ranch MD
Work Order: C17030850

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E624									Batch: R277281
Lab ID: b17031875-001dmsd	Sample Matrix Spike Duplicate				Run: 5971A.I_170331A				03/31/17 15:11
Vinyl chloride	22.8	ug/L	2.5	91	58	140	0.9	20	
m+p-Xylenes	46.0	ug/L	2.5	92	67	139	2.6	20	
o-Xylene	23.4	ug/L	2.5	94	74	135	3.5	20	
Xylenes, Total	69.4	ug/L	2.5	93	70	137			
Surr: 1,2-Dichloroethane-d4			2.5	112	71	139			
Surr: p-Bromofluorobenzene			2.5	105	80	127			
Surr: Toluene-d8			2.5	93	80	123			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Colorado Analytical Laboratories Inc
Report Date: 04/06/17
Project: 170324007 Sterling Ranch MD
Work Order: C17030850

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E625									Batch: 107942
Lab ID: MB-107942	Method Blank				Run: SV5973N2.I_170330B				03/30/17 16:12
Acenaphthene	ND	ug/L	10						
Acenaphthylene	ND	ug/L	10						
Anthracene	ND	ug/L	10						
Azobenzene	ND	ug/L	10						
Benzidine	ND	ug/L	10						
Benzo(a)anthracene	ND	ug/L	10						
Benzo(a)pyrene	ND	ug/L	10						
Benzo(b)fluoranthene	ND	ug/L	10						
Benzo(g,h,i)perylene	ND	ug/L	10						
Benzo(k)fluoranthene	ND	ug/L	10						
4-Bromophenyl phenyl ether	ND	ug/L	10						
Butylbenzylphthalate	ND	ug/L	10						
4-Chloro-3-methylphenol	ND	ug/L	10						
bis(-2-chloroethoxy)Methane	ND	ug/L	10						
bis(-2-chloroethyl)Ether	ND	ug/L	10						
bis(2-chloroisopropyl)Ether	ND	ug/L	10						
2-Chloronaphthalene	ND	ug/L	10						
2-Chlorophenol	ND	ug/L	10						
4-Chlorophenyl phenyl ether	ND	ug/L	10						
Chrysene	ND	ug/L	10						
Diethyl phthalate	ND	ug/L	10						
Di-n-butyl phthalate	ND	ug/L	10						
1,2-Dichlorobenzene	ND	ug/L	10						
1,3-Dichlorobenzene	ND	ug/L	10						
1,4-Dichlorobenzene	ND	ug/L	10						
3,3'-Dichlorobenzidine	ND	ug/L	10						
2,4-Dichlorophenol	ND	ug/L	10						
Dimethyl phthalate	ND	ug/L	10						
Di-n-octyl phthalate	ND	ug/L	10						
Dibenzo(a,h)anthracene	ND	ug/L	10						
2,4-Dimethylphenol	ND	ug/L	10						
4,6-Dinitro-2-methylphenol	ND	ug/L	50						
2,4-Dinitrophenol	ND	ug/L	50						
2,4-Dinitrotoluene	ND	ug/L	10						
2,6-Dinitrotoluene	ND	ug/L	10						
bis(2-ethylhexyl)Phthalate	ND	ug/L	10						
Fluoranthene	ND	ug/L	10						
Fluorene	ND	ug/L	10						
Hexachlorobenzene	ND	ug/L	10						
Hexachlorobutadiene	ND	ug/L	10						
Hexachlorocyclopentadiene	ND	ug/L	10						
Hexachloroethane	ND	ug/L	10						
Indeno(1,2,3-cd)pyrene	ND	ug/L	10						

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Colorado Analytical Laboratories Inc
Report Date: 04/06/17
Project: 170324007 Sterling Ranch MD
Work Order: C17030850

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E625									Batch: 107942
Lab ID: MB-107942	Method Blank				Run: SV5973N2.I_170330B				03/30/17 16:12
Isophorone	ND	ug/L	10						
n-Nitrosodimethylamine	ND	ug/L	10						
n-Nitroso-di-n-propylamine	ND	ug/L	10						
n-Nitrosodiphenylamine	ND	ug/L	10						
2-Nitrophenol	ND	ug/L	10						
4-Nitrophenol	ND	ug/L	50						
Naphthalene	ND	ug/L	10						
Nitrobenzene	ND	ug/L	10						
Pentachlorophenol	ND	ug/L	50						
Phenanthrene	ND	ug/L	10						
Phenol	ND	ug/L	10						
Pyrene	ND	ug/L	10						
1,2,4-Trichlorobenzene	ND	ug/L	10						
2,4,6-Trichlorophenol	ND	ug/L	10						
Surr: 2-Fluorobiphenyl			10	57	28	107			
Surr: 2-Fluorophenol			10	42	20	56			
Surr: Nitrobenzene-d5			10	62	32	94			
Surr: Phenol-d5			10	30	19	45			
Surr: Terphenyl-d14			10	80	32	122			
Surr: 2,4,6-Tribromophenol			10	68	21	130			
Lab ID: LCS-107942	Laboratory Control Sample				Run: SV5973N2.I_170330B				03/30/17 16:43
Acenaphthene	89.1	ug/L	10	89	58	99			
Acenaphthylene	84.2	ug/L	10	84	57	96			
Anthracene	75.6	ug/L	10	76	60	107			
Azobenzene	78.0	ug/L	10	78	56	100			
Benzidine	53.1	ug/L	10	53	10	100			
Benzo(a)anthracene	86.4	ug/L	10	86	62	114			
Benzo(a)pyrene	84.7	ug/L	10	85	62	108			
Benzo(b)fluoranthene	89.8	ug/L	10	90	48	127			
Benzo(g,h,i)perylene	87.2	ug/L	10	87	62	121			
Benzo(k)fluoranthene	84.0	ug/L	10	84	55	111			
4-Bromophenyl phenyl ether	87.1	ug/L	10	87	58	105			
Butylbenzylphthalate	90.8	ug/L	10	91	60	113			
4-Chloro-3-methylphenol	74.6	ug/L	10	75	53	92			
bis(-2-chloroethoxy)Methane	69.9	ug/L	10	70	50	92			
bis(-2-chloroethyl)Ether	72.1	ug/L	10	72	44	82			
bis(2-chloroisopropyl)Ether	63.2	ug/L	10	63	56	87			
2-Chloronaphthalene	84.9	ug/L	10	85	56	95			
2-Chlorophenol	67.2	ug/L	10	67	47	76			
4-Chlorophenyl phenyl ether	83.0	ug/L	10	83	58	99			
Chrysene	87.0	ug/L	10	87	63	106			
Diethyl phthalate	84.6	ug/L	10	85	58	103			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Colorado Analytical Laboratories Inc
Report Date: 04/06/17
Project: 170324007 Sterling Ranch MD
Work Order: C17030850

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E625									Batch: 107942
Lab ID: LCS-107942	Laboratory Control Sample				Run: SV5973N2.I_170330B				03/30/17 16:43
Di-n-butyl phthalate	87.1	ug/L	10	87	61	110			
1,2-Dichlorobenzene	69.3	ug/L	10	69	43	81			
1,3-Dichlorobenzene	64.0	ug/L	10	64	41	79			
1,4-Dichlorobenzene	64.5	ug/L	10	64	42	79			
3,3'-Dichlorobenzidine	64.8	ug/L	10	65	51	93			
2,4-Dichlorophenol	70.6	ug/L	10	71	49	90			
Dimethyl phthalate	82.5	ug/L	10	82	58	104			
Di-n-octyl phthalate	93.4	ug/L	10	93	56	110			
Dibenzo(a,h)anthracene	87.8	ug/L	10	88	61	111			
2,4-Dimethylphenol	66.2	ug/L	10	66	45	89			
4,6-Dinitro-2-methylphenol	66.1	ug/L	50	66	37	105			
2,4-Dinitrophenol	54.1	ug/L	50	54	27	81			
2,4-Dinitrotoluene	86.2	ug/L	10	86	63	110			
2,6-Dinitrotoluene	77.2	ug/L	10	77	60	107			
bis(2-ethylhexyl)Phthalate	86.0	ug/L	10	86	56	108			
Fluoranthene	84.2	ug/L	10	84	63	110			
Fluorene	89.3	ug/L	10	89	60	99			
Hexachlorobenzene	82.7	ug/L	10	83	57	103			
Hexachlorobutadiene	71.7	ug/L	10	72	39	83			
Hexachlorocyclopentadiene	81.0	ug/L	10	81	39	91			
Hexachloroethane	65.0	ug/L	10	65	37	75			
Indeno(1,2,3-cd)pyrene	83.2	ug/L	10	83	59	109			
Isophorone	69.8	ug/L	10	70	42	102			
n-Nitrosodimethylamine	36.8	ug/L	10	37	20	45			
n-Nitroso-di-n-propylamine	76.6	ug/L	10	77	49	98			
n-Nitrosodiphenylamine	91.5	ug/L	10	92	61	108			
2-Nitrophenol	72.3	ug/L	10	72	51	96			
4-Nitrophenol	27.4	ug/L	50	27	15	36			
Naphthalene	68.1	ug/L	10	68	48	96			
Nitrobenzene	77.9	ug/L	10	78	51	91			
Pentachlorophenol	72.4	ug/L	50	72	53	109			
Phenanthrene	82.0	ug/L	10	82	58	104			
Phenol	40.6	ug/L	10	41	27	45			
Pyrene	85.0	ug/L	10	85	64	108			
1,2,4-Trichlorobenzene	71.2	ug/L	10	71	49	85			
2,4,6-Trichlorophenol	73.9	ug/L	10	74	47	99			
Surr: 2-Fluorobiphenyl			10	69	28	107			
Surr: 2-Fluorophenol			10	42	20	56			
Surr: Nitrobenzene-d5			10	72	32	94			
Surr: Phenol-d5			10	36	19	45			
Surr: Terphenyl-d14			10	80	32	122			
Surr: 2,4,6-Tribromophenol			10	70	21	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Colorado Analytical Laboratories Inc
Report Date: 04/06/17
Project: 170324007 Sterling Ranch MD
Work Order: C17030850

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E625									Batch: 107942
Lab ID: C17030850-001CMS	Sample Matrix Spike				Run: SV5973N2.I_170330B				03/30/17 17:45
Acenaphthene	86.7	ug/L	10	87	58	99			
Acenaphthylene	75.5	ug/L	10	76	57	96			
Anthracene	81.6	ug/L	10	82	60	107			
Azobenzene	84.6	ug/L	10	85	56	100			
Benzidine	122	ug/L	20	122	10	100			S
Benzo(a)anthracene	83.4	ug/L	10	83	62	114			
Benzo(a)pyrene	78.4	ug/L	10	78	62	108			
Benzo(b)fluoranthene	79.9	ug/L	10	80	48	127			
Benzo(g,h,i)perylene	83.2	ug/L	10	83	62	121			
Benzo(k)fluoranthene	84.5	ug/L	10	84	55	111			
4-Bromophenyl phenyl ether	79.5	ug/L	10	79	58	105			
Butylbenzylphthalate	89.2	ug/L	10	89	60	113			
4-Chloro-3-methylphenol	78.3	ug/L	10	78	53	92			
bis(-2-chloroethoxy)Methane	77.9	ug/L	10	78	50	92			
bis(-2-chloroethyl)Ether	71.5	ug/L	10	71	44	82			
bis(2-chloroisopropyl)Ether	58.4	ug/L	10	58	56	87			
2-Chloronaphthalene	77.6	ug/L	10	78	56	95			
2-Chlorophenol	63.7	ug/L	10	64	47	76			
4-Chlorophenyl phenyl ether	81.0	ug/L	10	81	58	99			
Chrysene	85.9	ug/L	10	86	63	106			
Diethyl phthalate	84.0	ug/L	10	84	58	103			
Di-n-butyl phthalate	87.0	ug/L	10	87	61	110			
1,2-Dichlorobenzene	67.3	ug/L	10	67	43	81			
1,3-Dichlorobenzene	66.0	ug/L	10	66	41	79			
1,4-Dichlorobenzene	66.7	ug/L	10	67	42	79			
3,3'-Dichlorobenzidine	131	ug/L	10	131	51	93			S
2,4-Dichlorophenol	70.0	ug/L	10	70	49	90			
Dimethyl phthalate	79.3	ug/L	10	79	58	104			
Di-n-octyl phthalate	81.8	ug/L	10	82	56	110			
Dibenzo(a,h)anthracene	80.1	ug/L	10	80	61	111			
2,4-Dimethylphenol	70.7	ug/L	10	71	45	87			
4,6-Dinitro-2-methylphenol	53.1	ug/L	50	53	37	105			
2,4-Dinitrophenol	43.0	ug/L	50	43	27	81			
2,4-Dinitrotoluene	85.6	ug/L	10	86	63	110			
2,6-Dinitrotoluene	81.5	ug/L	10	81	60	107			
bis(2-ethylhexyl)Phthalate	77.5	ug/L	10	77	56	108			
Fluoranthene	84.0	ug/L	10	84	63	110			
Fluorene	80.0	ug/L	10	80	60	99			
Hexachlorobenzene	78.2	ug/L	10	78	57	103			
Hexachlorobutadiene	69.1	ug/L	10	69	39	83			
Hexachlorocyclopentadiene	69.0	ug/L	10	69	39	91			
Hexachloroethane	62.6	ug/L	10	63	37	75			
Indeno(1,2,3-cd)pyrene	76.3	ug/L	10	76	59	109			

Qualifiers:

RL - Analyte reporting limit.
ND - Not detected at the reporting limit.
S - Spike recovery outside of advisory limits.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Colorado Analytical Laboratories Inc
Project: 170324007 Sterling Ranch MD

Report Date: 04/06/17
Work Order: C17030850

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E625									Batch: 107942
Lab ID: C17030850-001CMS	Sample Matrix Spike				Run: SV5973N2.I_170330B				03/30/17 17:45
Isophorone	71.4	ug/L	10	71	42	102			
n-Nitrosodimethylamine	26.1	ug/L	10	26	20	45			
n-Nitroso-di-n-propylamine	76.1	ug/L	10	76	49	98			
n-Nitrosodiphenylamine	105	ug/L	10	105	61	108			
2-Nitrophenol	73.5	ug/L	10	74	51	96			
4-Nitrophenol	25.8	ug/L	50	26	15	36			
Naphthalene	75.6	ug/L	10	76	48	96			
Nitrobenzene	75.6	ug/L	10	76	51	91			
Pentachlorophenol	60.3	ug/L	50	60	53	109			
Phenanthrene	83.8	ug/L	10	84	58	104			
Phenol	38.7	ug/L	10	39	27	45			
Pyrene	87.0	ug/L	10	87	64	108			
1,2,4-Trichlorobenzene	74.7	ug/L	10	75	49	85			
2,4,6-Trichlorophenol	68.8	ug/L	10	69	47	99			
Surr: 2-Fluorobiphenyl			10	51	28	107			
Surr: 2-Fluorophenol			10	41	20	56			
Surr: Nitrobenzene-d5			10	64	32	94			
Surr: Phenol-d5			10	33	19	45			
Surr: Terphenyl-d14			10	73	32	122			
Surr: 2,4,6-Tribromophenol			10	67	21	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Colorado Analytical Laboratories Inc
Project: 170324007 Sterling Ranch MD

Report Date: 04/06/17
Work Order: C17030850

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E625								Analytical Run: R277253	
Lab ID: 30-Mar-17_CCV_11	Continuing Calibration Verification Standard							03/30/17 15:40	
Acenaphthene	75.3	ug/L	10	100	80	120			
Acenaphthylene	79.7	ug/L	10	106	80	120			
Anthracene	75.2	ug/L	10	100	80	120			
Azobenzene	75.1	ug/L	10	100	80	120			
Benzidine	70.6	ug/L	10	94	80	120			
Benzo(a)anthracene	76.3	ug/L	10	102	80	120			
Benzo(a)pyrene	81.9	ug/L	10	109	80	120			
Benzo(b)fluoranthene	78.3	ug/L	10	104	80	120			
Benzo(g,h,i)perylene	78.0	ug/L	10	104	80	120			
Benzo(k)fluoranthene	81.6	ug/L	10	109	80	120			
4-Bromophenyl phenyl ether	81.6	ug/L	10	109	80	120			
Butylbenzylphthalate	78.0	ug/L	10	104	80	120			
4-Chloro-3-methylphenol	76.0	ug/L	10	101	80	120			
bis(-2-chloroethoxy)Methane	70.4	ug/L	10	94	80	120			
bis(-2-chloroethyl)Ether	77.2	ug/L	10	103	80	120			
bis(2-chloroisopropyl)Ether	76.7	ug/L	10	102	80	120			
2-Chloronaphthalene	79.8	ug/L	10	106	80	120			
2-Chlorophenol	72.7	ug/L	10	97	80	120			
4-Chlorophenyl phenyl ether	72.7	ug/L	10	97	80	120			
Chrysene	74.9	ug/L	10	100	80	120			
Diethyl phthalate	76.8	ug/L	10	102	80	120			
Di-n-butyl phthalate	76.9	ug/L	10	102	80	120			
1,2-Dichlorobenzene	76.8	ug/L	10	102	80	120			
1,3-Dichlorobenzene	72.1	ug/L	10	96	80	120			
1,4-Dichlorobenzene	74.8	ug/L	10	100	80	120			
3,3'-Dichlorobenzidine	76.2	ug/L	10	102	80	120			
2,4-Dichlorophenol	73.5	ug/L	10	98	80	120			
Dimethyl phthalate	77.0	ug/L	10	103	80	120			
Di-n-octyl phthalate	81.2	ug/L	10	108	80	120			
Dibenzo(a,h)anthracene	76.2	ug/L	10	102	80	120			
2,4-Dimethylphenol	70.3	ug/L	10	94	80	120			
4,6-Dinitro-2-methylphenol	77.4	ug/L	50	103	80	120			
2,4-Dinitrophenol	80.2	ug/L	50	107	80	120			
2,4-Dinitrotoluene	79.8	ug/L	10	106	80	120			
2,6-Dinitrotoluene	80.8	ug/L	10	108	80	120			
bis(2-ethylhexyl)Phthalate	77.3	ug/L	10	103	80	120			
Fluoranthene	76.8	ug/L	10	102	80	120			
Fluorene	82.8	ug/L	10	110	80	120			
Hexachlorobenzene	74.2	ug/L	10	99	80	120			
Hexachlorobutadiene	73.0	ug/L	10	97	80	120			
Hexachlorocyclopentadiene	79.2	ug/L	10	106	80	120			
Hexachloroethane	74.4	ug/L	10	99	80	120			
Indeno(1,2,3-cd)pyrene	73.3	ug/L	10	98	80	120			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Colorado Analytical Laboratories Inc
Project: 170324007 Sterling Ranch MD

Report Date: 04/06/17
Work Order: C17030850

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E625									Analytical Run: R277253
Lab ID: 30-Mar-17_CCV_11	Continuing Calibration Verification Standard								03/30/17 15:40
Isophorone	71.5	ug/L	10	95	80	120			
n-Nitrosodimethylamine	79.5	ug/L	10	106	80	120			
n-Nitroso-di-n-propylamine	76.0	ug/L	10	101	80	120			
n-Nitrosodiphenylamine	77.5	ug/L	10	103	80	120			
2-Nitrophenol	74.6	ug/L	10	99	80	120			
4-Nitrophenol	72.4	ug/L	50	97	80	120			
Naphthalene	68.4	ug/L	10	91	80	120			
Nitrobenzene	77.1	ug/L	10	103	80	120			
Pentachlorophenol	71.7	ug/L	50	96	80	120			
Phenanthrene	70.9	ug/L	10	95	80	120			
Phenol	79.0	ug/L	10	105	80	120			
Pyrene	79.0	ug/L	10	105	80	120			
1,2,4-Trichlorobenzene	73.1	ug/L	10	98	80	120			
2,4,6-Trichlorophenol	71.0	ug/L	10	95	80	120			
Surr: 2-Fluorobiphenyl			10	108	80	120			
Surr: 2-Fluorophenol			10	105	80	120			
Surr: Nitrobenzene-d5			10	101	80	120			
Surr: Phenol-d5			10	102	80	120			
Surr: Terphenyl-d14			10	104	80	120			
Surr: 2,4,6-Tribromophenol			10	105	80	120			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Colorado Analytical Laboratories Inc
Report Date: 04/06/17
Project: 170324007 Sterling Ranch MD
Work Order: C17030850

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260M									Analytical Run: 108173
Lab ID: CCV-108173	Continuing Calibration Verification Standard								04/06/17 08:29
1,4-Dioxane	95.7	ug/L	1.0	96	80	120			
Method: SW8260M									Batch: 108173
Lab ID: LCS-108173	Laboratory Control Sample				Run: VOA5973A.I_170406A				04/06/17 08:51
1,4-Dioxane	87.5	ug/L	1.0	88	70	130			
Lab ID: MB-108173	Method Blank				Run: VOA5973A.I_170406A				04/06/17 09:12
1,4-Dioxane	ND	ug/L	1.0						
Lab ID: C17030850-001AMS	Sample Matrix Spike				Run: VOA5973A.I_170406A				04/06/17 09:55
1,4-Dioxane	194	ug/L	2.0	97	70	130			
Lab ID: C17030850-001AMSD	Sample Matrix Spike Duplicate				Run: VOA5973A.I_170406A				04/06/17 10:17
1,4-Dioxane	206	ug/L	2.0	103	70	130	6.0	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

Work Order Receipt Checklist

Colorado Analytical Laboratories Inc C17030850

Login completed by: Corinne Wagner
Date Received: 3/28/2017
Reviewed by: Kasey Vidick
Received by: ckw
Reviewed Date: 3/29/2017
Carrier name: Ground

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all shipping container(s)/cooler(s)?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on all sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes ☑	No ☐	
Temp Blank received in all shipping container(s)/cooler(s)?	Yes ☐	No ☑	Not Applicable ☐
Container/Temp Blank temperature:	6.6°C On Ice - From Field		
Water - VOA vials have zero headspace?	Yes ☑	No ☐	No VOA vials submitted ☐
Water - pH acceptable upon receipt?	Yes ☐	No ☐	Not Applicable ☑

Standard Reporting Procedures:

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as –dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

Contact and Corrective Action Comments:

None

Chain of Custody Form

Colorado Analytical Laboratories, Inc.

Brighton Lab
240 South Main Street
Brighton, CO 80601
Lakewood Lab
12860 W. Cedar Dr, Suite 100A
Lakewood CO 80228

Phone: 303-659-2313
Fax: 303-659-2315

www.coloradolab.com

Report To Information	Bill To Information (If different from report to)	Project Name
Company Name: Colorado Analytical Laboratoy	Company Name: Same	170324007
Contact Name: Stuart Nielson	Contact Name: ____	Sterling Ranch MD
Address: P.O. Box 507 240 S Main St City Brighton State CO Zip80601	Address: ____ City ____ State __ Zip ____	Task Number (Lab Use Only) CAL Task No. 170324007 LS-N IR-1 750 w/ 1548 ARF
Phone:303-659-2313 Fax:303-659-2315	Phone: Fax:	
Email: stuartnielson@coloradolab.com	Email:	Disposal Date(Lab Use Only)
Sample Collector:	PO No.:	

C17030850

Sample Matrix (Select One Only)

- Waste Water ☐
- Ground Water ☒
- Surface Water ☐
- Soil ☐
- Sludge ☐
- Compost ☐
- Plant Tissue ☐
- Other ☐ ____

Date	Time	Sample ID	No. of Containers	Grab	or (Check One Only) Composite	8260 1,4-Dioxane	624 Long List	625 SOCs
3/23/17	08:03	170324007 Sterling Ranch MD	7	☐	☐	☒	☒	☒

Instructions: UPS to Energy Labs

C/S Info:

Deliver Via: C/S Charge ☐

Seals Present Yes ☐ No ☐ UPS-6

Temp. 6 °C/Ice yes Sample Pres. Yes ☐ No ☐

Relinquished By:	Date/Time:	Received By:	Date/Time:	Relinquished By:	Date/Time:	Received By:	Date/Time:
P. McClellan	3/27/17 1700					[signature]	3.28.17

APPENDIX F

FAWA WATER SUPPLY VS CURRENT WATER COMMITMENTS

JDS-HYDRO CONSULTANTS, INC.
A Division of RESPEC Company, LLC

RESPEC

Appendix F

Falcon Area Water and Wastewater Authority
Commitments within FAWWA Service Area
Update March 31, 2023

	Development	Preliminary Commitments: Commitment SFE	Preliminary Commitments: Supply / Commitment Acre-Feet	Preliminary Commitments: Letter or Summary Date/Notes	Final Commitments: Commitment SFE	Final Commitments: Commitment Acre-Feet	Final Commitments: Letter or Summary Date/Notes	Volumetric Commitment (300 year--Acre-feet)
	Analysis of Water Commitments							
Commitments	**The Retreat at TimberRidge Preliminary Plan (Central System Only)**	167	58.951	April 2018 Report Supplement Nov 2020				**17685.3**
	Final #1				59 SFE	20.827	23-Aug-20	
	Final #2				78 SFE	27.53	April 30,2021	
	Final #3				30 SFE	10.59	July, 2022	
Commitments	**Sterling Ranch Preliminary Plan Phase One**	726	**255.96**	June 2015 Report/Summary Update February 2019				
	Sterling Ranch Filing #1				0	0	Tracts Only	
	Tract BB (10.545) Branding Iron at Sterling Ranch Filing No. 1				51	17.85	Summary and Letter	**5355.0**
	Branding Iron Filing No. 2				88	31.07	Revised Feb 20, 2020 Residential)	**9321.0**
	Sterling Ranch Filing #2 (49 SF lots with 4.29 AF landscaping)				61 (61 SFE w irrigation)	21.59	Includes 4.29 AF Irrigation Revised Jan 21, 2021	**6477.0**
	Sterling Ranch Filing No 5	72	**24.26** March 31, 2023 Letter				Previously Tract B Branding Iron N2	**7278.0**
	Tract G (19.574) Homestead at Sterling Ranch Filing No. 1				72	25.42		**7624.8**
	Tract E (29.658) Homestead at Sterling Ranch Filing No. 2				104	36.71	25-Sep-19	**11013.6**
	Homestead at Sterling Ranch Filing No 3 (Vacation and Replat)				-2	-0.71	6-Mar-23	**-211.5**
	Copper Chase at Sterling Ranch resubmittal	142.9	**50.45** 138 single family lots 12/21/2021 includes 1.39 Ac Park	17-Dec-21	147.68	**52.13**	October 12, 2022 138 single family lots includes 1.39 Ac Park additonal irrigation	**15135.0**
	Sterling Ranch Preliminary Plan Phase Two Sterling Ranch Filing #4	214.5	**75.719**	July, 2020 Re-issue Feb 26, 2021	159 Lots (2.667 Acres Irrigation) Specific Note 1	51.91	School commitment (13 SFE) contained in Branding Iron Filing #2 above	**22715.6**
	Homestead North at Sterling Ranch Preliminary Plan	147	**62.47**	10.58 AFs irrigation Update Letter Jan 21, 2021			AFs irrigation Update Letter Jan 21, 2021	**18741.0**
	Homestead North at Sterling Ranch Filing No. 3	77 (5.65 acres irrigation)	**41.31**	Letter dated June 10, 2022 updated November 3, 2022				**12393.0**
	Foursquare at Sterling Ranch PUD Preliminary Plan	158 High Density Units (1.424 acres irrigation)	**50.73**	Letter dated June 10, 2022 Update November 3, 2022				**15219.0**
	Villages at Sterling Ranch East PUD and Preliminary Plan	246 High Density Units (1.934 acres irrigation)	**67.58**	Letter dated June 10, 2022 Updated December 16, 2022				**20274.0**
	Sterling Ranch East Preliminary Phase One	761 (28.31 acres irrigation) 35 acre K-8 School	**335.68**	Letter dated June 10, 2022 Revision October 18, 2022			Note prior commitment for elementary school in Branding Iron No 2	**100704.0**
	Sterling Ranch East Filing No 1				294 SFE, 18.809 acres irrigated	144.15	Letter dated November 15, 2022	
	Sterling Ranch East Filing 1A				42 lots; 1.088 acres irrigation	16.85	Letter dated November 15, 2022	
Totals		**Total Findings at Preliminary**			**Total Findings at Final**			
		Units	**AF**		**Units**	**AF**		
	Total Active Commitments Either actual Finding of Sufficiency or anticipated Finding	**1770.5**	**716.70**		**523.7**	**184.063**		**269724.8**
				Total Active Commitments (AF)		**900.76**		

Specific Note 1; Lolts 147 -157 were previously platted as lots 22-32 Sterling Ranch Filing No. 2 Water was committed under Sterling Ranch Filing No 2

General Note 1. As of January 1, 2022 the Falcon Area Water and Wastewater Authority is managing all water among various Districts, who are participating agencies. Therefore, water acocunting changes were adopted on January 1, that do not separately balance or account for separate water accounting within the respective area. Going forward, the commitment sheet will be streamlined by simply adding the total commitments across the FAWWA participating entities.

General Note 2; Sketch Plans do not have hard commitments and are not shown here. Subdivisions can either have a finding of sufficiency at preliminary or final plat stage. Water reports/commitments are sometimes submitted at both stages, even though suffuiciency might be achieved at different stages. In order to attempt to track this possible discrepancy we will show the active water commitment in yellow highlight as best as possible. Summation of active water

General Note 3; Yellow highlight signifies applicable commitments, where commitments have been over-riden, changed or modified and are no longer active, they are not highlighted in yellow

Gneral Note 4; March 6, 2023 was a vacation and replat within Homestead at Sterling Ranch No 2 resulting in a net loss of 2 lots, therefore a negative allocation has been applied

APPENDIX G

WATER SUPPLY SUMMARY FORM

JDS-HYDRO
CONSULTANTS, INC.
A Division of RESPEC Company, LLC

RESPEC

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 adeuate supply of water"

1. NAME OF DEVELOPMENT AS PROPOSED *Sterling Ranch Filing 5 Preliminary Plan/PUD*

2. LAND USE ACTION *Preliminary Plan PUD*

3. NAME OF EXISTING PARCEL AS RECORDED *N/A*

SUBDIVISION *See Above* **FILING** *Preliminary* **BLOCK** *All* **Lot** *All*

4. TOTAL ACERAGE *11.66* | **5. NUMBER OF LOTS PROPOSED** *72* | **PLAT MAPS ENCLOSED** ☑ YES Preliminary Plan Separate Cover

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? ☐ YES ☑ NO

B. Has the parcel ever been part of a division of land action since June 1, 1972? ☑ YES ☐ NO

If yes, describe the previous action Tract B of Branding Iron at Sterling Ranch Filing No 2

7. LOCATION OF PARCEL - Include a map deliniating the project area and tie to a section corner. (In submittal)

Portions OF *SE/4 of SW/4* SECTION *33* TOWNSHIP *12* ☐ N ☑ S RANGE *65* ☐ E ☑ W

OF 1SECTION TOWNSHIP

PRINCIPAL MERIDIAN: ☑ 6TH ☑ N.M. ☐ UTE ☐ COSTILLA

8. PLAT - Location of all wells on property must be plotted and permit numbers provided.

Surveyors plat ☐ YES ☑ NO If not, scaled hand -drawn sketch ☑ YES ☐ NO N/A

9. ESTIMATED WATER REQUIREMENTS - Gallons per Day or Acre Foot per Year

HOUSEHOLD USE # *	*72* of units	*19,872* GPD	*22.26* AF
COMMERCIAL USE # ***	*0* Acres	*-* GPD	*-* AF
IRRIGATION # **	*0.93* acres of head	*2,076* GPD	*2.33* AF
STOCK WATERING #		GPD	AF
OTHER		GPD	AF
TOTAL		*21,948* GPD	*24.59* AF

* Units less than 7000 SF are subject to reduction in water demands

** Tract Irrigation

10. WATER SUPPLY SOURCE DENVER BASIN

☑ EXISTING ☐ DEVELOPED

WELLS SPRING

WELL PERMIT NUMBERS

LFH 80131-F

Arapahoe 80132-F

☐ NEW WELLS

Proposed Aquifers - (Check One)

☐ Alluvial ☑ Upper Arapahoe

☐ Upper Dawson ☑ Lower Arapahoe

☐ Lower Dawson ☑ Laramie Fox Hills

☐ Denver ☐ Dakota

☐ Other

☑ MUNICIPAL

☐ ASSOCIATION

☐ COMPANY

☐ DISTRICT

NAME Falcon Area Water and Wastewater Authority/Sterling Ranch Metro District

LETTER OF COMMITMENT FOR SERVICE ☑ YES ☐ NO

WATER COURT DECREE CASE NUMBERS

08 CW-113; 08 CW -018

86 CW -019, 17 CW 3002, 18 CW 3002

20 CW 3059, 93 CW 018, 85 CW 131

1689 BD, 1690 BD, 1691 BD

11. ENGINEER'S WATER SUPPLY REPORT ☑ YES ☐ NO If yes, please forward with this form. (This may be required befor our review is completed)

12. TYPE OF SEWAGE DISPOSAL SYSTEM *Central Sewer*

☐ SEPTIC TANK/LEACH FIELD

☐ LAGOON

☐ ENGINEERED SYSTEM (Attach a copy of engineering design)

☐ CENTRAL SYSTEM - DISTRICT NAME:

☑ VAULT - LOCATION SEWAGE HAULED TO:

☐ OTHER:

Falcon Area Water and Watsewater Authority

JDS-RESPEC 03/31/2023

Falcon Area Water & Wastewater Authority
c/o Spencer Fane
102 S Tejon St #750, Colorado Springs, CO 80903
719.633.1050

FAWWA

March 31, 2023

Doug Stimple
Classic Homes
2138 Flying Horse Club Drive
Colorado Springs, Colorado 80921

RE: Commitment Letter for Sterling Ranch Filing No. 5 Preliminary and PUD

Dear Doug:

This commitment is for the above Preliminary Plan PUD known as Sterling Ranch Filing No 5. The subdivision includes 72 lots which meet the criteria for high density equivalency. This land was previously platted as Tract B of Branding Iron Filing No 2 and the water was dedicated for an elementary school which was subsequently moved to another location in Sterling Ranch. The water for this subdivision is a new commitment, as the school water was transferred with the school site since it had been committed on a final basis.

The Falcon Area Water and Wastewater Authority will provide central water and sewer service to the above-named subdivision which includes approximately 72 single family lots and an estimated 0.93 acres of active irrigated landscaping. In response to the trend towards high density housing on small lots, the Authority has modified its water supply ratios to accommodate the trend in land use.

SFE Equivalency for High Density Lots

Lot Size	SFE Ratio	Effective Annual Demand
Lots < 2000 SF	0.65	0.23
Lots < 3500 SF	0.75	0.265
Lots < 7000 SF	0.90	0.318
Lots > 7000 SF	1.0	0.353

The Authority's base SFE allocation remains at 0.353 AF/SFE, but the above table allows for consideration of the water efficiency for high density lots. The amount of water set-aside will be 24.26 acre-feet/year. The wastewater commitment is for 12,384 gal/day on an average daily- maximum monthly basis.

Sincerely,

Falcon Area Water and Wastewater Authority
James Morley
Authority Board President
cc: Jennifer Shagin