

IN THE OFFICE OF THE STATE ENGINEER
OF THE STATE OF NEVADA

#1302

ORDER

**GRANTING PETITION TO ADOPT A GROUNDWATER MANAGEMENT PLAN FOR
THE DIAMOND VALLEY HYDROGRAPHIC BASIN (07-153), EUREKA COUNTY,
STATE OF NEVADA.**

WHEREAS, decades of declining water levels in the Diamond Valley Hydrographic Basin is due to the simple fact that groundwater pumping has consistently exceeded the perennial yield of the basin. An obvious solution to the problem caused by *over* pumping is to *reduce* groundwater pumping. Designating Diamond Valley a Critical Management Area (CMA) (the first and only basin thus far in Nevada), provided water right users within the Diamond Valley basin the opportunity to develop a customized groundwater management plan (GMP) that does in fact reduce groundwater pumping to a level that satisfies the State Engineer that the water levels will reach an equilibrium. The CMA and GMP process became law in 2011 specifically to allow those that truly have skin-in-the-game (the water right holders in the basin), to create a means to the same end as curtailment by priority, but without the dire and sudden impacts.

Years before the State Engineer declared the basin a CMA in 2015, the GMP process was initiated by the local community and stakeholders. Work on the GMP continued for an additional three years after the CMA designation with numerous meetings of the community and stakeholders, ultimately arriving at the version presented to the State Engineer in 2018. The testimony, written public comment and background of Appendix C of the GMP demonstrate that this process was emotional and difficult for the participants—yet they persisted in forging a plan in an effort to avoid curtailment by priority to save their community and the established agricultural way of life in Diamond Valley. It is significant that the participants are not professional water right managers, but are ordinary citizens who made a Herculean effort to craft their own plan in response to a complex problem.

WHEREAS, this matter came before the State Engineer on a Petition to Adopt a Groundwater Management Plan (Petition), pursuant to Nevada Revised Statute (NRS) § 534.037 filed on August 20, 2018.

WHEREAS, the history leading up to the subject Petition is as follows:

Diamond Valley is a major groundwater farming area in the Diamond Valley Hydrographic Basin, Basin 153.¹ There are approximately 26,000 acres of irrigated land, which primarily produce premium quality alfalfa and grass hay. In 2013, it was estimated that approximately 110,000 tons of hay were produced annually for a total farming income of approximately \$22.4

¹ GMP, p. 8.

million.² Approximately 126,000 acre-feet annually (afa) of irrigation groundwater rights are appropriated in Diamond Valley, and as of 2016, groundwater pumping for irrigation was estimated to be 76,000 afa. The perennial yield of Diamond Valley is 30,000 acre-feet (af).³

For over 40 years, annual groundwater pumping has exceeded the perennial yield of Diamond Valley.⁴ In the years that groundwater pumping has exceeded the perennial yield, groundwater levels in Diamond Valley have consistently declined at a rate of up to 2 feet per year. Prior to declaring Diamond Valley a CMA pursuant to NRS § 534.110(7), the State Engineer held public meetings on numerous occasions in Diamond Valley to discuss over-appropriation of the basin and to encourage water rights holders to formulate solutions or a plan at the local level to address declining water levels.

Because withdrawals have consistently exceeded the perennial yield of the basin, on August 25, 2015, the State Engineer declared Diamond Valley a CMA pursuant to NRS § 534.110(7).⁵ Once declared a CMA, holders of water rights within the basin have 10 years to create and present to the State Engineer a groundwater management plan; otherwise, the State Engineer is required to curtail the basin by priority.⁶

WHEREAS, the process for approval of a GMP by the State Engineer is as follows:

Nevada Revised Statute § 534.037(1) requires that a petition for the approval of a GMP that is submitted to the State Engineer must be signed by a majority of the holders of permits or certificates to appropriate water in the basin that are on file in the Office of the State Engineer.

At the time of filing the petition, there were 419 water right permits or certificates in the Diamond Valley Hydrographic Basin. Of these, 257 are represented by at least one signature in the petition. Comparing the signatories with the confirmed owner of record in the files of the Office of the State Engineer demonstrates that 223 water right permits or certificates are represented by the owner of record. If accepting the affirmation made on each page of the signed petition, then 257 rights of 419 rights is 61%. If limiting only to those signatures by a confirmed owner of record, then 223 of 419 is 53.2%. In either case, a majority of permits and certificates in the Diamond Valley Hydrographic Basin are represented in the petition; therefore, the State Engineer finds that the petition satisfies the requirement of NRS § 534.037(1).⁷

The total duty of groundwater rights in Diamond Valley is 130,625 afa. Of these, 126,188 afa are subject to the plan and 4,437 afa are not subject to the plan. The estimated amount of

² GMP, p. 8.

³ GMP, p. 8.; J.R. Harrill, *Hydrologic Response to Irrigation Pumping in Diamond Valley, Eureka and Elko Counties, Nevada, 1950-65*, Water Resources Bulletin No. 35, (Department of Conservation and Natural Resources, Division of Water Resources and U.S. Department of the Interior, Geological Survey), 1968.

⁴ GMP, p. 8.

⁵ Order 1264, official records in the Office of the State Engineer; GMP, p. 8.

⁶ NRS § 534.110(7).

⁷ Exhibit 1, public administrative hearing before the State Engineer October 30, 2018, official records in the Office of the State Engineer. Hereinafter the exhibits and transcript will be referred to solely by the exhibit number or transcript page.

groundwater committed to domestic wells at the statutory maximum of 2 afa per domestic well is 234 afa. By duty, over 96% of the total groundwater commitments are subject to the plan. It is reasonable that the focus of the plan to reduce the groundwater pumping be focused on those manners of use that have the greatest potential effect on the pumping in the groundwater basin.

The GMP assumes that the dividing line between senior and junior water rights holders is where the consumptive use of the water rights is estimated at 30,000 af, which is equal to the perennial yield of Diamond Valley; therefore, those rights with a priority date of May 12, 1960, or earlier are referred to in this Order as the senior rights (with a duty totaling 29,325 afa) and those rights with a priority date after May 12, 1960, are referred to as the junior rights. At the time of filing the petition, there were 77 senior water right permits or certificates, and 36, or 46.8%, of these were represented by at least one signature on the petition. The remaining 342 water right permits or certificate were junior, and 221, or 64.6%, of these were represented by at least one signature on the petition. Of the 29,325 afa of senior water rights, 18,700 afa, or about 64%, is represented by signatories of the petition. The State Engineer finds that significant portions of both senior and junior rights are represented in the petition.

Nevada Revised Statute § 534.037(3) requires that before approving or disapproving a groundwater management plan the State Engineer shall hold a public hearing to take testimony on the plan in the county where the basin lies or, if the basin lies in more than one county, within the county where the major portion of the basin lies. The State Engineer shall cause notice of the hearing to be:

- a. Given once each week for two consecutive weeks before the hearing in a newspaper of general circulation in the county or counties in which the basin lies.
- b. Posted on the Internet website of the State Engineer for at least two consecutive weeks immediately preceding the date of the hearing.

Notice of a public hearing to be held on October 30, 2018, was published in the *Eureka County Sentinel*, the *Elko Daily Free Press*, and the *Ely Times* during the weeks of the 15th and 22nd of October.⁸ Also, notice of the hearing was posted on the Internet website of the Nevada Division of Water Resources commencing on October 1, 2018.⁹ Additional notice was also sent by certified mail directly to the boards of county commissioners for the counties of Eureka, Elko, and White Pine.¹⁰ The GMP was made available through the Internet website of the Nevada Division of Water Resources commencing on October 1, 2018, and was also available by request.¹¹

A public hearing to take testimony on the proposed GMP was held in Eureka, Nevada, on October 30, 2018, during which testimony in favor of and in opposition to the GMP was received. In addition, the State Engineer held open the period for written public comment for an additional three working days following the hearing, during which time additional public comments were

⁸ Exhibit 4.

⁹ http://water.nv.gov/documents/Hearing_Notice-Diamond_Valley_GMP.pdf

¹⁰ Exhibit 3.

¹¹ <http://water.nv.gov/documents/Final%20DV%20GMP%20for%20Petition.pdf>

received. This Order evaluates the testimony and written comments and other elements required for approval of the Petition.

Nevada Revised Statute § 534.037(1) requires that in a determination whether to approve a groundwater management plan, the State Engineer shall consider, without limitation:

- a. The hydrology of the basin;
- b. The physical characteristics of the basin;
- c. The geographic spacing and location of the withdrawals of groundwater in the basin;
- d. The quality of the water in the basin;
- e. The wells located in the basin, including, without limitation, domestic wells;
- f. Whether a groundwater management plan already exists for the basin; and
- g. Any other factor deemed relevant by the State Engineer.

WHEREAS, the Diamond Valley Groundwater Management Plan is summarized as follows:¹²

The predominant manner of use of existing rights in Diamond Valley is irrigation, where groundwater is pumped and used to produce primarily alfalfa and grass hay. Consequently, the GMP applies to irrigation rights and mining and milling rights with an irrigation base right, while vested rights, other manners of use and domestic wells are excluded from the plan. The GMP requires annual reductions in pumping with a goal of stabilizing groundwater levels and reducing consumptive use to the perennial yield. The GMP applies a formula to calculate the annual duty a rights holder can pump after required reductions, where the formula is based upon the original water right duty and priority of the right to arrive at a number of shares. The formula is defined as:

$$WR * PF = SA$$

Where:

WR = Total groundwater right volume as recognized by DWR, accounting for total combined duty (i.e., overlapping places of use) (measured in acre feet)

PF = Priority Factor based on seniority

SA = Total groundwater Shares

An annual amount of water that can be pumped per share is allocated to a rights holder (i.e., the annual allocation), and the reductions in pumping are accomplished by annually reducing the amount of water each share is allocated. In the initial year of the GMP, the total amount of water that can be pumped is equal to the amount of water currently in use. Unused allocations

¹² Specific components of the GMP are discussed in greater detail below with reference to the public comments received; accordingly, an overview of the major GMP structure is introduced here.

may be banked, traded, leased or sold; thus, the GMP employs a market-based approach. The GMP also contains penalty provisions for pumping in excess of allocations. The GMP is governed by an Advisory Board of elected representatives that are charged with making recommendations to the State Engineer, who ultimately oversees and administers the Plan. The GMP is funded through annual assessments, which, in part, will be used to also fund a water manager employed by the Nevada Division of Water Resources, whose role is expected to involve implementation and management of the GMP.

WHEREAS, the comments made at the October 30, 2018, hearing on the Diamond Valley Groundwater Management Plan and the State Engineer's response are as follows¹³:

I. COMMENTS RELATED TO LEGAL SUFFICIENCY

Several comments were received challenging the legal sufficiency of the GMP as being in violation of established Nevada water law or that the GMP waives existing mandatory provisions required by the NRS including the prior appropriation doctrine, movement of allocations, well abandonment and a banking component without adequate permitting.¹⁴

Prior Appropriation

First, several commenters asserted that the GMP violates the doctrine of prior appropriation by eliminating the bedrock principle of "first in time, first in right." The violation, they allege, occurs because all water rights—both senior and junior—have their allocations reduced annually, rather than reductions being imposed solely on junior rights.¹⁵

While it is acknowledged that the GMP does deviate from the strict application of the prior appropriation doctrine with respect to "first in time, first in right," the following analysis demonstrates that the legislature's enactment of NRS § 534.037 demonstrates legislative intent to permit action in the alternative to strict priority regulation. Nevada Revised Statute § 534.037(1) provides that a groundwater management plan "must set forth the necessary steps for removal from the basin's designation as a [CMA]." Other prior appropriation states have addressed whether a

¹³ The following analysis is intended to address written and public comments received concerning the GMP. In large part, all of the comments made in opposition to the GMP in writing or at the hearing raised issues that were considered during the GMP drafting process. These issues, and many more, are succinctly summarized in a "comment and answer format" in Appendix C at pp. 241-255, entitled *GMP Issues and Concerns Identified Through the Process*.

¹⁴ Written comments of Ira and Montira Renner, Timothy and Constance Marie Bailey, Sadler Ranch, LLC, and Great Basin Resource Watch.

¹⁵ Appendix F to the GMP contains the preliminary table of all rights subject to the GMP and the share calculation for each right. The relative priority dates of all rights subject to the Plan are shown in the table. Notwithstanding the share calculations shown in Appendix F, one commenter acknowledged that if a GMP is not adopted and curtailment is ordered on all rights, that rights junior to about May 1960 would be curtailed. This would include a significant number of irrigation rights, all mining rights, and some municipal rights. See Written Comment of Great Basin Resource Watch, p. 5. In addition, the majority of domestic wells in the basin are junior and would also be completely curtailed. See NRS § 534.110(6) (the State Engineer may order that withdrawals, including withdrawals from domestic wells, be restricted to conform to priority rights).

shortage sharing plan violates the prior appropriation doctrine. For example, in *State Engineer v. Lewis*, 150 P.3d 375 (N.M. 2006), the New Mexico Supreme Court examined whether a settlement agreement entered into by the Interstate Stream Commission, the United States and three irrigation districts, upon which a partial final decree was entered in an adjudication proceeding, violated the New Mexico Constitution, which codified the prior appropriation doctrine.

The appellants, senior rights holders, contended that the settlement agreement violated the New Mexico Constitution, and that due to chronic water shortages for senior rights, the negotiating parties were duty-bound to adhere to the prior appropriation doctrine as it was traditionally understood and enforced, through a priority call. *Id.*

The court's examination focused on a statute that was enacted for the express purpose of achieving compliance with New Mexico's obligations under the Pecos River Compact (the compliance statute). *See id.* at 150 P.3d at 379. In the words of the court, the parties to the settlement agreement sought to cut the water shortage "Gordian knot" through a process more flexible than strict priority enforcement, yet still comply with the prior appropriation doctrine.

In interpreting the legislative intent of the compliance statute, the *Lewis* court found that the intent and purpose of the legislation was beyond dispute—to take charge of resolving a critical situation created by an amended decree, while complying with the obligation of protecting existing rights. In determining that the statute was constitutional, the court assumed that the legislature was aware of the prior appropriation doctrine when it enacted the statute, and that the statute was to be read as a clear signal that the legislature and governmental players wanted to create a solution other than a priority call as the first and only response. *Id.* at 150 P.3d 385.¹⁶ Notwithstanding that the court found the statute constitutional and not violative of prior appropriation, the court found it important that the settlement agreement did not rule out a priority call if needed. *Id.* at 150 P.3d 386.

Nevada Revised Statute § 534.037(1) was enacted in 2011 by A.B. 419. Aside from the six specific and one general consideration codified in the statute, the State Engineer finds that the legislative history contains scarce direction concerning how a plan must be created or what the confines of any plan must be.

Like *Lewis*, in enacting NRS § 537.037, the Nevada legislature expressly authorized a procedure to resolve a shortage problem. And, like *Lewis*, the State Engineer assumes that the Legislature was aware of prior appropriation when it enacted NRS § 534.037,¹⁷ and the State Engineer interprets the statute as intending to create a solution other than a priority call as the first and only response. Nothing in the legislative history of A.B. 419 or the text of NRS § 534.037 suggests that reductions in pumping have to be borne by junior rights holders alone—if that were

¹⁶ Although the prior appropriation doctrine is not codified in the Nevada Constitution, a similar analysis to *Lewis* is appropriate as prior appropriation is the law in Nevada.

¹⁷ The fact that NRS § 534.110(7) requires the State Engineer to regulate by priority after 10 years if no GMP is adopted makes clear that the Legislature was aware of prior appropriation. Also, the remarks of Assemblyman Goicoechea, the bill sponsor, reinforces the Legislature's awareness of prior appropriation when the Assemblyman described regulation by priority (*e.g.*, pumping is curtailed and the basin is brought back into balance with only senior water rights being held). *See Minutes on the Assembly Committee on Government Affairs, 76th Session, p. 66 (March 30, 2011).*

the case, the State Engineer could simply curtail junior rights—a power already granted by pre-existing water law in NRS § 534.110(6). Thus, the State Engineer concludes that NRS § 534.037 provides flexibility outside regulation by priority, and the manner in which the GMP proposes to reduce pumping is authorized by Nevada law.

Notwithstanding, even though NRS § 534.037(1) does not require a GMP to impose reductions solely against junior rights, the most senior rights in the GMP have a higher priority factor than junior rights when the share calculation is made. Thus, the State Engineer finds that the GMP still honors prior appropriation by allocating senior rights a higher priority factor than junior rights.¹⁸

Well Use Approvals

Second, commenters opposed to the GMP challenged the GMP's provision to allow temporary movement (less than 1 year) of allocations, alleging the GMP contravenes existing law by automatically granting such changes, that the temporary approval process diminishes State Engineer and public review and encourages trading on annual bases, rather than filing for a permanent change.¹⁹ On the other hand, other comments were received that supported the flexibility offered by the expedient temporary movement process.²⁰

Existing water law has provisions that deal with temporary changes to water rights²¹ and permanent changes to existing rights.²² Because the GMP unbundles allocations from the place of use where existing water rights are appurtenant, movement of allocations is controlled by a new or existing well serving as the point of diversion.²³ Thus, the GMP was (1) modeled after existing law regarding temporary changes²⁴ and (2) still requires application of NRS § 533.370 to new wells or increased withdrawals exceeding 1 year.²⁵

Section 14.8 of the GMP provides that any new wells or wells having withdrawals in excess of what was approved under the base right be submitted to the State Engineer. Such changes are approved after 14 days if not denied as impairing other rights or contrary to the public interest. The State Engineer finds that the existing law concerning temporary changes (NRS § 533.345(2))

¹⁸ The public comments during the hearing reiterated that the 20% spread of the priority factor likely received the greatest consideration and debate during the GMP process. Ultimately, a spread of priority factor between 0.9997 and 0.80 was what a majority of the plan proponents could agree to.

¹⁹ Written comments of Sadler Ranch, LLC and Great Basin Resource Watch.

²⁰ Written comment of Marty Plaskett; *and see* Transcript, pp. 80-81 (Matt Morrison) (providing an example that when annual reductions are implemented, an irrigator may not have enough water for one pivot, but would have flexibility to combine allocations to water a full crop, while also allowing some irrigation on former irrigation lands to keep them viable until farming on that pivot could resume).

²¹ NRS § 533.345(2).

²² NRS § 533.370.

²³ *See* GMP §§ 14.8 and 14.9.

²⁴ GMP, p. 20 at fn. 20.

²⁵ GMP § 14.9.

expresses a command to grant temporary changes (*e.g.*, “shall approve”) unless the State Engineer determined it impairs existing rights or is contrary to the public interest. Thus, the State Engineer finds that § 14.8 and § 533.345(2) to be entirely consistent. Further, the State Engineer agrees that allowing changes expediently up to the original duty at that well is permissible because the State Engineer already made such an affirmative analysis when the water right was granted. Additionally, the State Engineer finds that § 14.8 of the GMP is not a significant departure from existing law because temporary change applications do not undergo publication or hearing unless required by the State Engineer.²⁶ Thus, it is unpersuasive that § 14.8 diminishes State Engineer and public review. Finally, the potential of a rights holder to serially move allocations for less than 1 year to escape being subject to the procedures of NRS § 533.370, exists under current law, as there is no limitation in statute to the number of temporary applications to change. The State Engineer is mindful that when annual notices are given, to examine such notices to determine there is a motivation to avoid the statutory change process.

With respect to new wells, additional withdrawals exceeding 1 year, or where the State Engineer determined within the 14 calendar days may be not be in the public interest or may impair rights of other persons, the existing procedures under NRS chapters 533 and 534, including publication and protest provisions, still apply.²⁷

Well Plugging Provisions

One commenter asserted that the GMP waived existing law regarding exempting wells from NRS Chapters 533 and 534.²⁸

GMP §§ 14.2 and 14.3 direct when active, unused or inactive wells must be plugged and abandoned, or that a waiver of abandonment can be obtained. The State Engineer finds that these provisions are consistent with existing regulations found in NAC §§ 534.300 and 534.427. Additionally, GMP §§ 14.4 and 14.5 expressly require that well construction and maintenance must comply with the requirements of NRS and NAC Chapter 534. The State Engineer finds that the GMP does not waive or exempt wells from existing laws or regulations.

Banking and Aquifer Storage and Recovery

Lastly, one commenter stated that the banking component of the plan was an aquifer storage and recovery (ASR) project, which lacks a necessary permit required by NRS § 534.250, *et. seq.*²⁹

²⁶ NRS § 533.345(3).

²⁷ GMP § 14.9.

²⁸ Transcript, p. 19 (David Rigdon).

²⁹ Written comment of Sadler Ranch, LLC; Transcript, p. 14 (David Rigdon). The statement at the hearing was that this comment was based upon the report of the hydrogeologist in Appendix I that water banking is a type of aquifer storage and recovery project regulated by the State Engineer. As indicated by further findings, the State Engineer does not agree that the banking component of the GMP is an aquifer storage and recovery project.

Section 13.9 of the GMP allows unused allocations to be carried over and banked for use in a subsequent year to increase the amount of water the rights holder can use in the next year. The banked allocation is subject to depreciation in the amount that is carried over to account for natural losses over time.³⁰ In contrast to banking in the GMP, a typical aquifer storage and recovery project is operated by injecting or infiltrating water from a surface source into the aquifer for the purpose of accumulating storage for future use.³¹ These elements of project operation are not part of the GMP. The State Engineer finds that banking of unused allocations in the GMP is a mechanism to allow flexibility by users to determine when to use their limited allocation and to encourage water conservation practices. Consequently, the State Engineer finds that the banking allocations in the GMP is a reasonable means to facilitate conservation and water planning by water users, as provided for under NRS § 534.037, and that the GMP is not required to fulfill the statutory obligations of NRS §§ 534.250–340.

II. COMMENTS RELATED TO ABANDONMENT, FORFEITURE, AND PROVING BENEFICIAL USE

Some commenters stated that water rights that are currently unused should be abandoned or forfeited prior to reductions in pumping being imposed against existing water rights.³² The State Engineer finds that pursuing forfeiture or abandonment prior to implementing any GMP is ill-advised for several reasons.

First, time is of the essence for rights holders to get a GMP approved prior to August 25, 2025, or curtailment by priority will be ordered for all rights in Diamond Valley. Because forfeiture and abandonment must be shown by clear and convincing evidence, it is doubtful whether there is sufficient time to investigate and assemble evidence concerning abandoned rights, to conduct administrative hearings and engage in any appellate proceedings with time left to secure a final table of water rights to support the GMP. Pursuing abandonment at this moment would likely lead to lengthy administrative and/or appeal proceedings, delaying action on a GMP until a final listing of active groundwater rights would be known.³³

Second, a different problem is presented by forfeiture proceedings. Because the State Engineer conducts an annual inventory in Diamond Valley, information is available concerning those rights that may be subject to forfeiture. However, in 2017, NRS § 534.090 was amended to require that a notice of non-use be served prior to forfeiting unused water rights to provide one year to cure a forfeiture.³⁴ Serving notices of non-use at this stage would require that owners of water rights that are currently unused make efforts to resume beneficial use (*i.e.*, pumping). The

³⁰ Section 13.9 describes that Diamond Valley is divided between the main farming area (generally located in the southern half of the basin) and the groundwater discharge area (the northern half of the basin). Banked water north of the dividing line in the discharge area depreciates at 17% and banked water south of the line at 1%. The depreciation factors are based on numerical flowing modeling analysis to justify and support these amounts. *See* GMP, Appendix I.

³¹ *See, e.g.*, NRS §§ 534.250- 340.

³² Written comments of Sadler Ranch, LLC and Carolyn Bailey.

³³ *See, e.g.*, GMP, Appendix F.

³⁴ *See* NRS § 534.090(2).

consequence of resuming pumping is contrary to the intent of the GMP to *reduce* pumping. Thus, the State Engineer finds that in addition to similar timing problems discussed above, initiating forfeiture proceedings could exacerbate conditions in the basin by increasing pumping, prior to reducing pumping pursuant to the GMP, thereby lessening the effectiveness of the plan.³⁵

Third, assuming *arguendo*, there are water rights existing only on paper (*e.g.*, that could be abandoned or forfeited), reductions in pumping by the GMP start at the ceiling of *actual pumping* (76,000 afa), not at the ceiling of existing rights (126,000 afa). Stated otherwise, even if the State Engineer assumed that the difference between existing rights and actual pumping (50,000 afa) was paper water, the elimination of paper water rights to match active rights will not change that the reductions in *pumping* begin at the component of active rights. The issue of paper water was raised and considered during the GMP drafting process, and it was determined that the GMP contemplated that any valid right in good standing was to be issued shares.³⁶ The State Engineer believes there is a low probability of success for abandonment, and the preceding paragraph describes the likely unanticipated effect of pursuing forfeiture. Therefore, the State Engineer finds that requests to eliminate paper water does not warrant halting this process in order to initiate abandonment or forfeiture proceedings.

Additionally, one commenter stated that existing permitted rights should prove beneficial use and become certificated prior to implementing a GMP. For reasons discussed above, including timing and discouraging increases in pumping, the State Engineer finds that requiring proof of beneficial use prior to implementing a GMP is not in the best interest of taking immediate action to adopt and implement a basin-wide GMP. Further, the GMP petition process expressly applies to the holders of *permits* and *certificates*. Therefore, the GMP statute implicitly recognizes that permitted rights which have not fully proven beneficial use will participate in the GMP process.

III. COMMENTS RELATED TO APPLICABILITY OF PLAN TO ONLY CERTAIN WATER RIGHTS

Some comments were directed to the scope of GMP applying only to irrigation rights and mining and milling rights with a base irrigation right. Some expressed concern that it created a preference for certain manners of use, that there was no environmental component to the plan and it would result in water barons.³⁷ Many comments in favor of the plan described how they believed the plan would allow more irrigators or mines to stay in business, ultimately benefitting the greatest number of operators by providing more favorable conditions such as weed and rodent control.³⁸ The comments favored adoption of a GMP in lieu of curtailment, which many recognized would

³⁵ The issue of forfeiture in Diamond Valley, particularly of pivot corners, pre-dates the 2017 amendments to NRS § 534.090. In the 1980s, the State Engineer pursued forfeiture of unused pivot corners in Diamond Valley, which lead to the enactment of NRS § 534.090(3) (pre-2017 version). *See Nev. Stat. ch 559 (1983); and see, A.B. 597 (1983).*

³⁶ *See GMP, Appendix C, p. 244.*

³⁷ Written comments of Great Basin Resources Watch, and Ari Erickson.

³⁸ Written comments of James Gallagher, Mark Moyle and Donald Palmore; Transcript, p. 68 (Jim Gallagher); pp. 80-81 (Matt Morrison).

likely force many junior irrigators into bankruptcy, and as a result, the community would suffer.³⁹ In addition, many comments in favor of the GMP spoke positively about methods for increasing efficiency to continue operations while reducing pumping.⁴⁰

As discussed in the introductory paragraphs section, *supra*, over 96% of committed rights are represented in the plan; therefore, the State Engineer finds that given the overwhelming majority of irrigation rights and mining and milling rights having irrigation base rights, the application of the plan to those rights that will have the most impact and be most impacted, is appropriate. While one commenter opined that the GMP does not address environmental concerns, the State Engineer does not agree. The GMP may not contain express provisions for the environment, but allowing the greatest number of irrigators to remain in business and keep cultivated lands active, will prevent the incursion of weeds, and will provide dust and rodent control. And ultimately, the State Engineer finds that the objective to reduce the pumping of groundwater to stabilize groundwater levels is a benefit of the groundwater basin, the irrigators and other members of the community that rely upon it and live within it, and that it is not necessary to explicitly identify certain areas of environmental concern within the scope of the plan for the plan to have a generalized benefit to the environment.

Finally, the State Engineer finds that comments that the GMP will result in “water barons” or that it will create a preference for certain manners of use, are speculative. Existing water law provides that water rights are a form of real property that are freely alienable and transferrable independent of land where the water was formerly appurtenant. In that way, the ownership of water rights and the manners of use are currently determined by a market of real property transactions.

IV. COMMENTS RELATED TO PRACTICALITY OR REASONABLENESS OF THE PLAN IMPLEMENTATION

Mitigation Rights

Some commenters challenged the fact that the GMP does not provide for mitigation of senior surface water rights that have been negatively impacted by junior groundwater pumping.⁴¹

The requirement for the approval of a GMP is that it “must set forth the necessary steps for removal of the basin’s designation as a critical management area.” NRS § 534.037(1). Neither the plain language nor the legislative history indicate that mitigation of senior surface water rights that have allegedly been adversely affected by groundwater pumping must be mitigated by a GMP.⁴²

³⁹ Written comments of William Norton and Donald Palmore; Transcript, pp. 80-81 (Matt Morrison).

⁴⁰ Written comment of William Norton, Marty Plaskett, Robert Burnham and James Gallagher; Transcript, p. 81 (Matt Morrison).

⁴¹ Written comments of Sadler Ranch, LLC and Daniel Venturacci.

⁴² In fact the opposite appears to be true from the legislative history. As proposed, A.B. 419 would have required the State Engineer “to consider the relationship between surface water and groundwater in the basin,” but this consideration was amended out of the bill after the First Reprint.

Of note is that the State Engineer entered Order 1226, entered on March 26, 2013, which provided a mechanism for mitigation of senior surface water rights allegedly impacted by junior groundwater pumping. Two of the commenters at the hearing who raised this issue have taken advantage of the provisions of Order 1226, by filing for mitigation groundwater rights, which were granted by the State Engineer. Consequently, the State Engineer finds that mitigation is not a required element of the GMP; and in any event, the commenters who raised this issue have already taken advantage of Order 1226.⁴³

Out-of-Basin Transfers

One commenter was concerned that unbundling water rights appurtenant to their place of use creates an incentive for out-of-basin transfers.⁴⁴ The commenter acknowledged that the current GMP prohibits out-of-basin transfers, but suggested the plan proponents may consider amending the plan to strengthen provisions to avoid incentivizing out-of-basin transfers. The State Engineer finds that NRS § 534.037 provides that once adopted, the GMP can be amended by the same procedure which allows for adoption of a plan.⁴⁵ Because the GMP currently prohibits out-of-basin transfers, there is currently no necessity to mandate changes to the GMP to strengthen provisions to disincentivize out-of-basin transfers. Some commenters involved the creation of the plan who spoke in favor of it acknowledged the plan may not be “perfect.” Short of finding the current GMP cannot be approved as a matter of law, the State Engineer finds that denial of the Petition to require years of possible additional negotiations to merely better state existing plan provisions, to be unnecessary.⁴⁶

See A.B. 419 (First Reprint), Senate Committee on Government Affairs, 76th Sess. (May 25, 2011).

⁴³ *See, e.g.*, Permits 81720, 82268, 81825 and 82572, official records in the Office of the State Engineer.

⁴⁴ Written comment of Great Basin Resource Watch.

⁴⁵ NRS § 534.037(5).

⁴⁶ The State Engineer values all comments and testimony received concerning the GMP. While it is clear the *Public Interest Review of the Proposed Diamond Valley Groundwater Management Plan* prepared for Great Basin Resource Watch was thorough in its analysis, the State Engineer gives great weight to comments and testimony from water rights holders in Diamond Valley, senior or junior whom are for or against approval of the GMP. Great Basin Resource Watch does not own water rights in Diamond Valley and it does not appear it was involved in the years of public meetings held in Eureka to negotiate the details of the GMP. *See, e.g.*, GMP Appendix C at pp. 121-240. Indeed, its own written comment appears to recognize it is appropriate to afford great weight to those that created and are affected by the plan. *See* Written comment of Great Basin Resource Watch at p. 8 (a groundwater management plan should address the varied objectives or goals of water users and residents in the basin, and a worthwhile consideration is whether the GMP promotes bottom-up collaboration to promote broad buy-in from affected individuals and to provide flexibility in decision-making); *and see also*, Transcript, p. 65 (Mark Moyle) (responding to comments at the hearing, stating that the GMP was developed by the people who live in Diamond Valley and will be most affected and that everyone was making sacrifices).

Public and Local Community Interest

The same commenter stated that the public interest component was not adequately represented and that the description of local community interests could be strengthened.⁴⁷

The State Engineer disagrees that the public interest is not adequately represented. As already discussed under well use approvals, new wells, additional withdrawals exceeding one year, or where the State Engineer rejected a request under § 14.8, is subject to the procedures of NRS § 533.370—including the public interest review for change applications.

Many comments in support of the GMP reflect the reality that it took years for the participants to negotiate an agreement that was able to attain majority support required to petition the State Engineer for approval. Years before the State Engineer declared the basin a CMA in 2015, the GMP process was initiated by the local community and stakeholders.⁴⁸ Work on the GMP continued for an additional three years after the CMA designation with numerous meetings of the community and stakeholders, ultimately arriving at the version presented to the State Engineer in 2018.⁴⁹ Appendix C of the GMP demonstrates that this process was emotional and difficult for the participants—yet they persisted in forging a plan in an effort to avoid curtailment. The written comments overwhelmingly demonstrate the public and local community interests to be preserved by the approval of the plan, which are best stated by the following irrigator:⁵⁰

The irrigators that support this plan understand that we all need to sacrifice for the long-term benefit of the community and the long-term continued success of the farming industry. Diamond Valley is the heart of southern Eureka County's economy. . . . Strong, willing, and giving people who understand that it takes community effort to sustain and survive built Diamond Valley. . . . The purpose of the DVGMP is to continue the ongoing success of the entire southern Eureka County area and the enterprises that exists [sic] there.

This sentiment was repeated in all written comments submitted in support of the plan.⁵¹ In addition, many stirring accounts were given at the public hearing about living and growing up in Diamond Valley, the desire to preserve the established way of life, the hardscrabble efforts made over decades to create the farms that exist in the valley today, and the determination of the community to work together to solve issues, both past and present, which challenged their continued existence.⁵² The State Engineer finds that the GMP materials, written comments and testimony at the public hearing overwhelmingly describe and support the public and local

⁴⁷ Written comment of Great Basin Resource Watch.

⁴⁸ GMP, Appendix B.

⁴⁹ See GMP, Appendices A, C.

⁵⁰ Written comment of Mark Moyle.

⁵¹ See written comments of Robert Burnham, Russell Conley, Jim Etcheverry, James Gallagher, Andrew Goettle, William Norton, Donald Palmore, Marty Plaskett and Ruby Hill Mining Company; *and see* Transcript, pp. 52-53 (D'Mark Mick).

⁵² Transcript, pp. 57-59 (James Moyle); pp. 75-77 (Vickie Buchanan); pp. 79-82 (Matt Morrison); pp. 84-85 (Lloyd Morrison); pp. 85-88 (Alberta "Birdie" Morrison).

community interests, which weigh heavily in the determination at hand. While many comments in the *Public Interest Review*⁵³ reflect aspirational components of what a plan *may* contain or how it could be best stated, the State Engineer finds that the GMP is acceptable in these areas.

Protections for Domestic Wells

One commenter suggested that domestic wells were not protected because pumping will continue to exceed the perennial yield while the GMP is carried out. The State Engineer finds that NRS § 534.110(7), states that unless at GMP has been approved for a basin pursuant to NRS § 534.037, “withdrawals, including, without limitation, withdrawals from domestic wells, be restricted in that basin to conform to priority rights.” And that pursuant to NRS § 534.080, domestic wells are assigned the date of priority of the date the well was drilled. Thus, the GMP is protective of domestic wells because it specifically excludes the domestic wells from pro-rata reductions in use and allows for their continued use to the full statutory permitted amount, compared to the alternative that (a) the domestic wells in Diamond Valley are junior in priority to the 30,000 af PY, and (b) since, absent an approved GMP, domestic wells are subject to curtailment based upon their priority.

Advisory Board Makeup

Commenters had differing issues with the makeup of the Advisory Board.⁵⁴ One commenter stated that the GMP favors junior appropriators on the Advisory Board. Alternatively, another commenter posited that after a period of years, the makeup of the Advisory Board could favor non-irrigators over irrigators. The State Engineer finds that the plan was created by the individuals that will be subject to the plan, and the State Engineer accepts that a majority of the rights holders agreed that the makeup and voting structure of the participants agreed this to be a fair manner of representation on the Board.

V. COMMENTS RELATED TO SCIENTIFIC SOUNDNESS

Some commenters challenged the GMP, asserting that the GMP is not supported by science and hydrologic analysis, with the following observations:⁵⁵

- a. The scheduled reduction in pumping would exceed the perennial yield for the life of the GMP and in the process it would deplete aquifer storage in excess of the transitional storage volume.
- b. The GMP is not supported by a hydrogeologic analysis or a groundwater model to provide information on the effects of the plan.
- c. Some commenters had questions about the accuracy of the ET depreciation rate, and whether this rate may change over time because

⁵³ Written comment of Great Basin Resource Watch.

⁵⁴ Written comments of Sadler Ranch, LLC and Great Basin Resource Watch.

⁵⁵ Written comments of Ira and Montira Renner and Sadler Ranch, LLC; Transcript, p. 19 (David Rigdon); pp. 23-24 (David Hillis).

of groundwater recovery and corresponding changes in groundwater ET.

- d. One commenter raised the lack of thresholds or triggers in the GMP.

The GMP is based on the simple fact that groundwater pumping is the cause of declining water levels, and therefore pumping must be reduced to solve the problem. The reduction in pumping is set at 3% per year for the first 10 years, and may be adjusted up or down thereafter as informed by groundwater level monitoring data. The goal of this approach is to progressively reduce groundwater pumping until the perennial yield is not consistently exceeded, and the measure of that ultimate outcome is a stabilization of water levels.

Perennial yield is based on the principle of conservation of mass, which dictates that water levels will stabilize when recharge equals discharge. Before any groundwater development occurs, an undeveloped basin is considered to be in equilibrium between natural groundwater recharge and discharge. When wells are developed, groundwater is initially drawn from aquifer storage in the vicinity of the well, but over time that groundwater removal is replaced by a decrease in natural discharge or increase in recharge until a new equilibrium is reached and the discharge by pumping is part of the basin water balance. Water drawn from storage in the period of time between the pre-development equilibrium and the post-developed equilibrium is defined as the transitional storage. The amount of transitional storage consumed before a new equilibrium state is reached may affect the depth to water at a new equilibrium condition, but as long as recharge and discharge are ultimately balanced then an equilibrium condition can be reached and the goal of the GMP to stabilize water levels can be achieved. The amount of storage consumed in the transitional period will not prevent equilibrium from being reached.

Groundwater modeling and hydrogeologic analysis are not the basis for the GMP's determination of pumping reduction rates and target pumping totals at the end of the plan. Instead, the pumping reduction rate was selected by agreement of the GMP authors, and the target for total pumping at the end of the GMP was selected from existing published values. Upon implementation, the real effects of the plan will be monitored and observed by measuring the change in groundwater levels throughout the basin. Those measurements will be the basis for plan review and any modifications of pumping reduction rates that the GMP requires after an observation period of 10 years.

Groundwater modeling is a helpful and informative tool for projecting the effects of pumping reduction and planning accordingly, but modeling is not necessary to conclude that reductions in pumping will lead to reductions in water level drawdown. Groundwater modeling and hydrogeologic analysis beyond what is publicly available in existing published reports would not change the fact that the cause of groundwater decline is due to pumping groundwater and that the stakeholder-authored plan seeks to reduce pumping. Modeling could be a useful tool for future evaluation of the plan and modifications to pumping reduction rates, but it is not required.

One commenter questioned whether the reductions in pumping under the plan combined with rights not subject to plan would bring withdrawals to the perennial yield based on his calculation of rights able to be pumped being excess of 42,000 afa.⁵⁶ As explained, the goal of the

⁵⁶ See written comment of Ari Erickson.

GMP is to reduce consumptive use to the current perennial yield; and, as indicated in the introductory paragraphs, there are 4,437 af of groundwater rights in the basin not subject to the plan. Thus, the State Engineer does not find that there could be total pumping in excess of 42,000 af in the basin at the end of 35 years under the GMP. Assuming, *arguendo*, that rights subject to the plan and those not subject to the plan were estimated to be 34,437 af, existing evidence used by the State Engineer to designate the basin a CMA demonstrates that there are wide variations in annual pumping—in some years, by several thousand acre-feet more or less than the prior year.⁵⁷ Because the designation of a CMA is based on withdrawals *consistently* exceeding the perennial yield, the State Engineer finds that existing law suggests some tolerance of variations on the annual amount of pumping. In addition, the State Engineer is mindful that perennial yield is an *estimate* of water availability and is only one-half of the equation of GMP success.⁵⁸ Actual observations of water levels are the most direct and reliable means of determining GMP success. The plan to reduce pumping, monitor the effects on water levels, and then adjust pumping reductions is a sound approach to achieving the goal of stabilizing water levels. The lack of a groundwater model or detailed hydrogeologic analysis does not preclude approval of the GMP as written.

One commenter raised the lack of thresholds or triggers in the GMP. The State Engineer finds that there is no express requirement in NRS § 534.037 for thresholds or triggers, and that a reference to thresholds or triggers is commonly in reference to a “Monitoring, Management and Mitigation (3M)” Plan. The State Engineer has historically utilized 3M Plans as a tool in approving new appropriations when impacts to existing rights are unknown. Consequently, the State Engineer finds that a 3M Plan having thresholds and triggers is different than the GMP now pending before the State Engineer, and that the two types of plans serve different functions. Nevertheless, the State Engineer finds that there has been robust monitoring of irrigation groundwater use in Diamond Valley by the State Engineer’s office for many decades and that monitoring groundwater use and groundwater levels is ongoing. Moreover, the GMP requires irrigators to install a smart meter, which will provide increased accuracy and nearly real-time knowledge of groundwater use.⁵⁹ Finally, the GMP incorporates the State Engineer’s enforcement authority concerning over-pumping of a user’s allocation, and contains penalties to be paid in water for over-pumping and stiff administrative fines for meter tampering.⁶⁰

Finally, some commenters had questions about the accuracy of the ET depreciation rate, and whether this rate may change over time because of groundwater recovery and corresponding

⁵⁷ See Order 1264, official records in the Office of the State Engineer.

⁵⁸ Both the GMP and the commenter acknowledged the release of a 2016 report by the U.S. Geological Survey, which estimated the perennial yield may be 35,000 af. GMP, p. 8 at fn. 2; Transcript, p. 37 (Ari Erickson). As part of a different administrative hearing proceeding, the State Engineer was requested to accept the USGS Report as the perennial yield in Diamond Valley. That matter is currently under submission, and no determination has been made by the State Engineer whether to accept this number. Consequently, the GMP was based on the current estimate of perennial yield of 30,000 af.

⁵⁹ See GMP § 15. The most recent groundwater inventory conducted by the State Engineer in 2018 revealed that there was nearly 100% compliance with smart meter installation already. This further affirms that rights holders have already made financial commitments of purchasing and installing smart meters to ensure success of the GMP.

⁶⁰ GMP §§ 16, 17.

changes in groundwater ET. The selection of these rates was the only component of the GMP expressly based on groundwater model simulations. The accuracy of the model and appropriateness of assigning ET depreciation rates based on model interpretation was discussed at GMP planning meetings. The ET depreciation rates in the final GMP were a compromise and there was never a consensus. Adjustments to these rates is provided for under the provisions to amend the GMP, as warranted by the data.

VI. COMMENTS RELATED TO PRECEDENCE

Several commenters were concerned that any GMP adopted in Diamond Valley creates a precedent for other areas in the state that may be designated Critical Management Areas. The proposed GMP under consideration is the first plan in the state adopted through the process required by NRS § 534.037. As with most decisions involving water, the conditions and issues facing Diamond Valley are unique to Diamond Valley, and therefore the requirements of this plan may not be suitable for any other area in the state. Many individuals speaking in support of the plan made this observation, and the State Engineer concurs that the Diamond Valley GMP does not limit the possible solutions that may be employed by other groundwater management plans.

WHEREAS, based upon the foregoing, the State Engineer makes the following findings of fact, conclusions of law and order:

The State Engineer finds that Appendix D to the GMP sufficiently describes (a) the hydrology of the basin; (b) the physical characteristics of the basin; (c) the geographic spacing and location of the withdrawals of groundwater in the basin; (d) the quality of the water in the basin; and (e) the wells located in the basin, including, without limitation, domestic wells.

The State Engineer finds that there is currently no groundwater management plan in existence for Diamond Valley.

The State Engineer finds that the GMP is analogous to the settlement agreement at the center of the *Lewis* case, *i.e.*, an agreement supported by at least a majority of the permit and certificate holders in Diamond Valley to protect existing rights while cutting the Gordian knot of basin over-appropriation. Thus, the State Engineer concludes that adoption of the GMP is expressly authorized by statute and does not violate the prior appropriation doctrine because the statute provides flexibility outside strict regulation by priority.

The State Engineer finds that the GMP is not legally deficient nor waives any authority of the State Engineer to enforce Nevada water law.

The State Engineer finds that due to the length of time required, initiating abandonment or forfeiture proceedings or requiring proof of beneficial use prior to implementing a GMP is not in the best interest of reducing pumping and would only serve to delay such reductions.

As discussed in the introductory paragraphs, over 96% of committed rights are represented in the plan; therefore, the State Engineer finds that given the overwhelming majority of irrigation rights and mining and milling rights having irrigation base rights, and that the application of the plan to those rights that will have the most impact, and that will be the most impacted, is appropriate.

The State Engineer finds that public and local community interests have been considered, and that such interests are a cornerstone of the plan by retaining the greatest number of farms or mines as economically viable, which will provide social, economic, and environmental benefits.

The State Engineer finds that the standard for determining success of the plan by stabilizing water levels is sound.

The State Engineer finds that groundwater modeling is an informative tool for projecting the effects of pumping reduction, and that future model results could add confidence to decisions on any changes to pumping reductions, but that the lack of a groundwater model or hydrogeologic analysis does not preclude approval of the GMP as written.

The State Engineer finds that the GMP's annual reductions in pumping will lead to the entire basin's groundwater pumping approaching the perennial yield and stabilization of groundwater levels.


The State Engineer finds that the GMP is a groundwater management plan and is not a monitoring, management and mitigation plan; therefore, not only is there no requirement that there be a mitigation component or thresholds and triggers for activation of mitigation actions, but also such components would cloud the plan's goal and objectives.

The State Engineer finds that 1 acre-foot is equal to 325,851 gallons pursuant to practice and policy of the Office of the State Engineer, and that this conversion rate will be used.

In light of the foregoing findings, having considered the comments for and against the GMP, the State Engineer concludes that the petitioning parties have met the requirements for the adoption of the Diamond Valley Groundwater Management Plan, and the Petition is accordingly granted.

ORDER

NOW THEREFORE, it is ordered that the Petition to Adopt the Groundwater Management Plan for the Diamond Valley Hydrographic Basin is hereby GRANTED.

 P.E.

JASON KING, P.E.
State Engineer

Dated at Carson City, Nevada this

11TH day of JANUARY, 2019.