

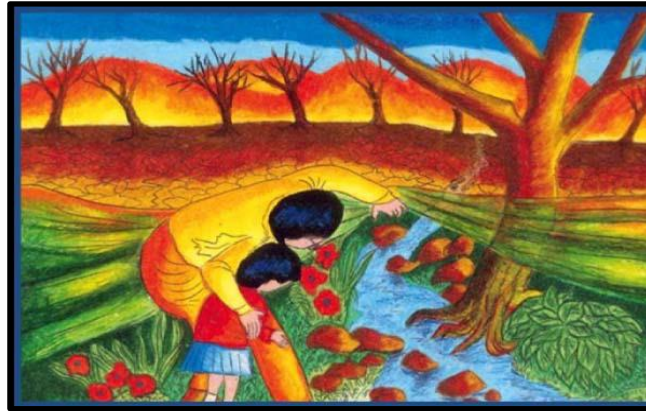
AMERICAN GROUND WATER TRUST

(501(c)(3) non-profit education organization)

Annual Colorado Groundwater Conference

“Everything aquifers and groundwater management”

Wednesday, October 17 and Thursday, October 18, 2018
DoubleTree by Hilton-Denver 3203 Quebec Street, Denver, CO 80207



Continuing Education

The AGWT will issue Certificates of Attendance:

Approved for Water Operators – WT 1.25 TUs, DS 1.25 TUs – Board Approval #18-IS-0546

Approved for Water Well Construction and Pump Installation Contractors – 8 CE hours. Course #2018-01-049-A



Join our conference sponsors!



(Visit www.agwt.org/events for information on sponsorship & exhibit opportunities)

Day one (October 17) will have a technical focus and Day two (October 18) will have a policy/legal focus.

Since 2000, the American Ground Water Trust has convened twenty three information-exchange & education programs in Colorado with a focus on technical and policy groundwater issues. This 2018 program will be #24.

Day 1 - Wednesday October 17th

7:30 – 8:30 REGISTRATION (Exhibits)

8:30 – 8:45 INTRODUCTION

The first half of day-one of the conference has seven presentations on innovations in water well design and construction. Has the horizontal drilling technology for water supply cracked the code that will now make this approach mainstream? The efficiency of water flow into wells (and out of wells for recharge) is the major objective of well design. Often ignored in groundwater projects is the critical importance of selecting the right pump for the job. Recharge via wells involves more than pouring water down well casing! Maximizing recharge rates with appropriate valves will become increasingly important as ASR grows as a groundwater management strategy in Colorado. If Colorado adds cement bond logging as a requirement for water wells, will other western states soon follow?

8:45 – 9:20

HORIZONTAL DIRECTIONAL DRILLING FOR WATER SUPPLY APPLICATIONS

Jacob Gallagher, Business Development Manager, Directed Technologies Drilling, Inc., Denver, CO

9:20 – 9:55

COMPLYING WITH THE COMING WATER WELL CEMENT BOND LOGGING REQUIREMENTS FROM THE COLORADO STATE ENGINEER'S OFFICE

Lia Martinez, Geophysical Engineer, and Marcus Donaldson, BMR Business Development-North America, Mount Sopris Instruments, Denver, CO

9:55 – 10:30

THE FIRST HORIZONTAL COLLECTOR WELL IN COLORADO – SITE INVESTIGATION, ECONOMIC ANALYSIS, CONSTRUCTION, AND TESTING. (South Platte alluvial aquifer, completed for South Adams County Water & Sanitation District)

Matt Seitz, P.E., P.G., Principal Hydrogeologist, HRS Water Consultants, Inc., Lakewood, CO

10:30 – 10:50 BREAK

10:50 – 11:25

THE COST/BENEFIT OF USING GLASS BEADS FOR FILTER PACK IN WATER SUPPLY WELLS

Gary Gin, RG, Vice President of Arizona Operations, Leonard Rice Engineers Inc., Phoenix, AZ

11:25 – 12:00

COST AND PERFORMANCE CONSIDERATIONS FOR HIGH CAPACITY PUMP SELECTIONS

David Kill, PE, Training Consultant, Xylem Goulds Water Technology, St. Paul, MN

12:00 – 1:00 LUNCH

1:00 – 1:35

VALVES FOR DOWN-HOLE AQUIFER RECHARGE – THE IMPORTANCE, AND THE PROCESS INVOLVED IN OBTAINING NSF-61 CERTIFICATION FOR ASR EQUIPMENT

Kent Madison, President, 3RValve LLC, Echo, OR

Following the presentations on well design, the remainder of day-one has five presentations, three focus on applications of geophysics to help solve some of Colorado's groundwater investigation needs. These techniques will help determine the location of abandoned wells, optimize siting of new wells and help identify important lithological characteristics of the state's aquifers. Presentations on planning for aquifer development and ASR projects round out the day, with the ASR presentation serving to set-up the ASR focus of several presentations for day-two of the conference.

1:35 – 2:10

GOT GROUNDWATER IN COLORADO?

Phil Sirles, Chief Operating Officer and Principal Geophysicist, Olson Engineering, Inc, Wheat Ridge, CO
(Co-author recognition, Margot Truini (retired) Hydrogeologist, USGS)

2:10 – 2:45

DRONE BASED MAGNETIC AND EM SURVEYS TO LOCATE ABANDONED WELLS AND FLOW LINES AND FOR GEOLOGIC MAPPING

Ron Bell, President, Aerobotic Geophysical Systems, Denver, CO

2:45 – 3:20

ELECTRICAL RESISTIVITY SURVEYS TO MAP DEEP CHANNELS IN THE OGALLALA AND OTHER COLORADO AQUIFERS

Doug Laymon, PG, Geophysical Services Manager, Collier Consulting, Stephenville, TX

3:20 – 3:35 BREAK

3:35 – 4:10

THE UPPER PIERRE AQUIFER IN COLORADO, DEVELOPMENT, PERMITTING AND RESEARCH
Theresa Jehn Delaport, President, Quantum Water Consulting, Lakewood, CO

4:10 – 4:45

TECHNICAL CONSIDERATIONS FOR ASR PLANNING IN COLORADO'S FRONT RANGE
Dave Colvin, PG, PMP, Groundwater Team Leader, Leonard Rice Engineers, Inc., Denver, CO

4:45 WRAP-UP

4:45 – 6:00 RECEPTION (cash bar) – (Network with attendees, presenters and exhibitors)



Day 2 – Thursday October 18th

7:30 – 8:30 REGISTRATION (Exhibits)

8:30 – 8:45 RECAP OF DAY ONE AND INTRODUCTION TO DAY TWO

The second day of the conference is centered on water quality issues, policy and legal aspect of aquifer recharge and groundwater management. The morning starts with proposals for an update of the State's Groundwater Atlas so that it can be a more versatile tool for effective assessment of groundwater potential. The program continues until 11:30 with an emphasis on groundwater quality. From 11:30 to 2:30 the conference has a focus on development of water resources and Aquifer Storage Recovery (ASR) rulemaking for Designated Groundwater Basins.

The first of the final two sessions of the conference is designed to present the views of the agricultural industry on ASR and irrigation water quality. As is now the tradition for this annual conference, the final session provides an opportunity for elected representatives to discuss likely 2019 water legislation.

8:45 – 9:15

UPDATING THE COLORADO GROUND WATER ATLAS IN A DYNAMIC WEB-BASED FORMAT
Peter E. Barkmann, CPG, Colorado Geological Survey, Colorado School of Mines, Golden, CO

9:15 – 9:45

AN OVERVIEW OF COLORADO'S GROUNDWATER ISSUES
Mike Sullivan, PE, Deputy State Engineer, State Engineer's Office, Denver, CO

9:45 – 10:15

THE WATER QUALITY CONTROL DIVISION'S ROLE IN IMPLEMENTING STATUTES AND REGULATIONS TO PROTECT THE QUALITY OF THE STATE'S GROUNDWATER
Patrick Pfaltzgraff, JD, Director, Water Quality Control Division, Colorado Department of Public Health and Environment, Denver, CO

10:15 – 10:45

LONG TERM AGRICULTURAL IMPLICATIONS OF DETERIORATING QUALITY OF IRRIGATION WATER RESULTING FROM SALINITY BUILD-UP FROM CYCLES OF WATER REUSE
Saman Tavakoli, PhD, Civil and Environmental Engineering, Colorado State University, Fort Collins, CO

10:45 – 11:00 BREAK

11:00 – 11:30

THE IMPORTANCE OF MANAGING QUALITY AND QUANTITY OF EFFLUENT WATER USED AND RECOVERED FROM AQUIFER RECHARGE. (Examples of impact from Upper Black Squirrel Basin and the Gilcrest area of Weld County)
Robert Longenbaugh, PE, Water Engineer, Fort Collins, CO

11:30 – 12:00

DISCUSSION OF COLORADO STATUTES AND GROUNDWATER COMMISSION RULES AND REGULATIONS THAT PROTECT DESIGNATED BASIN VESTED WATER RIGHTS FROM INJURY

Alyson K. Scott, JD, Attorney, Lawrence Jones Custer Grasmick LLP, Johnstown, CO

12:00 – 1:00 LUNCH

1:00 – 1:30

THE SOUTH PLATTE REGIONAL WATER DEVELOPMENT CONCEPT: HOW ASR FITS WITH IN THE PROJECT

Lisa Darling, Executive Director, South Metro Water Authority, Greenwood Village, CO

1:30 – 2:00

JOINT PARTIES' PERSPECTIVE ON ASR RULE-MAKING (Aurora, Castle Rock, Pikes Peak Regional Water Authority, PV, LLC, Pioneer Metropolitan District, Cherokee Metropolitan District, Paint Brush Hills Metro District and Woodmen Hills Metropolitan District);

Steven O. Sims, JD, Attorney, Shareholder, Brownstein Hyatt Farber Schreck, LLP, Denver, CO

2:00 - 2:30

THE DISTRICTS' PERSPECTIVE ON ASR RULE-MAKING (Lost Creek, Upper Black Squirrel, Morgan Quality Water and Black Mountain Ranch)

Lisa Thompson, JD, Attorney, Shareholder, Trout Raley, Denver, CO

2:30 – 2:45 BREAK

2:45 – 3:15

Grower/Irrigator Panel with Q & A

HOW AQUIFER RECHARGE AND THE USE OF RECLAIMED WATER ARE IMPACTING COLORADO'S AGRICULTURE INDUSTRY

Glen Fritzler, Gilcrest, CO (Irrigation farmer)

Dan Farmer, Colorado Springs, CO (Irrigation farmer)

Todd Demming, Keenesburg, CO, (Director, Lost Creek Groundwater Management District)

3:15 – 4:00

Legislator Panel with Q & A

WATER LEGISLATION EXPECTED OR NEEDED FOR THE 2019 SESSION

State Representative Jeni James Arndt, PhD, Colorado House District 53, Denver, CO

Chair: Agriculture, Livestock, & Natural Resources Committee

Vice-Chair: Water Resources Review Committee

State Representative Lori Saine, Colorado House District 63

Member: Water Resources Review Committee

Member: Agriculture, Livestock, & Natural Resources Committee

Senator Don Coram, Senate District 6

Member: Water Resources Review Committee

Member: Agriculture, Livestock, & Natural Resources Committee

4:00 ADJOURN

Registration Information

ANNUAL COLORADO GROUNDWATER CONFERENCE
Wednesday and Thursday October 17 & 18, 2018

[Complete information below or register on-line at www.agwt.org/events](http://www.agwt.org/events)

| | Two Day Oct 17 AND 18 | One Day Oct 17 OR Oct 18 |
|---|---------------------------------|--|
| YOU MUST CHECK ONE: → | <input type="checkbox"/> | <input type="checkbox"/> or <input type="checkbox"/> |
| General Registration* | <input type="checkbox"/> \$450 | <input type="checkbox"/> \$260 |
| AGWT Member* | <input type="checkbox"/> \$410 | <input type="checkbox"/> \$220 |
| Full-Time Student* (ID required at Registration) | <input type="checkbox"/> \$120 | <input type="checkbox"/> \$80 |
| Download of presentation ppts (Registrant Price) | <input type="checkbox"/> \$30 | |
| Exhibit Table (personal registration also required) | <input type="checkbox"/> \$300 | |
| <i>*Registration Includes: access to exhibits, reception, breaks and lunch(s)</i> | | |
| Total for all checked boxes \$ | | |
| Call (800 423 7748) or provide information on-line to be an event sponsor | | |

SPEAKER REGISTRATION ONLY! - ANNUAL COLORADO CONFERENCE

Speakers receive complimentary registration for the day of their presentation

Speaker Presentation Date Oct 17 Oct 18
 Attending (day not presenting) Oct 17 - \$100 Oct 18 - \$100

Payment Information:

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TEL: (603) 228-5444

? QUESTIONS:
 (800) 423-7748
 9:00-4:00pm (EST)

Register on-line at www.agwt.org/events

[On-line registration or fax completed registration form to 603 228 6557](http://www.agwt.org/events)