

Groundwater Control Alternatives February 11, 2015

The following list is compiled from various sources, including ideas discussed over the years by the Laramie County Control Area Advisory Board. Inclusion here reflects no endorsement by any party, nor assessment for consistency with applicable statute or agency policy.

Alternatives could be combined, or applied differently in different areas, e.g. focusing on future use in relatively undeveloped areas and on existing use in specific areas of historical groundwater level declines.

I. Limitations on future groundwater development

Groundwater modeling tells us this would be insufficient to arrest the decline of water levels in the existing problem areas.

- A. Moratorium on additional wells (e.g. in “problem” areas)
 - 1. All wells
 - 2. Wells of some threshold production rate
 - 3. Exemptions for certain types of wells (e.g. stock and domestic)
- B. Spacing restrictions (e.g. the existing Temporary Order)
 - 1. Vertical (e.g. limit certain size/type wells to certain aquifers)
 - 2. Horizontal (e.g. require sufficient spacing between wells such that local recharge would meet demand; could require metering)
- C*. Permit conditions
 - 1. Volumetric caps (total ac-ft per season)
- D. Mitigation requirements (e.g. retire existing consumptive use, perhaps in >1:1 ratio; would require hydrologic connection between new and old uses)

II. Limitations on existing groundwater development

Groundwater modeling scenarios indicated reductions in historical irrigation on the order of 50% are necessary to stabilize declining water levels in the existing problem areas.

Non-regulatory approaches:

- A. Encourage/subsidize conservation measures, e.g.
 - 1. Eliminate end guns on sprinkler pivot systems.
 - 2. Conversion to low-head sprinkler application
 - 3. Provide irrigation scheduling services(Only minor improvements are likely available under this option.)
- B*. Voluntary acreage retirement (with controls to prevent offsetting increases in pumping on adjacent lands), e.g.
 - 1. Acreage “buy-out” programs
 - 2. Seasonal rotation/fallowing agreements
 - 3. Voluntary reductions in irrigated area (percentage could vary by priority date).

C. Agreements to convert to lower-water-use and short-season irrigated crops.

D. “No Action” alternative: let nature and farm economics take their course. Groundwater production naturally decreases as wells go dry, cropping patterns are adjusted to reduced water supply, it becomes un-economic to replace aging systems, etc.

Regulatory approaches:

E*. Priority regulation - wells with earliest priority dates pump; wells with latest priority dates do not pump - cutoff date to be determined by overall reduction targets. (Would require determinations of hydrological connections.)

F. Restrict irrigation water application

1. Institute irrigation rotation, e.g.

a. only pump so many days per week (days allowed could vary by priority date)

2*. Institute pumping allocation, e.g. XX inches on total permitted acres.

a. vary inch allocation by priority (e.g. in date tiers)

b. establish “certified” acreage as baseline

c. allow pooling and transfer of allocation

- over a specified area

- over a single owner

d. allow averaging over several seasons

* - these options would require flow metering of all relevant wells.