Legal Issues Analysis Project

Introduction

This purpose of this project was to have KGA counsel Valerie Kincaid prepare an expository paper(s) analyzing legal issues that affect the allocation of a material amount of groundwater in the Kern Subbasin and which may be relevant to preparation of multi-agency GSPs and the coordination agreement. This paper reports how established legal precedents and applicable laws apply to the legal questions presented, explains how the facts in the cases affected the decisions and how they may relate to the facts present in Kern, and where governing law is unsettled or absent, acknowledge that and discuss relevant legal principles that may be applied by future courts to resolve the questions. KGA counsel does not make determinations of what the hydrogeological facts are within the Kern Subbasin, but this work is based on the commonly understood fact that the Kern Subbasin overall is in severe overdraft.

This paper is based on case law that may be applicable if the Kern Subbasin were adjudicated (which would take decades and tens of millions of dollars), much of which is nearly a century old, and as noted certain principles have evolved and are evolving over time. **This paper is not intended to constrain what the GSA may determine though the SGMA process is the most practical and efficient way to manage the Kern Subbasin and protect its beneficial uses, while avoiding "undesirable results" as provided in SGMA.**

This paper has been shared with counsel for Kern participants, who provided critiques and further analysis, which Valerie Kincaid considered. The objective was to foster a collaborative analysis of claims to groundwater and empower participants to negotiate solutions to implement SGMA, taking into account applicable law (regulatory, statutory and case law).

This paper was prepared to foster a better understanding of applicable law and nothing in this paper shall be binding, or considered an admission, or otherwise precedential on any party or their counsel in any administrative or judicial proceeding.

Not Binding or Precedential

As noted above, the purpose of this paper is to foster collaboration. Nothing in this paper shall be binding or otherwise precedential on any party.

Legal Background on Groundwater Rights

There are four types of groundwater rights. Pueblo, overlying, appropriative, and prescriptive. Each of these rights has a different set of attributes and limitations, which define and limit the extraction of water in specific circumstances. The basics of each right are set forth below.

Pueblo Water Right

The pueblo groundwater right is the highest priority right in the use of native groundwater. (*Los Angeles v. San Fernando* (1975) 14 Cal.3d 199, 245-55 ("*San Fernando*"); *Los Angeles v. Glendale* (1943) 23 Cal.2d 68, 75-79 ("*Glendale*"); *City of San Diego v. Cuyamaca Water Co.* (1930) 209 Cal. 105, 141.) The pueblo water right is the right of a city or local government as a successor of a Spanish or Mexican municipality to use the water naturally occurring for municipal use. (*Lux v. Haggin* (1884) 69 Cal. 255, 328-330 ("*Lux v. Haggin*").) The pueblo right does not attach to foreign water imported from outside the watershed and stored within the boundaries of the historic pueblo. (*San Fernando*, at 253.)

Overlying Groundwater Right

Ownership of land overlying percolating groundwater provides the landowner with an overlying groundwater right. (*Pasadena v. Alhambra* (1949) 33 Cal.2d 908, 925 ("*Pasadena*").) An overlying water right is not quantified, but allows the water right holder to divert as much water as is reasonable to support beneficial uses on the overlying land. (*Katz v. Walkinshaw* (1902) 141 Cal. 116 ("*Walkinshaw*"); *Pasadena*, at 925.) In times of shortage, the correlative nature of the overlying right limits an overlying extraction to a "proportionate fair share of the total amount available based upon reasonable needs." (*Tehachapi-Cummings County Water District v. Armstrong* (1975) 49 Cal.App. 3d 992, 1001("*Tehachapi*"); *Pasadena*, at 926; *City of Barstow v. Mojave Water Agency* (2000) 23 Cal.4th 1224, 1253 ("*Mojave*").) There is no specific formula for determining the proportionate fair share, however, the *Tehachapi* court provides the factors that should be considered in determining fair share. These factors include, but are not limited to, "the amount of water available, the extent of ownership in the basin, the nature of the projected use . . . the area sought to be irrigated, the character of the soil, the practicability of irrigation" and the expense of irrigation compared to the projected profit. (*Tehachapi*, at 1002.)

As a general rule, California law provides that an overlying right cannot be lost by nonuse. (*Lux v. Haggin*, at *391*.) However, overlying groundwater rights are subject to prescription and may be eroded or otherwise lost if prescribed. (*Pasadena*, at 925-26; *Yorba v. Anaheim Union Water Co*. (1953) 41 Cal.2d 265, 272 ("*Anaheim*").) Nonuse may impact the development of a physical solution by an adjudicating court; previous adjudication actions have considered nonuse of overlying water right holders in developing physical solutions. (*Mojave*, at 1249, fn. 13; *Long Valley Creek Stream System* (1979) 25 Cal.3d 339 ("*Long Valley*").) In addition, unexercised overlying rights may also be eroded or otherwise lost through prescription, as described below.

Appropriative Groundwater Right

An appropriative right to extract groundwater does not derive from land ownership, but comes from the actual taking or "appropriation" of water. (*Pasadena*, at 925; *Central and West Basin Water Replenishment Dist. v. Southern Cal. Water Co.* (2003) 109 Cal. App. 4th 891, 905 ("*Central Basin*").) Appropriative water right holders may export groundwater and are not limited to use on lands within a specific area. (*Peabody v. Vallejo* (1935) 2 Cal.2d 351, 368-69 ("*Peabody*"), 368-69; *Pasadena*, at 926.) Water that serves the public is considered an appropriation, regardless of the fact the water is served to customers that overlie the basin from which the water is extracted. (*San Bernardino v. Riverside* (1921) 186 Cal.7, 10-11 ("*San Bernardino*"); *Eden Township Water Dist. v. City of Hayward* (1933) 218 Cal. 634, 640; *Wright v. Goleta Water District* (1985) 174 Cal.App.3d 74 ("*Goleta*").)

The quantity of an appropriative right is based on the amount of appropriative water extracted and put to beneficial use. During times of shortage, appropriative water right holders are junior to overlying extractors and are limited to the quantity of water remaining after all overlying uses are fully satisfied. (*Pasadena*, at 926.) Amongst and between appropriators, the rule during shortage is first in time, first in right. (*Mojave*, at 1241.) A prior appropriator is entitled to take all the water he has previously used before a subsequent appropriator may divert any water. (*Pasadena*, at 926.)

Prescriptive Groundwater Right

A prescriptive right develops when an appropriator takes water that is not surplus and such extraction is (a) actual, open and notorious, (b) hostile and adverse to the true owner, (c) under claim of right, and (d) continues uninterrupted for five years. (*San Bernardino*, at 22-23; *California Water Service v. Sidebotham* (1964) 224 Cal.App.2d 721, 726; *Walkinshaw*, at 135; *Pasadena*, at 926.) Both overlying and appropriative groundwater rights are subject to prescription. (*Pasadena*, at 927.) The element of adversity may only be met when a basin is in overdraft; when there is surplus water, the extraction of water that is not overlying is appropriative, not prescriptive. (*San Fernando*, at 283; *City of Santa Maria v. Adam* (2012) 211 Cal.App.4th 266, 293 ("*Santa Maria*").) The five-year requirement is met only by five consecutive years of extractions during overdraft; thus, a single year of surplus will break the continuity requirement and not allow the prescriptive right to vest. (*San Fernando*, at 284; *Santa Maria*, at 291-92.) However, each five-year prescriptive period begins running at the point it can be proven that overdraft began. (*Pasadena*, at 928-29.)

There are limitations on prescriptive rights. On limitation is that a private pumper cannot obtain prescriptive rights against public entities. (*San Fernando*, at 214.) Another limitation is that appropriative and overlying water right holders may protect themselves from prescription by continuing to extract water during the period of overdraft. (*Mojave*, at 1241; *Pasadena*, at 926, 930-32; *San Fernando*, at 1732.) The concept of protecting an existing groundwater right against prescription by continuing to pump during overdraft is referred to as "self-help." (*Pasadena*, at 931.)

Legal Questions

1. Much of the water that recharges the Kern Basin starts as native water in the Kern River and other mountain streams (including but not limited to Grapevine Creek, El Paso Creek, Tejon Creek, Caliente Creek, and Poso Creek.) Other inputs are subsurface flows. Additional inputs are provided by imported surface supplies. When this water percolates or moves into the basin, what portions (pursuant to what actions) are specifically credited to someone? What portions remain available to basin?

(A) Native Groundwater

Water that percolates back into the groundwater aquifer after being extracted from the native groundwater supply and applied to a beneficial use is considered part of the native common ground water supply. (*San Fernando*, at 261.)

(B) Native Surface Water Flowing in Natural Watercourse

Water that naturally percolates into the ground from a natural watercourse, without human intervention, becomes part of the common percolating groundwater supply when it seeps through the bed and bank of the stream and loses its character as part of the flow of that watercourse, and it "is essential to the nature of percolating waters that they do not form part of the body or flow, surface or subterranean, of any stream." (*Vineland Irrigation Dist. v. Azusa Irrigating Co.* (1899) 126 Cal. 486, 494.) This water is available to groundwater users in the same priority in which they are able to extract percolating groundwater. Absent evidence which establishes the right to a developed water supply resulting from human intervention, the seepage or percolation of native water flowing in a natural channel becomes common supply at the point that it seeps into the ground and is no longer in the bed and banks, flowing in a specific direction and has become percolating groundwater.

(C) *Native Surface Water Diverted From Natural Water Course For Riparian Use*

A riparian water right holder has the right to divert water from a natural surface water course that is contiguous to the riparian parcel in a quantity that is reasonable to support the beneficial use(s) on the riparian parcel. (*Pleasant Valley Canal Co. v. Borror* (1998) 61 Cal.App.4th 742, 754 ("*Pleasant Valley*").) The riparian land upon which the water is used must be within the watershed and must never have been severed from its contiguity to the watercourse. (*Pleasant Valley*, at 774.) Because the riparian water right holder is restricted to use the quantity of water that is reasonable to support beneficial uses on the riparian parcel, it does not have the right to recapture water that seeps or percolates into the groundwater after the initial beneficial use is served. Instead, water that percolates into the ground from the application of riparian diversions becomes part of the native common supply. (*Stanford v. Felt* (1886) 71 Cal. 249, 250; *Vernon Irr. Co. v. Los Angeles* (1895) 106 Cal. 237, 256.)

(D) Imported Surface Water

There is a right to recapture percolating return flows from imported surface water. (*E. C. Horst Co. v. New Blue Pt. Min. Co.* (1918) 177 Cal. 631, 635; *Stevens v. Oakdale Irrigation District* (1939) 13 Cal.2d 343, 352 ("*Stevens*").) Seepage and percolation of imported water from natural watercourses, canals, or application to beneficial uses, such as agriculture or municipal and industrial uses is credited to the importing party. (*Stevens*, at 352; *Glendale*, at 77; *San Fernando*, at 256-58.) *Stevens* is one of the first cases to address the issue of recapture of return flows. Oakdale Irrigation District ("OID") diverted water from the Stanislaus River, conveyed it through its system of irrigation facilities, and the tail water or return flows were discharged into Lone Tree Creek, which was a natural watercourse in a different watershed. (*Stevens*, at 352.) For twenty plus years, OID abandoned the flows into Lone Tree Creek and Stevens relied on the abandoned flows. After more than twenty years of abandoning the return flows, OID decided to stop such abandonment and began to recapture the flows that previously returned to Lone Tree Creek. Upon this recapture, water was no longer available in Lone Tree Creek for Stevens' diversion. Stevens sued OID, claiming it had a duty to continue to supply Lone Tree Creek with imported abandoned water to support Stevens' diversion. (*Id*., at 347.) The court held that OID did not have a duty to continue abandoning its return flows and had the right to recapture the water, despite the historic abandonment. (*Id*., at 350-352.) The court held that a surface water diverter that invests in the diversion and importation of water is entitled to "exclusive control" of the water and such control extends to "surface run-off and deep percolation." (*Id*., at 350-51.)

After *Stevens*, several other cases were decided similarly and extended the rule of recapture from imported water to flows that percolate into the groundwater aquifer. For example, in *Glendale*, the court held the percolating return flows from water imported from another watershed remained in the control of the importer. (*Glendale*, at 76-78.) The *Glendale* court determined the City of Los Angeles had a right to all native water subject to the pueblo claim. However, the court exempted imported waters from the reach of the pueblo right. (*Glendale*, at 73.) The *Glendale* decision held that imported water supplies could be delivered through natural conveyance systems and stored underground. (*Glendale*, at 76.) The court further noted that importers have prior rights and the importer "did not abandon that right when it spread the water

for the purpose of economical transportation and storage." (*Id.*) While there must be some mechanism by which to recapture the stored water, it is not necessary to recapture the specific molecules of water that constituted the percolating return flows. (*Stevens*, at 352.) Even when the imported flows percolating return flows have left the control of the importer, recapture is still allowed, so long as the importer intended to recapture the water and has facilities to retake the water at a lower point. (*Id.*) In *Santa Maria*, the court affirmed that the right of the importer does not attach to the specific molecules and that the right to recapture return flows did not turn on the fact that the importer's wells were down-gradient from where the imported water return flows entered the basin. (*Santa Maria*, at 302.)

Similarly, in *San Fernando*, the court distinguished the difference between percolating return flows from application of imported water and percolating return flows from application of native groundwater. The court declined to treat return flows from applied native groundwater similarly to imported water, stating "Even though all deliveries produce a return flow, only deliveries derived from imported water add to the ground supply. The purpose of giving the right to recapture returns from delivered imported water priority over overlying rights and rights based on appropriations of the native ground supply is to credit the importer with the fruits of his expenditures and endeavors in bringing into the basin water that would not otherwise be there. Returns from deliveries of extracted native water do not add to the ground supply but only lessen the diminution occasioned by the extractions." (*San Fernando*, at 261.) Therefore, the holding from *San Fernando* provides clear direction that percolating return flows from imported water belongs to the importer, but percolating return flows from native groundwater extractions that seep back into the ground return to the common native supply.

The court in *Santa Maria* also reached the same conclusion, awarding the return flows from imported water to those parties who had imported the water. (*Santa Maria*, at 302.)

The Superior Court in the Antelope Valley Adjudication relied on *San Fernando* for the rule that allowing importers to recapture percolating return flows, but not allowing the recapture of percolating return flows from the extraction of native groundwater as such flows remain native common groundwater supply when they percolate back down into the groundwater basin.

(*Antelope Valley Groundwater Cases Included Consol. Actions v. Diamond Farming Co.* (2015), at 13-14.) The *Antelope Valley* court stated, "The right to return flows is limited to return flows from imported water." (*Ibid*.)

(E) Salvaged Surface Water

In addition to imported waters, courts allow the recapture of percolated return flows from salvaged surface water. Salvaged water could include increased system efficiencies. (*Pomona Land & Water Co. v. San Antonio Water Co.* (1908) 152 Cal. 618 ("*Pomona*").) In addition, salvage waters include native water saved from flowing out of the basin or released at a time when native flows would not be present. For example, in *Santa Maria*, the Court of Appeal defined "salvaged water" as "water that is saved from waste as when winter floodwaters are dammed and held in a reservoir." The court confirmed that, as with return flows from imported water, "a priority right to salvaged water belongs to the one who made it available." (*Id.*, at 304-305). Salvaged water may be native to the extent it would naturally flow within the stream to which it is released but it is "foreign in time" to the degree that "it would not find its way in the basin absent a reclamation project to divert it, store it, and release it on a schedule to augment natural recharge." (*Ibid.*) *Santa Maria* thus stands for the proposition that entities responsible for "salvaging" water by diverting, storing, and releasing water that is native to a watershed so as to augment natural recharge are entitled to a priority right to the increment of basin supply attributable to the salvaged water.

(F) Native Surface Water Diverted From Natural Water Course For Appropriative Use

(1) Rules For Recapturing Intentional Percolation That Follow a Surface Water Diversion

An appropriative surface water right holder has a usufructuary right to the beneficial use of water in a natural water course. (The California Law of Water Rights, Wells A. Hutchins, p. 120 [citations omitted].)) Once this right to divert water is exercised, the right becomes possessory and the appropriator has "the sole and exclusive right to use the same for the purposes for which it was appropriated." (*Hoffman v. Stone* (1857) 7 Cal. 46, 49 ("*Hoffman*"); *Stevens*, at 350; *Parks Canal & Min. Co. v. Hoyt* (1880) 57 Cal. 44, 46 ("*Hoyt*").) Once the right becomes possessory, the appropriator retains its interest even if the appropriated water is added to another source such as a stream or basin. (Water Code, § 7075; *Santa Maria*, at 302.)

The appropriative right is inclusive of losses to evaporation, canal seepage, reasonable yet unavoidable waste and associated conveyance losses necessary to convey the appropriated water to the location of its beneficial use. (*Thayer v. California Development Co.* (1912) 164 Cal. 117, 137; *Tulare Dist. v. Lindsey-Strathmore Dist.* (1935) 3 Cal. 2d 572-74.) These are all part of the total appropriation necessary to accomplish the end beneficial use of water. To the extent an appropriator is able to reduce conveyance losses, the appropriator has the right to use such water as part of the original appropriation. (*Pomona*, at 623.)

Further, appropriative surface water right holders are allowed to store diverted surface water underground provided that a beneficial use of the stored water ultimately occurs. (Water Code, §§ 1242, 7075; *San Fernando*, at 260.) When storing surface water underground, such storage does not equate to an abandonment of the water. (*Ibid*.) Rather, the surface water appropriator is allowed to store the appropriated surface water underground, recapture the stored water, and put it to beneficial use at a later date.

However, there is no right to recapture percolating return flows that have been abandoned. (*Glendale*, at 76-78; *San Fernando*, at 258-60; *Stevens*, at 352-43; *Crane v. Stevninson* (1936) 5 Cal. 2d 387, 398.) Abandonment requires proof of intent to relinquish permanently the possession and enjoyment of a property right. (*Wood v. Etiwanda Co.* (1905) 147 Cal. 228, 233-34 ("*Etiwanda*"); *Lindblom v. Round Valley Water Co.* (1918) 178 Cal. 450, 455 ("*Lindblom")*.) Abandonment is a question of fact. (*Utt v. Frey* (1895) 106 Cal. 392, 398 ("*Frey*").) Intent to abandon must be affirmatively proven. (*Carden v. Carden* (1959) 167 Cal.App.2d 202, 209 ("*Carden*"); *Frey*, at 397-98.) Therefore, in order to extinguish the existing right to recapture percolating return flows from imported water, there must be affirmative evidence that the water was abandoned. (*San Fernando*, at 260; *Stevens*, at 350.) The court in *San Fernando* held that the City of Los Angeles proved it intended to recapture percolating return flows from imported water because it provided evidence that its construction of conveyance facilities took into account engineer estimates of how much water would be recharged into the basin. (*San Fernando*, at 259.) Further the court in *San Fernando* held that previous intent to recapture was not necessary; even if the City had previously abandoned return flows from imported water, it

could decide to stop such abandonment and exercise its right to control the percolating return flows at any time. (*San Fernando*, at 259-60.) Because the City asserted its intent to recapture the percolating return flows at the commencement of litigation, this evidences sufficient intent. (*Id*., at 260-61.)

As discussed above, courts have historically rewarded a party that invests in importation of water or the development of salvaged water with the right to recapture return flows of such "developed" water. One of the stated reasons courts have allowed the right to percolating return flows from water imported from out of the watershed is that the importer should be rewarded for bringing additional water into the basin. (*Stevens*, at 350; *San Fernando*, at 261 ["The purpose of giving the right to recapture returns from delivered imported water priority over overlying rights . . . is to credit the importer with the fruits of his expenditures and endeavors in bringing into the basin water that would not otherwise be there."].) Similarly, courts have rewarded entities and individuals responsible for developing return flows attributable to "salvaged water," holding that such waters are "rescued" and that the "rescuer has the prior right to it." (*Santa Maria*, at 304-305.)

(2) Rules For Recapturing Native Surface Water Return Flows After Application to Beneficial Use

The rules for recapturing the percolating return flows after application to beneficial use from native surface water (not imported or salvaged water) can be further distinguished between (a) surface water that, if left in the natural channel, would not have recharged the basin supply; and (b) surface water that, but for the diversion, would have recharged the basin supply.

(a) Native surface water that would not have recharged the basin supply

No court has directly decided the question of rights to return flows following application of native surface water that, if left in the natural channel, would not have recharged the basin. However, the salvaged water policy articulated in *Santa Maria* can be cited in support of the proposition that the surface water appropriator is entitled to recapture the percolated water to the extent the native basin supply is augmented. (*Santa Maria*, at 304-05.) In this situation, the diversion of surface water supplies that, but for the diversion, would have flowed out of the basin

and would not otherwise recharge the basin supply. Thus, much like the treatment of salvage waters above, the act of diverting the surface water and the percolating return flows from the diversion creates a new source of water that would not otherwise have been included in the native supply. Because this water would not have recharged the basin supply, the diversion and application of the water creates or "salvages" a new supply and thus the right to recapture these flows belongs to the appropriating party.

(b) Native surface water that, but for the diversion, would have recharged the basin supply

There also is no published California decision addressing the question of whether a surface water right holder has a right to recapture return flows occurring after being applied to beneficial use which is derived from native surface water that, but for the diversion, would have recharged the basin supply. This issue is undecided and there is disagreement concerning how such water should be treated. Some contend that the appropriator should be afforded a right to recapture such return flows. Others contend that such return flows should be treated similar to return flows from native groundwater, which become part of the common basin supply once they percolate into the basin.

(a)(i) Does the above analysis change if a surface water right holder diverts the water into a separate natural channel?

Surface Water Diverted Via Riparian Right

No. If the surface water right holder is a riparian, the rule remains that the riparian has no right to control water that it cannot put to reasonable and beneficial use on the riparian parcel. (*Felt*, at 250; *Vernon Irrigation*, at 256.)

Surface Water Diverted Via Appropriative Right

No. If an appropriative surface water right holder diverts surface water from one watercourse into a separate natural channel, the water becomes the possessory right of the water right holder upon its diversion from the first watercourse. (*Stevens*, at 350; *Hoffman*, at 49; *Hoyt*, at 46.) Appropriators are allowed to convey water in a natural channel after it has been properly diverted. (*Stevens*, at 352.) The use of the natural channel for conveyance does not change the

nature of the previously-appropriated water. This water is not available for appropriation by other water right holders. In *Stevens*, the court addressed the question of diversion of water into a secondary channel and stated:

"He (one who conducts water from the First River into the watershed and stream channel of the Second River) . . .has the ownership of the right to the flow of the First River to the intake of his conduit, and, it may be, the ownership of such specific water is actually passing through his works, but the water that has left the mill and gone down Second River is again neither his property nor anyone's. It is however, affected by the important consideration that its continued going is not of natural but is of artificial cause; it is not a natural body of water, nor a natural formation; its existing as a whole depends upon the action of this man. It is from this consideration, and not from ownership of any water as such, that a question first arises between him and lower claimants upon Second River. As a result, he is, for the most part, under no obligation to them to continue to maintain the flow. At any time or in any manner he pleases he may act upon the water at a point above where it leaves his control, although the result is to stop the flow into the Second River." (*Stevens*, at 349 [quoting Wiel, Mingling of Waters, 29 Harvard Law Review, 137.].)

For these reasons, the analysis above remains unchanged by the use of a natural channel for conveyance.

Imported Water

No. The importer of water is able to recapture percolating return flows, regardless of the diversion into a natural channel. (*Stevens*, at 351-52.)

(a)(ii) Does the above analysis change if a surface water right holder diverts the water into a lined or an unlined canal?

Surface Water Diverted Via Riparian Right

Seepage and percolation from a riparian diversion would remain part of the native common supply. (*Felt*, at 250; *Vernon Irrigation*, at 256.)

Surface Water Diverted Via Appropriative Right

The ability of a surface water right holder to line a canal or otherwise reduce losses to percolating groundwater depends on whether such improvements, loss reduction, or conservation will injure another legal user of water. (*Barnes v. Hussa* (2006) 136 Cal.App.4th 1358, 1369-70 ("*Barnes*"); *Pomona*, at 623-24.) In *Barnes*, the court found that a surface water right holder was able to change its place of use to add an additional parcel. The court denied the claim that the downstream users, which prior to the addition of the new place of use diverted water that could not be used on the original parcel, were injured. (*Barnes*, at 1369.) The court found that there was no evidence that the ability to put more water to use decreased return flows. (*Ibid*.) The court further found that a lower priority water user could not stop a senior water right holder from putting its entire water right to beneficial use by claiming injury; such a claim of injury is limited to a claim that an appropriator used a "greater amount of water than he was entitled to." (*Ibid*.)

In *Pomona*, the court allowed a water right holder to make improvements in the efficiency of conveyance facilities and use the water saved from the efficiency measures as its own. Specifically, in *Pomona*, nineteen percent of the surface flow was lost by seepage, percolation, and evaporation. An upstream water right holder put in a pipeline to reduce these losses and continued to deliver the same amount of water as existed in the natural watercourse prior to the improvements. (*Pomona*, at 621-22.) The court held that this action did not injure the downstream water user, who continued to receive the same amount of water as before the improvements were made. The *Pomona* court did not specifically address whether the elimination of seepage would injure groundwater right holders. Plaintiffs suggested that the elimination of seepage may injure the "surface stream to the extent that the waters filled the soil and gravel beneath the surface stream." The court recognized this may be true, but it did not injure Plaintiffs and therefore upheld the salvage of water losses. (*Pomona*, at 630.)

In *Dannenbrink v. Burger* (1913) 23 Cal.App.587 ("*Dannenbrink*"), the court looked specifically at the question of whether a surface water right holder is able to make improvements to its system and when such improvements injure other water users. This court made the distinction between whether the seepage or return flows support a natural watercourse or an artificial

conveyance systems. (*Id.*, at 595-97.) The court poses the question of "whether as a prior appropriator he may so change or reconstruct his ditch, flumes, and dam as to prevent waters seeping through his ditch from discharging into the original stream from which they were thus taken" if such flows supported a lawful right to divert or extract water. The court answers this question in the negative. However, the court goes on to distinguish repairs and efficiencies to systems in which the seepage or return flows form an artificial watercourse or return to a "place other than the stream from which it is diverted." (*Id.*, at 597.) In this case, the appropriator may reduce seepage without concern of injury, because there is no duty to maintain an artificial stream. (*Ibid*.)

From these cases, the question of whether a canal can be lined to reduce seepage is fact specific. The answer will depend on the facts and whether the facts can establish that the lining of the canal will injure a valid water user, whether the water user had a valid right and expectation of continuing supply, and whether the reduced seepage is returning to the same water source.

Imported Water

An importer of water would be allowed to line a canal that conveyed only imported water. There would be no injury, because both riparian and appropriative groundwater extractors are prohibited from developing an interest in the extraction of imported water. (*Glendale*, at 73; *Stevens*, at 349.)

(a)(iii) puts it to beneficial use on a farm or M&I use and a portion ("return flow") percolates into the basin after use,

Surface Water Diverted Via Riparian Right

A riparian water right holder does not have the right to control or claim return flows after water has been applied to the riparian parcel for beneficial use. (*Felt*, at 250; *Vernon Irrigation*, at 256.)

Surface Water Diverted Via Appropriative Right

To the extent the appropriation of native surface water allows the appropriator to recapture percolating return flows from the application of native surface water, there is no reason this right

would not extend to the right to recapture return flows from farm and municipal and industrial uses.

Imported Water

An importer of foreign water that uses the foreign water for agriculture or municipal and industrial uses has the right to recapture percolating return flows from that imported water. In the cases of *Glendale* and *San Fernando*, the courts held that an importer of foreign water has the right to claim title to water that had percolated into the ground after it had been applied to agriculture and municipal and industrial uses. This decision turned on the fact that the importers were able to prove they intended to recapture the water and did not abandon the water. (*Glendale*, at 78; *San Fernando*, at 259.)

The *Glendale* and *San Fernando* cases were decided in 1943 and 1975 respectively. The decisions involve the same groundwater basin and several overlapping issues. One of those issues was the right of recapturing return flows of imported water. In *Glendale*, the court held that the City of Los Angeles had a prior right to imported water that had returned to the groundwater basin after the water was sold by the City to farmers, the farmers applied water to fields, and the water seeped into the groundwater basin. (*Glendale*, at 76.) In *San Fernando*, defendants sought to distinguish this holding by stating that much of the beneficial uses had changed. Now, instead of agricultural uses, much of the imported water was being delivered municipal and industrial uses. The *San Fernando* court held that change of use did not change the right of the importing party to have a prior right to return flows. The court held that "just as a change in appropriators place or character of use of the appropriated water does not affect his right to take it, an alteration in the type of use from which imported water is returned to the ground does not impair the importer's claim to it as return water." (*San Fernando*, at 259.) The court further found that the return water from municipal and industrial uses could be effectively estimated, similar to agriculture application.

(a)(iv) directly recharged for basin benefits,

The recharge of groundwater, without later extracting the water and putting it to beneficial use, is not a beneficial use of water. (https://www.waterboards.ca.gov/waterrights/water_issues/programs/applications/groundwater_recharge/.) Water can be stored underground, recaptured, and put to a beneficial use. (Water Code, § 1242, 7075; *San Fernando*, at 260.) However, without recapturing the water and putting it to a beneficial use, recharging groundwater in a basin for the purpose of recharge and without a subsequent application to beneficial use is likely to be considered abandoned water and part of the native common supply. (*Ibid*.; *Santa Maria*, at 302.)

(a)(v) banked and credited to a recharger's account, or

Surface Water Diverted Via Riparian Right

A riparian water right holder does not have the right to store water and therefore cannot bank water in underground storage. (*Colorado Power Co. v. Pacific Gas & Electric Co.* (1933) 218 Cal. 559, 564-66; *Seneca Consolidated Gold Mines Co. v. Great Western Power Co.* (1930) 209 Cal. 206, 215-19.)

Surface Water Diverted Via Appropriative Right

The Water Code authorizes the storage of water underground. Section 1242 of the Water Code states:

> The storing of water underground, including the diversion of streams and the flowing of water on lands necessary to the accomplishment of such storage, constitutes a beneficial use of water if the water so stored is thereafter applied to the beneficial purposes for which the appropriation for storage was made.

In addition, Water Code section 7075 allows:

> Water which has been appropriated may be turned into the channel of another stream, mingled with its water, and then reclaimed; but in reclaiming it the water already appropriated by another shall not be diminished.

Several cases have held that section 7075 includes the ability to recharge water into an underground aquifer for the purposes of later extracting it and putting it to beneficial use. (*San Fernando* (1975) 14 Cal. 3d 199.)

Imported Water

The percolating return flows from imported banked water would remain the property of the banking party to the extent that party intends on recapturing the water and is able to quantify the amount of water that escapes to the Basin. (*San Fernando*, at 260; *Stevens*, at 350.) The right to percolating return flows from native surface water is unclear (see above analysis), but it could be argued to belong to the banking party. To the extent there is no evidence that the banking party intended to maintain control over the seepage, the water would be abandoned and become part available for appropriation as part of the native common supply.

Characterization of Banked Water

Surface water banked underground is surface after held in storage and is not subject to the native groundwater priority system. (Slater, California Water Law and Policy, Ch. 7: Foreign, Developed, and Salvaged Water, p 7.01 [citing Gould & Grant, Cases and material on Water Law, Sixth Edition, at 89 "A right to store water is subject to the priority system, but the right to stored water is independent of the priority system."].) The surface water appropriator maintains the right to utilize the stored water above all other users just as it would if the water was stored above ground and on a similar basis and for similar reasons as an importer, maintains its right to imported water after it has commingled with native supplies. (*Santa Maria*, at 304; *Glendale*, at 78; *San Fernando*, at 261.) The preservation of surface water maintaining its status of surface water when stored underground, rather than being converted to groundwater, is particularly important with regard to the Sustainable Groundwater Management Act ("SGMA") regulations, as SGMA does not regulate surface water, but does impact the management and use of groundwater.

Banked surface water is surface water that is banked underground; the storage underground does not convert the stored surface water to groundwater. Section 7075 of the Water Code, which allows for the banking of surface water underground specifically states "Water which has been

appropriated may be turned into the channel of another stream, mingled with its water, and then reclaimed." This language suggests that co-mingling the water with other types of water, such as unappropriated surface waters or groundwater, does not change the character of the right. Instead, the language that the water is "reclaimed" suggests that the water even if mixed with water that has different characteristics will retain its own character upon reclaiming. The few cases that have interpreted section 7075 and applied it to allow the storage of surface water underground also suggest that such storage does not turn the stored surface water into groundwater. For example, *Santa Maria* explains that section 7075 allows an appropriator "to retain an interest in appropriated water that the appropriator brings from one stream or basin and adds to another." An interest in surface water is different and distinct from an interest in groundwater. As reflected by the interpretation in *Santa Maria*, the ability to store water where the water is considered salvaged water that would otherwise be lost to the basin, allows the appropriator to retain the interest it has in the water that is being stored. (*Santa Maria*, at 306.) This suggests that storing surface water in an underground aquifer does not convert the water to groundwater, but instead, allows the surface water right holder to retain its interest in the water as surface water.

(a)(vi) banked along with it's part of agreed losses per the MOU and/or a CEQA document?

Contracts governing water banks typically include provisions for the "leave behind" of an agreed-upon increment of banked water. For example, the banking entity may agree that for every 100 acre-feet of water banked 10 acre-feet will be left behind for the benefit of the banking project operator and landowners in the vicinity of the banking project. Absent proof of intent on the part of the banking project operator to abandon the so-called "leave behind" water, the banking project operator and associated landowners will retain the right to recapture the "leave behind" water pursuant to the case law discussed above that recognizes the right of recapture for importers and salvage project operators.

(a)(vii) Does anyone who holds a pre-1914, SWRCB, or other right appropriated water right in a creek, stream or river have any valid claim to water that has percolated from the creek, stream or river to the basin, but was not actually "diverted" from the natural channel of the creek, stream, or river?

Generally, no. To the extent that natural flow of native water remains in a natural watercourse and is not previously stored or diverted from the natural watercourse by any valid surface water right holder, this water is natural flow. The seepage and percolation from which is common supply. However, water right holders have a usufructuary right to divert the water and put it to beneficial use. If the water is diverted and impounded for release in a natural channel when the water would not naturally flow in the channel, such water is rescued water and the rescuer has the prior right to it. (Water Code, § 1242; *Glendale*, at 76; *San Fernando*, at 260; *Santa Maria*, at 304-05.)

(a) Groundwater: (i) Subterranean flows in and out of the county from and to the north? (ii) Flows into the Kern Basin from the White Wolf Basin?

Inflows of groundwater from other basins are part of the native common supply. (*Santa Maria*, at 280 [defining native groundwater as "rainfall, natural infiltration from lakes and streams and other natural inflows" into the basin].)

(i) Do any of the above vary based on (i) type of water right the diverter (or non-diverting water right owner) holds,

Yes, as noted above, the answers vary depending on the specified right.

(ii) Type of use (domestic, M&I, irrigation),

No, as noted above, the type of beneficial use does not affect the right to recapture percolating return flows. The type of beneficial use may affect the quantity of water that percolates back into the basin, but it would not impact the right to recapture.

(iii) The native water would or would not have percolated into the Kern Basin without the foregoing actions (under current conditions, or at some prior point in time);

Yes. Courts treat native water that would not have percolated into the basin but for intervening actions as salvaged water or newly developed water. For example, in *Santa Maria*, the court

held that native surface water flows that were stored in a reservoir and released at a time when the flows would not naturally have flowed in a surface watercourse were salvaged waters. (*Santa Maria*, at 304-05.) The court found that the efforts of storing and releasing surface water at a different time made the waters "foreign in time" and was sufficient investment to allow the right to control the percolating return flows therefrom:

> "The priority of the overlying right does not extend to water made available by the efforts of another. Salvaged water may be native to the extent it would naturally flow within the stream to which it is released but it is "foreign in time." It would not find its way into the Basin absent a reclamation project to divert it, store it, and release it on a schedule to augment natural recharge. It is rescued water; the rescuer has the prior right to it." (*Santa Maria*, at 304-05.)

(iv) The percolation that took place without a diversion from a creek, stream or river occurred with or without some objectively expressed intent to "recharge" the undiverted water for future use?

Intent Regarding Recapture

Abandonment depends on proof of an intent to relinquish permanently the possession and enjoyment of a property right. (*Etiwanda*, at 233-34; *Lindblom*, at 455.) Abandonment is a question of fact. (*Frey*, at 398.) Intent to abandon must be affirmatively proven. (*Carden*, at 209; *Frey*, at 397-98.) Water that percolates into the groundwater without intent to recapture the water and put it to beneficial use is abandoned. (*Stevens*, at 350.) This abandoned water becomes part of the common native supply that is available for appropriation. (*Ibid*.)

Intent to recapture is required to preserve the existing ability to recapture percolating return flows. (*San Fernando*, at 259; *Stevens*, at 350.) However, intent is an element that is required after original control of the water has been established. (*Ibid*.) Intent alone, without first diverting or controlling the water through storage, is not sufficient to maintain an interest in the ability to recapture percolating return flows. Therefore, intent to recapture is premised on the original "capture." Percolation of flows from a natural creek that have not been diverted or stored upstream belong to the native common supply, regardless of intent otherwise. (*Simpson*, at 252; *San Fernando*, at 260; *Stevens*, at 350.) The fact that water which is 'rescued' via upstream storage percolates through the channel of a stream does not abrogate the developer's entitlement to enjoy the benefit of that augmented yield. (*San Fernando*, at 260 ["The right to

withdraw amounts of appropriated water contributed to the channel of a stream is provided by Water Code section 7075 (formerly Civ.Code section 1413) which states: 'Water which has been appropriated may be turned into the channel of another stream, mingled with its water, and then reclaimed . . . The rule codified by this statute applies as well to the addition and withdrawal of water in an underground basin."]).

2. Respecting the water that recharges the basin, which is not credited to a specific entity, is it allocated to the basin as a whole and divided among all basin overlying landowners, or is it allocated to subsets or specific areas of the basin? What precedents are there for allocating yield to subsets of the basin based on which sources of water flow where absent clear hydrologic barriers?

There is precedent for allocating groundwater rights based on underground sources of water such as an aquifer, basin, strata, or other term for an underground body of water. The cases use different language to define specific underground water bodies, but the general precedent is consistent; courts allocate water rights based on underground waterbodies and the facts of whether such bodies are connected or not are the main determinative factor that affects the right to extract water therefrom.

For example, in *Burr v. Maclay Rancho Water Co.* (1908) 154 Cal.428 ("*Burr*"), the court found that groundwater rights were based on the location and use of water with regard to the "common water-bearing strata." Landowners whose land overlaid the "strata" had overlying water rights. (*Burr*, at 434.) Whereas "an appropriator of water from a common water-bearing strata [that] has begun to take the water therefrom to distant lands not situated over the strata" is an appropriator and junior to the overlying water right holder. (*Id.*, at 435-36.)

In *Barton v. Riverside Water Co.* (1909) 155 Cal. 509 ("*Barton*"), the court found that rights were based on location of a "basin" and the connectivity of water within such a basin. The *Barton* court agreed with the plaintiff's characterization of the basin, which it described as: "The artesian basin and the land immediately surrounding it is composed of a mass of sand, gravel, and other porous material, and that the water therein forms a common supply for the plaintiffs, so connected because of the character of the material in which it lies and its free

movement therein, that a diversion of water from one part of the basin is, practically, a diversion from the whole and decreases the common supply of all of them, though not affecting them all to the same extent." (*Barton*, at 513.)

In *Hudson v. Daily* (1909) 156 Cal. 617 ("*Hudson*"), the court defined rights by the "common supply" similar to the cases above, based on the concept that hydrologically inter-connected water bodies should be treated as the same waterbody for water allocation purposes. The *Hudson* court explained that the rule of overlying rights "is that where two or more persons own different tracts of land, underlaid by porous material extending to and communicating with them all, which is saturated with water moving with more or less freedom therein, each has a common and correlative right to use this water upon his land." (*Hudson*, at 625.)

In *Miller v. Bay Cities Water Co.* (1910) 157 Cal. 256 ("*Miller*"), the *Miller* court defined rights amongst and between water right holders "overlying a common substratum of percolating water." (*Miller*, at 278.)

In *San Bernardino*, the court defined rights based on shared supply, stating that overlying water right holders share in the "same general underground supply of water." (*San Bernardino*, at 15.)

In *Eckel v. Springfield Tunnel & Development Co.* (1927) 87 Cal.App.617 ("*Eckel*") the court tied overlying groundwater rights to the holding of land "over a common basin, saturated strata, or underground reservoir."

The above cases stand for the proposition that California courts will allocate water rights based on underground water bodies that are hydrologically inter-connected. SGMA's requirement to manage groundwater on a basin by basin basis may be at odds with the case law, at least in situations where groundwater within a basin is not entirely inter-connected due to the presence of faults or other geologic features. A further complicating factor arises from the fact that SGMA, in many instances, defines "basin" to be the "subbasin" established by the Department of Water Resources in areas in which a subbasin has been defined; this has the effect, for example, of making the "Kern Subbasin" the "basin" for purposes of SGMA implementation, even though it

is clear that the Kern Subbasin has at least some form of hydrologic connection to neighboring subbasins, such as the Tule Subbasin to the north. It is unclear what impact these facts will have on the analysis of water rights based on case law that merely references "basins," and does not distinguish a basin from a subbasin.

In light of SGMA's foundational mandate that the groundwater sustainability plan avoid undesirable results, the focus of management decisions should be whether separate or combined management is necessary to achieve this central purpose. It may be appropriate to establish separate management areas within the basin, together with discretely identified undesirable results to be avoided and distinct management actions, where connectivity is entirely lacking or so substantially lacking that separate management is better suited to facilitate effective management. On the other hand, separate management may not be justified where groundwater production and management actions in an area are likely to affect other areas because of connectivity between them unless there are other compelling reasons to manage the areas separately to avoid undesirable results and achieve sustainable groundwater management throughout the basin.

a. If some water won't ever make it to a part of the basin (e.g. if Sierra runoff won't make it to the northwest corner of the county), is that part of the basin deemed to not benefit from that water?

Connectivity

As noted from the cases discussed above regarding common supply, groundwater rights, like surface water rights, are defined in relation to a specific water body. For groundwater, a single water body is usually defined by connectivity. Connectivity is one of the key factual elements for determining whether underground water should be treated as a single water body for water right purposes.

How are water rights affected if connectivity is lacking? Facts that suggest that two bodies of underground water are not connected may suggest that there are two distinct aquifers or basins which would be treated separately for water right purposes. For example, in *San Fernando,* the court determined that the lack of hydrologic connectivity resulted in treating the unconnected

"subareas" as separate basins for water right purposes. The *San Fernando* court found that within the Los Angeles River watershed the "Sylmar, Verdugo and San Fernando subareas each contain separate underground reservoirs or basins with no significant amount of underground flow between them." (*San Fernando*, at 247.) The court later evaluated the extent of connectivity between the subareas. The court found approximately 560 acre-feet per year moved from the Sylmar to the San Fernando subarea and determined this connectivity was not sufficient to treat the two subareas as one unit. (*Id*., at 249.) In addition, the court found that almost no water moved between the Verdugo and San Fernando subareas. The court found the lack of underflow between the areas was largely due to the extraction of water in the Verdugo area. It was on the basis of lack of connectivity that the court found the pueblo right asserted by the City of Los Angeles to all water in the San Fernando Valley did not include the groundwater contained in the Sylmar and Verdugo subareas. (*Id*., at 250.)

The *San Fernando* court further considered contentions from water right holders in the San Fernando subarea claiming their rights should be excluded from the pueblo rights due to physical separation of water sources from the Sylmar and Verdugo subareas. These landowners alleged that their wells were "separated from the Los Angeles River by natural fault barriers" and other physical limitations. The court referred to trial court findings, which did not note that the fault barriers were sufficiently significant to result in separate treatment. The court rejected the landowner assertions, however, stating the trial court found that each "basin," including the San Fernando basin, contains a "common source of water supply" and that extractions in that subarea will affect other water users within the San Fernando subarea. (*San Fernando*, at 251.)

The trial court in the Antelope Valley Adjudication was clear on the issue of interconnectivity; the entire adjudicated area was determined to be inter-connected and within the same aquifer. If an area was not connected, it was excluded from the adjudication. (*Antelope Valley Groundwater Cases Included Consol. Actions v. Diamond Farming Co.* 2015 Cal.Super. LEXIS 12, at 12.) Similarly, the appellate court in *Santa Maria*, found that the basin was sufficiently interconnected to treat it as a single "bucket" of water, but accounted for the natural barriers and various formations by creating three separate hydrological subareas. (*Santa Maria*, at 280.)

Therefore, precedent exists for treating areas with little to no connectivity as different aquifers or basins for purposes of administering water rights and allocating water supplies. However, there are two issues that may confuse this rule: (1) facts that reflect indirect or loose connectivity; and (2) SGMA's requirement to manage on a basin (or "subbasin") level.

(1) Sufficiency of Connectivity – From the *San Fernando* case, the significance of connectivity is a factual question based on the rate and quantity of flow between the two subareas, whether pumping in either area affects users in the other area, existence of geologic barriers and other factors. Of course, in order to share in the common supply, the lands must have access to and be able to pump the supply, that is, overlying owners have the right to pump water from beneath their lands for use on their lands. (*Mojave*, at 1253-1254; *Tehachapi*, at 1001-1002 [an overlying right is "the right to take water from the ground underneath the land for use on the land"].)

(2) SGMA Defined Basins – It is not clear from SGMA whether Bulletin 118 basin boundaries are the relevant unit for purposes of administering water rights and allocating water supplies. Since SGMA does not "alter" California law of groundwater rights (Water Code, § 10720.5(a)), arguably water rights should be administered and water supplies allocated under SGMA by reference to basin, rather than subbasin, boundaries.

(3) It is clear that SGMA defines the lateral constructs of basins for the purpose of management. (23 CCR, §354.14(b)(2).) This definition, combined with the push to manage collectively as a basin unit, may support the idea that the Bulletin 118 basin boundaries are the defined areas in which groundwater supplies in each basin are assigned. However, SGMA also allows for multiple groundwater sustainability plans (GSP) in a single basin and the separation of management areas within a single GSP. (23 CCR, § 354.20(a).) Therefore, if there are factors that suggest there are more than one hydrologic unit with different physical conditions in a SGMA-defined basin or subbasin, the allocation of groundwater may be based on the separate units, but the management of each of the units will have to be integrated to comply with SGMA. It

is also possible that the nature and extent of "undesirable results" (the standard in SGMA for determining the "sustainable yield" of a basin and whether a basin is meeting the "sustainability goal") within different parts of the basin may lead to different management areas with different minimum thresholds and measurable objectives under a GSP. (Draft Sustainable Managements criteria BMP, page 6). Finally, it is possible that parties within a larger management unit (subbasin or a GSA) within a subbasin may have other reasons for managing different areas within those units in differing manners that are not related to the connected or isolated nature of the aquifer underlying those areas, including the differing availability of surface water and the differing nature or intensity of water use. Therefore, the fact that SGMA has allowed for this level of management division does not, by itself, indicate a determination by the California Legislature that groundwater basins should be separated into distinct hydrologic units for water right purposes.

Overlying Rights

The common law rule of overlying groundwater rights was based on the concept that the landowner owned the land and all materials underneath the land, including the waters and soils. Specifically, that the title to land "extends to the center of the earth and includes everything within the cone having the superficial boundaries of the land for the base and the center of the earth for its vertex." (*San Bernardino*, at 14.) This concept that the landowner owned all water underlying the land, provided the overlying groundwater right holder with unlimited and unrestricted use of such water. The prior rule as explained by *Walkinshaw*, was that "water percolating in the ground, or held there in saturation, belongs to the landowner as completely as do the rocks, ground, and other material of which the land is composed and therefore he may remove it and sell it, or do what he pleases with it." (*Walkinshaw*, at 664-65.)

However, as courts have more recently applied the rule of reasonable use to overlying water right holders, the definition of the overlying right has changed. The overlying right is no longer defined as an absolute ownership of the physical water underlying the parcel. Rather, the rule of correlative rights to a common supply has emerged. More recent cases focus increasingly on the correlative nature of the overlying right. For example, in *Niles Sand & Gravel Co. v. Alameda*

County Water District (1974) 37 Cal.App.3d 924 ("*Niles*"), the court held the common law doctrine of a landowner owning the right to the land surface and everything permanently situated beneath has given way to the correlative rules, which provide an overlying water right holder with the right to use a reasonable amount of the common supply "in correlation with those" also holding overlying rights. (*Niles*, at 934.)

In *Central Basin*, the court noted that after 1928 and the adoption of the reasonable use requirement, "there is no private ownership of groundwater." (*Central Basin*, at 905.) The court continued by explaining that overlying groundwater right holders have the right to take and use water, but they do not own the water outright and cannot waste it. (*Ibid*.)

Applying this rule to the question, the cases suggest that, so long as the overlying water right holder is extracting water from the same basin or aquifer, the right is to the common supply. Therefore, for overlying water right holders who overlie a common supply, it does not matter that a portion of the common supply does not physically reach the overlying parcel; the right is to a common supply, not a specific molecule of water. Of course, this is only true until the lack of connectivity results in a determination that the water body is separate, at which point the overlying right would only extend to the common (connected) supply for which is overlies.

Appropriative

An appropriative groundwater right is based on the extraction of water and putting that water to reasonable and beneficial use. (*Pasadena*, at 925.) The appropriative groundwater right is not based on land ownership and is not tied to land. (*Id*., at 925-26.) It has long been held that an appropriator may change its point of diversion without affecting its right, so long as such a change does not injure another legal user of water. (*San Bernardino*, at 28-29.) Therefore, regardless of whether a certain quantity of water reaches the point at which the appropriator extracts water, the appropriative water right holder may change its point of diversion to divert water from a more plentiful part of the basin, so long as it does not cause injury.

Injury to another legal water user is not strictly defined, but is determined on a case-by-case basis. In *Barton*, the court found that a change in the point of diversion to extract groundwater

was allowed. The court also found there was no injury to plaintiffs since the defendants in the matter did not take any more water than they had previously taken through a different method. (*Barton*, at 517 ["The new wells take from the same supply as the old ones the total amount taken has not been and is not to be increased."].)

In *Pomona*, the court decided that a downstream party was not injured when an upstream diverter dammed the watercourse and provided water delivery to the downstream party by pipeline in order to conserve evapotranspiration and salvage water. In considering injury, the *Pomona* court stated that the downstream party could not complain, as they were receiving the same quantity and quality of water they had received prior to the upstream facilities were constructed. The *Pomona* court held the downstream party received "the natural flow to which they are entitled delivered, unimpaired in quantity and quality, through a pipe-line, they are not injured by the fact that other water, which otherwise would go to waste, as merely supporting the surface flow, was rescued." (*Pomona*, at 630.)

Injury was also evaluated in *Peabody*, where the court determined that a groundwater right holder seeking to stop the extractions of a junior groundwater right holder is not injured if there is "no material diminution of the supply by reason of the exercise of the subsequent right." However, the senior groundwater right holder is entitled to a "judgment declaring his preferential and paramount right and enjoining the assertion of an adverse use which might otherwise ripen into a prescriptive right." (*Peabody*, at 376-77.) *Peabody* goes on to also evaluate whether an injury arises from extractions that require deepening or movement of facilities. The *Peabody* court, citing *Waterford Irr. Dist. v. Turlock Irr. Dist.* (1920) 50 Cal.App. 213, noted that the "mere inconvenience, or even the matter of extra expense, within limits which are not unreasonable" does not result in injury sufficient to "prevent a subsequent appropriator from utilizing his right." (*Peabody*, at 376-77.)

Injury related to groundwater rights, overdraft, and prescriptive rights were considered in *Pasadena*. The *Pasadena* court held that the proper time for a valid groundwater right holder to act to avoid prescription is when the basin is in overdraft. The court stated: "Each taking of water in excess of safe yield, whether by subsequent appropriators or increased use by prior

appropriators, was wrongful and was an injury to the then existing owners of water rights, because the overdraft, from its very beginning, operated progressively to reduce the total available supply." (*Pasadena*, at 929.) Of course, in practice, it is not always obvious when the overdraft of a basin begins. Overdraft is likely to begin long before the existing groundwater right holder incurs impacts from such overdraft, such as shortage of supply or needing to deepen wells. The *Pasadena* court recognized this dilemma, noting that during the time of injury "no owner was immediately prevented from taking the water he needed." (*Ibid.*) However, the court recognized that upon overdraft the existing-groundwater right holders are injured by the continued extraction of non-surplus water and may rightfully seek an injunction thereof.

Applying these rules to the question, as long as there is no injury, a groundwater appropriator may move its point of diversion to any point that overlies the common supply from which it is extracting water. The fact that a groundwater appropriative right is defined by the common supply and the appropriator has the right to change its point of diversion, means that whether a specific quantity of water is able to travel to the point of extraction for the appropriator does not affect the appropriative right. To the extent that the lack of connectivity results in the conclusion that there are multiple underground water courses, the appropriator would only have a right to the source from which it previously diverted.

b. To what extent do groundwater contours, hydrogeology and locality of percolated surface water affect groundwater allocations?

Water Rights

Courts have historically allocated rights in the same aquifer or basin as a single unit; i.e. appropriators are determined to be junior or senior depending on priority of extraction from the aquifer. Courts have declined to allocate groundwater rights within the same basin differently based on groundwater contours or location of percolating waters. For example, the court in *San Fernando* considered the allegations that water right holders should be considered differently due to the separation of natural fault barriers. The court determined that the natural fault barriers did not amount to proof that the water did not come from a "common source" and declined to provide allegedly separate portions of the basin as legally different than any other part of the basin. *(San Fernando*, at 251.)

SGMA

Although SGMA requires management at a subbasin level, SGMA and the Department of Water Resources (DWR) recognizes the contours, hydrogeology and location of each subbasin will have to be taken into consideration in the management of groundwater and compliance with SGMA. Specifically, DWR states the water budget requires each GSP define the groundwater system, which DWR defines as "one or more principal aquifers and represents the physical basin area used to quantify the annual change in volume of groundwater stored." (Water Budget BMP, at 15.) In addition, SGMA allows for each GSP to divide its territory into "management areas." (23 CCR, § 354.20(a).)

In addition, SGMA requires the regional geologic and structural setting of the basin to be included in describing the physical components of the basin. (23 CCR, § 354.14(b).) DWR has interpreted this requirement to mean the GSP should include the distribution, extent, and characteristics of geologic materials present in the basin, along with the location and nature of significant structural features such as faults and bedrock outcrops that can influence groundwater behavior in the basin. (HCM BMP, at 7.)

c. What geologic time period is relevant and how long can water take to move to another area for overlying lands to benefit from water recharging the basin?

Several cases discuss the process of recharging groundwater, however, few evaluate the time period of recharge. Most of the cases make non-technical references to the timing and subscribe little to no legal meaning to the timing of percolation, but instead, assume once water is recharged it is stored and available for extraction. For example, in the *Santa Maria*, the court explained that surface water would be stored underground and "later withdrawn and placed to beneficial use." (*Santa Maria*, at 307.) No further analysis of "later" was provided by the court. However, the court noted that the right to recapture return flows does not require the control of the specific water molecules that are recharged. (*Id.*, at 302.) Not having to control the water in order to receive credit and the legal ability to recapture recharged water may alleviate the need to determine the amount of time water takes to recharge. In *Glendale*, the court evaluated whether

groundwater is included in the pueblo right. In this evaluation, the court held that the water percolating into the ground from dams holding pueblo waters should be characterized as pueblo water because the waters "eventually" reached the subterranean basin. Therefore, *Glendale* seems to suggest that if recharge reaches the basin eventually, regardless of how long it takes, the percolating water is credited to recharging the basin.

In *Niles*, the court explained the recharge program consisted of collecting "water on the land surface and stores it in sufficient quantity so that the pressure of its weight and density forces it to percolate through the underlying soil and into the basin proper." (*Niles*, at 928-29.) The court noted that this process "inevitably" results in elevating and restoring groundwater levels. (*Ibid*.) Therefore, from the cases that discuss the timing of recharge, there is no specific timing requirement in which recharge must reach percolating waters before it can be extracted.

In short, courts have effectively treated recharge as inevitable and immediate. However, in these cases, the court did not need to delve further into the issue of recharge lag, and so it would be imprudent to assume that if the issue was directly challenged that the dicta from these cases would be controlling. Since recharge lag will likely vary across different geological substrates, any determination as to when overlying lands are deemed to benefit from recharge will likely become a fact-determined issue that requires scientific evidence and expert opinion.

d. Do we look at the basin condition as it exists now or at some prior point in time?

Determination of Water Rights

There are cases that indirectly address the issue of whether groundwater rights are based on historic or existing conditions. In *Santa Margarita*, the court determined whether a parcel of land was riparian. It was faced with historical data from "past ages" that suggested the land was riparian, but that formation changes through the years had now caused the lands to drain to the ocean and were no longer part of the river watershed. The *Santa Margarita* court concluded that the existing rights "are not determined by past geologic formations but by the present natural topography." (*Santa Margarita*, at 549.)

Later in this same case, the court considered whether competing uses of water were reasonable. In so doing, the court stated that the evaluation of what is a reasonable use of groundwater must be based on existing conditions and the water users were not "entitled" to make claims based on how the system "existed in a state of nature." (*Rancho Santa Margarita v. Vail* (1938)11 Cal.2d 501, 561 ("*Santa Margarita*").)

In order to determine whether subareas of the Los Angeles River watershed constituted a single basin or several separate basins, the *San Fernando* court evaluated somewhat historical data. Specifically, the court looked at whether there was underflow between the subareas from the 1920s to the 1960s. In reviewing this data, the court found the data reflected lacking connectivity and treated the separate areas as different basins. (*San Fernando*, at 249-50.)

The *Niles* court also considered historic data in determining the impacts of pumping water out of gravel pits. The court disclosed the existing groundwater surface elevation, the elevation in 1969 and the estimated elevation in a "state of nature" which the court defined as "that condition which would have existed without diversion from the watershed and/or extractions from the basin." (*Niles*, at 929 [In *Niles*, a gravel company alleged inverse condemnation stemming from the alleged taking of property when groundwater recharge resulted in flooding of gravel pits.].) These disclosures were for context and information, the court did not require management or allocate rights based on a specific historic period.

The court in *Antioch v. Williams Irrigation Dist.* (1922) 188 Cal. 451 ("*Antioch*") considered whether to limit water rights based on historic conditions. The case considered surface water, not groundwater, and specifically evaluated whether the diversions from Sacramento and San Joaquin Rivers which causes salt water intrusion near the City of Antioch could be enjoined based on a claim that the City had senior water rights which it could not exercise due to the impaired water quality based on junior diversions. (*Antioch*, at 455.) The City entered much evidence regarding the historical water quality conditions at its point of diversion. The court considered this historical information, but failed to require these historical conditions to be maintained. The court recognized that an appropriator has the right to enjoin the pollution of the stream above him so that the water may flow down to his place of diversion in a condition that is

suitable for the uses that existed at the time he acquired the right to take the water. (*Antioch*, at 459.) However, the court distinguished the addition of pollution from the intrusion of salinity from proper legal use of water. The court declined to stop all upstream diversion in order to preserve the natural conditions for the City. Specifically, the court found that preserving the state of nature for the City would stop most upstream diversions and amount to a waste and unreasonable use of water. (*Id*., at 464-66.)

In *Santa Margarita*, the court declined to be swayed by the presentation of geologic testimony alleging that a parcel was riparian because it was included in the Delta lands during a past geologic age. (*Santa Margarita*, at 547-48.) The court concluded that the determination of water rights today is not determined by "past geologic formations but by the present natural topography." (*Id*., at 549.)

In sum, most courts focus on the current conditions in the basin. It does not appear any court has required or endorsed a decision that would require a return to historic conditions. However, courts consider evidence of prior conditions in providing context and baseline for management actions. Specifically, a court might be persuaded to treat two currently separate basins as being a single hydrologically-connected basin if evidence shows prior hydrologic connection severed only by inconsistent extraction rates in different areas.

SGMA

SGMA requires each GSP to quantify the current, historical and projected water budget for the basin. (23 CCR, § 354.18(c).) For the historical water budget assessment, DWR opines the GSP must use "at least" the most recent ten years of data to estimate the components required to develop a water budget. (Water Budget BMP, at 32.)

SGMA requires the GSP assess overdraft by calculating the change in groundwater storage over a period of years which approximate average conditions. (Water Budget BMP, at 23.) If each subbasin does not already have existing data, DWR directs the subbasin to use DWR's annual precipitation over the past 30 years. (*Ibid*.)

e. Do overlying lands adjacent to or near the mountains/streams/underground inflows that are the source of the water have a priority claim to those inflows?

Overlying

In early cases, the overlying water right is defined by the water that exists under the land owned by the overlying water right holder. (*San Bernardino*, at 14.) Like a riparian, the overlying water right holder was limited to water that came into contact with his land. (*Ibid*.) These rules would suggest that the location of the overlying parcel would determine the right. However, recent cases have established the rule of correlative rights amongst overlying groundwater users. (*Katz*, at 663.) This means that each overlying water right holder shares equally in the common share. There is no priority amongst and between overlying water right holders. (*Pasadena*, at 925.) The lack of priority amongst and between overlying water right users suggests that priority among overlying landowners would not change based on location of extraction. Further, the foundation of overlying rights sharing a common supply means that regardless of the location of the overlying parcel, there is no priority structure among overlying groundwater rights.

Appropriative

Appropriative water right holders are subject to priority and the rule of first in time, first in right. (Civ. Code, § 1414; *San Bernardino*, at 28 ["As between appropriators, the one first in time is the first in right."].) The location of the parcel does not affect priority amongst and between appropriators.

Adjudications

The location of areas within a basin that are closer to the sources for underground water supply have been considered in adjudications. For example, in *Mojave*, the court reviewed a "physical solution" settlement in which the groundwater basin was separated into five different hydrologic subareas. (*Mojave*, at 1234.) The physical solution agreed to by many parties in the *Mojave* matter allocated a "base annual production" amount of water to each water right holder in a specific subarea. In addition, the physical solution required "each subarea within the basin to provide a specific quantity of water to the adjoining downstream subarea." (*Mojave*, at 1235.) Therefore, this physical solution recognized there were specific areas within the basin that were

closer to the sources of groundwater recharge and required a portion of the recharge to pass to the subareas further away from the source. (*Ibid*.) It is important to note that the *Mojave* court allowed the physical solution to apply to the parties that agreed to its limitations, but it did not require parties who did not agree to the physical solution to be bound by the terms because, at least in part, the court found that the physical solution did not appropriately consider the priority of the groundwater right holders. (*Id*., at 1243.) Thus, priority of right overrides proximity to the source.

f. Do areas of dormant/unexercised overlying rights (i.e. rangelands) lose their priority claim (if any) to groundwater? What if these lands are farmable and were farmed in the past? What if the future use is a de minimis use?

Overlying

Overlying water rights are not subject to forfeiture for non-use. (*Pasadena*, at 933.) The right of the overlying water right holder is not specifically quantified, but is based on the amount of water that can reasonably be put to use on the overlying parcel. (*San Bernardino*, at 268.) The overlying water right holder may put water to use on his overlying lands, regardless of prior nonuse. In *Burr*, the court noted overlying water right holders are senior to groundwater appropriators and specifically stated that such seniority also applied "with equal force to the right . . . for future use upon the portion of his lands not hitherto supplied with water." (*Burr*, at 438.) But note this area of the law is evolving as discussed below under "Treatment of Non-Use in Adjudications."

Appropriative

Appropriative water right holders are subject to the loss of the appropriative water right after five years of non-use. (*Mojave*, at 1241.)

Prescriptive

A prescriptive water right can be lost by nonuse for a period of five years. (*Santa Maria*, at 294.) However, non-use is not the same as lacking adverse use; a prescriptive water right is not subject to loss for the failure to continue to use water adversely once the right is established. For example, in *Santa Maria*, overlying water right holders claimed that prescriptive water right

holders had lost their rights for five years of non-use during a five-year period in which the basin was not in overdraft conditions. The *Santa Maria* court declined to extinguish the prescriptive water rights based on the five-year period of surplus. (*Santa Maria*, at 295-96.) The court acknowledged that in order to establish a prescriptive right there needed to be five years of continuous and adverse use of non-surplus water. However, after the prescriptive right is established, the water right holder does not need to continue to adversely prescribe, he may simply divert pursuant to the established right. The *Santa Maria* court concluded: "a prescriptive right in the groundwater context is a water right like any other; it is the right to take the water from the water source. It is not disused simply because the presence of a surplus makes assertion of its priority unnecessary." (*Santa Maria*, at 297.)

Non-Use Due to In-Lieu and Replenishment

The reduction or cessation of extraction of groundwater due to in lieu use or to allow the groundwater basin to replenish is considered a beneficial use of water. (Water Code, § 1005.1, 1005.2.)

Treatment of Non-Use in Adjudications

The development of a physical solution by courts in the groundwater adjudication context attempt to account for the different rules of non-use for overlying and appropriative water right holders. However, the nature of the physical solution often requires the court provide certainty and numeric limits to overlying water right holders, even though without such a physical solution, overlying water rights are not limited to a specific numeric limit. In developing physical solutions, courts have a history of taking non-use into account and have used the lack of established water use as a limiting factor in a physical solution.

For example, in *Goleta*, the court recognized that the nonuse of overlying water right users must be protected in an adjudication. (*Goleta*, at 84.) The *Goleta* court recognized the difficulty in adjudication between allowing unfettered potential future uses by overlying water right holders and providing certainty in a physical solution. The court recognized that the future reasonably beneficial use of an overlying groundwater right "cannot be fixed in amount until the need for such uses arises." (*Id*., at 85.) The court addressed this dilemma between preserving future

development of overlying water rights and the need for certainty. The court suggested the solution to this dilemma was to declare the rights of the overlying water right holder so that such rights are protected against prescription and may be developed in the future, but until such time as the overlying water right holder puts the water to beneficial use, the appropriator may use it, which facilitates putting all water to beneficial use. (*Id*., at 85.)

The doctrine of subordination may be applied to cap and limit groundwater use by landowners in future adjudications of overdrafted basins. Through this doctrine, the dormant portion of a landowner's overlying rights may be "subordinated." The subordination doctrine has been applied in the surface water context, but not yet in the groundwater context. In the case *In re Water of Long Valley Stream System* ("*Long Valley*"), the California Supreme Court approved the SWRCB's subordination of the dormant riparian rights in the surface water context.[1] To date, the courts have not applied the same principle to subordinate dormant overlying rights. (*Goleta*, at 87-89 [refusing to extend the principle applied in *Long Valley* to subordinate dormant overlying groundwater rights in a groundwater basin adjudication reasoning that the comprehensive legislative scheme applicable to adjudication of riparian rights is not applicable to overlying rights].) However, in *Mojave*, the Supreme Court seemed to predict that the subordination principle applied in *Long Valley* may need to be applied in the future to subordinate dormant overlying rights "to harmonize groundwater shortages with a fair allocation of future use." (*Mojave*, at n. 13.) Further, as part of the recent groundwater basin adjudication reform law, the legislature explicitly permits the court to apply the principles set forth in *Long Valley* within a comprehensive groundwater basin adjudication. (Code Civ. Proc., § 830(b)(7).)

[1] In *Long Valley*, the California Supreme Court held that although unexercised riparian rights could not be extinguished entirely, in the context of a comprehensive stream adjudication, the state had the authority under Article X, section 2 of the California Constitution (state policy requiring maximum beneficial use of water) to subordinate the priority of dormant riparian rights to the priority of presently exercised riparian rights. The SWRCB has applied *Long Valley* to subordinate unexercised riparian rights in several instances, including to subordinate riparian rights unexercised for periods as short as approximately ten years. (*See, e.g., In the Matter of the Determination of the Rights of the Various Claimants to the Waters of Roaring Creek Stream System,* Order WR: 85–1, 1985 WL 20014, at 10–11; *In the Matter of the Determination of the Rights of the Various Claimants to Waters of Purisima Creek Stream System in San Mateo County, California*, Order WR 84-9, 1984 WL 19066, at 4; *In the Matter of the Determination of the Rights of the Various Claimants to the Waters of San Gregorio Creek Stream System, In San Mateo County, California*, Order WR 89-16, 1989 WL 98156, at 5 [amended in part by Order WR 90-6, 1990 WL 272140, at 1] [subordinating riparian rights unexercised for a period of approximately 10 years].)

The judgment recently entered in the Antelope Valley groundwater basin adjudication, which is on appeal, also subordinated dormant overlying owners.

The prescription doctrine, combined with the doctrine of "self-help" (i.e., protection of a portion of overlying rights through the act of pumping by landowners during the prescriptive period) may also be used as a legal basis to cap and limit extractions by overlying landowners and thereby prohibit new uses pursuant to previously dormant overlying rights. (*Santa Maria*, at 298; *Hi-Desert County Water Dist. v. Blue Skies Country Club, Inc.* (1994) 23 Cal.App.4th 1723.)

g. Do lands that are within a Subbasin as defined by Bulletin 118 but that do not overlie usable groundwater receive credit for any portion of the resource?

Water Rights

This aspect of California groundwater law is not well-developed. The question above seems focused on the overlying right – asking specifically if the lands overlying unusable groundwater receive a portion of the common supply of groundwater. This question turns on whether the unusable groundwater is considered part of the common underground water supply. If the unusable supply is considered part of the underground water body, then arguably the overlying water right holder would be included in the common supply. However, to the extent that a saline or otherwise unusable groundwater supply is not treated as part of the common underground supply for water right or water allocation purposes, no overlying right would attach. There are no cases which identify the point at which water quality is so compromised that it should not be considered part of the common supply. For this reason, this aspect of California law will require further development before definitive guidance can be provided.

Adjudications

There is precedent for allowing overlying rights to be produced from other areas overlying the same common supply. This issue has arisen in relation to mutual water companies, which frequently involve a group of overlying owners pooling their overlying rights and being served by the mutual water company's common well or wells located on a single or select parcel(s). In such circumstances, courts have recognized that the overlying or riparian right allows water to be produced from one overlying or riparian property for use on another. (*Forest Lakes Mutual*

Water Co. v. Santa Cruz Land Title Co. (1929) 98 Cal.App. 489; *Erwin v. Gage Canal Co.* (1964) 226 Cal.App.2d 189; *Hildreth v. Montecito Creek Water Co.* (1903) 139 Cal. 22, 29 ("*Hildreth*").)

h. To what extent do underlying conditions and water quality affect groundwater allocations?

Water Rights

The few cases that discuss the specific groundwater quality conditions suggest that underlying groundwater quality conditions affect allocations to the entire basin, rather than the area specifically experiencing groundwater quality degradation. However, these cases seem to be limited to the evaluation of seawater intrusion. The rules may apply differently to cases that have specific and isolated water quality contaminants whose origins are from user discharge.

In *Griffith v. Pajaro Valley Water Management Agency* (2013) 220 Cal. App. 4th 586 ("*Griffith*") the court upheld the distribution of program costs for fighting seawater intrusion over the entire basin, rather than just to the areas in which sea water intrusion was affecting groundwater quality. The court supported treating all basin users the same for this water quality issue because "the cost of this process is borne by all users, on the theory that even those taking water from inland wells benefit from the delivery of water to coastal users, as that reduces the amount of groundwater those coastal users will extract from their own wells, thereby keeping the water in all wells from becoming too salty." (*Griffith*, at 590-91.)

Adjudications

In the Central Basin Adjudication, highly saline water was excluded from the adjudication as unusable. The Judgment defines "water" to include only "non-saline water, which is that having less than 1,000 parts chlorides to 1,000,000 parts of water." (Third Amended Judgment, Definitions, at 11–12.) This suggests that water of more than 1,000 ppm of chlorides is excluded from the adjudication and exempt from management. The Judgment also provides a mechanism for extracting contaminated groundwater and exempting such extractions from counting against the extracting parties' production rights. (*Id.*, at 39.) However, the exclusion of contaminated water from the adjudication does not mean the adjudication excluded the landowners owning

land that overlies the contamination from the adjudication. In fact, the Central Basin Judgment does not contemplate the exclusion of overlying groundwater right holders from participating in the adjudication due to the poor quality of water underlying their lands.

Similarly, in the Seaside Basin Adjudication, the court allowed for the diversion of brackish waters outside the allocation of usable water, so long as such extraction of brackish waters did not injure a legal water user. (Third Amended Judgment, at 21-22.) The court did not make the finding that the poor quality of groundwater was so impaired that it was not usable or did not constitute groundwater. Nor did the court make a specific determination that landowners overlying the brackish waters were not overlying water right holders, or otherwise excluded from sharing in the common supply.

SGMA

The only treatment of groundwater quality in SGMA is to include it as one of the elements of undesirable results, the avoidance of which groundwater management systems are intended to avoid. There is no provision of SGMA that relates groundwater quality to any system of allocation of groundwater rights. SGMA requires each basin be managed to avoid six specific undesirable results. (Water Code, § 10721(w).) One of the identified undesirable result is the degradation of water quality and another is the unreasonable intrusion of sea water. (*Id*., at § 10721(w)(3), (4).) The SGMA regulations require the GSP to disclose water quality conditions in the basin, including identification descriptions and maps of groundwater contamination and seawater intrusion. (23 CCR, § 354.16.)

Further, the Department of Water Resources recently released its draft best management practices document for developing sustainable management criteria and is recommending each GSP consider the following water quality data when developing minimum thresholds for water quality:

- What are the historical and spatial water quality trends in the basin?
- What is the number of impacted supply wells?
- What aquifers are primarily used for providing water supply?
- What is the estimated volume of contaminated water in the basin?

- What are the spatial and vertical extents of major contaminant plumes in the basin, and how could plume migration be affected by regional pumping patterns?
- What are the applicable local, State, and federal water quality standards?
- What are the major sources of point and nonpoint source pollution in the basin, and what are their chemical constituents?
- What regulatory projects and actions are currently established to address water quality degradation in the basin (e.g., an existing groundwater pump and treat system), and how could they be impacted by future groundwater management actions?
- What are the adjacent basin's minimum thresholds?

None of the above speaks to how groundwater quality, or differing levels of quality within a basin, affect a system of allocation of groundwater rights that a GSP may look to employ.

i. To what extent does the type of use matter?

Generally, water rights are allocated with regard to land, timing of extraction, and quantity of extraction. The type of use does not matter with regard to acquiring a groundwater right. However, the type of groundwater use may affect allocations in certain circumstances.

The first type of use that affects allocations is the restriction that public or municipal uses cannot be supported by overlying rights. (*San Bernardino*, at 24.) The *San Bernardino* court declined to allow municipal extractions to be considered the exercise of an overlying right, regardless of whether the municipality and/or its residents own land overlying the basin. The court held that whenever a party "takes such water from the land and delivers it into its reservoirs, canals, or mains as part of its water held for the public use, at that moment it becomes a mere appropriator of the water and its rights thereto are no greater, as against the other parties, than would be the case if the water was taken out of land which it did not own." (*Id.*, at 29.)

The second type of use that affects allocations is the limitation on the remedies against public uses. In an action against a groundwater right holder that extracts water for public use purposes,

injunctive relief is not available. In *Glendale*, the defendants asserted an affirmative defense claiming the intervention of a public use insulated them from the challenge. The court noted that an intervening public use "does not bar suit by the owner of a water right; it merely limits his remedy to damages in place of in injunction." (*Glendale*, at 80.) The court in *Barton v. Riverside*, explained why the public use of groundwater is not subject to injunction: "Where one whose property is taken for a public use has stood by without objection, knowing that it was so taken and applied, and has allowed the public use to be instituted and carried on at great expense, and has permitted the people benefited thereby to adapt themselves to the new conditions and avail themselves of the conveniences and advantages thereby afforded, he cannot thereafter maintain an action to enjoin the continuance of such public use or to recover possession of the property so take, but will be relegated to an action for damages." (*Barton*, at 515.)

The third type of use that affects allocations is the limitation on the loss of public groundwater rights once they have been achieved. Section 1007 of the Civil Code has been interpreted to immunize a public use from prescription. (*San Fernando*, at 273.) The San Fernando court held that if an extraction of groundwater is "devoted to a public use, it remained immune from prescription." (*Ibid*.)

3. What are the characteristics of underground water that will cause it to be considered not groundwater regulated by SGMA (e.g. too deep, too salty, polluted, other geologic circumstances, etc.)? What are the conditions precedent, parameters and limitations to making that finding?

Several of the characteristics listed above – depth and the water quality components - are interrelated and inform each other. For these reasons, the explanations of each component may overlap.

(a) Depth

SGMA regulates groundwater only in the groundwater basins or subbasins identified and defined in Bulletin 118. Although Bulletin 118 clearly defines the lateral boundaries of basins, it does not define the vertical boundaries of basins. Instead, SGMA has left this boundary definition to the local GSAs. (23 CCR, §354.14 (b)(3).) DWR has provided guidance that the GSA may define the vertical basin boundary, or definable bottom of the basin, by either, 1) a structural

barrier to groundwater flow as determined by local geology, or 2) the base of fresh water as determined by groundwater quality information. (DWR, Water Budget BMP, at 14.)

DWR provides guidance that deep portions of the basin that are not part of the groundwater flow path can be excluded from analysis. However, if a portion of the basin is part of the flow path being managed, this portion should be included in the analysis.

Defining the Basin Bottom based on Physical Properties

DWR suggests the bottom of the basin may be defined as the "depth to bedrock also recognized as the top of bedrock below which no significant groundwater movement occurs." (DWR, HCM BMP, at 8.) This type of information may be found from reviewing geologic logs from wells drilled for water extraction, as well as from oil and gas exploration wells which tend to be drilled deeper than usable aquifer systems.

Defining the Basin Bottom based on Management

DWR provides guidance to the GSAs defining the basin depth, suggesting the depth should be at least as deep as the deepest groundwater extractions, to the extent such a definition does not conflict with other local, State, or Federal programs or ordinances. (DWR, HCM BMP, at 9.) In addition, the GSA should consider how the adjacent basins are defining the bottom of the basin. If adjacent basins are hydraulically-connected, differing definitions may create challenges in developing and determining impact of one GSP on the adjacent basin. (*Ibid*.)

Defining the Basin Bottom based on Water Quality Properties

DWR also provides guidance on how the quality of water may define the depth of the managed basin. To the extent that freshwater is underlain by saltier or brackish water that is a remnant of the marine conditions that were present when the Valley was flooded in the geologic past, DWR suggests the brackish water level would define the bottom of the SGMA-managed basin. (DWR, HCM BMP, at 8-9.) DWR and other governmental agencies have suggested several standards for establishing the bottom of a groundwater basin. For example, DWR and USGS publish base of freshwater maps for the Central Valley, which are based on 3,000 mg/L total dissolved solids. (*Ibid*.) In addition, the United States Environmental Protection Agency (US EPA) has defined

minimum thresholds for Underground Source of Drinking Water (USDW), which is a standard of less than 10,000 mg/L TDS.

DWR also plans to release a freshwater map for the Central Valley that depicts the useable bottom of the alluvial aquifer. This map assumes that the base of freshwater is defined by the Title 22 State Water Resources Control Board (SWRCB) upper secondary maximum contaminant level recommendation of 1,000 milligrams per liter (mg/L) total dissolved solids. (DWR, HCM BMP, at 8.)

Defining the Basin Bottom Based on Existing Activities

Oil and gas aquifers underlie the potable alluvial aquifer in some basins, which is defined as less than 10,000 mg/L TDS in Title 40, Section 144.3, of the Code of Federal Regulations. DWR has provided guidance that GSAs may define basin boundaries based on the geologic boundaries that separate potable alluvial aquifers and oil and gas aquifers. In the Best Management Practice guide for the Hydrogeologic Conceptual Model, DWR stated that "In basins where produced water from underlying oil and gas operations is beneficially used within the basin, or injected into the basin's USDW, the [GSA] can characterize the geologic boundaries that separate the USDW from the oil and gas aquifers, and identify the "exempted aquifer" portion of the groundwater basin that has been permitted for underground injection control by the SWRCB Oil and Gas Monitoring Program or the Division of Oil, Gas and Geothermal Resources (DOGGR)." (DWR, HCM BMP, at 8-9.)

Defining the Basin Bottom based on the Bulletin 118 Update

The 2016 Interim Update of Bulletin 118 states that, for groundwater management purposes, "the effective bottom of a groundwater basin is sometimes defined as the depth below which generally only unusable brackish or saline groundwater can be found." (Bulletin 118, at 4.) That definition suggests that brackish and saline water may be treated separately from the groundwater basins SGMA seeks to regulate.

(b) Quality

Consideration of Water Quality in Adjudications

In the Central Basin adjudication, "water" is defined in the applicable adjudication order to include only "non-saline water, which is that having less than 1,000 parts chlorides to 1,000,000 parts of water." (Third Amended Judgment, Definitions, at 11–12.) Thus, water of more than 1,000 ppm of chlorides is effectively excluded from the adjudication and therefore exempt from management. The Central Basin adjudication order also provides a mechanism for exempting extractions of contaminated groundwater if certain findings are made by the body administering the adjudication order.

In the Seaside Basin in Monterey County, the court's Decision defines "Brackish Water" as "water containing greater than 1,000 parts of chlorides to 1,000,000 parts of Water." The Decision provides that one of the parties shall have the right to produce Brackish Water from a portion of the Seaside Basin so long as the production of Brackish Water does not cause a "Material Injury," defined in the Decision as "a substantial adverse physical impact to the Seaside Basin or any particular Producer(s), including but not limited to: seawater intrusion, land subsidence, excessive pump lifts, and water quality degradation." (*California American Water v. City of Seaside* (Monterey Superior Court Case No. M66343, Decision Part III.C).)

In the Los Osos Basin adjudication, the Basin Plan and Stipulated Judgment recognize that shallow perched water in Aquifer Zones A and B (so-called "First Water") is generally not used as a source of water supply for the Los Osos community. Therefore, the Basin Plan and Stipulated Judgment do not contain restrictions on extraction of groundwater out of First Water, but confine their management to the Upper Aquifer and Lower Aquifer. (*Los Osos Community Services District v. Golden State Water Company, et al.* (San Luis Obispo Superior Court Case No. CV 040126) and Basin Plan adopted pursuant to the Stipulated Judgment therein.)

Quality of Groundwater as Defined in State Water Board Decisions

In its review of a proposed desalinization facility in 2012, the SWRCB, in the context of a reference from the California Public Utilities Commission pursuant to Water Code § 2000, considered whether brackish or saline water could be extracted from a basin to be treated in the

desalination facility. The SWRCB determined that the brackish water could be extracted, so long as no other water users are injured as a result of such extractions. Further, the SWRCB report supported the key principle applicable to developed and salvage water – recognition and reward of the effort of an individual to capture and beneficially use water that would otherwise be unusable. (State Water Resources Control Board, Draft Analysis of Monterey Peninsula Water Supply Project 20–21 (Dec. 21, 2012), citing *Cohen v. La Canada Land & Water Co*. (1907) 151 Cal. 680, 691.)

Quality of Groundwater as Evaluated by DWR Best Management Practices

Guidance regarding management of poor quality groundwater pursuant to SGMA is available in the Hydrogeologic Conceptual Model Best Management Practice (BMP) documents recently published by DWR. That BMP states that a GSP should estimate the quantity of groundwater that is brackish or unusable in the water budget but identify it as such. (DWR, Water Budget BMP, at 19-20.) Although water that is of such degraded quality to be unusable will not be included as part of the water budget available to meet demand, if the poor-quality water is treated to a degree that it becomes usable, then the treated water would likely become available for use by the treating party under salvage water principles (see discussion in subpart c below).

The Hydrogeologic Conceptual Model BMP provides that if poor water quality is at great depth and the bottom of the basin has been defined based on geochemical properties, then there may not be a reason to include the poor quality deep groundwater that exceeds the bottom of the basin (outside the basin) in the water budget unless there is some subsurface groundwater inflow or outflow. (DWR, HCM BMP, at 8-9.)

c. If someone in fact pumps this water and treats and/or uses it, is this considered "new water" that they can use or sell free of basin pumping limitations?

Developed water generally refers to the addition of new water to a natural supply. An example of developed water is the desalination of water whose salt content is so high that it is otherwise unusable. (*California American Water v. City of Seaside* (Monterey Superior Court Case No. M66343; Water Code, § 1010.) Salvage water generally refers to water that can be saved from loss. An example of salvaged water is water produced from the reduced evapotranspiration or seepage

water conveyance facilities. (*Pomona Land & Water Company v. San Antonio Water Company* (1908) 152 Cal. 655.)

The term "new water," as used in the question above, may encompass either "developed" or "salvage" water depending on the facts and circumstances. Because "new water" would not exist in the basin but for intervening actions and investments, they are not considered part of the native or common groundwater supplies. (*Santa Maria*, at 302.) Instead, salvaged or developed waters belong to the party who made it available and are not subject to the same restrictions as water that is native or common supply. (*Santa Maria*, at 304; *Scott v. Fruit Growers Supply Co.* (1927) 202 Cal. 47, 51.)

Case Law

In *Pomona*, the court determined that the party responsible for investing in facilities that reduced evaporation, seepage, and other waste, was the rightful owner of the water that was saved due to the facility improvements. Specifically, in *Pomona*, there was a conveyance system that experienced significant seepage and evaporation. The Defendants in *Pomona* constructed a dam and a pipeline system, which saved approximately 19 percent of the water flowing downstream. The defendants took the 19 percent water increase provided by the improvements and provided the downstream users with the same volume of water they previously received. The *Pomona* court upheld the system improvements and awarded the Defendants the right to the 19 percent salvaged or saved water.

In *Santa Maria*, the court held that the parties that bore the cost of operation and maintenance of the Twitchell Dam and Reservoir were entitled to prior rights in salvaged or developed flood waters that were stored in the project; but for that storage, the water would have left the watershed as flood flows. The court explained the rationale for awarding priority as follows: "If not collected behind dams and stored in reservoirs, most of these high flows would waste to the sea in the winter and the rivers would run low or dry in the summer months." (*Santa Maria*, at 280.) The court in *Santa Maria* was clear that such salvaged or developed water could not be considered part of the native or common supply. The court stated that the priority of overlying

groundwater rights does not extend to salvaged or developed water, but rather, it is the "rescuer" that has the prior right to such rescued water. (*Santa Maria*, at 304-05.)

Adjudications

The adjudication at issue in *Santa Maria* provided the salvagers – or Twitchell participants – with the right to take the first 32,000 acre-feet as salvaged water, which did not charge them with extracting any part of the native supply of the groundwater. (*Id*., at 310.)

The adjudication in the Seaside Basin provided that the right to brackish water used for the purpose of operating a desalinization plant was not subject to the limitations of the adjudication on the native common supply. However, as noted above, the Decision provides that one of the parties shall have the right to produce Brackish Water from a portion of the Seaside Basin so long as the production of Brackish Water does not cause a "Material Injury," defined in the Decision as "a substantial adverse physical impact to the Seaside Basin or any particular Producer(s), including but not limited to: seawater intrusion, land subsidence, excessive pump lifts, and water quality degradation." (County of Monterey Superior Court Case No. M66343, at 22.)

Statutory Authority

Water Code section 1010 provides that the use of recycled, desalinated, or polluted water in place of the diversion of surface water or extraction of groundwater shall amount to a reasonable and beneficial use of the water pursuant to the water right.

d. Is water generated as a by-product of oil/gas extraction that is thereafter treated and put to beneficial use considered "new water"?

Water generated as a by-product of oil/gas extraction is likely exempt from SGMA regulation and likely not considered part of the native common supply. In the definitions section of the Water Code that refers to enabling Water Conservation Districts, the Water Code defines groundwater as "all water beneath the earth's surface, but does not include water which is produced with oil in the production of oil and gas, or in a bona fide mining operation, or during construction operations, or from gravity or artesian springs." (Water Code, § 75502.)

Consistent with this Water Code provision, DWR supports the idea that water produced in the production of oil and gas is not considered native groundwater and directly concludes that for SGMA purposes, "oil field-produced water should be identified as a separate source of imported water." (DWR, Water Budget BMP, at 21.) This treatment of oil/gas produced water as imported water makes sense, when read in conjunction with the guidance on defining the bottom of the basin; if the water produced from oil/gas operations is below or outside the defined aquifer, such water is appropriately treated as imported.

DWR provides some guidance with regard to how a GSP should account for imported oil/gas produced water. (DWR, Water Budget BMP, at 20.) DWR directs a GSA to estimate the quantity of water and the beneficial use for which the water is being used. DWR states that such water should be accounted for in the water budget accounting, but also states that the reliability of such water also needs to be disclosed. DWR suggests that due to the fluctuation in oil/gas production, that water produced as a by-product may be suitable for use in an initial basin recovery effort, but may not be similarly suited for long-term sustainability reliance. (DWR, Water Budget BMP, at 20.)

DWR also provides that the GSP disclose the water quality of water produced through oil/gas production, including existing use permits and treatment employed. (*Ibid*.)

4. General Questions that may or may not relate to the above issues:

    a. Is the exercise of an overlying right limited to pumping from the land in question, within some proximity to the land in question, or may the owner pump from anywhere within the basin? Same question as to both appropriative and prescriptive pumping.

Overlying

An overlying water right holder is generally not limited to pumping water on the overlying parcel. However, there are limitations to pumping off the overlying parcel. Such pumping may not cause injury, it may not be unreasonable, and it is generally subject to the same correlative restrictions that limit all overlying water right holders. In *Burr*, the court considered the meaning

of a reservation in a deed that reserved the right to non-overlying water rights on several different parcels overlying a groundwater supply. In considering this reservation and defining the overlying right, the court held that so long as the overlying water was used on the parcels overlying the basin, the point of diversion did not have to be on the specific overlying parcel. The court's decision was based on the common supply of the correlative right and the fact that the point of diversion did not result in injury to another water right holder:

"Plaintiff's respective blocks of land are all situated over the basin in question and each block is entitled to sufficient water from the basin for the necessary use thereon. The taking of it all by means of well on one lot, instead of boring wells on each and obtaining for each the necessary water from its own well, would be a mere technical and wholly unsubstantial departure from the terms of the reservation, unless some special injury results from the location of the respective wells." (*Burr*, at 434.)

The *Burr* court went on to conclude that the single well supplying water to several overlying parcels did not create injury, because it did not increase the extraction of water outside the existing overlying water rights or materially lower the water level in nearby wells. (*Id*., at 434.) The *Burr* court explained the correlative limitations in times of shortage: "So far as the use of the water upon block 191 is concerned, the case seems to be within the rule established in *Katz v. Walkinshaw*, 141 Cal. 116, 135. In that case it was decided that two owners of separate tracts of land, situated over common strata of percolating water, may, each upon his own land, take by means of wells and pumps from the common strata, such quantity of water as may be reasonably necessary for beneficial use upon his land, or his reasonable proportion of such water, if there is not enough for all, but that one cannot, to the injury of the other, take such waters from the strata and conduct the same to distant lands not situated over the same water-bearing strata."

Other cases, arising in the context of riparian rights to surface water (which the cases observe are analogous to overlying rights to groundwater), also support the conclusion that an overlying water right holder is not required to divert water from the overlying parcel. With regard to riparian rights, it has been held that a riparian water right holder may have a point of diversion that is not located on the riparian parcel. For example, in *Hildreth*, the court held that riparian

water right holders may share a single water system and divert water from a point of diversion off a specific riparian parcel. The *Hildreth* court upheld the following use: "here a number of persons owning land are each entitled to take water from a common stream or source, for use upon their respective tracts of land, either by virtue of an appropriation under the Civil Code or by prescription, or as riparian owners, the water-right of each is individual and several, and must be considered as private property and not the subject of public use, although the persons so owning interests in the stream are very numerous and their lands include a large neighborhood. The owners of such water rights may make a joint diversion, and may carry the water from the point of diversion in a common conduit, made with common funds, and in such a case, in the absence of a special contract to the contrary, they will be the owners in common of the diversion works and conduits; but the respective water-rights will remain several and will remain private property." (*Hildreth*, at 29.)

Appropriative and Prescriptive

Appropriative groundwater right may change the place of extraction, provided others are not injured by the change. (*San Bernardino*, at 28-29; *Barton*, at 517.) The court in *San Bernardino* explained that an appropriative water right holder has always been able to change the point of diversion without affecting the underlying right. The court specifically held "the appropriator has acquired the right to take the quantity which he beneficially uses, as against others having no superior rights in the source, and that neither the particular place of use, the character of the use, nor the place of taking is a necessary factor in such acquisition. The change of place of taking becomes wrongful only in the event that others are injured thereby." (*San Bernardino*, at 29.) There are at least two ways that an overlier or an appropriator may injure other groundwater users by pumping from lands other than those from which the overlying right or appropriation originated: 1) neighbors in the area of the remote extraction may suffer localized reductions in water levels (the condition noted as not existing in *Burr* cited above, which allowed the remote pumping to continue); 2) the aquifer underlying the originating lands is limited hydraulically or geologically in its ability to support groundwater extractions, such that an advantage is obtained by remote pumping. In either case, the qualification that remote pumping must not damage other water users would not be met, and the remote pumping could be enjoined as a result.

b. How does the use of surface water in lieu of groundwater affect groundwater rights?

Under Water Code section 12927(a), the term "In-lieu recharge" is defined as "accomplishing increased storage of groundwater by providing interruptible surface water to a user who relies on groundwater as a primary supply, to accomplish groundwater storage through the direct use of that surface water in lieu of pumping groundwater. In-lieu recharge would be used rather than continuing pumping while artificially recharging with the interruptible surface waters." This definition is provided in the definitions section of the Water Code that established bond funding through the 1985 Water Conservation and Groundwater Recharge Bond. (*See also*, Water Code section 78670(b) which uses the same definition and was part of the Safe, Clean, Reliable Water Supply Act.)

The practice of utilizing surface water in-lieu of groundwater does not affect the underlying groundwater right. The increased storage of groundwater that results from in-lieu recharge operations augments the native supply of groundwater. Under principles first established in *San Fernando*, the operator of an in-lieu recharge project is entitled to the fruits of his expenditures and endeavors in bringing into the basin water that would not otherwise be there.

Water Code sections 1005.1-1005.4 were enacted to support conjunctive use programs and facilitate the use of surface water in-lieu of groundwater. These sections protect the underlying groundwater right by ensuring that the use of surface water instead of groundwater does not reduce or otherwise endanger the existing groundwater right. Water Code section 1005.4 (a) (applicable to counties outside of enumerated southern California counties) specifically addresses the issue of loss of a groundwater right from non-use due to in-lieu practices and states:

"Cessation of or reduction in the extraction of ground water, to permit the replenishment of such ground water by the use of an alternate supply of water from a non-tributary source, constitutes herby declared to be, a reasonable beneficial use of the ground water to the extent and in the amount that water from the alternate source is applied to reasonable beneficial use, not

exceeding, however, the amount of such reduction. No lapse, reduction or loss of any right in groundwater, shall occur under such conditions." (Water Code, § 1005.4.)

Water Code sections 1005.4(b) provides the option for a water user to file a statement quantifying the amount of reduced extractions as result of use of an alternate supply in order to promote groundwater replenishment. However, this section is optional; failure to file a statement does not affect the right of a water user to claim the benefit of section 1005.4(a). (Water Code, § 1005.4(b).)

The court in *Central Basin*, upheld the authority of a water replenishment district to manage an in-lieu replenishment program, which the court described as a project that "involves using surface water in lieu of pumping water from a basin." (*Central Basin*, at 898.) The *Central Basin* court affirmed that the legislature has recognized the rights of water replenishment districts to manage in-lieu replenishment programs, without an impact to the underlying groundwater rights of participants by quoting the statutory language that allows the formation of a water replenishment district and empowers such districts to "fix the terms and conditions of any contract under which producers may agree voluntarily to use replenishment water from a non-tributary source in lieu of groundwater, and to that end a district may become a party to the contract and pay from district funds that portion of the cost of the replenishment waters as will encourage the purchase and use of that water in lieu of pumping so long as the persons or property within the district are directly or indirectly benefited by the resulting replenishment. (§ 60230, subd. (p).)." (*Central Basin*, at 914.)

In an unpublished decision, *Cal. Water Impact Network v. Castaic*, 2009 Cal. App. Unpub. LEXIS 3029, the court upheld the environmental impact report analyzing the environmental impacts of a banking and recovery program. One primary component of the program was the in-lieu provision of surface water. The court described the in-lieu program as "rather than use their banked groundwater" project proponents "transfer water to which they have rights under their contracts with the State Water Project" which allows the "groundwater . . .to remain in the ground." (*Castaic*, at 12.) The *Castaic* court did not further discuss how in-lieu recharge affected groundwater rights; however, the court's discussion was consistent with the principle

that an in-lieu recharge program does not diminish or otherwise affect underlying groundwater rights.

In-Lieu Recharge Under SGMA

The treatment of in-lieu recharge may, in some instances, cause accounting issues in the implementation of SGMA. While Water Code section 1005.1 et al. treats the use of an alternative supply of surface water from a "non-tributary source" in-lieu of groundwater as a reasonable and beneficial use of groundwater for purposes of establishing or maintaining the right to extract groundwater, the concept of in-lieu recharge is different in focus. In the context of a groundwater banking project that relies, in whole or in part, on in-lieu recharge, additional recharge of the basin occurs as a result of the use of surface water in place of groundwater and this additional increment of groundwater in storage is then available for later withdrawal in accordance with the terms and conditions of the banking project. Therefore, in developing a groundwater management plan the GSA will need to identify in-lieu recharge and properly account for the fact that such recharge (and the associated groundwater in storage) remains subject to the recapture right of the in-lieu recharge project operator. In other words, the increment of groundwater in storage that is attributable to in-lieu recharge operations should not be treated as part of the basin native yield for accounting purposes.

SGMA addresses the need to identify and disclose in-lieu recharge activities. Water Code section 10727.2(d) requires a GSP to include "a description of surface water supply used or available for use for groundwater recharge or in-lieu use." SGMA regulations also require a GSA to report on in-lieu use on an annual basis by requiring that the annual report include: "Surface water supply used or available for use, for groundwater recharge or in-lieu use shall be reported based on quantitative data that describes the annual volume and sources for the preceding water year." (23 CCR, § 356.2.)

c. If a priority for groundwater is available for domestic and/or M&I uses, what if any are the limitations?

Water Code section 106 provides that it is the policy of the state that the "use of water for domestic purposes is the highest use of water." This general statement of policy in section 106 does not trump or override the water right priority system. However, there are cases in which, in the context of a shortage among riparians, those using water for domestic purposes were given priority over agricultural water users. In *Deetz v. Carter* (1965) 232 Cal. App. 2d 851 ("*Deetz*"), the court interpreted section 106 to provide "the apportionment of water between riparian claimants, need for domestic purposes receives first preference." In the apportionment of water among riparian owners, the amount reasonably needed by any one owner is a question of fact to be determined on the circumstances of the particular case. (*Carlsbad etc. Co. v. San Luis Rey etc. Co.*, 78 Cal.App.2d 900, 911.) One of these facts is the nature of the use; i.e. whether it is domestic. The *Deetz* court found that domestic use includes consumption for the sustenance of human beings, for household conveniences, and for the care of livestock. (*Deetz*, at 854-55; *citing Prather v. Hoberg* (1994) 24 Cal.2d 549, 562; *see also Drake v. Tucker* (1919) 43 Cal.App. 53, 56.)

Section 106 was also considered in *San Fernando*. In considering whether the shift from agricultural to urban water use changed the previous determination in *Glendale* that the City of Los Angeles had valid pueblo rights, the court held that the change in type of use did not impact the *Glendale* holding. Further, the *San Fernando* court noted that the change toward urban use would provide further support for its finding of pueblo rights and cited Water Code section 106 for the policy of placing the domestic use as the highest use. (*San Fernando*, at 228.)

Water Code section 106.5 states: "It is hereby declared to be the established policy of this State that the right of a municipality to acquire and hold rights to the use of water should be protected to the fullest extent necessary for existing and future uses." This section is more general and does not suggest any priority be given to municipal uses, only that the ability to acquire and hold rights should be protected. The *Santa Maria* case, in the context of rejecting the argument that a prescriptive right to groundwater was lost due to non-use, states the following:

"the Legislature has directed that we consider domestic use a higher use than irrigation (Wat. Code, § 106) and "that the right of a municipality to acquire and hold rights to the use of water should be protected to the fullest extent necessary for existing and future uses … ." (*Id*., § 106.5.) Domestic and municipal users take water as appropriators. Many, such as *Santa Maria*, may have done so during years of overdraft, acquiring, in the process, prescriptive rights to the native supply upon which they would be bound to depend in the event of a future shortage. The LOG parties' interpretation would lead to an especially harsh result from the perspective of these preferred water users. Thus, even if the LOG parties' interpretation were a supportable alternative, Water Code sections 106 and 106.5 compel us to reject it."
(*Santa Maria*, at 298.)

In addition to section 106, section 1007 of the Civil Code has been interpreted to immunize a public use from prescription. (*San Fernando*, at 273.) The *San Fernando* court held that if an extraction of groundwater is "devoted to a public use, it remained immune from prescription." (*Ibid*.)

There are no cases that have interpreted the general statement of policy contained in Water Code section 106 as overriding the existing water right priority system. For example, there is no case that interprets section 106 or 106.5 as authorizing a junior domestic appropriator to divert prior to a senior overlying groundwater right holder. Given SGMA's guiding principle that "[n]othing in this part, or in any groundwater management plan adopted pursuant to this part, determines or alters surface water rights or groundwater rights under common law or any other provision of law that determines or grants surface water rights" (Water Code section 10720.5(b)), groundwater management plans adopted pursuant to SGMA will be required to respect the water right priorities of groundwater right holders.

d. At what point in time is the basin deemed to be in "overdraft"?

Case Law

Early cases defined groundwater overdraft simply and often without context as the time when more water is extracted from the basin than is naturally replenished. (*Tehachapi*, at fn. 2; *Pajaro Valley Water Management Agency v. Amrhein* (2007) 150 Cal.App.4th 1364, 1370.) However, as

cases evolved to consider prescription and complexities of hydrologic conditions specific to particular basins, courts recognized that determining the time overdraft commences is a complex task. Cases began to recognize that the dropping of groundwater levels was not sufficient, in and of itself, to support a determination of overdraft and began to consider broader considerations of basin conditions in the context of hydrologic conditions over a period of years.

Specifically, courts held the development of a prescriptive groundwater right, like any other prescriptive right, requires that overlying owners be on "notice", among other elements. "To perfect a prescriptive right the adverse use must be 'open and notorious' and 'under claim of right,' which means both the prior owner and the claimant must know the adverse use is occurring. In the groundwater evidence from which the court may fix the time at which the parties 'should reasonably be deemed to have received notice of the commencement of overdraft'" (*Santa Maria* at 293; quoting *San Fernando* at 283.) Both *Santa Maria* and *San Fernando*, recognize overdraft is not based on a single year of high extractions, but define overdraft in terms of safe yield, which these courts describe as the "maximum amount of water that could be extracted annually, year after year, without eventually depleting the underground basin." (*Santa Maria*, at 279; *San Fernando*, at 278-79.) Therefore, these courts define overdraft as a condition that develops over the long-term with results of "eventual" depletion.

SGMA

SGMA does not define the term "overdraft." However, in requiring that GSAs identify and report on overdraft conditions, SGMA refers to the Bulletin 118 definition of overdraft. For example, 23 CCR 354.18(b)(5) requires that "if overdraft conditions occur, as defined in Bulletin 118, the water budget shall include a quantification of overdraft over a period of years during which water year and water supply conditions approximate average conditions."
The Water Budget BMP further explains this requirement, stating:

"The GSP water budget must include an assessment of groundwater overdraft conditions. Determination of overdraft conditions requires the evaluation of current and historical water budget conditions. As described in DWR Bulletin 118, overdraft occurs when groundwater extraction exceeds groundwater recharge over a period of years, resulting in a decrease in

groundwater storage. Overdraft conditions should be assessed by calculating change in groundwater storage over a period of years during which water year and water supply conditions approximate average conditions. Overdraft conditions should be evaluated as changes in groundwater storage by water year type. For basins without an existing water year index, water year types will be developed, classified, and provided by the Department based on annual precipitation as a percentage of the previous 30-year average precipitation for the basin. Water year classifications will be divided into five categories ranging from wet, above normal, below normal, dry, to critically dry conditions. Single-year reduction in groundwater storage during critical, dry or below normal water years may not represent overdraft conditions. Reductions in groundwater storage in above normal or wet years or over a period of average water year conditions may indicate overdraft conditions. All annual change in groundwater storage estimates from water budget accounting should be included and discussed in the GSP. If overdraft conditions are identified, the GSP shall describe projects or management actions, including a quantification of demand reduction or other methods, for the mitigation of overdraft, as required under §354.44(b)(2) of the GSP Regulations."

The standard under SGMA is whether a basin is "sustainable" which is the lack of significant and unreasonable "undesirable results," not necessarily what a water balance analysis shows or a declaration by DWR that a basin is in "overdraft", although those matters may need to be addressed in the GSP as noted above.

DWR includes the evaluation of overdraft as one of the criteria for GSP evaluation. Specifically, the SGMA regulations provide ten (10) components that DWR will evaluate to determine whether a Plan is likely to achieve the sustainability goal for the basin – number six on this list is the evaluation of "whether the Plan includes a reasonable assessment of overdraft conditions and includes reasonable means to mitigate overdraft, if present." (23 CCR, § 355.4(b)(6).)

Finally, SGMA partially defines what overdraft is not. In its definition of undesirable results, SGMA sets forth that "Overdraft during a period of drought is not sufficient to establish a chronic lowering of groundwater levels if extractions and groundwater recharge are managed as necessary to ensure that reductions in groundwater levels or storage during a period of drought

are offset by increases in groundwater levels or storage during other periods." (Water Code, § 10721 (x).)

Bulletin 118

Bulletin 118 (Update 2003) defines "overdraft" as ". . . the condition of a groundwater basin or subbasin in which the amount of water withdrawn by pumping exceeds the amount of water that recharges the basin over a period of years, during which the water supply conditions approximate average conditions. Overdraft can be characterized by groundwater levels that decline over a period of years and never fully recover, even in wet years. If overdraft continues for a number of years, significant adverse impacts may occur, including increased extraction costs, costs of well deepening or replacement, land subsidence, water quality degradation, and environmental impacts." (DWR Bulletin 118 Update 2003, page 96). This definition is consistent with California appellate case law including *San Fernando*. The key element of the definition is the notion that overdraft does not necessarily occur when more water is extracted from a basin than is naturally replenished in a single year or a limited number of years. Rather, overdraft exists when the amount of water withdrawn by pumping exceeds the amount of water that recharges the basin "over a period of years, during which the water supply conditions approximate average conditions." In other words, the analysis of whether overdraft is occurring in a basin must consider basin conditions in both wet and dry periods.

e. Is there any restriction on recovering banked water that may have migrated, and if so what?

Water Code section 7075 states: "Water which has been appropriated may be turned into the channel of another stream, comingled with its water, and then reclaimed; but in reclaiming it the water already appropriated by another shall not be diminished." This rule was specifically applied to the withdrawal of water in an underground basin in *Glendale*. (*Glendale*, at 76.)

The court in *San Fernando* interpreted section 7075 to allow the party storing water to recover the same quantity that was delivered to storage. The *San Fernando* court stated the "recapture right . . . is a right to take from the commingled supply an amount equivalent to the augmentation. (*San Fernando*, at 260.) The *San Fernando* court also discussed the issue of

migration and determined that the right to recapture "does not necessarily attach to the corpus of water physically traceable to particular deliveries." (*Ibid*.) Thus, a party storing water underground does not need to physically trace the molecules of water it has stored.

Glendale and *San Fernando* both hold that the right to recapture is not based on the corpus or actual molecule of water; i.e. the party storing water underground does not need to control the physical molecules of water, but has a right to recapture the amount of water stored. The lack of requirement to control the physical water stored is likely to lead to practical challenges on the ground. In unconfined basins where water migrates out of the basin, problems of supply and demand are likely to occur. For example, if party A stores 100 acre-feet of groundwater and party B is an overlying water right holder that is able to put 100 acre-feet to reasonable and beneficial use on the overlying parcel, then there are valid rights to extract 200 acre-feet from the basin. However, if at the time of recapture, 50 of the 100 acre-feet of stored groundwater has moved out of the basin, there is only 150 acre-feet of supply and 200 acre-feet of demand.

Inherent in the language of section 7075, and in cases regarding recapture of stored water, is the concept that the recapture is limited to the amount of water by which the natural supply of the basin is augmented. For example, in *San Fernando*, the court described the quantity of water that a banking party is allowed to recapture as the quantity "equal to the net amount by which the reservoir is augmented by such deliveries." (*San Fernando*, at 262.) The *San Fernando* court had been referring to the basin as an underground reservoir; in the quote above the word reservoir is used in the context of an underground reservoir or basin. Similarly, in *Glendale*, the court provided a similar definition describing the quantity of water available for recapture. The *Glendale* court held that there is a "right to recapture the amount by which the available conglomerated ground supply has been augmented." (*Glendale*, at 76-77.)

One of the most common ways to account for water that remains in the basin is to assign specific loss ratios to the recapture of stored groundwater. For example, in Fresno County, there is an ordinance that requires the recapture of stored groundwater to be reduced by a certain loss ratio. Section 14.03.050 of the Fresno County Code of Ordinances provides exemptions to groundwater management requirements. In this code, Fresno County exempts water banking

operations in which local water agencies bank water and the "later extraction and transfer of the banked water does not exceed the initially banked amount of water less reasonably anticipated losses." (Fresno County Code of Ordinances, 14.030.050.) The code requires the recapture of stored groundwater be limited by the anticipated loss. Anticipated losses are likely to be local and specific in nature, considering the specific migration, evaporation, conveyance or other attributes that may result in loss of stored groundwater.

Similarly, the United States Bureau of Reclamation (USBR) issued the "Groundwater Banking Guidelines for Central Valley Project Water" which provides guidelines to implement water banking of CVP water. These Guidelines include a section that states USBR will develop agreed upon banking loss provisions with the groundwater bank operator. (Guidelines, at 6.) The Guidelines further provide guidance that the loss will be based on local conditions, including "local hydrology, evaporation rates, conveyance facilities, and aquifer characteristics." (*Ibid*.)

The other limitation on recapture of stored groundwater is the requirement that it must be later extracted and put to reasonable and beneficial use. (Water Code, § 1242.) To the extent that stored water has migrated out of the basin and such migration prevents the banking party from recapturing a portion of the water and putting it to beneficial use, the portion of water that has migrated out of the basin is not subject to the right of recapture. Of course, if the water has migrated out of the basin and the banking party maintains the physical ability to recapture the water and put it to beneficial use, either through facilities or transfer, the recapture right is retained. (*Glendale*, at 76 [holding that even if water has migrated out of the boundaries of the district, the district may recapture the water "where such recapture had been planned when arrangements for importing the water were made."].)

SGMA requires each GSP to estimate the quantity of water that migrates in and out of the managed area covered by the GSP. (23 CCR §354.18(b) ["The water budget shall quantify the following, either through direct measurements or estimates based on data: (1) Total surface water entering and leaving a basin by water source type. (2) Inflow to the groundwater system by water source type, including subsurface groundwater inflow and infiltration of precipitation, applied water, and surface water systems, such as lakes, streams, rivers, canals, springs and conveyance

systems. (3) Outflows from the groundwater system by water use sector, including evapotranspiration, groundwater extraction, groundwater discharge to surface water sources, and subsurface groundwater outflow."].) DWR provides several examples of the types of outflows the GSP must identify and estimate, including evapotranspiration; groundwater discharge to surface water sources; and subsurface groundwater outflow. (DWR, Water Budget BMP, at 21-22.) This quantification of migration may be helpful in determining how the migration of stored groundwater out of a groundwater basin will impact the ability to recapture water previously banked.

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