SUBSTITUTE WATER SUPPLY PLAN FORUM

SEPTEMBER 1, 2004

Hunter Education Building
6060 Broadway
Denver, Colorado

9:00 A.M. -12:00 P.M.

Sponsored by
The State Engineer's Office and
Applegate Group

9:00-9:10	**General Overview** *Hal Simpson and Dick Stenzel*
9:10-9:35	**History of Legislation and Rules** *Kevin Rein and Jim Hall*
9:35-9:45	**SWSP Matrix** *Keith Vander Horst*
9:45-10:05 10:05-10:10	**Approval of SWSPs pursuant to 37-92-308, CRS Policy 2003-2** *Dick Wolfe* **SWSP Notification List** *Alison Needham*
10:10-10:30	**Approval of SWSPs Pursuant to 37-90-137(11), CRS Review of Proposed Guidelines** *Jeff Deatherage*
10:30-10:45	**Break**
10:45-11:00	**Approval of Plans in Water Division 2 Including Rule 14 Plans** *Bill Tyner*
11:00-11:15	**Other Types of Plans Approved by the Division of Water Resources** *Dick Wolfe*
11:15-11:30 11:30-11:40	**Use of ET Credit in SWSP - Policy 2004-3** *Dick Wolfe* **Process for Involvement and Feedback on Proposed Guidelines and Policies** *Hal Simpson*
11:40-12:00	**Questions and Feedback** *Dick Stenzel*

SPEAKERS

Hal Simpson, State Engineer
Colorado Division of Water Resources

Dick Stenzel
Applegate Group, Inc.

Jim Hall, Division Engineer
Water Division 1
Colorado Division of Water Resources

Kevin Rein, Team Leader
Water Division 1
Colorado Division of Water Resources

Keith Vander Horst, Team 237
Colorado Division of Water Resources

Dick Wolfe, Chief of Water Supply
Water Divisions 2-7
Colorado Division of Water Resources

Alison Needham, Litigation Coordinator
Colorado Division of Water Resources

Jeff Deatherage, Team Leader
Water Division 1
Colorado Division of Water Resources

Bill Tyner, Assistant Division Engineer
Water Division 2
Colorado Division of Water Resources

Brief History of the Events Leading up to the Current Substitute Water Supply Plan Approval Process

Brief History

1965 Act/House Bill 1066

- In 1965 the Colorado General Assembly passed House Bill 1066 and enacted the Colorado Ground Water Management Act ("1965 Act").
- Gave the State Engineer the authority to evaluate the use of ground water and deny a well permit
- These tools also incorporated ground water into the priority system.

Brief History

1969 Act

- In 1969, the Colorado General Assembly enacted the Water Rights Determination and Administration Act ("1969 Act").
- Reinforced recognition of the connection between ground water and surface water.
- Introduced the concept of plans for augmentation (integrate ground water into the priority system)

Brief History

1974, 1977

- In 1974, the legislature adopted Senate Bill 7. Senate Bill 7 authorized the State Engineer to approve temporary plans for augmentation.
- In 1977, the provisions of Senate Bill 7 allowing this authority were repealed.

Brief History

Basin Specific Rules (Examples)

- Arkansas River Rules
- South Platte Rules

Brief History

Recent Events

- Empire Lodge Decision 2001
- South Platte Specific
  - May 30, 2002, the State Engineer filed an application to the water court (2002CW108) to promulgate Amended Rules of the South Platte River. The judge (December 30, 2002) and the Supreme Court (April 30, 2003) ruled against the State Engineer
- Concurrently, in the 2002 legislative session, the legislature enacted House Bill 02-1414

Brief History

- HB-1414 provided the statutory provisions in C.R.S. 37-92-308.
  - 37-92-308(3) ("renewals")
  - 37-92-308(4), (new SWSPs)
    - Water court application
    - Plan to the SEO
    - Notification (Objectors)
    - 1-year approval

Brief History

- 37-92-308(5), five-year depletions
  - No water court application
  - Plan to the SEO
  - Notification (*SWSP Notification List*)
  - 1-year approval
- 37-92-308(7), Public health and safety.
  - Plan to the SEO
  - No notification is required
  - 90-day approval
- 37-92-308(8) identifies the $300 filing fee

Brief History

- 2003, House Bill 03-1001 modified portions of 37-92-308. Specifically:
  - Changes of water rights
  - 'Notify' parties on the *SWSP Notification List* for 37-92-308(4) plans

Brief History

- 2003, Senate Bill 03-73 modified portions of 37-92-308. Specifically:
  - New 308(3), temporary approval of SWSP without water court application
    - Wells in the South Platte Basin
    - Previously in a SWSP
    - Through December 31, 2005
    - Notify parties on the *SWSP Notification List*
    - 1-year approval
    - The statute requires that a hearing be held by the state engineer for these approval requests
  - It provided for the approval of plans for augmentation wells, only under strict conditions.

Current Process

- In 2001, 18-20 SWSPs. In 2003 , more than 80 (South Platte Basin).
  - Many wells from larger plans "broke off" into smaller plans
  - Water users whose plans had lapsed or who did not previously have plans were being exposed
- Approval takes more time and effort
  - Increased detail
  - Statute makes the submittal/approval process more rigid
  - Input from other parties
  - Changes were coincident with drought.

Current Process

- General approval process:
  - Receive and enter
  - Preliminary review
  - Comment period
  - Evaluation
  - Division review
  - Approval
  - Copies

Replacement Plans and Substitute Water Supply Plans

Type of Diversion	Duration	Replacement Plan Type	Conditions and requirements
DIV. 2 Alluvial and surficial wells constructed through December 31, 1985 (Includes change of use and expansion of use on existing wells through December 31, 1985)	Indefinite Use of native replacement sources (owned not leased) limited to 10 years by which time a decree for augmentation use must be obtained. See Rule 6.	Rule 14 "Pre-1986"	• Use consistent with decree or permit. Changed uses of pre-1986 wells allowed after Water Court approves change with same priority. • No new wells constructed after Dec. 31, 1985. These wells must comply with either a Rule 14 plan or HB 02-1414 (See 308(4), (5), & (7) below) or decreed augmentation plans. If the applicant obtains a decree for a replacement (over 200 ft move), APD or SPD to a pre-1986 well, then that well can be included in a Rule 14 plan. • Plans due by March 1 of each year; submittal requirements are listed in "1996 Amended Use Rules". • Use accounting model for delayed depletions. SDF or Glover models may be used for non-irrigation wells or wells not in the Gray Area. • Presumptive depletion factors and the Durbin usable flow method may be used for irrigation wells as allowed and limited by the 1996 Amended Use Rules. • Plans with remediation wells can add additional wells if no increase in depletions • Not to be used for decreed plans for augmentation or APOD wells to surface water rights
DIV. 2 Alluvial and surficial wells constructed after December 31, 1985 and prior to Jan. 1, 2002 (Includes change of use and expansion of use on existing wells through December 31, 2001) Bedrock wells previously included in an approved SWSP may be allowed on case-by-case basis.	By Jan. 1, 2008, applicant must submit an application for an augmentation plan to Water Court. Applicant may operate for up to an additional 5 years under 37-92-308(4) (i.e. HB 02-1414) while pursuing a decree.	Rule 14 "Post-1985"	• Uses remain consistent with last approved SWSP. • No new use of wells, or changes or expansions of use after Jan 1, 2002. These wells must comply with HB 02-1414 (See 308(4), (5), & (7) below). • Plans due by Jan 1 of each year beginning 01/01/03. Plans will then convert to Plan Year (April 1st – March 31st). • Plans submittal requirements are listed in "1996 Amended Use Rules". • Plans to be submitted separately from Rule 14 plans for pre-1986 wells (above). • Site specific modeling and depletion factors. Cannot use Durbin method. • Application for an augmentation plan must be submitted to water court by 01/01/08. Decreed plan for augmentation required by end of 10 years (5 years under a Rule 14 plan and 5 years under 308(4)) unless the applicant can demonstrate to the Water Judge that additional time is needed per 308(4)(b). • Monthly reporting of pumping and depletions, as well as all application requirements shown in the 1996 Amended Use Rules. • Plans with remediation wells can add additional wells if no increase in depletions • Not to be used for decreed plans for augmentation or APOD wells to surface water rights

Div. 1 Out-of-priority ground water depletion with SWSP approved prior to 1/1/03 or for augmentation wells.	•	Renewal not to extend past 12/31/05. • After Jan. 1, 2006, must be included in a plan for augmentation approved by water judge, or a SWSP approved pursuant to 308(4), or operated under their own priorities.	37-92-308(3)	• Must provide report on how plan will operate using the procedures and standards set forth in 37-92-308(3). • Notice required to SWSP Notification List for Div. 1. • Hearing is required no sooner than 35 days and no later than 50 days after date of mailing of notice. • Must have agreements with impacted parties for unpaid 2002-2003 winter depletions before SWSP is approved.
Statewide Out-of-priority ground water or surface water diversion, or change of water rights.	•	Depletions not to exceed 5 years. • Approved for one year / renewable, but not more than 5 years.	37-92-308(5)	• Notice to subscribers on the SWSP notification list.
Statewide Out-of-priority ground water or surface water diversion, or change of water rights.	•	Approved for one year / renewable yearly with 3 year & 5 year limit checks. • Any years under 308(5) count under 308(4).	37-92-308(4)	• Requires augmentation plan or application for change in water right to be filed with the water court. • Notice requirements to objectors in water court case, or if deadline for filing a statement of opposition has not passed, the applicant may provide written notice to those who have subscribed to the SWSP notification list. • SWSP must be consistent with water court application or a subset thereof.
Statewide Out-of-priority ground water or surface water diversion, or change of water rights.	•	90 days. • May include augmentation wells.	37-92-308(7)	• Public health or safety emergency only. • No notice required unless using augmentation wells (37-92-308(7)).

Effective July 1, 2003.

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POLICY 2003-2

IMPLEMENTATION OF SECTION 37-92-308, C.R.S. (2003) REGARDING SUBSTITUTE WATER SUPPLY PLANS

The following general statement of policy is adopted to explain the State Engineer's implementation of HB 02-1414, HB 03-1001 and SB 03-73 regarding substitute water supply plans.

Considerations and Background for Policy

Subsequent to the Supreme Court ruling in Empire Lodge Homeowners v. Moyer, the 2002 and 2003 General Assemblies granted additional authority to the State Engineer that allows limited approval of substitute water supply plans involving out-of-priority diversions. According to section 37-92-308(1)(a), C.R.S. (2003), "There are certain circumstances under which the time required to go through the water court adjudication process can be problematic for some water users. Prior to January 1, 2002, substitute water supply plans had come into common usage for a number of water users, and based on this precedent, it appears desirable to establish additional authority for the State Engineer to approve substitute water supply plans." Substitute water supply plans provide water users a mechanism to replace out-of-priority depletions on an interim basis. This allows temporary changes of use and in the case of permanent changes, the protection of other water rights during litigation involving water change cases and augmentation plans. Approved substitute water supply plans include stringent terms and conditions to ensure that operation of the plans will not injure other water rights.

This statement of policy generally explains the State Engineer's interpretation and implementation of HB 02-1414, HB 03-1001 and SB 03-73 with respect to the State Engineer's review and approval of substitute water supply plans; however, the State Engineer will make the final decision regarding approval of any plan.

Policy

1) Implementation of this policy hereby revokes Policy 2002-2.

2) Requests for substitute water supply plans for providing domestic water within new or proposed residential subdivisions will not be granted because of the potential of the substitute water supply plan not being renewed and a permanent plan for augmentation not being approved by the water court. Under these circumstances, persons purchasing lots and constructing homes could potentially be faced with mandatory curtailment of their water source.

3) Requests for substitute water supply plans involving not-nontributary ground water will not be granted because statutes specifically require a judicially approved plan for augmentation prior to the pumping of not-nontributary wells. See section 37-90-137(9)(c)(I), C.R.S. (2003).

4) The Proof of Notice required by section 37-92-308(4)(a)(II), C.R.S. (2003) shall be a copy of a certificate of mailing or equivalent by first-class mail from the applicant.

5) The notification required by sections 37-92-308(3)(b)(IV), 37-92-308(4)(II), 37-92-308(5)(a)(II) and 37-92-308(6), C.R.S. (2003) shall include a statement that a response to the notice is required to be considered a "party to the application". This response indicating party status must be sent to the State Engineer or his designated agent by first-class mail or by electronic mail. The applicant should state in the notice that a response to the State Engineer must be received within 30 days of notice. All responses to the notice and SWSP must be sent to the State Engineer's Office and the Applicant.

6) The Division of Water Resources may act on a request for approval of a substitute water supply plan prior to the expiration of the 30-day comment period, if comments have been received from all opposers or noticed parties. *See* sections 37-92-308(4)(a)(III) and (5)(a)(III), C.R.S. (2003).

7) Section 37-92-308(6), C.R.S. (2003) directs the State Engineer to establish a notification list for each water division to notify interested parties of requests for approval of substitute water supply plans (including emergency approval for augmentation wells):

   To be placed on the notification list, parties shall pay a fee of twelve dollars per calendar year, per water division. The notification lists may be posted on the Division of Water Resources' website.

   The requestor shall provide copies of the proposed substitute water supply plan to all parties on the list and shall contact the Division of Water Resources for the current notification list at the time of mailing.

8) A hearing shall be held pursuant to 37-92-308(3)(b)(IV), C.R.S. (2003) (aka, SB 03-73), regardless of whether comments are received from any party.

9) Only one emergency request pursuant to section 37-92-308(7), C.R.S. (2003) will be allowed per applicant in any twelve-month period, unless the State Engineer specifically allows a subsequent request. Emergency requests are limited to

situations affecting the public health and safety and are not intended to be used for situations including, but not limited to, crop relief, piscatorial or recreational purposes.

10) No substitute water supply plan shall be granted pursuant to 37-92-308(5) if stream depletions from out of priority diversions are projected to occur more than five years after diversions begin or if the applicant has sought water court approval of a plan for augmentation or a change of water right for some or all of the same structures or water rights.

11) The conversion of a substitute water supply plan applied for under section 37-92-308(5), C.R.S. (2003) to a substitute water supply plan applied for under section 37-92-308(4), C.R.S. (2003) shall not occur without prior approval from the State Engineer.

12) The time periods allowed for approvals and renewals of requests submitted under section 37-92-308(4), C.R.S. (2003) shall not be dependent upon the time the water court application has been pending with the water court prior to the request. If the conversion is allowed, the State Engineer will count any years operating under 37-92-308(5) approval towards the annual renewal limits contained in 37-92-308(4).

13) Emergency requests for substitute water supply plans under section 37-92-308(7), C.R.S. (2003) shall have the highest priority for evaluation. Every attempt will be made to process emergency requests as soon as possible. Requests submitted under sections 37-92-308(4) and (5), C.R.S. (2003) shall be evaluated chronologically based on the date of submittal to the State Engineer unless directed otherwise by the State Engineer. Evaluations for requests submitted under section 37-92-308(3) shall be pursuant to timeframes established in this section.

14) Water from wells decreed in Larimer County District Court Civil Action 11217 shall not be used as a source of replacement supply or substituted water supply in a substitute water supply plan.

15) The State Engineer's Office does not have the authority or resources to provide consulting engineering services. Thus, a substitute water supply plan request must be complete upon submittal to the State Engineer. Often, consultation with a professional engineer may be necessary to address the technical and engineering issues involved and to assure that a complete request is prepared. The following items must be addressed when submitting a request for approval of a substitute water supply plan.

   a) Provide a statement regarding the justification and need. Please cite the subsection of section 37-92-308, C.R.S. (2003) under which the request is being made.
   b) Show Proof of Notice as required in sections 37-92-308(3)(b)(IV), 37-92-308(4)(a)(II), 37-92-308(5)(a)(II), and 37-92-308(7), C.R.S., (2003), by providing a copy of a certificate of mailing or equivalent by first-class mail from the applicant.

c) Submit a narrative description summarizing the water resource aspects of the proposed or existing operation including water usage and consumption and a proposed plan for replacing out-of-priority depletions or for change of water right.

d) Provide an affidavit of ownership or a consent agreement to utilize an existing water right. If leased water is being used, a copy of the agreement between the applicant and the lessor must be submitted.

e) Provide an engineering report for the substitute water supply plan. The report should include, but is not limited to, all pertinent information regarding the replacement water and its water quality, historical and proposed consumptive uses, return flows, diversion records, aerial photographs to document historical use, well permit numbers, location maps, transit losses and the time, location and amount of stream depletions. The engineering report must be prepared consistent with the "GENERAL GUIDELINES FOR SUBSTITUTE WATER SUPPLY PLANS SUBMITTED TO THE STATE ENGINEER PURSUANT TO SECTION 37-92-308, CRS (2003)" attached to this policy. The guidelines may be updated and amended from time-to-time. To assure that you have the most current version, contact the DWR website at www.water.state.co.us.

f) Submit a proposed monthly accounting form for the substitute water supply plan that includes all diversions, stream depletions, and replacement water deliveries. The accounting must be provided to the water commissioner and division engineer on forms and a reporting schedule that is acceptable to them. The accounting form should contain all information necessary for the administration of the plan. The name, mailing address, and phone number of the contact person who is responsible for operation and accounting of this plan must be provided on the accounting form.

g) All water diverted or used for augmentation in the proposed substitute water supply plan shall be adequately measured to the satisfaction of the division engineer or a designee.

h) The approval of a substitute water supply plan may require the issuance of a well permit, if applicable. The well permit application process, timelines and fees are not waived under this policy. Consent of adjacent well owners or a hearing may be required prior to issuance of a well permit if another well is located within 600 feet. See section 37-90-137(2)(b)(I), C.R.S. (2003).

i) An approved substitute water supply plan may be revoked or modified at any time should it be determined that injury to other water rights has or will occur as a result of the approved plan, or if the applicant has violated any term and condition contained in this or any prior plan.

This policy becomes effective immediately and can only be modified or revoked in writing by the State Engineer.

Hal D. Simpson
State Engineer

8/12/03
Date

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ATTACHEMENT TO POLICY 2003-2

GENERAL GUIDELINES FOR SUBSTITUTE WATER SUPPLY PLANS SUBMITTED TO THE STATE ENGINEER PURSUANT TO SECTION 37-92-308, CRS (2003)

The Colorado Legislature passed House Bill 02-1414 in 2002 House Bill 03-1001 and Senate Bill 03-073 in 2003 authorizing the State Engineer to approve limited substitute water supply plans. The provisions of this bill are found in Section 37-92-308, C.R.S. (2003). This statute affects all substitute water supply plans submitted to the State Engineer after January 1, 2002, sets fees associated for review (HB 02-1414), provides specific requirements on those wells operating within the South Platter River Basin (SB 03-073), and allows for temporary approval of change of water rights within substitute water supply plans (HB 03-1001). To maintain consistency and to streamline the review process, the State Engineer's Office (SEO) is requesting substitute water supply plan applications submitted pursuant to Section 37-92-308, C.R.S. follow the format presented below, where applicable or as more specifically provided for in 37-92-308 (e.g. 37-92-308(3)). These general evaluation guidelines are provided to assist the applicant in preparing the substitute water supply plan request and are not to be construed as formal policy. Even though most of these guidelines address engineering related issues, there are some that address policy concerns of the State Engineer as well as statutory requirements (Also see revised Policy 2003-?).

PROJECT DESCRIPTION

1. Provide a statement regarding the need and justification. Please cite the subsection of Section 37-92-308, C.R.S. (2003) under which the request is being made. The statutory fee for asubstitute water supply plan request (new or renewal) to be evaluated under 37-92-308, C.R.S. is $300. South Platter River basin wells that have been operating pursuant to substitute water supply plans approved before 2003, or for augmentation wells, using the procedures and standards set forth in 37-92-308(3), C.R.S., may apply for renewal each year through the calendar year 2005, after which all diversions must cease unless the applicant submits a plan under 37-92-308(4), or must be included in a plan for augmentation approved by a water judge, or must operate under their own priority. A request submitted under 37-92-308(4) must be accompanied by a copy of the water court application with case number. A plan that is submitted pursuant to 37-92-308(5) cannot have depletions exceeding five years. A plan that is to be evaluated pursuant to 37-92-308(7) must address emergency situations only. An

explanation of how the plan addresses a situation that affects "public health or safety" must be included.

2. Show Proof of Notice as required in Section 37-92-308(3)(b)(II) or 37-92-308(5)(a)(II), C.R.S., by providing a copy of a certificate of mailing or equivalent by first-class mail from the applicant or electronic mail from the applicant. Those plans submitted under Section 37-92-308(4)(a)(II) must show Proof of Notice to all parties who have filed a statement of opposition to the plan in water court, or, if the deadline for filing a statement of opposition has not passed, the applicant may provide written notice of the request for approval of the substitute water supply plan to all parties who have subscribed to the substitute water supply plan notification list.

3. A narrative description shall be submitted summarizing the water resource aspects of the proposed or existing operation including water usage and consumption and a proposed plan for replacing out-of-priority depletions or for change of water right.

DEPLETION

4. **Evaporation:** Gross evaporation (free water surface) shall be calculated based upon evaporation atlases in NOAA Technical Report NWS 33 or more site-specific information if available. Any other estimate should be within 10% of the NOAA estimate. Any credits to offset gross evaporation must be pursuant to state statutes and state engineering policy. The total gross evaporation estimate from NOAA 33 shall be distributed to all months. The monthly distribution for elevations below 6500 feet msl is: Jan-3.0%, Feb-3.5%, Mar-5.5%, Apr-9.0%, May-12.0%, Jun-14.5%, Jul-15.0%, Aug-13.5%, Sep-10.0%, Oct-7.0%, Nov-4.0%, and Dec-3.0%. The monthly distribution for elevations above 6500 feet msl is: Jan-1.0%, Feb-3.0%, Mar-6.0%, Apr-9.0%, May-12.5%, Jun-15.5%, Jul-16.0%, Aug-13.0%, Sep-11.0%, Oct-7.5%, Nov-4.0%, and Dec-1.5%.

5. **Irrigation:** Provide a map showing the proposed lands to be irrigated. Provide information on the types of crops to be irrigated and the method of irrigation. Analysis of monthly consumptive use shall be based upon the modified Blaney-Criddle method or other acceptable methods or determination from previous court decrees for shares in same ditch. Estimates of irrigation efficiencies and ditch conveyance efficiencies shall be based on acceptable engineering references and standards. Need detail of water balance (i.e., historical diversions versus crop irrigation requirement) to determine net stream depletion. Analysis shall show depletions on a monthly basis.

6. **Drinking & Sanitary:** Estimate the number of full time employees, part time employees, and visitors that are expected and the expected demand in gallons per day per person. Describe the expected method of water treatment. Septic/leach fields are assumed to have a consumption of 10% of diversions and municipal systems are assumed to have a consumption of 5% of diversion. Other consumption rates must be supported with engineering documentation. If animals are to be watered, detail the type of animals and the

number of animals. Animal watering is assumed to be 100% consumptive. Analysis should show depletions on a monthly basis.

7. **Remediation:** Describe the method of water treatment. Determine the rate of pumping in gallons/minute and how many minutes per month the wells will be pumped. Determine the percent of depletion using energy balance methods or empirical methods, i.e., manufacturer's estimates, and provide the supporting documentation. Calculate the total monthly consumption. Provide information on how the treated water is disposed.

8. **Industrial/Commercial/Other:** Provide a detailed analysis of all water uses, pumping rates, and estimated depletions for each use on a monthly basis. Provide information on the methods of water disposal for the different uses. Consumption rates must be supported with engineering documentation.

9. **Depletions – Lagged:** The effect of stream depletions from the operation shall be evaluated. It will not be assumed that depletions occur instantaneously unless the well is located within 100 feet from the river or site-specific geologic and hydrologic information warrants this assumption. Generally, timing of depletions may be calculated using Glover techniques [parallel drain theory, stream depletion factor (SDF)], or numeric modeling. Special procedures may be necessary to analyze depletions and injury on intermittent streams. Analysis shall show stream depletions on a monthly basis. Please see 37-92-308(3)(b)(I), C.R.S. for specific requirements (e.g., must use SDF where available to determine lagged depletions) within the South Platte River basin for duration of lagged depletion period. Also, see 37-92-308(3)(c)(II).

REPLACEMENT SOURCES

10. Replacement water to compensate for out-of-priority depletions must be available in the proper quantity, quality, place and time as necessary to prevent injury to vested water rights. All plans submitted must meet this requirement in order to obtain approval from the State Engineer.

11. Plans for replacement generally utilize four primary sources of water to compensate the stream system for depletions. These sources include direct flow water rights, reservoir storage, nontributary water, transbasin water, augmentation wells and recharge wells and basins. The water from these sources may be owned or leased. Water right decrees and other pertinent information regarding the replacement sources shall be included. The applicant shall also provide signed lease agreements including without limitations deeds, share certificates, etc., authorizing use of the proposed replacement sources. Although the substitute water supply plan may be approved for temporary use of leased or nontributary water for the replacement water, the SEO may object to the use of these sources in a proposed decreed plan for augmentation.

12. Nontributary, transbasin, or other consumptive use sources may be used for replacement purposes in a substitute water supply plan provided adequate engineering and supporting

documentation are supplied. Use of nontributary water must also comply with the Statewide Nontributary Ground Water Rules or Denver Basin Rules as applicable. Water from wells decreed in Larimer County District Court Civil Action 11217 shall not be used as a source of replacement supply or substituted water supply in a substitute water supply plan. Lawn irrigation return flow credits may not be acceptable unless established by the water court. Irrigation return flows from the Colorado-Big Thompson Project water cannot be used for replacement purposes. Replacement water must be adequate in amount in duration to cover all post-pumping depletions.

13. Many plans utilize the historical consumptive use associated with irrigation water rights as part of their replacement sources. All or a portion of the land irrigated by the surface water right shall be dried up to provide historical consumptive use replacement credits. The land to be dried up shall be monumented to the satisfaction of the local water commissioner. Maintenance of historical return flows from the former irrigated lands will be required if necessary to prevent injury to other water rights. The timing of return flows may be calculated using Glover techniques [parallel drain theory, stream depletion factor (SDF)], or numeric modeling. Consumptive use replacement water from irrigation water rights will only be available to replace irrigation season depletions unless sufficient water is placed in an acceptable storage vessel for release during the non-irrigation season, or as provided by change of use decree.

14. Analysis of historical consumptive use shall be based upon the modified Blaney-Criddle method or other methods generally accepted in the engineering community for calculating crop evapotranspiration or determination from previous court decrees for the subject water right, if applicable. The historical consumptive use analysis shall be based on a representative study period and the projected yield for the plan year must be adequate to meet augmentation requirements. Any non-use of the water right during a study period shall be included in averaging historical use. All sources of water for irrigation must be considered when determining historical consumptive use. Any occurrence of subirrigation must be documented and considered in the historical use analysis. Documentation of historical irrigation may be based on aerial photographs, sworn affidavits, court decrees, well permit files and water commissioner diversion records. Estimates of irrigation efficiencies, ditch conveyance efficiency, and subirrigation shall be based on acceptable engineering references and standards.

15. Substitute water supply plans may use reservoir water released to the stream at the proper time and in the proper amount. Reservoir storage and releases are generally required to offset winter depletions. An analysis of the consumptive use of the reservoir water (if reservoir water is not decreed for augmentation purposes) shall be required. Dry-up of irrigated lands will be required if the only source of water available was the reservoir water used for irrigation.

16. An excavation that intercepts groundwater is considered a well; thus, the excavation may not be used for water storage unless it meets the standards outlined in the State Engineer's Guidelines for Lining Criteria for Gravel Pits.

17. It may be possible to introduce water into recharge sites located at desirable distances from the stream using the sources discussed previously or water diverted when there is a free river. Water introduced into the recharge site will migrate to the stream over time. The rate of movement is a function of the transmissivity and specific yield of the alluvial material. The accretions to the stream from this recharge may also be calculated using the Glover techniques described above or by any other method generally accepted in the engineering community. With properly located recharge sites, recharge water could reach the stream during all months of the year and would be creditable against stream depletions. The State Engineer must specifically approve the use of these recharge plans unless the water court has previously approved the site.

18. Transportation loss charges, if applicable, will be assigned for any replacement source of water determined by the water commissioner or the division engineer.

OPERATION OF PLAN

19. Each plan shall include a detailed accounting sheet providing monthly estimates of the following items including, but not limited to, all consumptive uses, total lagged depletions impacting the river during the plan year including depletions (caused by plan-year pumping and prior-year pumping), reservoir or replacement source releases, physical flow available at the surface water right headgate, historical consumptive use credit estimate, and transportation loss charges. All items in this list may not be applicable to every proposal. Likewise, certain proposals may require additional accounting. A draft accounting form shall be submitted to the State Engineer for approval. The substitute water supply plan shall provide the name, address and telephone number of the contact person who will be responsible for the accounting and operation of this plan.

20. Accounting and reporting of depletions and replacements shall be made monthly to the division engineer and water commissioner. More frequent accounting may be required by the division engineer. Reservoir releases may also be aggregated at the division engineer's or water commissioner's discretion for maximum benefit of the stream system.

21. Adequate flow measuring devices and measurements may be required to implement the plan. Measurements may include, but shall not be limited to, all diversions from the well(s), water released from reservoirs or other sources for replacement water, and the diversion and turn back of ditch diversions.

22. If the subject plan requires a well permit, a plan will not be approved unless the applicant has also applied for the well permit. A well permit application, with the applicable filing fee, must be submitted with the substitute water supply plan proposal. Additionally, if another well is located within 600 feet of the proposed well, consent of the well owner(s) must be obtained or a hearing will be held before the State Engineer to determine if a well permit can be issued.

23. Evidence that water from the well has been put to beneficial use prior to the expiration date of the permit must be submitted prior to the expiration date of the permit on a form prescribed by the State Engineer. A field inspection may be required by the division engineer's office to assist the water court in determining the adequacy of any water right claimed for this structure regardless of the amount of water claimed on the Statement of Beneficial Use form. The Statement of Beneficial Use must be submitted prior to the expiration date of the permit in order for the permit to remain valid.

24. Substitute water supply plans may be revoked or modified at any time should it be determined that injury to other vested water rights has occurred or will occur as a result of the plan. A copy of the approved substitute water supply plan must be recorded with the county clerk and recorder.

25. These guidelines shall be reviewed, and updated as necessary.

SUBSTITUTE WATER SUPPLY PLAN NOTIFICATION LIST SUBSCRIPTION REQUEST

Section 37-92-308, C.R.S. (2004) directs the State Engineer to establish a notification list for each water division to notify interested parties of requests for approval of: substitute water supply plans (§37-92-308), loans for an instream flow (§37-83-105), and interruptible water supply agreements (§37-92-309).

There is a $12 fee per calendar year, per water division to be included on these lists. The fee may be paid by Visa, MasterCard, check or money order payable to the Colorado Division of Water Resources. For further information regarding Substitute Water Supply Plans, refer to the Division of Water Resources' website at http://water.state.co.us/ or call (303) 866-3581.

Name: _____

Company: _____

Address: _____

_____

City: _____ State: _____ Zip Code: _____

Phone number: (_____) _____ E-mail address: _____ @ _____

I'd like Applicants for a SWSP to send the information to me via:

☐ e-mail or ☐ first-class U.S. mail.

Include me on the notification list for Water Division(s): _____

Enclosed is $12 per division, per calendar year. $12 x _____ = $ _____ total

☐ Check or money order payable to the Colorado Division of Water Resources

☐ Visa or MasterCard _____ exp. _____/_____

Return this information to:

Substitute Water Supply Plan Notification List
Colorado Division of Water Resources
1313 Sherman Street, Room 818
Denver, Colorado 80203
phone: (303) 866-3581
fax: (303) 866-3589
e-mail: dwr-swsplist@state.co.us

STATE OF COLORADO

OFFICE OF THE STATE ENGINEER
Division of Water Resources
Department of Natural Resources

1313 Sherman Street, Room 818
Denver, Colorado 80203
Phone (303) 866-3581
FAX (303) 866-3589

http://www.water.state.co.us

You have requested approval of a substitute water supply plan pursuant to section 37-92-308, C.R.S. Therefore, you must provide a complete copy of the proposed plan to each party on the attached notification list. Please abide by the subscribers' preference to receive this information by e-mail or U.S. Mail, as indicated in the last column of the list. You should also advise those individuals:

1. The parties on the notification list have thirty days after the notice was sent to file comments on the proposed substitute water supply plan. Pursuant to statute, the comments must include any claim of injury or any terms and conditions that should be imposed upon the plan to prevent injury to a party's water rights or decreed conditional water rights and any other information the opposer wishes the state engineer to consider. Send comments to the attention of XX XXX at the Division of Water Resources, 1313 Sherman Street, Room 818, Denver, Colorado 80203. Comments may also be e-mailed to XX.XXX@state.co.us or sent via fax to (303) 866-3589. The State Engineer will not consider comments received after the thirtieth day.

2. The State Engineer will deliver a copy of his decision to those who submit comments by first-class mail or electronic mail. Please indicate the preferred method of service with the comments.

3. Any appeal of the State Engineer's decision must be made to the applicable division water judge within thirty days of the decision.

Send the requisite proof of service to the above address. You may find additional information regarding the implementation section 37-92-308, C.R.S. in the Division of Water Resources Policy 2003-2, available at http://water.state.co.us/pubs/policies/policy2003-2.pdf.

SWSP List, 8-17-04 Div 1

FirstName	MI	LastName	Suffi	Company/FirmName	Address1	Address2	City	St	Zip	E-mail	Phone	E-mail USPS
Cynthia	F.	Covell	Esq.	Alperstein & Covell, P.C.	1600 Broadway, Suite 2350		Denver	CO	80202-4923		303-894-8191	U
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				Riverside Reservoir & Land Co.	215 East Kiowa		Fort Morgan	CO	80701			
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DRAFT

GENERAL GUIDELINES FOR SUBSTITUTE WATER SUPPLY PLANS FOR SAND AND GRAVEL PITS SUBMITTED TO THE STATE ENGINEER PURSUANT TO SB 89-120 & SB 93-260

In 1989, the Colorado Legislature passed Senate Bill 120 that affects gravel pits in operation after September 31, 1980. §37-90-137(11)(a)(II), C.R.S. requires any gravel pit that exposed ground water to the atmosphere after December 31, 1980 to replace all out-of-priority depletions of ground water. In 1993, the Colorado Legislature passed Senate Bill 260 that ~~basically~~ changed the fees associated for review of the substitute water supply plans. To maintain consistency and to streamline the review process, the Office of the State Engineer is requesting substitute water supply plan applications for sand and gravel pits submitted pursuant to Senate Bill 89-120 and Senate Bill 93-260 follow the format presented below, where applicable. These general evaluation guidelines are provided to assist the applicant preparing the substitute water supply plan request and are not to be construed as formal policy making procedures. Even though most of these guidelines are engineering related issues, there are some that contain policy issues by the State Engineer as well as statutory requirements.

PROJECT DESCRIPTION

1. A narrative description shall be submitted summarizing the water resource aspects of the proposed or existing operation including water usage and consumption and a proposed plan for replacing out-of-priority depletions.

2. Two maps should be provided showing the water resource aspects of the operation, including the existing or proposed lake(s), streams, wells, ditches, dewatering pumps and trenches, ~~and~~ points of discharge for the washing and dewatering operations, and slurry walls or liners, both on and off the property, which may affect the timing of lagged depletions. One of the maps should be a USGS 7-1/2' quadrangle. The second map can be hand drawn showing current, proposed and ultimate lake surface area. The scale, section, township, range, and principal meridian should be clearly identified on each map. Additionally, aerial photographs (if applicable) need to be provided delineating the lake surface area prior to January 1,1981 and after.

3. ~~3.~~ The statutory fee for a new substitute water supply plan request is $1,343.00 regardless of the number of acres exposed and is applicable for the first two years, or shorter time period as proposed by the applicant. Plans and fees are necessary only if the gravel pit operation exposes groundwater in an over-appropriated stream system. ~~The exception to the fee for the substitute water supply plan in an over-appropriated stream system is a submittal using a pre-1989 written agreement with a water users' association [§37-90-137(11)(a)(1), C.R.S.] (e.g., Water Users Association of Water District No. 6 and St. Vrain and Left Hand Water Conservancy District) or a plan of inclusion in a recognized District (e.g., Middle Park Water Conservancy District, West Divide Water Conservancy District, Basalt Water Conservancy District, and the Bureau of Reclamation project water in Green Mountain Reservoir and Ruedi Reservoir) by this office for making sufficient replacements in time, location and quantity. Fees are not required for proposed augmentation plans submitted to the water court that do not propose to expose groundwater until after a decree is entered by the water court. A substitute water supply plan may still be required if groundwater is removed in the product or groundwater is used for dust control or gravel washing.~~ If multiple gravel mining operations apply for a combined replacement plan, a filing fee is required for each mining site as recognized by a unique Division of Minerals and Geology permit number or recognized by the Division of Minerals and Geology as a separate site that does not require a permit though their agency.

4. Mining operations that will not expose ground water, must apply for a substitute water supply plan pursuant to C.R.S. § 37-92-308.

5. Pursuant to § 37-90-137(11)(a)(I), C.R.S. no substitute water supply plan or augmentation plan shall be required by the state engineer or the water court, if a gravel pit owner or operator has, prior to January 15, 1989, entered into and has continually thereafter complied with a written agreement with a water users' association (e.g. Water Users Association of Water District No. 6 and St. Vrain and Left Hand Water Conservancy District) or water conservancy district (e.g., Middle Park Water Conservancy District, West Divide Water Conservancy District, Basalt Water Conservancy District, and the Bureau of Reclamation project water in Green Mountain Reservoir and Ruedi Reservoir) to replace or augment the depletions in time, location and quantity which result from open mining of sand and gravel. A substitute water supply plan or court approved augmentation plan will be required if the depletions from the mining operation exceed that amount covered by the agreement with the water users' association or water conservancy district. The above referenced agreement shall be submitted to the Office of the State Engineer or division engineer upon request to show that depletions from the gravel mining operation are being replaced in time, location and quantity.

6. ~~4.~~ The deepening of an existing pit for which all ground water was exposed prior to January 1, 1981 may not warrant a substitute water supply plan. If the surface area of the existing pit to be deepened has not expanded, it is grandfathered pursuant to §37-90-137(11)(b), C.R.S., and no plan and fees are necessary.

7.~~5.~~ The renewal fee for an existing substitute water supply plan is $217. A substitute water supply plan application will only be considered a renewal if the plan is received by the Office of the State Engineer prior to the expiration date of the previously approved plan, the plan does not change the replacement sources(s) and does not add additional uses that were not approved in the original plan. A renewal can increase the quantity of water which is consumed by the uses which were originally approved. ~~if the renewal is made prior to the expiration of the existing plan.~~ Plans that expire ~~and subsequently resubmitted~~, change the replacement source(s), or add new uses in addition to those uses approved in the original plan are considered new plans requiring a fee of $1,343.00. The fee for a gravel pit well permit application is $~~60~~480, even if the operation is not in an over-appropriated stream system. These fees must be paid at the time of application and are not refundable. An outside consultant will review all new substitute water supply plan requests. The Office of the State Engineer will review ~~process~~ all renewals. Once the substitute water supply plan has been approved by the Office of the State Engineer, any subsequent amendments will require submittal of an engineering report and $217 filing fee, or $1,343 filing fee, depending on the nature and extent of the amendment.

DEPLETIONS

8.~~6.~~ Gross evaporation (free water surface) shall be calculated based upon evaporation atlases in NOAA Technical Report NWS 33 or more site-specific information if available. Any other estimate, including site-specific information, should be within 10% of the NOAA estimate. The net replacement of depletions shall be determined as gross evaporation less any historical consumptive use credit available for the area replaced by the free water surface. Phreatophyte credit, including effective precipitation, cannot be claimed for mining operations which were not approved under a permit issued by the Division of Minerals and Geology. The total gross evaporation estimate from NOAA 33 shall be distributed to all months. The monthly distribution for elevations below 6500 feet msl is: Jan-3.0%, Feb-3.5%, Mar-5.5%, Apr-9.0%, May-12.0%, Jun-14.5%, Jul-15.0%, Aug-13.5%, Sep-10.0%, Oct-7.0%, Nov-4.0%, and Dec-3.0%. The monthly distribution for elevations above 6500 feet msl is: Jan-1.0%, Feb-3.0%, Mar-6.0%, Apr-9.0%, May-12.5%, Jun-15.5%, Jul-16.0%, Aug-13.0%, Sep-11.0%, Oct-7.5%, Nov-4.0%, and Dec-1.5%. ~~The percentage distribution of evaporation will still apply for periods when ice cover occurs.~~ Evaporation does not need to be calculated for ice cover periods, however, if the applicant claims ice cover periods, adequate engineering documentation must be submitted to support the claim.

9. Pursuant to §37-90-137(11)(b), C.R.S., the applicant is not required to account for depletions that occur due to evaporation form ground water exposed within the permit boundaries prior to January 1, 1981. If the applicant can demonstrate that the mining operation has removed ground water surface area exposed prior to January 1, 1981, the applicant can claim credit, against evaporation, for the Pre-81 surface area. Credit is available only within the boundaries of the original Division of Minerals and Geology boundary area that existed for the gravel operation at the time that the area was exposed.

The pre-81 credit can only be credited against depletions from evaporation. Credit cannot be taken for surface area that was exposed for reasons other than sand and gravel mining.

10.~~7.~~ Water consumption by the gravel operation including, but not limited to, dust control, water removed with the mined product, and reclamation irrigation must also be determined. The matrix below specifies the percent of product mined which is considered water weight. ~~From previous experience, 4% of the product mined (i.e., any product excavated from below the groundwater table or any product excavated above the groundwater table and washed) by weight is water.~~ All water diverted from the pit shall be measured. All diversions, including water for dust control and irrigation for vegetation establishment, shall be considered 100% consumptive unless it can be documented otherwise.

	Not Washed	Washed
Material mined above the ground water table	Material has 2% moisture content, but 0% is charged because the moisture is not a ground water diversion	Material has a 4% moisture content (saturated), but 2% is charged because 2% is from the soil profile and 2% is from ground water used for washing
Material mined below the ground water table	Material has 4% moisture content (saturated), and 4% is charged because all of the water is a ground water diversion	Material has 4% moisture content (saturated), and 4% is charged because all of the water is a ground water diversion –maxed out at 4%
Material mined below the ground water table, but in a dewatered state	Material has 2% moisture content, and 2% is charged because the moisture is from a ground water diversion	Material has 4% moisture content (saturated), and 4% is charged because all of the water is a ground water diversion

Note: the percentages are by weight

11. The plan shall specifically address whether dewatering will occur at the site. If the site will be dewatered, the expected rate and volume of dewatering must be specified along with the lagged depletions which will occur due to the dewatering process. The applicant is responsible for replacing all out of priority depletions caused by the dewatering operation. Accretions that may occur at the beginning of the dewatering operation may be claimed as credit to offset depletions that occur due to the mining operations and the dewatering process, if applicant can account for these accretions. The credit can only be claimed for mining depletions that occur within the mining permit boundaries. All site dewatering must be accounted for in a method satisfactory to the division engineer and water commissioner. Adequate measuring devices may be required in order to adequately account for the dewatering. If dewatering is occurring at the site, the gravel pit well permit application must specifically specify dewatering as a use.

12.8. If the proposed final reclamation of the mining operation, as approved in the Division of Minerals and Geology permit, does not include backfilling or lining of all ground water exposed within the mining boundaries, sufficient replacement water must be dedicated to the plan to cover the expected depletions which would occur at the site due to evaporation. The expected depletions from evaporation must include the surface area which would occur if dewatering operations at the site ceased and the ponds were allowed to fill. ~~Any dewatering operation that results in an exposed free water surface that will not be backfilled or lined upon reclamation shall need sufficient replacement water available in the event the dewatering pumps were stopped for any reason.~~ If the final reclamation does not include backfilling or lining, the applicant can still provide sufficient bonding (through the Division of Minerals and Geology) to cover lining or backfilling ~~during operation.~~ until such time as a court approved augmentation plan is obtained or until all depletions at the site have ceased and all delayed depletions have been replaced. In the event that the operator of the pit walks away from the site prior to final approval of an augmentation plan or prior to replacement of all delayed depletions, the dedicated water or bond will be used to insure that depletions will not occur a the site or that depletions will be replaced. As part of the proposed plan the applicant must clarify if they will dedicate water to the plan or whether a bond has been approved. If the applicant has obtained a bond they must indicate the amount of the bond and show that the bond is adequate to line or backfill the water surfaces that will be exposed during the plan period.

13.9. The effect of stream depletions from the operation shall be evaluated. It will not be assumed that depletions occur instantaneously unless ~~the outside edge of~~ the exposed ground water in the pit is located within 100 feet from the river or ~~site~~ site-specific geologic and hydrologic information warrants this assumption. Generally, timing of depletions may be calculated using Glover techniques [parallel drain theory, stream depletion factor (SDF)], or numeric modeling. Special procedures may be necessary to analyze depletions and injury on intermittent streams.

14. ~~10.~~ Historical native vegetation (including phreatophytes) consumptive use may be credited against monthly gross evaporation only if engineering documentation is included. The credit shall only be applied for the area under the free water surface and cannot exceed the amount of gross evaporation. Documentation of the vegetative growth shall be based on aerial and perspective photographs depicting the growth. Consumptive use analysis of this growth shall be based upon published engineering studies acceptable to our office and engineering analysis of site specific information for the type of growth, ground water depth, and soil information. In accordance with the State Engineer's Office Policy 2004-3 phreatophyte credit cannot be claimed for sand and gravel mining operations which are not approved through a permit with the Division of Minerals and Geology. Credit cannot be claimed for historical native vegetation under the free water surface exposed prior to January 1, 1981.

15.~~11.~~ The historical consumptive use credit may be assigned to precipitation or ground water. The amount of consumptive use credit from precipitation and ground water during the growing season cannot exceed the total potential consumptive use of the native vegetation. No benefit is given for excess consumptive use credits. The net depletion will be calculated as gross evaporation minus historical consumptive use. The historical consumptive use for non-irrigated native sites without phreatophytes or subirrigation is equal to the effective precipitation, which is equal to 70% of total precipitation for each month. Higher maximum effective precipitation amounts must be supported with engineering documentation. The maximum effective precipitation must be adjusted accordingly for sites with historical irrigation or subirrigation.

16. For gravel pits that are lined in accordance with the State Engineer's Lining Criteria, the applicant must replace depletions from all water consumed within the lined area except for the water removed in product.

17. In accordance with the State Engineer's Office Policy 2004-3, phreatophyte credit, including effective precipitation, cannot be claimed for an off channel lined gravel pit which is used as a storage reservoir.

18. Plans approved for sand and gravel mining operations cannot be used to replace depletions that occur from uses that are not directly related to the mining operation. The plan cannot replace depletions from uses that occur outside the mining permit boundary, unless the applicant can show to the satisfaction of the State Engineer's Office that the use is directly related to the gravel mining operation.

REPLACEMENT SOURCES

19.~~12.~~ Replacement water to compensate out-of-priority depletions must be available either directly or by exchange in the proper quantity, quality, place and time to insure ~~those~~ that existing water rights are not injured. All plans~~, whether the pit has exposed water or not,~~ submitted to this office will be required to have concurrent replacement water available in order to obtain approval from the State Engineer.

20.~~13.~~ Plans for replacement generally utilize ~~three~~ four primary sources of water to compensate the stream system for depletions resulting from evaporation and mining losses. These sources include direct flow water rights, reservoir storage, ~~and~~ nontributary and transbasin water, and leased reusable effluent. Water right decrees and other pertinent information regarding the replacement sources shall be included. The applicant shall also provide signed lease agreements or recorded non-encumbered ownership documents authorizing use of the proposed replacement sources. Although the substitute water supply plan may be approved on a temporary basis using leased or nontributary water for the replacement water, this office may object to the use of these sources in a proposed decreed plan for augmentation. The decision to accept these sources as adequate to protect the senior water rights may be determined by the Water Court in which the plan is filed.

21. For plans that propose short-term leases as a replacement source, assurance will be required to guarantee that a replacement source will be available in the event that the lease is not renewed. This assurance may be in the form of a bond, dedication of a back-up water source or other method that the State Engineer feels is adequate to assure that unreplaced depletions will not occur.

22.~~14.~~ Nontributary, transbasin, or other fully consumable sources may be used for replacement purposes in the substitute water supply plan provided adequate engineering and documentation are supplied. Use of nontributary water must comply with the Colorado Revised Statutes, the pertinent decrees, and, if applicable, the Statewide Nontributary Ground Water Rules. All relinquishment required by decrees, permit, or the Statewide Nontributary Ground Water Rules must be met before using nontributary ground water. Nontributary ground water used as replacement water must be permitted for augmentation purposes. Lawn irrigation return flow credits will not be accepted unless established by the water court. Irrigation return flows from the Colorado-Big Thompson Project water cannot be used for replacement purposes. All replacement water must be made appurtenant to the site by dedicating it solely for the purposes of replacement at the site for the duration of the substitute water supply plan and recording that with the county. ~~Nontributary, transbasin, or other consumptive use sources may be used for replacement purposes in a substitute water supply plan provided adequate engineering and documentation are supplied. Use of nontributary water must also comply with the Statewide Nontributary Ground Water Rules and may not be used for more than 98 % of the fully consumptive use losses, e.g., evaporation, dust control and water removed in the product. Lawn irrigation return flow credits will not be acceptable unless established by the water court. Irrigation return flows from the Colorado-Big Thompson Project water cannot be used for replacement purposes. All replacement water must be made appurtenant to the gravel pit site for the duration of the substitute water supply plan.~~

23.~~15.~~ Many plans utilize the historical consumptive use associated with irrigation water rights as part of their replacement sources. All or a portion of the land irrigated by the surface water right is dried up to provide historical consumptive use replacement credits. This source of consumptive use replacement water will ~~only~~ not be available to replace irrigation season depletions unless sufficient water is placed in an acceptable storage vessel for release during the non-irrigation season, or as provided by change of use decree.

24.~~16.~~ Since only the water court has the authority to approve changes in water rights, those substitute water supply plans approved by this office that involve a change of use may not be able to claim the period of time while operating under the approved substitute water supply plan for historical consumptive use credit.

25.~~17.~~ Analysis of historical consumptive use shall be based upon the modified Blaney-Criddle method or other acceptable methods or determination from previous court decrees for the subject water right, if applicable. The historical use analysis shall be based on firm yield

(most cases equal to dry-year yield). A dry year analysis shall be based on the average of 4 or 5 dry years (1954, 1963, 1977, 1994, 2002) unless such average is greater than the historical average for the entire period of record. The water court may impose less stringent conditions on the plan for augmentation based on a different study period. Any non-use of the water right during a study period shall be included in averaging historical use. Any occurrence of subirrigation must be documented and considered in the historical use analysis. Documentation of historical irrigation may be based on aerial photographs, sworn affidavits, court decrees, well permit files and water commissioner diversion records. Estimates of irrigation efficiencies, ditch conveyance efficiency, and subirrigation shall be based on acceptable engineering references and standards.

26.~~18.~~ The land to be dried up shall be documented to the satisfaction of the local water commissioner. A copy of the dry-up covenant and a map designating the dried-up lands shall be submitted to ~~our office~~ the Office of the State Engineer and recorded with the county clerk and recorder. Maintenance of historical return flows from the former irrigated lands will be required if necessary to prevent injury to other water rights. The timing of return flows may be calculated using Glover techniques [parallel drain theory, stream depletion factor (SDF)], or numeric modeling.

27.~~19.~~ Substitute water supply plans may use reservoir water released to the stream at the proper time and in the proper amount. Reservoir storage and releases are generally required to offset winter depletions. An analysis of the consumptive use of the reservoir water (if reservoir water is not decreed for augmentation purposes) should be performed similar to that performed for a direct flow water right. Dry-up of irrigated lands will be required if the only source of water available was the reservoir water. A copy of the dry-up covenant shall be submitted to our office and recorded with the county clerk and recorder.

28.~~20.~~ An excavation that intercepts groundwater is considered a well; thus the excavation may not be used for water storage ~~without first being~~ unless the excavation is lined in accordance with the State Engineer's lining criteria or exists in an area surrounded by an impervious layer such as bedrock. ~~See attached proposed guidelines for lining criteria for gravel pits.~~

29.~~21.~~ It may be possible to introduce water into recharge sites located at desirable distances from the stream using the sources discussed previously or water diverted when there is a free river. Water introduced into the recharge site will migrate to the stream over time. The rate of movement is a function of the transmissivity and specific yield of the alluvial material. With ideally located recharge sites, recharge water would reach the stream during all months of the year and would be creditable against stream depletions caused by the gravel mining operation. Our office must specifically approve use of these recharge plans unless the water court has previously approved the site.

30.~~22.~~ Transportation loss charges, if applicable, will be assigned for any replacement source of water.

31. In accordance with amendments to Section §25-8-202-(7), C.R.S. and "Senate Bill 89-181 Rules and Regulations" adopted on February 4, 1992, the State Engineer shall determine if this substitute water supply plan is of a quality to meet requirements of use to which the senior appropriation receiving the substitute supply has normally been put. As such, water quality data or analyses may be requested at any time to determine if the requirement of use of the senior appropriator is met.

OPERATION OF PLAN

32. ~~23.~~ Each plan shall include a detailed accounting sheet providing monthly estimates of the following items: pit size, water surface area, gross evaporation, ~~net replacement~~, amount of~~on~~ mined material, water removed with the mined sand and gravel, diversions for dust control, diversions for vegetation establishment, total lagged depletions impacting the river, reservoir or replacement source releases, physical flow available at the surface water right headgate, historical consumptive use credit estimate, rate and volume of dewatering and transportation loss charges. All items in this list may not be applicable to every proposal. Likewise, certain proposals may require additional accounting. A draft accounting form shall be submitted to the State Engineer for approval. The substitute water supply plan shall provide the name, address and telephone number of the contact person who will be responsible for the accounting and operation of this plan. The State Engineer's Office will hold the permit designee of the operation as filed with the Division of Minerals and Geology responsible for compliance but reserves the right to also pursue the landowner for eventual compliance.

33.~~24.~~ Accounting and reporting of depletions and replacements shall be made monthly to the division engineer and water commissioner. More frequent accounting may be required by the division engineer to protect other water users. Reservoir releases may also be aggregated at the division engineer's discretion for maximum benefit of the stream system.

34.~~25.~~ Adequate flow measuring devices and measurements may be required to implement the plan. Measurements may include, but shall not be limited to, all diversions from the pit (excluding evaporation), water released from reservoirs or other sources for replacement water, and the diversion and turn back of ditch diversions.

35.~~26.~~ A plan will not be approved unless the applicant has also applied for a gravel well permit for the subject pit. A gravel well permit will not be issued until the substitute water supply plan is approved. Additionally, if another well is located within 600 feet (1/2 mile for designated basins) of the perimeter of the proposed free water surface, a waiver of objection form ~~consent of~~ the well owner(s) must be obtained ~~or a hearing before the State Engineer to determine if a well permit can be issued~~. If the applicant cannot obtain a waiver of objection from the owners of wells located within 600-feet of the free water surface, the State Engineer's Office shall notify the well owners in accordance with C.R.S. 37-90-137(2(b)(II)(A). If objections are received, a hearing will be held before the State Engineer

to determine if circumstances in the particular instance so warrant issuance of the well permit. As part of the water supply plan application, the applicant shall specify if any wells constructed in the same source, are located within 600 feet of the free water surface of the mining operation. If such wells exist the applicant shall provide waivers from the well owners or provide names and addresses of the well owners. This requirement only applies to the surface area exposed after June 10, 1989.

36. The gravel pit well permit will be issued in accordance with the uses and depletions approved in the substitute water supply plan. If the substitute water supply plan and well permit are approved for less than the final size of the ground water pond or for less than the maximum use of ground water, a new permit will be required each time the substitute water supply plan is approved for a greater use. All new well permits will be subject to the 600-foot spacing requirement.

37.~~27.~~ After initiation of excavation of the pit, plan and cross-sectional drawings are to be submitted on 8-1/2" x 11" paper. These drawings are required in lieu of the Well Completion Report and should include the extent of excavation, maximum depth of the pit and the initial static water level.

38.~~28.~~ No permanent well and pumping equipment shall be installed in the gravel pit unless a variance has been approved by the Board of Examiners of Water Well Construction and Pump Installation Contractors. A permanent well and pumping equipment does not include portable pumps used for watering needs at the gravel pit for such things as dewatering, dust control and gravel washing. When a permanent well and pump are installed, a Well Construction Report and Pump Installation Report are required. ~~Resolution 90-1~~ Board of Examiners Policy 2000-4, as approved by the Board of Examiners of Water Well Construction and Pump Installation Contractors is hereby incorporated into these guidelines.

39.~~29.~~ In accordance with SB04-185, e~~E~~vidence that water from the gravel pit (well) has been put to beneficial use is no longer required.~~must be submitted after ground water has been exposed and prior to the expiration date of the permit on a form prescribed by the State Engineer. For purpose of acceptance of the Statement of Beneficial Use the annual appropriation claimed shall be the maximum permitted regardless of the actual surface acreage exposed. The annual appropriation will be equal to the evaporation if there are no other beneficial uses of the groun dwater. A field inspection by this office will assist the water court in determining the adequacy of any water right claimed for this structure regardless of the amount of water claimed on the Statement of Beneficial Use form. The Statement of Beneficial Use~~ Evidence that the gravel pit well was constructed and a pump installed (if applicable) must be submitted prior to the expiration date of the gravel pit well permit in order for the permit to remain valid.

40.~~30.~~ An Abandonment Report must be filed if a permitted gravel pit (well) is either backfilled or lined.

41.~~31.~~ Substitute water supply plans may be revoked or modified at any time should it be determined that injury to other vested water rights has occurred or will occur as a result of the plan. A copy of the approved substitute water supply plan must be recorded with the county clerk and recorder.

42.~~32.~~ The duration of the substitute water supply plan will be evaluated case-by-case by the State Engineer. While mining continues, individual plans may be approved or renewed for extended years. Criteria for approving the plan for extended years include the approved term and conditions of mining by the Division of Minerals and Geology, the senior water rights impacted, the source and reliability of replacement water, the operating history of the applicant, and any other criteria that affects the operational viability of the plan.

43.~~33.~~ Approval of a substitute water supply plan does not relieve the Applicant and/or landowner of the requirement to obtain a Water Court decree approving a permanent plan for augmentation or mitigation to ensure the permanent replacement of all depletions, including long-term evaporation losses and lagged depletions after gravel mining operations have ceased. If reclamation of the mine site will produce a permanent water surface exposing ground water to evaporation, an application for a plan for augmentation must be filed with the Water Court at least three (3) years prior to the completion of mining to include, but not be limited to, long-term evaporation losses and lagged depletions. If a lined pond results after reclamation, replacement of lagged depletions from mining and dewatering shall continue until there is no longer an effect on stream flow. ~~All gravel mining operations that result in a permanent free water surface (i.e., exposed ground water) will be required to obtain a court decreed augmentation plan, and a decree for a permanent augmentation plan will be required within three (3) years of the date mining is completed in such operations unless specific reasons warrant an extension.~~

44. The applicant will be responsible for all lagged depletions that occur due to operation of the sand and gravel mining operation, including lagged depletions from evaporation, operational uses, reclamation and dewatering. The applicant must have a valid substitute water supply plan or court approved augmentation plan until such time as all lagged depletions have been replaced to the satisfaction of the state engineer, division engineer and water commissioner.

45. ~~34.~~ A request for a substitute water supply plan shall include a statement from the applicant ~~Before any plan is approved, an agreement must be obtained between the State Engineer and the operator~~ (or landowner, whoever is the responsible party) to indicate that they (and their successors) ~~who~~ are responsible for the operation and continuation~~nee~~ of the substitute water supply plan and any future augmentation requirements after mining is completed. A copy of t~~T~~his agreement and the substitute water supply plan must be recorded with the county clerk and recorder and be a binding document with the title to the property.

46.~~35.~~ A database for gravel mining operations is maintained at the State Engineer's Office. This database includes information about the mining operation including, but not limited to, applicant, Division of Minerals and Geology status, mine name and location, well permit status, substitute water supply plan and augmentation plan status, and field inspections.

47. In any substitute water supply plan approval, the decision of the state engineer shall have no precedential or evidentiary force, shall not create any presumptions, shift the burden of proof, or serve as a defense in any water court case or any other legal action that may be initiated concerning the substitute water supply plan. This decision shall not bind the State Engineer to act in a similar manner in any other applications involving other plans or in any proposed renewal of this plan, and shall not imply concurrence with any findings of fact or conclusions of law contained herein, or with the engineering methodologies used by the Applicant.

48. ~~36.~~ These guidelines are conditional for five years and will be subject to reevaluation.

STATE ENGINEER GUIDELINES FOR LINING CRITERIA FOR GRAVEL PITS AUGUST 1999

1.0 Design Standard

The intent of the reservoir lining design is to achieve ground water inflow (leakage rate) into the reservoir that is not greater than 0.03 $ft^3/day/ft^2$ (1x 10^{-5} $cm^3/cm^2/sec$) multiplied by the length of the perimeter wall in feet multiplied by the average vertical depth of the perimeter wall as measured from the ground surface to the pit bottom along the toe of the pit side slope, plus 0.0015 $ft^3/day/ft^2$ (5x 10^{-7} $cm^3/cm^2/sec$) multiplied by the area of the bottom of the liner system or natural bedrock bounded by the perimeter wall. Appropriate geotechnical evaluations and analyses should be performed to indicate that the Design Standard could be achieved with the proposed design to a reasonable probability. It is recommended that the applicant submit design and construction plans for review to the State Engineer.

2.0 Construction Standards

The applicant must demonstrate that the constructed liner meets the requirements of the design by performing appropriate quality control observations and tests. The applicant shall provide written documentation of the work performed and results of quality control field and laboratory tests. Tests performed shall meet or exceed the standards established by the American Petroleum Institute (API) and/or the American Society of Testing and Materials (ASTM) as applicable.

3.0 Performance Standards

The Performance Standard shall be three times the Design Standard as described above. The Performance Standard shall be applied to an initial test of competency of the liner, as well as to the ongoing operation of the reservoir.

3.1 Initial Liner Test

For mined pits: The unregulated ground water inflow to the reservoir will be tested by evacuating the contents of the reservoir and observing the inflow of water over a period of ninety days. The start of the test will be under essentially dry conditions.

For unmined pits: The unregulated ground water inflow to the reservoir will be evaluated by constructing a dewatering sump at the lowest portion of the pit and then dewatering until a steady-state condition is achieved. Once a steady-state condition exists, the amount of the unregulated ground water inflow will be determined. This process will generally require the installation of piezometers to be located on the inside and outside of the lined pit in the unmined area in order to determine whether a steady-state condition has been achieved.

A water balance must be done to demonstrate that the balance of the inflows (e.g., precipitation and ground water) and outflows (e.g., evaporation) equals the change in storage volume by a minimum of a 90-day test. Ongoing monitoring of the water balance may also be required as determined by the Division Engineer. The frequency of accounting and monitoring as well as the type and accuracy of the monitoring devices shall be determined after consultation with the Division Engineer.

The applicant shall demonstrate that during a 90-day test period the unregulated ground water inflow to the pit does not exceed the Performance Standard. Demonstration of inflows less than the Performance Standard shall be sufficient cause for a determination that the applicant has constructed a lined reservoir and is entitled to store water. If the unregulated ground water inflow to the reservoir exceeds the Performance Standard, the State Engineer shall require the reservoir to be dewatered until satisfactory changes have been made to the liner to conduct another initial liner test.

4.0 Water Budget Accounting

Monthly accounting shall be required as long as the liner continues to meet the Design Standard. Weekly accounting (or more frequent if required by the Division Engineer) shall be required for liners that do not meet the Design Standard but continue to meet the Performance Standard. Evidence of compliance with the standards shall be established through a mass balance analysis accounting for inflows, outflows, and change in storage.

If the State or Division Engineer determines that the ground water inflow (leakage rate) into the reservoir is greater than the Performance Standard, the applicant shall be required to calculate the inflow to or outflow from the reservoir by means of a mass-balance analysis on a 48-hour basis, and return to the stream system such inflows to the pit within 48 hours, without such water being used by applicant in any manner. This 48-hour accounting shall only be for the entire period specified under the Liner Failure During Operation Section (see below) and shall not be done permanently.

5.0 Liner Failure During Operation

In the event that the average daily unregulated ground water inflow to the reservoir exceeds the Performance Standard for two consecutive months, as evidenced by

accounting (see above), the applicant or their successor and the State Engineer's Office shall begin to consult regarding the probable cause of the unregulated ground water inflow, and the appropriate actions to be taken in response thereto. If the State or Division Engineer and the applicant cannot reach an agreement on the appropriate actions to reduce the unregulated ground water inflow to less than the Performance Standard within nine months of the beginning of the consultations, the State or Division Engineer shall provide written notice to the applicant of their determination to correct this problem. The 48-hour accounting shall begin following the two consecutive months that the Performance Standard is exceeded and shall continue until the applicant has demonstrated that the Performance Standard has been met. Applicant shall have two (2) years from the date of such written notice of liner failure to repair the liner to an inflow less than the Performance Standard. If satisfactory repairs are not completed within the two year period, no new water shall be stored in the reservoir until either: 1) the repair is made; 2) the issue is decided by the Water Court under retained jurisdiction, or; 3) the State Engineer's Office otherwise grants permission for storage to continue. The State or Division Engineer may declare the reservoir a well requiring a well permit.

6.0 Legal Storage of Water

Water shall not be impounded in the reservoir except pursuant to lawful diversions allowed by statute or decree. At all other times, all inflow of water into the reservoir from any source, including precipitation and ground water inflows shall be removed by the applicant. The water can be removed by draining, pumping, or other means, and released to the stream system, without use by the applicant in any manner. The applicant shall install the necessary measuring devices, including but not limited to, staff gauges in the reservoir and account on a monthly basis (or more frequently if required) for inflow and outflow, evaporation, precipitation, change in storage and any seepage. Prior to making any storage right absolute, the applicant shall develop and submit to the Division Engineer graphs showing height-storage relationships. Under no circumstance may the applicant withdraw more water from the reservoir than the measured inflow with appropriate evaporation and seepage losses being deducted.

7.0 Retained Jurisdiction

The Water Court shall retain jurisdiction to address injury to water rights caused by failure of the liner that results in ground water inflow exceeding the Performance Standard. Upon a prima facie showing by the State or Division Engineer or the party invoking the retained jurisdiction that such exceedence of the Performance Standard is occurring, and that reasonable efforts to correct the problem have been unsuccessful, and that injury to water rights is being caused thereby, the Water Court will proceed to hear evidence regarding the additional terms and conditions, or limitations and restrictions, that should be imposed upon the operation of the pit.

MEMORANDUM

August 6, 2004

TO: Respective Representatives of the Water Users and the Sand and Gravel Mining Industry

FROM: Hal D. Simpson, State Engineer

SUBJECT: Gravel Pit SWSP issued pursuant to § 37-90-137(11), C.R.S

Background:

In the summer of 2003, a potential conflict arose on the South Platte River as to the SEO's authority to issue gravel pit SWSPs pursuant to § 37-90-137(11), C.R.S., as historically done. Jeff Kahn, representing Rural Ditch Company, asked the SEO to revoke a SWSP issued to Varra Companies because he felt that the State Engineer exceeded his authority in approving a "change of water right," even if it is temporary. The SEO has historically processed gravel pit SWSPs along the following guidelines:

1. The gravel pit owner/operator has to replace depletions from evaporation, water removed in product, dust suppression, and concrete batching.
2. The gravel pit owner/operator could utilize the consumptive use value of irrigation water rights used on the same (?) land to offset the aforementioned depletions.
3. Three years prior to the completion of the gravel pit operation, the gravel pit owner/operator must apply to the water court for a permanent plan for augmentation if the open water surface area is to remain.

Jeff Kahn and other water users have stated that § 37-90-137(11) is clear in that only evaporation may be offset under a 137(11) SWSP, and that the Santa Fe Ranches and Empire Lodge Supreme Court decision made it clear that the SEO could not "change a water right" except under §37-92-308 after the applicant had filed an application with the water court for a change in water right. Mr. Kahn's position is that the SEO's historical practice exceeds statutory authority and that he would be willing to challenge this practice in the courts.

The water users indicated that they would work with the SEO and the gravel industry to resolve these issues, which resolution may include statutory modification. The SEO met with the gravel industry once separately, with Jeff and other representatives of South

Platte water users on two other occasions, with Jeff and various attorneys representing concerned water users separately, and finally with the gravel industry again. In the last meeting, the State Engineer presented the following proposed procedure to the gravel industry. The State Engineer's staff had previously discussed this proposal with the water user representatives, who indicated that it would probably be acceptable.

Proposed Procedure

1. The SEO will process gravel pit SWSPs as historically done (see above), if the replacement water utilized in the plan is fully consumable or decreed for augmentation.
2. The SEO considers water removed in the product to be a part of evaporative losses.
3. If the proposed SWSP utilizes water rights other than fully consumable or decreed for augmentation, the SEO will require that the owner/operator file with the appropriate water court an application to change the water right pursuant to § 37-92-308(4). Once the owner/operator files the change in water right application, the SEO may utilize the consumptive use value of that water right in the pending SWSP, so long as the 308 provisions are complied with. The SEO would then issue a 137(11) plan and a 308(4) plan for the same operation.

The gravel industry expressed the following concerns about the proposed procedure. First, the proposed procedure does not allow for flexibility in the operation of the gravel pit. Second, once the change of water right is before the water court, numerous parties, some of whom have no water rights, cause delays in the proceedings. Lastly, the gravel industry already submits it's engineering to the SEO and the SEO already has two outside engineering consultants review the consumptive use data. With the proposed procedure the gravel industry is now going to have to convince a court that may not have the engineering expertise, which will expensive.

After considering the gravel industry's concerns described above, the State Engineer proposes that, to maintain the maximum flexibility desired by the gravel industry while at the same time requiring the gravel pit owner/operator to apply to water court for changes in water rights, that a SWSP would allow the gravel pit owner/operator the ability to utilize the replacement water along the entire stretch of a stream (i.e. Poudre or St. Vrain), and would support the incorporation of some flexibility into the decree for the duration of the changed use.

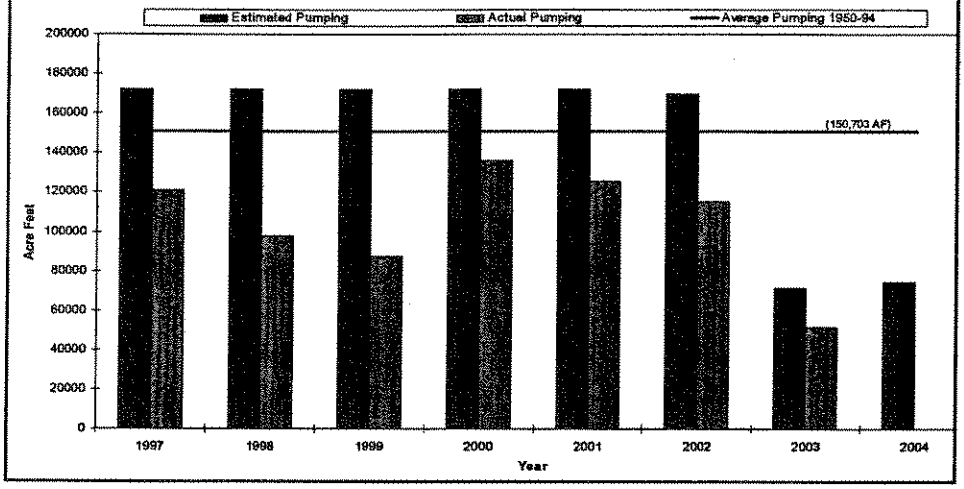
Implementation of the Arkansas Use Rules

- The Arkansas Use Rules have a dual purpose; to protect senior Colorado surface water rights from out of priority depletions caused by junior tributary ground water rights and to prevent depletions to usable Stateline flow that would otherwise occur as a result of pumping post-Compact wells in Colorado.

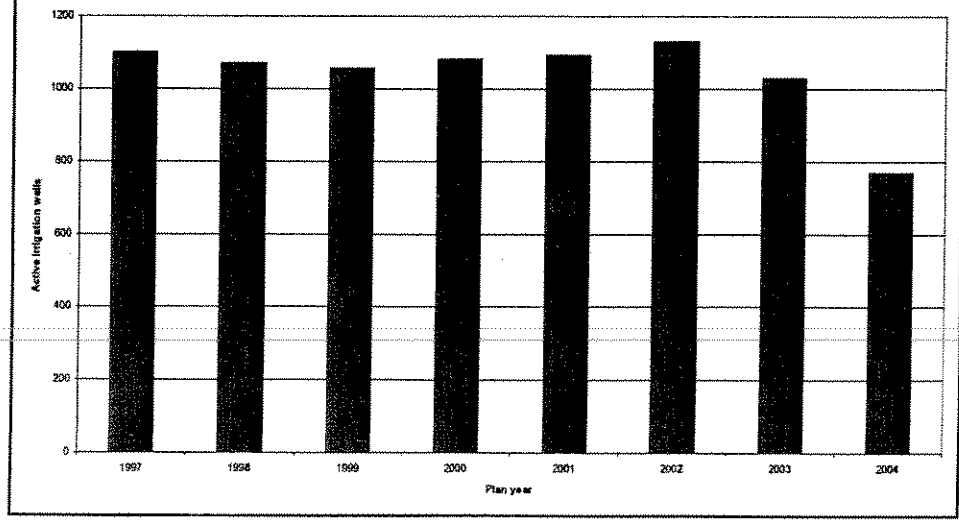
Some of the key points:

- Non-exempt tributary wells may not be pumped, except under annual SEO approved replacement plans or Court approved augmentation plans.
- SEO may approve use of senior rights as replacement sources for up to 10 years.
- Replacement requirements determined using presumptive depletion factors (PDFs) applied to amount pumped each month.
- This method of estimating depletion is subject to determinations based on use of HI Model over 10 yrs for Compact compliance purposes.

Irrigation Well Pumping From The Arkansas Valley Alluvial Aquifer Under The Amended Arkansas Use Rules



Active irrigation wells by plan year



Compact compliance status

- Special Master has found that Colorado's Use Rules and the replacement water provided, achieved Compact compliance for the period 1997-1999.
- Conservative estimates using HI Model indicate PDFs may be too low in drought years, causing some concern over Compact compliance at the end of the 10 year period in 2007.

Historical Sketch regarding ground water Administration

1965

- The legislature passed HB 1066 which clarified that the State Engineer has the duty to administer tributary underground water in accordance with the right of priority of appropriation and prescribed adoption of rules and regulations and the issuance of orders as needed.

1968

- Fellhauer v. People 167 Colo. 320, 447 P.2d 986, a case arising out of the Arkansas valley, interpreted the 1965 act to require adoption of reasonable rules as a prerequisite to regulation of tributary wells.

1972

- On the same date in 1972, State Engineer Kuiper adopted Rules and Regulations for the protection of surface and ground water rights in both the South Platte River basin and the Arkansas River basin, to become effective on February 19, 1973. The Arkansas Rules became effective without protest on that date, however, after extensive litigation and negotiation, the parties stipulated to a set of Rules for the South Platte on March 15, 1974.

1978

- Kuiper v. Atchison, Topeka & Santa Fe Ry. Co., 195 Colo. 557, 581 P.2d 293, determined that State Engineer Kuiper's attempt to amend the Arkansas Rules in 1974 was inappropriate without a basis of investigations and experience demonstrating the need to make them more restrictive on well owners.

1985

- The State of Kansas filed a motion with the United States Supreme Court for leave to file a complaint against the State of Colorado alleging that post-compact (1950) well development along the Arkansas River had materially depleted usable Stateline flows in violation of the Arkansas River Compact

1996

- State Engineer Simpson promulgated amended Rules for the Arkansas River basin that added protection of Kansas' Compact entitlement as a basis for the amended Rules. These Rules were approved by the Division 2 Water Court and made effective in June of 1996

2001

- Empire Lodge Homeowner's Ass'n v. Moyer, 39 P.3d 1139, established that the State Engineer's authority to approve operations pursuant to substituted supplies is more limited than previously believed and that it is the role of the General Assembly to provide amendments to statutes if additional State Engineer approval authority is desirable.

2002

- The legislature responded by passing HB-1414, which clearly provided a mechanism to obtain administrative approval allowing replacement of out of priority diversions on an interim basis

2003

- HB-1001 allowed the State Engineer additional administrative authority to approve temporary changes of water rights in addition to plans for augmentation.
- Simpson v. Bijou Irrigating Company et al., (need citation), affirmed the ruling of the water court finding that the provisions of the proposed amended Rules for the South Platte Basin, which allow the State Engineer, without an augmentation plan application pending in water court, to authorize out-of-priority groundwater depletions requiring "replacement plans," are in excess of his statutory authority and contrary to law. The Supreme Court also noted that this ruling has no effect on the existing Arkansas River basin Rules.
- SB-73, signed into law on the same date as the ruling was announced in Simpson v. Bijou; ratified the amended Rules for the Arkansas River basin and provided for a three year period (2003-2005) within which the State Engineer may approve annual substitute water supply plans for wells within the South Platte River basin that operated under such plans prior to 2003.

Implementation of Amended Arkansas Use Rules

As previously mentioned, the Arkansas Use Rules have a dual purpose; to protect senior Colorado surface water rights from out of priority depletions caused by junior tributary ground water rights and to prevent depletions to usable Stateline flow that would otherwise occur as a result of pumping post-Compact wells in Colorado.

Under the Arkansas Use Rules, non-exempt tributary wells may not be pumped, except as annually approved by the State Engineer pursuant to replacement plans as prescribed by the Rules or pursuant to Court approved plans for augmentation. Some of the key features of the Arkansas Use Rules are:

- The amount of depletions that must be replaced over time are estimated using presumptive depletion factors appropriate to each well. These presumptive depletion factors are multiplied by the amount of water pumped from each well, each month. Where flood and furrow irrigation techniques are used, wells used to supplement surface water supplies are charged 30% and where wells provide the only source of irrigation water, a 50% factor is applied. It is presumed that 75% of all ground water applied through sprinkler irrigation systems result in stream depletions that must be replaced
- The required timing and location of stream depletions are determined using modeling techniques applied to monthly pumping data.
- The State Engineer may approve use of senior surface water rights that are not decreed for augmentation purposes as replacement sources for a period of up to 10 years.

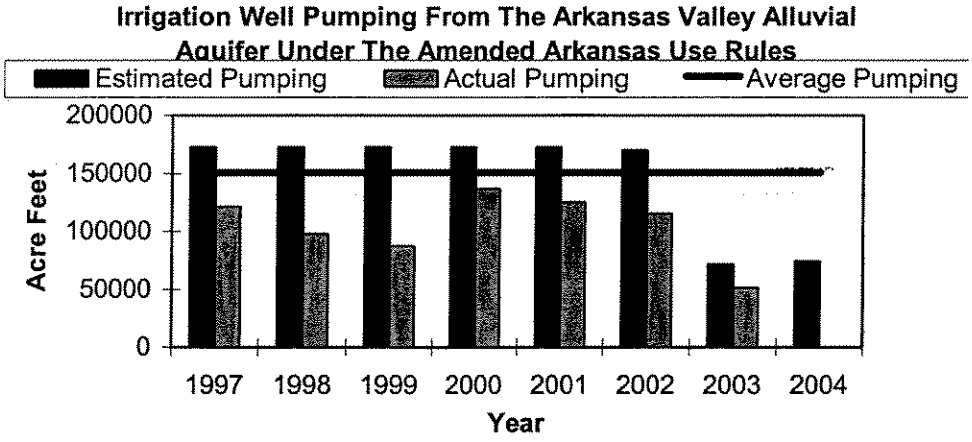


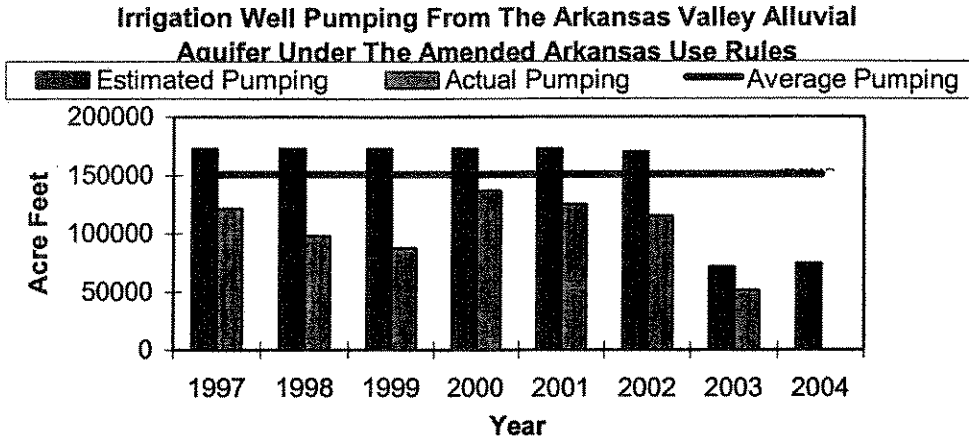
Figure 2

Substitute Water Supply Plans outside of Division 1

The enactment of legislation in 2002 and 2003 required some interpretation and integration of the legislatures intent into the practices of the State Engineer's office. (See Policy 2003-2, attached) A concise summary of all administratively approved "Replacement Plans and Substitute Water Supply Plans" is also attached.

The largest single temporary change of water right approved up to this point in time is the lease of 37.3% of the shares of the Rocky Ford Highline Ditch Company by the City of Aurora. This drought recovery mechanism may be used to acquire a maximum of 12,600 a.f. in 2004.

To a lesser degree, Substitute Water Supply Plans continue to be used throughout the State as a means of meeting temporary demands while balancing the competing demands of expediency and due process....



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OTHER PLANS APPROVED BY THE COLORADO DIVISION OF WATER RESOURCES

a) **Interruptible water supply agreements**—§37-92-309

i) Agreement between 2 or more water right owners whereby the loaning water right owner agrees to stop its use of the water right if the option is exercised and the other water user may divert the loaned water right subject to the priority system and approval by the State Engineer
ii) Agreement shall not be exercised for more than three years in a ten-year period and shall not be approved for another ten-year period unless agreement has not been exercised
iii) A water right subject to the agreement under this section may not use section 37-92-308(5)
iv) Must prevent injury to vested or decreed conditional water rights or interstate compacts
v) Do not have to adjudicate plan in water court
vi) Notice is provided pursuant to the SWSP Notification List
vii) The fee for review of these plans is to be determined by rules
viii) Appeal of plan is to the water judge

b) **Water banks**—§§37-80.5-101 – 107

The state engineer is required to promulgate rules to govern operation of a water bank to operate within a particular water division upon request by a water conservancy district or water conservation district located within such division that agrees to serve as the operator of the bank. The rules shall authorize, facilitate, and permit the lease, exchange, or loan of stored water within a division. May use for instream flow purposes if the transfer, lease, loan, exchange or sale is to the Colorado Water Conservation Board. The rules shall ensure that the operation of the banks shall not cause any material injury to the vested water rights or decreed conditional water rights. These statutes prohibit the transfer of water through the banks between divisions. The Arkansas River Water Bank Program can be viewed at http://www.coloradowaterbank.org/.

c) **Exchanges**

Exchanges provide water to affected senior calling water rights so that junior water rights can take the same amount of water upstream. An exchange has its own priority and works when other junior water rights are out of priority.

i) §37-80-120(1)
(1) Upstream out-of-priority storage for reservoirs
(2) Must be released to downstream senior if senior not satisfied
(3) Approved by the State Engineer

ii) §37-80-120(2) & (4)
(1) One-for-one exchange for same decreed uses

(2) Exchange can be decreed by water court
(3) Wells with delayed impacts would have to operate under §37-92-308

iii) §37-83-104
(1) Exchange between ditches and reservoirs for same decreed uses
(2) Approved by the division engineer

d) **Loans**

i) §37-83-105
(1) Loan of irrigation water right to another irrigation user for no more than 180 days
(2) Loan may be for instream flow purposes by the Colorado Water Conservation Board for no more than 180 days
(3) Have to demonstrate that injury will not occur to other decreed rights and not affect compacts
(4) Governor must declare a drought emergency or other emergency
(5) Approved by the division engineer
(6) Filing fee of $100
(7) Any appeal of decision by State Engineer is to the water judge

e) **Leases**

i) §37-83-106
(1) Lease or exchange water between political subdivisions
(2) Agreement between parties
(3) Review of water rights by division engineer
(4) Any water right or changes of water rights which are necessary to implement such agreements shall be adjudicated in water court

f) **Scarcity**

i) §37-88-109(2)
(1) Release of water from reservoirs owned by the Division of Wildlife for domestic and municipal purposes in time of scarcity
(2) Approved by the state engineer or division engineer

g) **Water Rule Power**

i) § 37-92-501
(1) Plans for wells operated pursuant to decreed rules and regulations
(2) Plans approved by the division engineer and state engineer

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POLICY 2004-3

USE OF EVAPOTRANSPIRATION CREDIT WITHIN SUBSTITUTE WATER SUPPLY PLANS INVOLVING THE EXPOSURE OF GROUND WATER IN PONDS OR RESERVOIRS NOT LOCATED WITHIN THE STREAM BED

Considerations and Background for Policy

The purpose of this policy is to clarify administrative decisions and actions by the State Engineer's Office when reviewing Substitute Water Supply Plans ("SWSPs") that pertain to the use of Evapotranspiration Credit ("ET Credit") as an offset to ground water consumption caused by the exposure of ground water in a pond or reservoir located outside the streambed outside the boundaries of a designated basin. ET Credit as utilized in the policy is equal to the sum of ET Credit from eradicated phreatophytes and ET Credit from effective precipitation on natural vegetation.

Under Colorado statutory law, ET Credit can be utilized to offset exposure of ground water in only two circumstances; a streambed reservoir and a gravel pit pond. See §§ 37-84-117(5), 37-80-120(5), and 37-92-305(12)(a), C.R.S. In all other circumstances where substituted water is required to offset ground water depletions, no ET Credit can be given.

This policy is developed through the interpretation of the statute governing the issuance of well permits. Exposure of ground water caused by an excavation requires a well permit to be issued by the state engineer. Under the provisions of § 37-90-137(2), C.R.S., the state engineer can only issue a well permit if (1) unappropriated water is available and (2) no material injury will occur as a result of the proposed withdrawal. Statutory construction requires that first unappropriated water be available for appropriation before the state engineer can issue a well permit. Material injury can only exist if water is determined to be available for appropriation. As a result, if an area is critical (or over appropriated) then the state engineer cannot issue a well permit without water being made available for appropriation.

Water is made available for appropriation through the approval of a plan for augmentation or a SWSP. Involved within a plan for augmentation or SWSP is the use of water rights decreed for augmentation. The very fact of decreeing a water right for augmentation makes water available for appropriation. Therefore, the state engineer, if a plan for augmentation or SWSP is approved, can issue a well permit because water is available for appropriation. Further, the plan for augmentation or SWSP, if operated pursuant to the respective terms and conditions, will prevent material injury to vested water rights. Therefore the state engineer can now issue a well permit pursuant to §37-90-137(2), C.R.S.

The use of ET Credit arises during the approval of a plan for augmentation or SWSP. Under the provisions of § 37-92-103(9), C.R.S., a plan for augmentation cannot include the eradication of phreatophytes (ET Credit). This statute change was made as a result of the Colorado Supreme Court decisions in Colo. Water Conservancy Dist. v. Shelton Farms, Inc., 529 P.2d 1321(Colo. 1979) and the R.J.A., Inc. v. Water Users Ass'n of Dist. 6, 690 P.2d 823 (Colo. 1983). As a result, if a plan of augmentation is needed to make water available for appropriation, such that the state engineer can issue a well permit, the eradication of phreatophytes (ET Credit) cannot be included in the plan for augmentation. The state engineer can only issue a SWSP if a plan for augmentation has been first filed with the water court. See § 37-92-308, C.R.S. Therefore, the same criteria in approval of a plan for augmentation apply to approval of a SWSP.

Proposed Policy

Effective February 17, 2004, or thereafter, no ET Credit shall be allowed to offset depletions caused by the exposure of ground water in reservoirs and ponds constructed outside the streambed. Further, no ET Credit shall be allowed to offset evaporative losses occurring as a result of reservoirs and ponds constructed outside the streambed.

This policy will not affect the policy concerning the mitigation of wetlands as further described in Dick Stenzel's, Policies Concerning Wetland Mitigation, Colorado Stream Lines, February 2000, Vol. XIV, No. 1.

References

1. Policies Concerning Wetland Mitigation, Colorado Stream Lines, February 2000, Vol. XIV, No. 1.
2. General Guidelines for Substitute Water Supply Plans for Sand and Gravel Pits Submitted to the State Engineer Pursuant to SB 89-120 and SB 93-260.
3. *Proposed* Procedure, Basis for Determining if Wells will be Located Within 100 Feet of a River Channel for the Purpose of Operating as a Headgate on the River, October 2003.
4. Sections 37-80-120(5) and 37-92-305(12)(a), C.R.S.
5. Section 37-84-117(5), C.R.S.

Hal D. Simpson, State Engineer

2/27/04
Date