August 1, 2016

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**Re: Comments CV Salts Policy documents**

Dear Ms. Creedon and Mr. Cory,

Thank you for the opportunity to provide comments on the documents prepared as part of the CV-SALTS process. We agree with the current goal of the policies to (1) ensure short and long term reliable, safe and affordable drinking water to impacted residents, (2) achieve BPTC that achieve salt and nutrient balance, and (3) restore the aquifer to best water quality since 1968. Our comments reflect our interest in providing greater specificity to this framework in order to ensure that these goals are in fact realized. In addition to the red-line copies of the policies, this letter provides an overview of our edits, which include an alternative, simpler framework for the SNMP that will ensure achievement of the three primary goals identified by CV SALTS as well as provide greater certainty to both the regulated community and consumers of groundwater.

Our comments reflect our belief that

- The Exceptions Policy provides needed flexibility for dischargers, although strict requirements are needed to protect other beneficial users and ensure restoration of water quality in the aquifer;
- Best Practicable Treatment and Control (BPTC) must be required of all dischargers;
- Management Zones can play a role in assessing water quality trends and ensuring BPTC throughout a region, but may not be an appropriate tool for determining compliance.
- Offset programs can help a discharger meet its obligations to achieve water quality objectives and avoid degradation of the receiving water;

- Mitigation programs are distinct from offsets and are intended to make whole those uses affected by degradation or pollution
- The most appropriate method of mitigation will be through payment into mitigation funds for drinking water access and aquifer restoration;
- Assimilative capacity should be applied on a geographically limited scale, i.e. the receiving water impacted by the underlying discharge
- Water quality targets should be set at a level that acknowledges the uncertainty of the data and provides a needed buffer between current water quality and water quality objectives that allow a public water systems to design treatment or find a new water source.

**Assimilative Capacity**

We are concerned that the use of assimilative capacity calculated across a management zone or subbasin runs counter to the goals of the program to protect users and restore water quality. Averaging water quality over such a large area creates the mistaken impression that water quality objectives are being met, when in fact degradation and pollution will almost certainly occur. If degradation and pollution are to be permitted under this program, this must only happen under specific and measurable conditions and locations under the Program's Exceptions Policy. Instead, we propose that the Regional Board consider only the assimilative capacity of the receiving water that will be directly impacted by the permitted discharge.

Like the authors of the policy documents, we also reviewed the State Water Board's Recycled Water Policy (RWP) for its use of assimilative capacity. The Recycled Water Policy's reliance on assimilative capacity was limited in scope, both substantively and temporally, in anticipation of a Salt and Nutrient Management Plan. Unlike that document, assimilative capacity as used in the SNMP guarantees negative impacts to the basin as it explicitly is used to allow discharges with nitrate concentrations above the current water quality of the management zone and allows degradation up to the water quality objective based on basin-level averaging.

While we support the use of assimilative capacity on a limited geographical basis, we understand that that dischargers bear a larger responsibility for assessing the cumulative impacts of their discharges within a subbasin. For the purposes of understanding these cumulative impacts, a calculation of assimilative capacity of the subbasin within the upper zone is appropriate.

Assimilative Capacity, in both contexts, should not be considered based on the Water Quality Objective but, rather, should include a buffer of the WQO such that assimilative capacity is

deemed to exist if contaminant levels are better than 75% of the water quality objective. If assimilative capacity is granted up to the MCL, any accidental discharges of nitrates above what is permitted could cause serious impacts on public health and other beneficial users. Additionally, we do not agree with characterizing some discharges as di minimus. As discussed below, we recommend three categories of discharges: those that do not degrade, those that will cause degradation up to 75% of the MCL and those that cause or contribute to an exceedance of 75% of the WQOs.

**Nitrate Permitting Policy**

The Nitrate Permitting Policy promotes a preference for allowing discharges despite their impact to water quality. The SNMP recommends that the Central Valley Water Board be predisposed to allocate assimilative capacity where it is available and thus cause high quality waters to be degraded. The SNMP defends this predisposition by stating that in general allowing the discharges "assures a significantly better outcome for the people of California than would requiring strict compliance with WDRs." This statement assumes that the case for degradation has already been made, while our understanding of that policy is that a full anti-degradation analysis must be conducted before such a conclusion can be reached. The notation in the Policy document that a regional guidance document will be developed explaining what maximum benefit to the people of the state will look like in these circumstances, it is premature to include such permissive language in the SNMP prior to its development.

The SNMP also includes references to assimilative capacity with which we have already expressed our disagreement.

The five categories for types of discharges seem both overly complicated and less than protective. First of all, any discharge which degrades water quality cannot be declared "de minimus," particularly a single discharge that uses 10% of the assimilative capacity, the upper limit for a single discharger. We think that *all* discharges that have the potential to degrade water quality must be subject to anti-degradation analysis. Additionally, the categories as written fail to provide a buffer between permitted discharges and the water quality objective. Given the impact on public water systems and the uncertainty in water quality throughout the aquifer, such a buffer must be required.

*Proposed: Nitrate Permitting Policy*

We propose a simpler Nitrate permitting policy that expands Regional Board authority to require offsets and mitigation programs while also granting the Board the authority to authorize exceptions (discussed below) in limited circumstances. All dischargers, regardless of categories listed below, must employ BPTC, must participate in a trend monitoring program and must monitor and publicly report Nitrate application, with respect to both ration (A/R) and load (A-R).

We propose that there be 3, rather than 5 categories of discharges

1. Those which meet WQOs and do not degrade highest water quality at FEG (as defined by the state's Anti-Degradation Policy)
2. Those which degrade water quality at FEG up to 75 % of the MCL
3. Those which degrade water quality at FEG to 75% of the MCL or cause or contribute to pollution

For the first category, the Board may authorize the discharge and may require offsets and / or mitigation programs if appropriate (maybe this is wrong but still feels like they may as well have authority). Discharger must monitor to ensure that discharge will not degrade water quality

For the second category, Board may authorize the discharge, subject to an anti-deg analysis and may require offsets and mitigation programs if appropriate. The Board shall require monitoring and reporting of N application and water quality necessary to ensure compliance with permit conditions.

For the third category, the Board may authorize the discharge, subject to an exception. The Board shall require mitigation programs as appropriate. The Board shall require monitoring and reporting of N application and water quality necessary to ensure compliance with permit conditions.

**Management Zone Policy**

We have serious concerns about the scale, formation and governance of the management zones as described, and do not see how they offer an incentive to dischargers to participate.

First, the policy document does not contain any parameters on how the boundaries of management zones will be drawn nor is there a requirement that the boundaries are linked to hydrological conditions. This could lead to gerrymandering which will result in impacted communities being left out of a given zone's jurisdiction. This potential and probable result

undermines the SNMP goals of addressing all impacted residents and restoring groundwater quality.

Second, there is no discussion as to how to coordinate and incorporate all the necessary parties within the basin within the management zone framework. It is unclear why a discharger discharging below the water quality objective would participate in a management zone. As currently proposed, it is likely only dischargers discharging above the water quality objective would participate, thus making it difficult for the management zone to function as expected. We are also concerned about the lack of discussion around the inclusion of other stakeholders - i.e. impacted residents or other water providers. As the management zone would be required to draft an Early Action Plan which would aim to address the impacts of nitrate contamination, there is no place for those impacted by nitrates to have a say in the solution. Additionally, within the basin as a whole, the policy does not require coordination between management zones that have a hydrologic connection.

Finally, calculating assimilative capacity across a management zone appears to disincentivize aquifer restoration. Locally significant impacts will not be treated as pollution and nuisance, instead being approved as within limits due to the averaging of assimilative capacity. We prefer exceptions, which acknowledge that pollution and nuisance are occurring and provide limited and specific regulatory relief

Without adequate coordination and clear parameters on how zones are created, it is hard to see how this framework will achieve the goal of reducing impacts to nitrates and restoring the basin. Instead of the current proposal we propose that the scope of the management zones be narrowed and also developed with the hydrological conditions in mind to prevent unfair gerrymandering.

Management zones should not be used for the development and implementation of drinking water projects nor for the purposes of determining the extent to which, and under what conditions, a discharger may discharge into receiving water. Drinking water projects should be handled at a minimum on a regional basis rather than a much narrower management zone basis. The best means of developing and sustaining drinking water solutions is through a mitigation fund in which all dischargers contribute to which will fund both short and long-term drinking water solutions.

*Proposed Use of Management Zones*

Management zones will primarily be used to provide basin-scale information about nitrogen loading trends and basin restoration needs. Furthermore, these activities must be developed in coordination with all other management zones within the basin or subbasin.

**Offsets Policy**

The offsets policy as written confuses offsets with mitigation and managed restoration projects. The purpose of offsets is to reduce the total contaminant load upon the aquifer in order to comply with water quality objectives. While we support the development and implementation of mitigation projects which will bring safe drinking water to communities, and believe these projects should be required by the WDRs, these are not the same as offset projects.

Offsets must be projects which reduce the contaminant loading into the aquifer from another source to make up for the degradation or pollution for which the discharger in question is responsible. A discharger seeking to qualify a project as an offset must participate or fund a project which will reduce nitrate contamination at the same or greater amount as the original discharge, and must be located in the discrete area impacted by the underlying discharge. Merely mitigating the impacts of nitrate contamination on impacted beneficial users does not prevent the degradation of the aquifer. Neither can this be considered managed restoration, as its intent is to avoid pollution and degradation rather than restore water quality to the best available since 1968.

We are also concerned that the anti-degradation language used in this policy creates a slippery slope allowing for the assumption that all offset projects (which is a loosely used term in this policy paper) will result in a benefit to the people of the state when in fact not all projects are created equally and will result in the necessary benefits to impacted beneficial users.

*Offsets proposal*

Offsets shall only be authorized as a means to allow dischargers to comply with water quality objectives (including the buffer) such that the discharge plus the offset allows the discharger to demonstrate no degradation or degradation (if approved) up to 75% of the water quality objective (i.e. categories 1 and 2 for Nitrate discharges). Any other programs designed to address the impacts of Nitrate dischargers with respect to both aquifer restoration and drinking water availability, shall be considered mitigation programs or projects, not offsets. The Board must find that offsets do not create or allow for any negative localized impacts that would not have occurred but for the offset.

**Exceptions Policy**

While we understand the utility of exceptions for dischargers that cannot meet water quality objectives, the current policy proposal contains insufficient conditions and findings to show that exceptions will lead to long-term restoration of the aquifer. As currently proposed the exceptions policy will effectively result in de-designation of basins. An effective exceptions policy must require enforceable and measured steps toward restoration of aquifers for beneficial uses.

Proposed Exceptions Policy

We propose the following exceptions policy which includes conditions designed to demonstrate restoration of the basin and the access to safe drinking water for all end-users.

At the initial granting of the exception the following must be included in the exception proposal:

- Ensure that the discharger is mitigating for Nitrate Impacts to groundwater within the first year that the exception is in effect, by
    - Paying into a mitigation fund to provide short term drinking water and develop and implement long term drinking water solutions or otherwise implementing a plan to fully mitigate impacts to drinking water.
    - Paying into a mitigation fund designed to restore the aquifer to meet water quality objectives or otherwise implementing a plan to fully mitigate impacts to the aquifer.
- Long-term management plans show improved water quality trends over a 10 and 20 year horizon
- Long-term management plans show salt/nitrate balance in as short a time as practicable but not to exceed 50 years
- Long-term management plans show show restoration of aquifer to meet water quality objectives in as short a time as practicable but not to exceed 50 years
-

At the first renewal (if appropriate):

- Demonstration that short-term drinking water solutions were effectively implemented
- Demonstration that mitigation fund / alternative drinking water projects have been effective and identification of additional actions if needed.
- Demonstration that aquifer restoration/mitigation projects have been effective and identification of additional actions, if needed.

- Targets have been identified for optimum nitrogen application and integrated into WDRs for each crop.
- BPTC established for each discharger and integrated into WDR
- Long-term management plans show improved water quality trends over a 10 and 20 year horizon
- Long-term management plans show salt/nitrate balance in as short a time as practicable but not to exceed 40 years
- Long-term management plans show show restoration of aquifer to meet water quality objectives in as short a time as practicable but not to exceed 40 years

At the second renewal (if appropriate):

- Demonstration that short-term drinking water solutions were effectively implemented
- Demonstration that mitigation fund / alternative drinking water projects have been effective and identification of additional actions if needed.
- Demonstration that aquifer restoration/mitigation projects have been effective and identification of additional actions, if needed.
- BPTC established for each discharger and integrated into WDR
- Long-term management plans show improved water quality trends over a 10 and 20 year horizon
- Long-term management plans show salt/nitrate balance in as short a time as practicable but not to exceed 30 years
- Long-term management plans show show restoration of aquifer to meet water quality objectives in as short a time as practicable but not to exceed 30 years

At the third renewal (if appropriate):

- Demonstration that short-term drinking water solutions were effectively implemented
- Demonstration that mitigation fund / alternative drinking water projects have been effective and identification of additional actions if needed.
- Demonstration that aquifer restoration/mitigation projects have been effective and identification of additional actions, if needed.
- BPTC established for each discharger and integrated into WDR
- Long-term management plans show improved water quality trends over a 20 year horizon
- Long-term management plans show salt/nitrate balance in as short a time as practicable but not to exceed 20 years
- Long-term management plans show show restoration of aquifer to meet water quality objectives in as short a time as practicable but not to exceed 20 years

At the fourth renewal (if appropriate):

- Demonstration that short-term drinking water solutions were effectively implemented
- Demonstration that mitigation fund / alternative drinking water projects have been effective and identification of additional actions if needed.
- Demonstration that aquifer restoration/mitigation projects have been effective and identification of additional actions, if needed.
- BPTC established for each discharger and integrated into WDR
- Long-term management plans show improved water quality trends over a 20 year horizon
- Long-term management plans show salt/nitrate balance in as short a time as practicable but not to exceed 10 years
- Long-term management plans show show restoration of aquifer to meet water quality objectives in as short a time as practicable but not to exceed 10 years

*Mitigation fund / mitigation projects: THe regional board shall establish two mitigation funds: one that will be capitalized at a level necessary to mitigate impacts of nitrate discharges on drinking water, and the other capitalized a level necessary to support aquifer restoration in as short a time frame as practicable, but not to exceed 50 years. When granting the exception, the Regional Board shall require payment into both mitigation fees unless a discharger can demonstrate that an alternative drinking water project or aquifer restoration project will have a more substantial impact, and will more effectively achieve the goals included in the exceptions policy, than paying into the mitigation feel.

**Secondary MCL Policy**

We strongly support the comments submitted by CUWA (California Urban Water Agencies). The requirements of CV Salts must reflect the regulatory framework under which public water systems operate, including the need for a buffer between the source water concentration and the drinking water objective. In addition, the apparent assumption in the policy document that secondary MCLs are “aesthetic” and don’t have a link to public health, is in error. We know from experience that residents who either don’t like the taste of their water or distrust the quality because of its color tend to purchase bottled water and soft drinks to avoid drinking it. This not only a financial burden, it also contributes to health issues related to consumption of sugary beverages.

Sincerely,

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# Draft Policy No. X: Principles to Govern Development of an "Offsets" Policy for Permitting Discharges to Groundwater

## What is an "Offset"?

An alternative means of achieving ~~partial or complete~~ compliance with Waste Discharge Requirements (WDRs), for a given pollutant or pollutants, by reducing ~~managing~~ other sources and loads not directly associated with the regulated discharge so that the combined net effect on receiving water quality from the discharge and the offset is functionally-equivalent to (and often better) than that which would have occurred by requiring the discharger to comply with their WDRs exclusively through its discharges.~~at the point of discharge~~. Offsets are voluntary but may be needed in order to permit the continued discharge of contaminants into the aquifer. They ~~They must be proposed by the discharger[1] as an Alternative Compliance Program (ACP), must be approved by the Central Valley Water Board, and~~ are enforceable through the WDR or other orders issued by the Board. Page 5 and following of this Policy document provides examples of potential applications of an Offsets Policy.

Principles of Offsets

Offsets may only be used to achieve water quality objectives in the specific area to which an underlying discharge impacts the receiving water. Offsets must eliminate the net negative impact of the underlying discharge in receiving water. No offsets may result in harm to beneficial uses or otherwise result in a negative impact in one or more areas in a management zone, basin, or subbasin. Projects or activities that do not result in achievement of water quality objectives shall not be considered an offset and instead may be considered a mitigation project or activity. Mitigation projects or activities ~~that~~ mitigate or lessen the impacts of dischargers yet do not result in the discharger meeting water quality objectives in the applicable receiving water. Mitigation projects or activities ~~may be mitigation measures and m~~ay be conditions of exceptions whereas offsets may not.

## What is the purpose for establishing an Offsets policy?

1) Offsets provide a mechanism, ~~other than approving an exception~~, for permitting otherwise non-compliant discharges in an area that lacks assimilative capacity by ensuring ~~while continuing to make progress toward~~ attainment of water quality standards in that area.~~basin or Management Zone~~.

2) Offsets provide a regulatory alternative, other than prohibiting the discharge or issuing an exception, when it is infeasible, impracticable or unreasonable to comply with WDRs directly.

3) Offsets provide a ~~another potential~~ method for permitting discharges with pollutant concentrations greater than the objective or higher than the current receiving water quality and can provide ~~better~~ overall improvement or result in less degradation in that receiving water basin, or sub-basin ~~or Management Zone~~. The discharge, however, may not result in negative ~~localized~~ impacts.

[1] ~~Throughout this document the term "discharger" can connote either an individual discharger or a coalition of dischargers regulated under a common set of categorical WDRs.~~

4) Offsets provide a mechanism to re-target the resources required to achieve compliance in order to produce greater public benefits (better net water quality, lower cost, less risk, etc.).

5) ~~Offsets provide a mechanism whereby diverse dischargers within the same Management Zone can pool available resources to implement ACPs, in phases, based on reducing impacts to beneficial users on a risk-priority basis. The option to pool resources creates a strong incentive to establish such Management Zones.~~

6) Offsets provide a mechanism to develop and fund large-scale, long-term regional water quality improvement projects such as described by the Strategic Salt Accumulation Land and Transportation Study (SSALTS)[2] or the Nitrate Implementation Measures Study (NIMS)[3] by recognizing participation in such efforts as partial credit toward compliance.

7) ~~Offsets create a market-based incentive to establish Mitigation Banks designed to develop and implement water quality improvement projects. This is particularly useful for pooling the resources of many relatively small dischargers into a critical mass of funding to support projects that would normally be beyond their individual means.~~

~~8) Offsets encourage creative solutions to complex problems by measuring success at the most critical endpoint: Net effect of water quality on end-users. This outcome-oriented approach is consistent with the primary purpose for imposing water quality standards-based permit requirements in the first place.~~

~~9)~~8) The current Central Valley Basin Plans do not authorize the Central Valley Water Board to consider offsets when evaluating compliance. If such authority is added to the Basin Plans the Board must take separate action, through the normal public notice and hearing process, to consider and approve any proposed offset.

## Where do Offsets fit within the array of existing regulatory options?

1) When offsets are employed, compliance is assessed by considering the aggregate net effect of the discharge and the offset project(s) on receiving water quality. Consequently, if a discharge requires an offset in order to achieve compliance with one or more receiving water limitations, then implementation of the offset must be enforceable through the WDRs.

2) IWhere ~~Where an allocation of assimilative capacity is sought, i~~implementing an offset project may be the best practicable treatment or control that is most consistent with maximum benefit to the people of the state. This is ~~particularly~~ true where the net effect on receiving water quality ~~and/or end users~~ is better than would otherwise occur by requiring strict compliance with water quality

**Commented [1]:** This may qualify as a mitigation project, but not an offset

**Commented [2]:** This may be a mitigation project, but not an offset

[2] *Strategic Salt Accumulation Land and Transportation Study (SSALTS), Final Phase 2 Report: Development of Potential Salt Management Strategies*. Report prepared by CDM Smith on behalf of CV-SALTS. October 1, 2014; *SSALTS, Final Phase 1 Report: Identification and Characterization of Existing Salt Accumulation Areas*. Report prepared by CDM Smith on behalf of CV-SALTS. December 13, 2013.

[3] *Nitrate Implementation Measures Study (NIMS) Final Report*. Report prepared by CDM Smith on behalf of CV-SALTS, March 31, 2016

standards at the point of discharge. ~~In such cases, implementing the proposed offset project would become a condition for allocating assimilative capacity to the discharge.~~

3) ~~Where there is no assimilative capacity available, or the Central Valley Water Board is unwilling to allocate the available assimilative capacity,~~[4]

4) Where offsets can be used to eliminate~~minimize~~ the net negative e~~a~~ffect on receiving water quality

5) Mitigation efforts may be required ~~as a condition for authorizing an exception to a non-compliant discharge. In such cases, the offset program may be used to help demonstrate that the discharger is making "reasonable progress" at eliminatingmitigating excess pollutant loads where feasible and practicable. Implementation of the offset project would become a condition for granting the exception and be enforceable through the WDRs.~~

a. Comment: #5 may quality as a mitigation program or project required by an exception.

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~~3)~~6) Offsets have been most commonly and successfully applied where a formal load allocation has been established for a given pollutant in a given receiving water. The presence of an accepted procedure for calculating and assigning pollutant loads also facilitates the process needed to validate and account for credits generated by the offset program.

~~4)~~7) Although offset projects may be proposed for any type of discharge, they are a particularly useful tool to implement more cost-effective water quality control strategies where the Central Valley Water Board has elected to "prescribe general waste discharge requirements for a category of discharges"[5]. Historically, the large number of non-point source discharges spread over a wide area makes it very time-consuming and expensive to assemble all of the documentation required by the state's Nonpoint Source Policy.[6] Offsets may offer the opportunity to focus and simplify the process so that some of the monitoring and reporting resources can be redirected to accelerate or expand water quality improvement projects.

## Under what conditions should an Offset be considered?

1) When it is not feasible, practicable or reasonable for the discharge to comply directly with applicable WDRs. WDRs normally require "direct" demonstration of compliance either at the point-of-discharge or at the confluence with the receiving water. ~~Evaluating compliance at the confluence with receiving water allows the Central Valley Water Board to consider pollutant reductions that may occur as a result of system mixing or by the process of percolating through the ground to the aquifer.~~[7]

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[4] ~~California Water Code §13263(b)~~

[5] California Water Code §13263(i); examples: WDRs issued to the dairy industry or various agricultural coalitions.

[6] Policy for Implementation and Enforcement of the Nonpoint Source Pollution Control Program. State Water Board Resolution No. 2004-0030, May 20, 2004.

[7] State Water Board Water Quality Order 81-5; In the Matter of the Petition of the City of Lompoc for Review of Order No. 80-03 (NPDES Permit No. CA 0048127), California Regional Water Quality Control Board, Central Coast Region (see pg. 6).

2) When it is not feasible, practicable or reasonable to prohibit a discharge that is unable to comply with applicable WDRs. This situation may also necessitate that the Central Valley Water Board approve a conditional exception where the offset is one of the conditions.

(i) Comment: this may qualify as a mitigation measure and condition of an exception, not an offset

2)

3) When there is no assimilative capacity available in the receiving water or as a condition for allocating any available assimilative capacity in order to authorize a discharge. If receiving water quality exceeds water quality objectives This situation may also require the Central Valley Water Board to approve a conditional exception, if the offset project is not proximate to the discharge. Board approval would be predicated on a finding of no harm to beneficial uses..

3)(i) Comment: this may qualify as a mitigation measure and condition of an exception, not an offset

4) When the net effect of authorizing the discharge, including the proposed offset project, would result in better water quality in the groundwater basin or sub-basin than is likely to occur if the discharge was required to comply with the applicable WDRs at the point-of-discharge.

5) When the net effect of authorizing the discharge, including the proposed offset project, would result in better water quality in the receiving water than would be expected to occur if the non-compliant discharge was prohibited altogether.

6) When the proposed offset project will provide substantially greater and more immediate public health protection (e.g., real risk reduction) than is expected to result if the discharger was required to comply with the applicable WDRs at the point of discharge or the non-compliant discharge was prohibited completely.

7) When the proposed offset project is an integral part of and facilitates a larger strategic plan designed to ultimately achieve attainment of water quality standards through a phased program of implementation that has been reviewed and approved by the Central Valley Water Board.

8) Other "factors" the Central Valley Water Board will consider when deciding whether to approve a proposed offset program/project include, but are not limited to: Relative location of the discharge and offset project and potential impacts on downgradient waters, reliability of the recharge, whether recharge-based offsets constitute genuine "new" groundwater recharge, impacts on the vadose zone over time, mixing assumptions, brine disposal, and whether the offset is proposed as a temporary or long-termpermanent alternate compliance strategy.

## What implementation requirements should apply to Offsets?

1) Offsets shallould be consistent with the local plan to manage salt and nitrate. And, in general, it is desirable to encourage offsets must need to impactbe in the specific area same receiving water groundwater basin or sub-basin where the discharge occurs in the receiving water. Assessing the

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Commented [3]: This may qualify as a mitigation project, but not an offset

impacts of the offset to a management zone, basin or subbasin is not allowable. ~~However, the Offsets Policy is also intended to incentivize implementation of some large-scale projects such as a regional regulated brine line or a Mitigation Bank established to provide safe drinking water.~~

~~1)~~a. comment : a mitigation bank to provide safe drinking water can be a mitigation and condition of an exception.

2) The offset must result in a net neutral or net improvement in current water quality (e.g., the offset ratio must be > 1:1) compared to baseline regulatory requirements. Offset ratios < 1:1 may be authorized only in accordance with the state's antidegradation policy unless an exception is granted or Time Schedule Order (TSO) allows a less stringent interim ratio to apply.

~~3) Offsets must be for substantially the same pollutant. Cross-pollutant trading (e.g., total dissolved solids (TDS) for nitrate, nitrate for arsenic, etc.) should not be construed as true "offsets." However, such "trading" may be permissible when there is assimilative capacity available for the pollutant being discharged and the discharger proposes to significantly reduce a different pollutant in the receiving water in a manner that provides "maximum benefit to the people of the state."~~

~~4)~~3) The proposed package (discharge + offset project) cannot result in unmitigated localized impairments (e.g., "hotspots") to sensitive areas (especially drinking water supply wells). ~~This situation can best be addressed by implementing offsets within Management Zones that provide other mechanisms to assure water users remain protected. Downgradient well owners must be notified and encouraged to participate in the offset approval process. Additional mitigation may be required.~~

~~5)~~4) Offsets must be approved by the Central Valley Water Board. The Board may elect to pre-approve specific offset projects (a 1-step process) or authorize the general use of offsets within a given order and then approve individual offset projects in subsequent Board actions (e.g., a 2-step procedure). All terms and conditions governing implementation of the proposed Offsets Policy must be enforceable through a WDR, Waiver or other enforcement order. Failure to comply with the terms and conditions of an offset approved by the Central Valley Water Board could constitute a violation of the underlying permit or enforcement order.

~~6)~~5) Offsets apply to a specific discharge for a defined period. Offsets can be renewed but must be periodically reviewed and reauthorized by the Central Valley Water Board. The length of that period and the maximum duration of the offset will be specified by the Central Valley Water Board when the offset is approved.

~~7)~~6) The terms and conditions governing an approved Offset should specify the remedial actions that must be undertaken by the discharger, and the metric(s) used to trigger such obligations, in the event that the offset project fails for some reason.

~~8)~~7) The offset project must include a monitoring and reporting program sufficient to verify that the pollution reduction credits are actually being generated as projected and that these credits are adequate to ~~meet~~ offset the discharge loads in the ratio approved by the Central Valley Water

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**Commented [4]:** This option would permit pollution and nuisance with no proscribed remedy.

**Commented [5]:** managment zone is too large; it needs to be in the same location as the discharge

Board. Pollutant removal, reduction, neutralization, transformation and dilution may all be acceptable means of generating offset credits (subject to appropriate verification).

## Hypothetical Examples to Illustrate the Offset Concept[8]

**Offset Example #1: *Equivalent Discharge Concentration***

Company X is seeking to discharge 10,000 gallons/day with an average TDS concentration of 1,200 mg/L to a groundwater basin with a TDS objective of 900 mg/L and a current average quality of 2,000 mg/L. Because there is no assimilative capacity available, the Central Valley Water Board intends to issue a WDR that restricts TDS concentrations in the discharge to no more than 900 mg/L. To meet this requirement, Company X would need to reduce the TDS in its discharge by 11.4 kg/day.

Company X proposes to construct and operate stormwater recharge basins in the area overlying the same groundwater basin. The new basins are expected to increase the total amount of precipitation that percolates to groundwater by 6 acre-foot/year (approximately 2 million gallons). The captured runoff has an estimated average TDS of 100 mg/L. The combined effect of the wastewater discharge and stormwater capture is 5.6 million gallons/year of recharge with a total volume-weighted average TDS concentration of 807 mg/L. The estimated offset ratio = 1.32:1 (Note: Long-term averaging required to implement this approach).

Comment: while this may be appropriate for salts, no offsets approved to offset nitrate loading may be applied across a management zone, basin or subbasin, rather all offsets designed to ensure compliance with the water quality objective for nitrate must ensure compliance with the water quality objective in the specific area in which the underlying discharge is permitted.

**Offset Example #2: *Equivalent Mass Reduction***

Company X is seeking to discharge 10,000 gallons/day with an average TDS concentration of 1,200 mg/L to a groundwater basin with a TDS objective of 900 mg/L and a current average quality of 2,000 mg/L. Because there is no assimilative capacity available, the Central Valley Water Board intends to issue a WDR that restricts TDS concentrations in the discharge to no more than 900 mg/L. To meet this requirement, Company X would need to reduce the TDS in its discharge by 11.4 kg/day.

Company X proposes to construct and operate a desalter in the worst area of the same groundwater basin where the average TDS concentration is 4,000 mg/L. They will pump and treat 1,000 gallons/day for the benefit of a nearby community. The reverse osmosis treatment system will reduce the average TDS concentration in the product water to 200 mg/L (effectively removing 3,800 mg/L or about 14.4 kg/day). The estimated offset ratio = 1.25:1.

[8] These examples are not being proposed as archetypes. They are offered solely to stimulate discussion regarding potential application of the Offsets Policy and identify the key issues and concerns related to using offsets.

Comment: while this may be appropriate for salts, no offsets approved to offset nitrate loading may be applied across a management zone, basin or subbasin, rather all offsets designed to ensure compliance with the water quality objective for nitrate must ensure compliance with the water quality objective in the specific area in which the underlying discharge is permitted.

**Offset Example #3: *Alternate Load Reduction - Eliminate Septic System***

A municipal discharger operates a wastewater treatment facility using a series of unlined ponds that overlie a groundwater basin with no assimilative capacity for nitrate-nitrogen. The average nitrate concentration in the discharge is 14 mg/L. As the city grows, the discharger plans to replace the present treatment with an activated sludge system that will reduce the average nitrate concentration to < 10 mg/L. However, this upgrade is not scheduled to begin until 2024. In lieu of accelerating the construction plans to meet the current WDRs, the discharger proposes to expand the existing collection system to provide sewer services in an adjacent, upgradient community and to install additional aeration at the ponds to reduce the average Total Inorganic Nitrogen (TIN) concentration from 14 mg/L down to 13 mg/L. Mass balance calculations show that intercepting and treating sewage currently going to septic systems in that community and upgrading aerators will reduce the combined TIN load by 2% more than building the activated sludge system early. Expanding the collection system is estimated to cost less than one-third what it will cost to build the new wastewater treatment plant and will expand the utility's rate base by 10%. It will also result in the current pond system reaching capacity one year sooner than would occur under normal growth conditions. Therefore, the discharger also intends to begin the plant upgrade one year earlier than previously planned (i.e., 2023 instead of 2024). This project might also be implemented throughd a traditional compliance schedule or TSO.

**Offset Example #4: Planning & Design Work for Large Regional Projects**

A coalition of agricultural dischargers, operating under a common set of categorical WDRs, are discharging salts to the underlying groundwater basin where the average TDS concentration is 1,100 mg/L and no assimilative capacity exists. The agricultural operators are using the best available water supply (TDS = 175 mg/L) to irrigate their fields; but, with a 15% leaching fraction, the recharge quality averages approximately 1,050 mg/L. This is slightly better than the receiving water quality but slightly worse than the "Upper" end of the acceptable TDS range specified for the Secondary Maximum Contaminant Levels.[9] However, TDS concentrations in the drinking water wells throughout the area are generally less than 700 mg/L. In lieu of increasing the leaching fraction, the dischargers are proposing to fund the first phase of the proposed long-term salt mitigation strategy identified in SSALTs, i.e., construction of a regulated brine line. This effort would focus primarily on preliminary engineering analysis (e.g., siting priorities), initial CEQA review, and regulatory permitting. The dischargers also propose to support the outreach efforts needed to secure the federal and state grant funding needed to pay for the capital construction anticipated in some subsequent phase of the program. This "offset"

[9] California Water Code 22 §64449, Table 64449-B.

might also be approved as a condition for authorizing an exception to WDRs. Renewals of this type of offset would be limited in time and scope.

Comment: while this may be acceptable for salts, this would not be appropriate for nitrates as the plan does nothing to improve water quality in the near term, leaving residents to continue to be impacted until later phases of a long-term plan.

~~**Offset Example #5: Alternate Water Supply**~~

~~An industrial discharger disposes of its wastewater by a land application system that irrigates silage crops grown in a 500 acre parcel. This parcel overlies a groundwater basin where the average nitrate concentration is 30 mg/L (no assimilative capacity). There is an economically disadvantaged community immediately adjacent to and upgradient from the discharger's property. The community draws its drinking water from the same basin and the groundwater is contaminated by both nitrate and naturally-occurring arsenic. In lieu of reducing nitrate in the discharge, the discharger proposes to construct and operate a well-head treatment system that will reduce nitrate and arsenic levels in the upgradient community's drinking water so that it easily complies with state and federal drinking water standards.~~

Comment: this may be a mitigation project and a condition of an exception; it may not qualify as an offset.

**Offset Example #6: Nitrate Mitigation Bank**

~~A Non-Governmental Organization (NGO) seeks and receives significant grant funding from the HP Foundation to develop an independent, non-profit corporation with a charter to construct and operate small drinking water supply systems for economically-disadvantaged communities. However, the initial grant funding is sufficient to address only a small fraction of the total problem. The HP Foundation encourages the non-profit corporation to leverage the available resources by establishing a Nitrate Mitigation Bank. The NGO does so and the Central Valley Water Board formally recognizes the mitigation bank as an acceptable offset program (subject to continuing verification of nitrate credits by state authorities and independent auditors).~~

~~a. A coalition of dairy operators, governed by a common set of categorical WDRs, is discharging nitrate to groundwater at a number of widely separated locations. Some of these dairies are proximate to economically disadvantaged communities with wells impaired by excess nitrate and some are not. Rather than attempting to discern the relative priority and develop appropriate offset projects for each dairy facility, the dischargers propose to make regular payments to the Nitrate Mitigation Bank.~~

~~b. A separate crop coalition, governed by its own common set of categorical WDRs, is also dispersed over a wide area with varying proximity to economically disadvantaged communities with nitrate-impaired wells. The coalition proposes to establish and collect an annual fertilizer use fee from its own members and to remit the proceeds to the Nitrate Mitigation Bank as an Alternate Compliance Program. The dischargers request that the Central Valley Water Board deem remission of said fees as an acceptable offset under their WDR.~~

~~In both cases, the mitigation bank would be responsible for assessing needs and coordinating with the community water systems to select a cost-effective solution. Contributions from the dischargers would be used to meet "matching requirements," operation and maintenance costs, or other expenses not normally covered by state and federal grants.~~

Comment: this may be a mitigation project and a condition of an exception; it may not qualify as an offset.

**Offset Example #7: Alternate Load Reduction - Fallow Cropland**

~~A small municipality relies on a pond system to treat its wastewater. Recharge water from the ponds presently has an average nitrate concentration of 15 mg/L. Small, low cost operational improvements are expected to reduce their nitrate concentration to about 13 mg/L. Meeting a WDR of 10 mg/L would require the city to construct and operate a modern activated sludge process that would cost several tens of millions of dollars. To offset the remaining nitrate the city proposes to purchase, annex, and retire 1,000 acres of active farmland on its border. The land will be re-zoned for multi-use purposes and will have ordinances and/or covenants severely restricting the use of nitrogen-based fertilizers in this area. Mass balance analysis confirms that the load reduction which results by fallowing the farmland is functionally equivalent to that which would be achieved by building a new wastewater treatment plant. However, the offset approach would cost 30% less and, eventually, the acquisition expense would be recovered when the land was re-sold for development. The ordinances and covenants would remain in place in perpetuity. Some sort of formal load allocation process may be needed to implement this type of offset project.~~