TO: Pajaro Valley Groundwater Agency Board

From: Rural Residents for Water

Date: Oct. 18, 2021

Gloria Muruato, Daniel Castillo, Marla Anderson, Brian Sparling, Kim Burdette, Helbard Alkhassadeh, Ann Peden, Mark Garcia, Fred Berge, Enrique Melgoza, Erin Peck, Chris Favre, Roland Glenn, Riley Glenn, Leah Levin, Kathy Almoslino, Lesley Noble, Larry Abrams, Matthew Garcia, Lewis Henderson, Paul Gates, Nick Bulich, Rebecca Bozarth, Sara Montez Shannon Shaffer, Joe Silva, Valerie Roach, Bill Martin, Brenda Wood, Michael Kelly, Thom Garia, Analia Zavala, Maria Zavala, Bobby Goodwin, Maria Sedano, Camilla Alkhassaden, Joae Torres, Mariso De Leon, Theodore Green, Manuel Alvarez, Jesse Farnandez, Michael Catalano, Salvador Herrera, Richard Muruato, Virginia Kalton, Jose Ibarra, Tomiko Edminston, Kimberely Guzman

RE: Draft GSU22 Plan

We submitted a comment letter regarding the draft GSU 22 plan on October 3, 2021. Our letter provided 40 comments /concerns. The Consultants listed new information added to the draft plan for 3 of the 40 comments. In a separate Technical Memorandum, the consultant provides information which does not respond to or does not adequately address the other 37 comments.

The revised draft GSU 22 plan continues to contain many inaccuracies in data and in assumptions that grossly minimalize the potential impact of the plan on exacerbating sea water intrusion, groundwater contamination and well failures. Additional changes are needed in order to create a quality GSU 22 plan that reflects the big picture of what is going on in our basin.

In an attempt to get a better quality of response to our comments, we are providing a consolidated version which specifically address Sections 2, 3 and parts of Section 7 relative to the Oct. 15 version of the GSU22 plan. We plan to submit additional consolidated comments on the remaining sections of the plan before the end of October. **We respectfully request your thoughtful consideration of our comments below in further revising and improving the quality of the GSU 22 plan towards the best possible outcomes for all water use sectors.**

Section 2 - Sea Water Intrusion

1). RRW comment- "Past and current SWI should be better quantified and identified in the draft plan . . . .How can current and future trends be identified if past trends on an annual basis have not been provided. We are quite sure that PV Water has this information but it hasn't been presented in a quantifiable format." **Consultant response does not respond to our request for historical data that documents incremental advances in sea water intrusion regardless of its redefinition from 100 mg/L to 250 mg/L. Apples need to be compared with apples in order for meaningful tracking**

and identification of trends to occur. Quantifiable historical incremental advances in SWI need to be put into the GSU 22 plan to show advances on an annual basis from year 2000 through present.

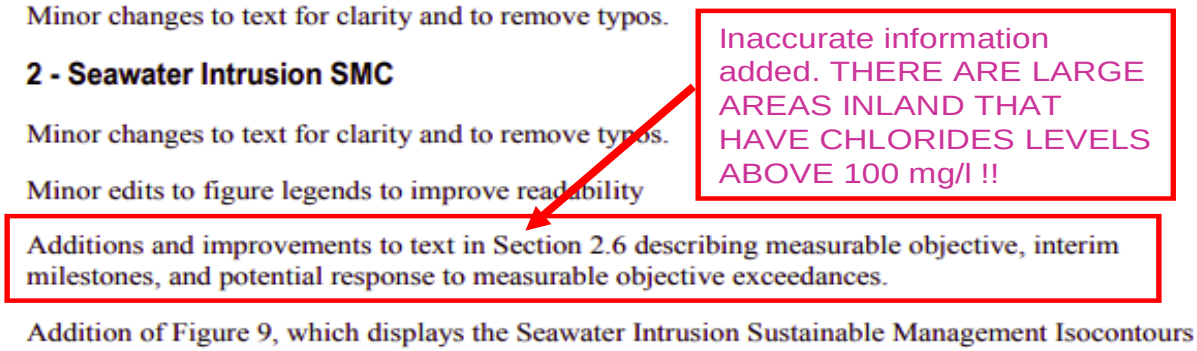
Section 2 - Sea Water Intrusion

2). RRW comment: "This comment makes no sense in Section 2.6 of the draft plan and needs to be revised. "The measurable objective is currently being achieved and the goal is to maintain that status. Therefore, interim milestones are equal to the measurable objective.""

Consultant response does not address this comment. The measurable objective is already being exceeded outside of the sea water intrusion zone in several areas. Without chloride interim milestones the exceedances how can future efforts to reduce SWI rates be evaluated? The measurable objective is NOT BEING ACHIEVED because there are several areas outside of the SWI that are already well over 100 mg/L!!

Section 2 - Sea Water Intrusion

3). Data from the State Water Boards geo tracker data base show the information below provided by consultants to be 100% false. The draft plan needs to be corrected to show the several areas in which clorides levels are being exceeded inland of the SWI zone. The high chlorides levels in these areas need to be recognized and addressed in the GSU 22 plan.

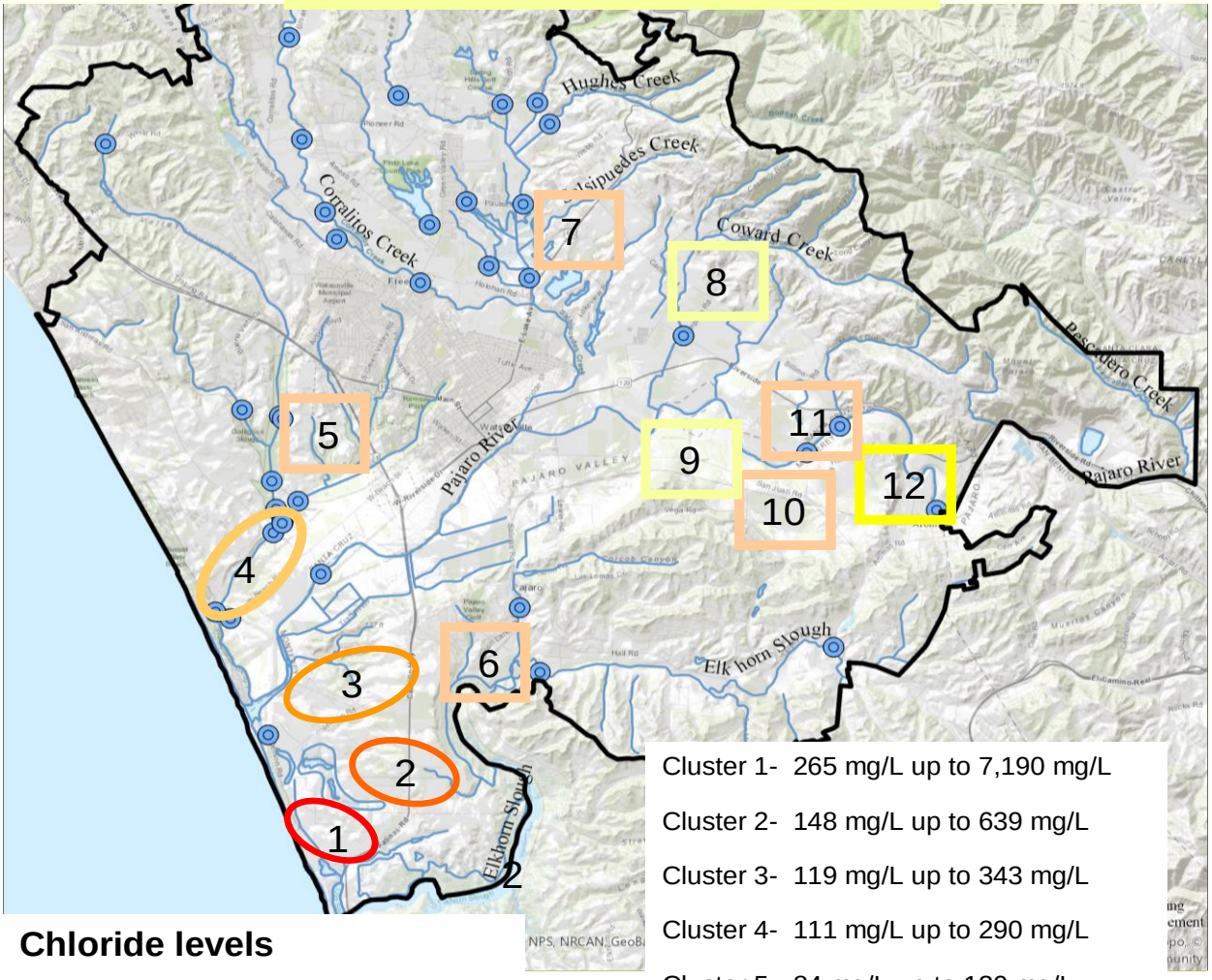


Click on following page for figures

Click below for figure

Chloride Levels over 100 mg/L

GAMA Wells 2018-2020



Chloride levels

- Between 265 and 7,190 mg/L
- Between 148 and 639 mg/L
- Between 119 and 343 mg/L
- Between 111 and 130 mg/L
- Between 130 and 150 mg/L
- Between 100 and 125 mg/L
- Data Gaps

Cluster 1- 265 mg/L up to 7,190 mg/L

Cluster 2- 148 mg/L up to 639 mg/L

Cluster 3- 119 mg/L up to 343 mg/L

Cluster 4- 111 mg/L up to 290 mg/L

Cluster 5- 84 mg/L up to 130 mg/L

Cluster 6- 140 mg/L

Cluster 7- 140 mg/L

Cluster 8- 100 mg/L up to 124 mg/L

Cluster 9- 108 mg/L up to 110 mg/L

Cluster 10- 132 mg/L

Cluster 11- 144 mg/L

Cluster 12- 110 mg/L

Section 2 - Sea Water Intrusion

4). RRW -" SECTION 7.5 NEEDS TO RECOGNIZE AND PROVIDE MANAGEMENT ACTIONS FOR SWI ALREADY OCCURRING AND THAT IS NOT BEING ADDRESSED. A STRATEGY FOR DEALING THE INTRUSION IN SPECIFIC AREAS THAT ARE NOT PROTECTED BY DELIVERED WATER NEEDS TO BE INCLUDED IN THE DRAFT PLAN[...]

a). The consultant states that a sentence has been added to Section 2.6 of GSU22: **"If the measurable objective is not being met in the future,** PV Water will evaluate its projects and management actions and **consider new strategies to prevent undesirable results**." **The measurable objective is ALREADY NOT BEING ACHIEVED IN SEVERAL AREAS OUTSIDE OF THE SWI ZONE. So why are there no projects or management actions written into the draft NOW to deal with these identified undesirable results that have already occurred? (See above figure)**

Chloride increase in the Las Lomas Area from 60 to 100 mg/L 2008 - 2018 shows steady sea water intrusion into the area. "Leveling off" 2016 - 2018 likely due to very good rain years in 2017-2018 not due to success of nearby Delivered Water Projects. If delivered water was helping here, the Hudsen Well would not have increased in chlorides by 850% from 2009 to 2019.

Section 3–Chronic Lowering of Groundwater Level

5). RRW Comment- "GWL Exceedances need to be more protective because it is not always feasible for an RMP network to proportionally detect groundwater levels for all water use sectors, especially those in upper elevations (over 200 ft above sea level)."

Consultant response talks about more monitoring wells planned to be added at specific locations. These location still do not monitor the several hundred domestic wells and small water systems located above the 200 ft. elevation level. Well owners in these areas wil be impacted even if they are tapping into the Purisima aquifer or into pockets when GWL are allowed to drop to a historical low level and stay below that level for an additional 4 years.

Click on Figure Below

Look at small water systems that are considered to be outside of the basin.The monitoring plan shows these areas as vacant

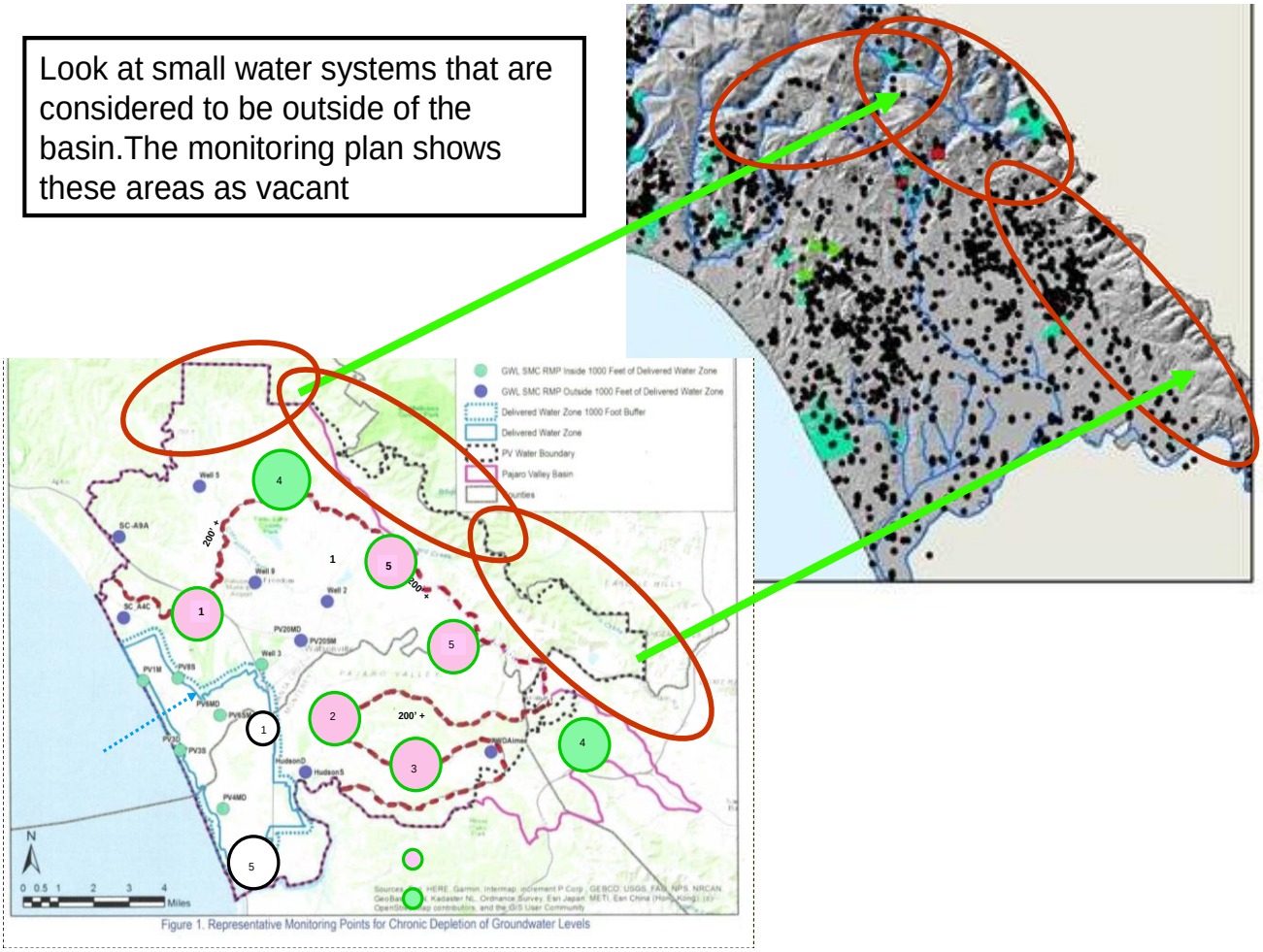


Figure 1. Representative Monitoring Points for Chronic Depletion of Groundwater Levels

Consultants state that SGMA only requires consideration of the "primary" aquifer. It's likely that these upper level areas draw from smaller sub-aquifers. However, these smaller aquifers are 100% impacted by chronic lowering of groundwater level in "downhill" aquifers. Not to include these areas within a sustainability plan for groundwater is not consistent with the "Human Right to Water" or principles of sound planning for all water use sectors as wells in upper elevation "Cracks" are the first to go when alluvial GWLs go too low.

Section 3–Chronic Lowering of Groundwater Level

6). RMPs planned in non- alluvial areas are low priority. This further exacerbates the inadequacy of the RMP network and the further skews the calculation of exceedances for GWL-SMCs to the detriment of rural residents . This makes is even more important for exceedances

to be revised so that GWLs and RMPs do not go below the minimum threshold for more then 2 years. . . not 4 years.

Click Below

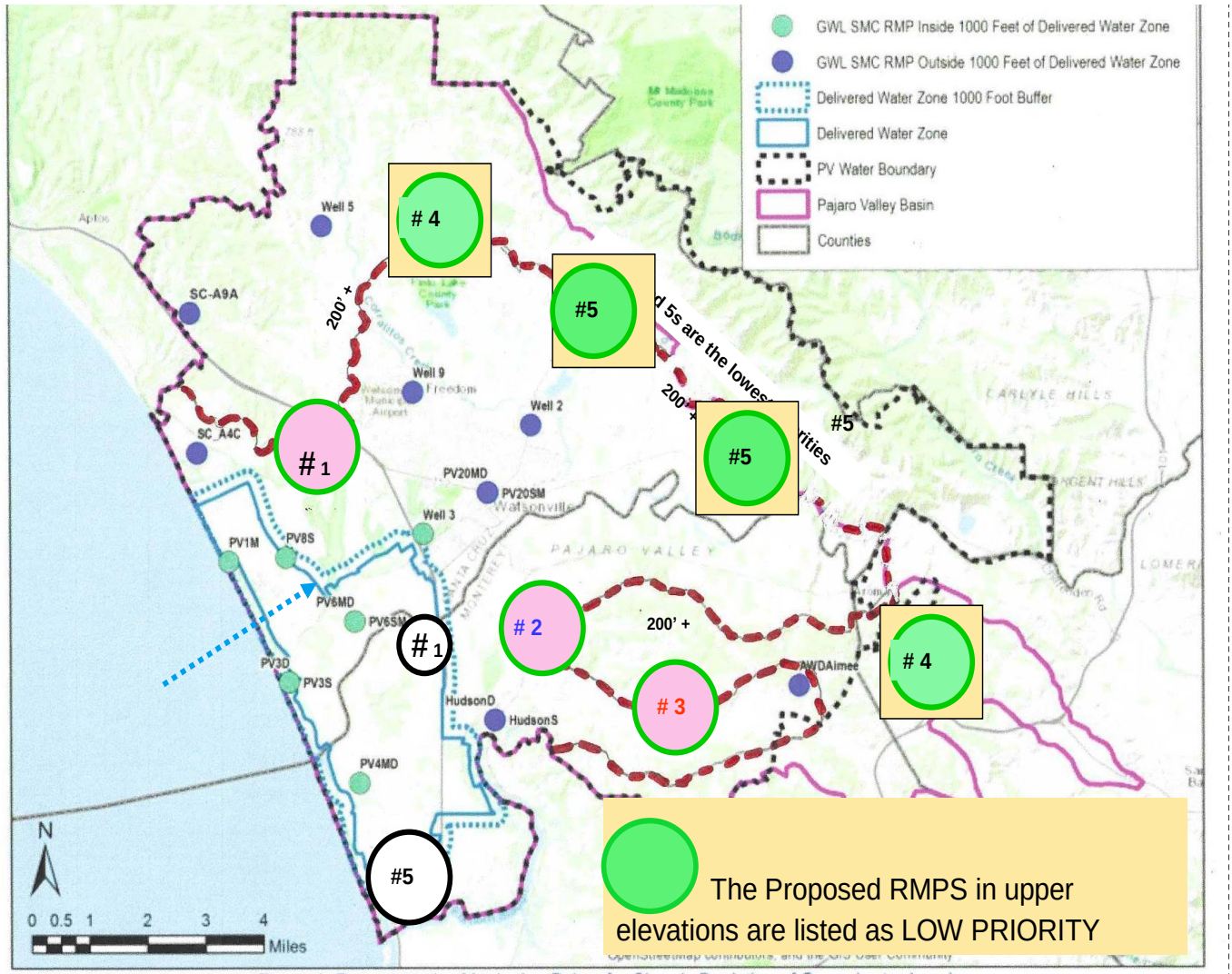


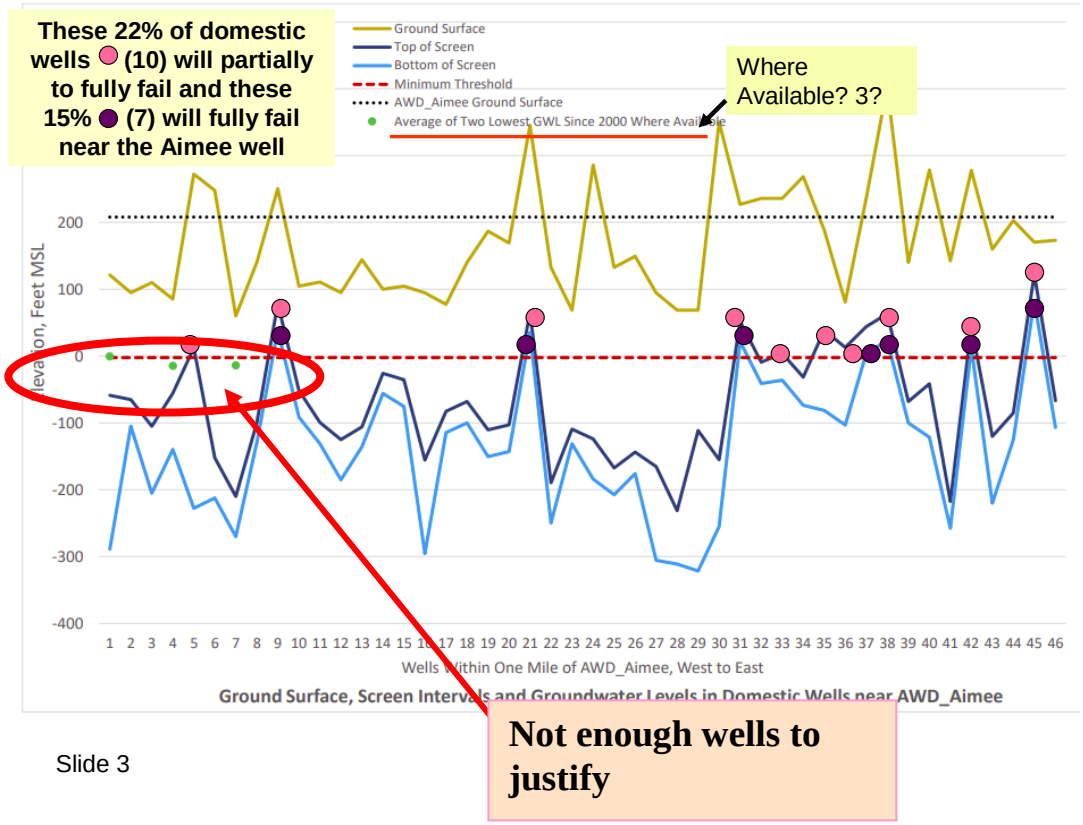
Figure 1. Representative Monitoring Points for Chronic Depletion of Groundwater Levels

Section 3–Chronic Lowering of Groundwater Level

7). RRW comment - The consultants response does not adequately address concerns over the lack of justification for inland RMPs that are clearly near domestic wells. Aimee Well- 4 of 51 nearby wells

(8%) used as justification- NOT ENOUGH WELLS. Well 5- 4 of 33 nearby wells (12%) used as justification- NOT ENOUBH WELLS. SCA 9A- 4 out of 51 (8%)

Consultant response states "The selection and justification of RMPs is based on best available information and the nearby wells used are the wells that have been monitored to provide data." The best available data is not sufficient to show justification. The claim of justification in 3.5 is not based on adequate data.



Slide 3

Section 3–Chronic Lowering of Groundwater Level

8). RRW comment- " The proposed minimum threshold levels are not based on sound historical data, especially outside of the DWZ zone.

Historical data does not support the claims of justification for minimum thresholds in Section 3.7 of the draft GSU 22 plan. Consultant claims that hydrographs listed in Appendix 3B and 3D justify minimum threshold levels at RMPs. Table 11 provides a summary of historical groundwater levels for 18 RMPs

Of the 18 hydrographs shown, 9 are located in or near the delivered water zone (Hudson S, Hudsen D, PV1M PV3D, PV3S, PV4MD, PV6SM, PV6MD, PV8S) so the graphs are representational for inland RMPS due to receipt of delivered water. For 6 of the remaining wells, NO DATA FOR YEARS PRECEDING 2000 IS AVAILABLE. The remaining 3 wells (well 5, well 9, Aimee) also have significant data gaps exist during various periods implying the wells were either deepened to capture more of the surrounding area's groundwater, more screen height was added or water users were diverted to a city water line. Out of 18 wells, there are no reliable wells with sufficient data to justify the proposed minimum thresholds over time for inland wells.

Click on following page for figure

Click below

Table 11. Summary of Chronic Lowering of Groundwater Levels Minimum Thresholds and Minimum Groundwater Levels over Time

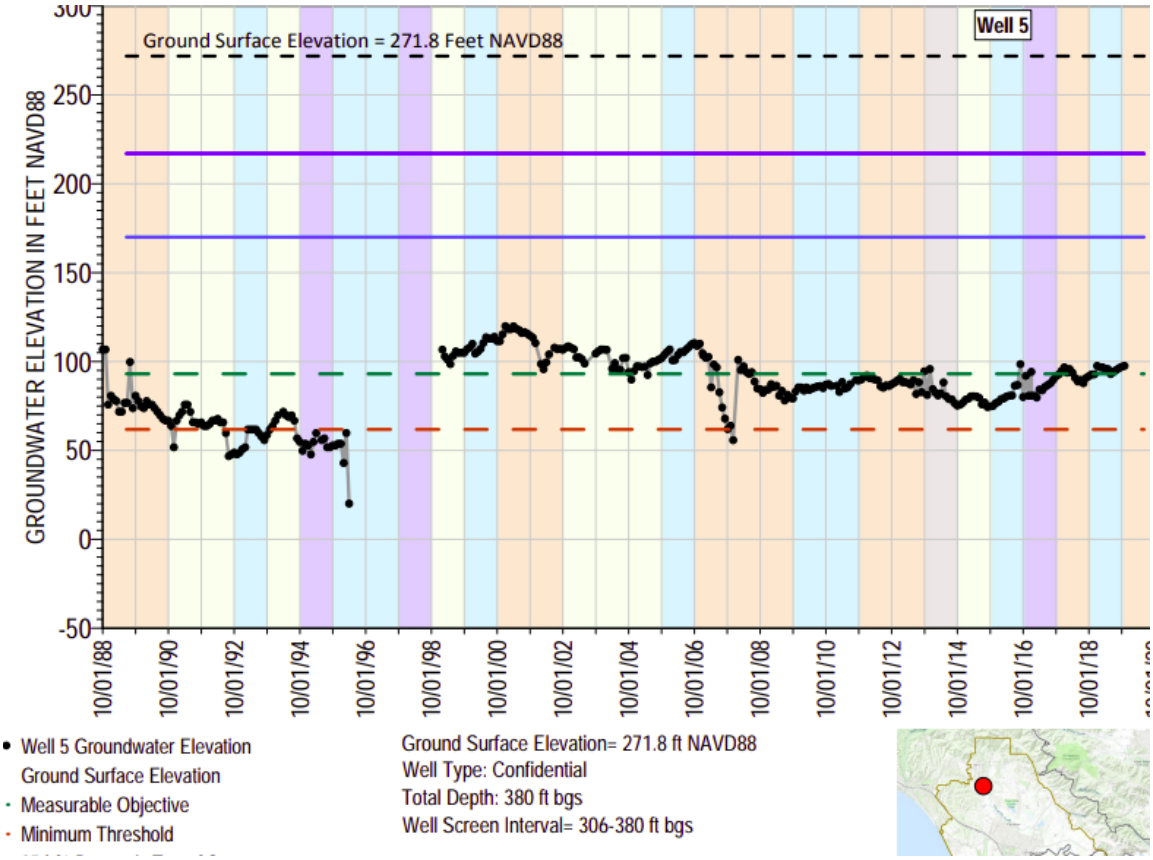
Well Name	Minimum Threshold	Pre-Water Year 2000 Minimum	Water Year 2000-2009 Minimum	Water Year 2010-2016 Minimum	Water Year 2017-2020 Minimum
	Groundwater Elevation in feet NAVD88				
AWD_Aimee	0.7	-13.0	No Data	-0.4	4.6
HudsonD	-19.8	-19.0	-20.0	-19.1	-15.6
HudsonS	-3.9	-5.8	-3.9	-2.1	-0.7
PV1M	2.2	No Data	1.8	4.7	5.1
PV20MD	-12.0	No Data	No Data	-13.0	-10.9
PV20SM	-7.1	No Data	No Data	-8.0	-6.2
PV3D	-16.1	-20.9	-16.3	-11.3	-8.8
PV3S	-5.8	-6.5	-7.9	-1.3	1.1
PV4MD	0.2	-2.1	-0.4	3.3	4.5
PV6MD	-18.4	-19.3	-20.2	-13.8	-9.0
PV6SM	-19.4	-27.1	-21.1	-13.3	-8.4
PV8S	1.7	3.0	0.9	3.1	4.2
SC_A4C	6.0	No Data	No Data	6.0	6.6
SC_A9A	10.3	No Data	No Data	10.2	10.4
Well 2	-6.1	No Data	No Data	-7.5	1.6
Well 3	-18.9	No Data	No Data	-18.9	-14.2
Well 5	61.8	20.1	55.8	74.4	79.8
Well 9	-9.5	-19.1	-3.2	-12.4	-5.6

Elevations below Minimum Threshold are underlined

Data gap years in the 1990s in hydrographs with subsequent changes in GWL patterns indicate Likely improvements were made in screen length and/or well deepening done to improve well function as compared to pre yr. 2000 function.

w

Declining water level 1988-1995, followed by a 3 year data gap 1995-1998, followed by a more consistent pattern 1998- 2018 is likely the result of well improvements or city water line extensions changing the pattern of water use from the this well. Pre yr 2000 historical low GWLs cannot be used as justification for this well.



Section 3–Chronic Lowering of Groundwater Level

9). RRW - "The statement in the draft that the minimum threshold is set at GWL that are higher than previous droughts is not true and needs to be deleted. The minimum threshold which is roughly equal to the 2014 groundwater level IS NOT HIGHER THAN GW LEVELS DURING PRIOR DROUGHTS!!"

a). Consultant claims that the proposed minimum thresholds, roughly equal to 2014 level, is higher than previous drought periods. This is not substantiated by figures contained in the 2014 Basin Management Plan shown below. Look at the footprint of groundwater below sea water in 2014. This is a larger footprint than the two prior droughts years. Click Below

2014 gw below sea level footprint is equal or larger than the peak footprint in drought years between 1947 and 2013

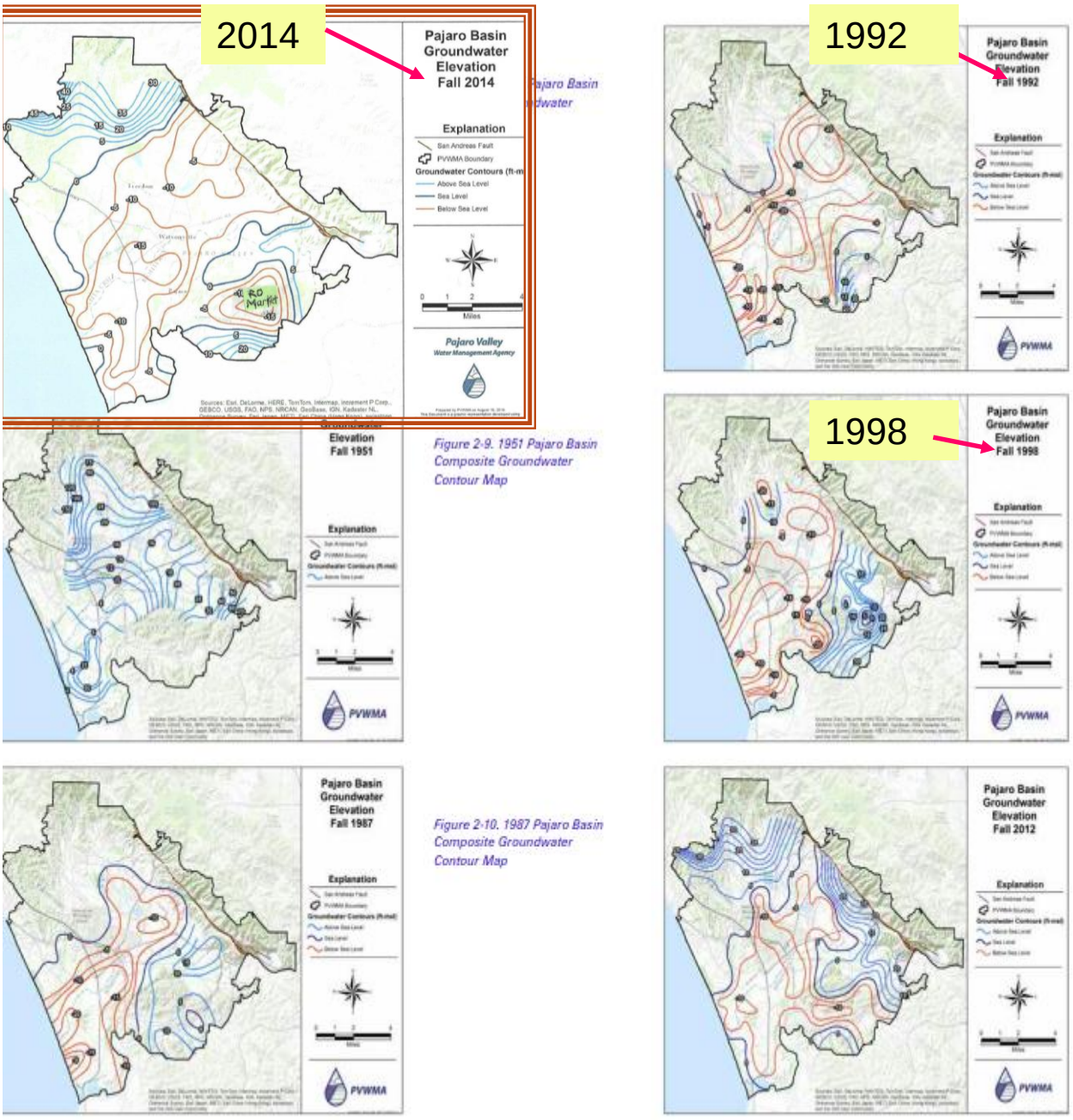


Figure 2-9. 1951 Pajaro Basin Composite Groundwater Contour Map

Figure 2-10. 1987 Pajaro Basin Composite Groundwater Contour Map

Section 3–Chronic Lowering of Groundwater Level

10). RRW – Section 3.8 of the the draft plan proposes GWL exceedances that are far out of line with other GSAs in the Central Coast region.

Consultant states that PV Water's Best Management Practice for SMC (DWR, 2017) states an example of an exceedance level as high as 37.5% . This is JUST AN ILLUSTRATIVE

EXAMPLE. . NOT A STATEMENT OF BEST MANAGEMENT PRACTICES. PVWATER'S EXCEEDANCE LEVELS ARE MUCH HIGHER AND LAST MUCH LONGER THAN ANY OTHER GSA IN THE CENTRAL COAST REGION

How Do PV Water's "exceedances" compare to those of other GSAs?

PV Water proposes to allow exceedances To continue for up to 4 years and at significantly higher percentages than other GSAs

	Salinas Valley Groundwater Sustainability Agency	Mid- Santa Cruz County Groundwater Sust. Agency	Oxnard Groundwater Sustainability Agency	Castac Groundwater Sustainability Agency	PVWMA- revised April 20
Year 1	15%	any one well for one month or more	none	any two wells	unlimited wells
Year 2	0% < and < 15%	none	none	any two wells	25%
Year 3	none	none	none	none	20%
Year 4	none	none	none	none	15%
Year 5	none	none	none	none	none

Why are PV Waters so much higher than other GSAs ? ?

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We have requested on numerous occasions for the exceedances below the minimum threshold to be reduced to 20% for 1 year and 10% for 2 years. So far, there has been no willingness to compromise on the part of PV Water's various decision makers. The claim of "stakeholder" representation is dramatically skewed towards those stakeholders who have or facilitate the interests of the deep well owners and high use water pumpers rather than people who depend on groundwater for every day living.

Section 3–Chronic Lowering of Groundwater Level

11). RRW – "The draft plan allows exceedances to go below the minimum threshold for as many as 4 years when the minimum threshold is already set at a 3-year drought period low. This creates a

situation similar to a 7-year drought which has not even occurred in recorded history for rthe Pajaro Valley Basin.

We disagree with the Consultant's statement that the exceedances do not constitute a scenario equal to a 7 year drought. The criteria that requires 15% of RMPs to go below the minimum threshold for an additional 4 years before an undesirable result occurs creates equal to a 7 year for people living in those 15% of RMP areas. the other 85% of RMP areas. This creates an disproportionate hardship for people living in areas where shallower wells tend to be located, typical for domestic wells and small water systems. People can bring in trucked water, they can put up with slow filling water tanks, etc for a year or two. Four years is too long for even one RMP to go below a minimum threshold.

7.7 –Groundwater Storage

12). RRW - Section 7.7 of the GSU plan needs to be revised. Sea Water Intrusion needs to be admitted to and quantified as propping up Groundwater levels and skewing g**roundwater storage lost when chloride limits were redefined from 100 mg/L to 250 mg/L**

Consultant states that there has not been significant increase in chlorides monitoring wells outside of the SWI zone. First hand results for a RRW member's well is that chlorides have almost doubled since it was first tested. Other data ignored includes data contained in the draft GSU 22 plan. See folloeing figures that show significant chloride increases from 2002-2011 to 2016-2020.

Click on following page for figure

Click below

HUGE JUMP IN CHLORIDES BETWEEN TOP FIGURE PERIOD AND BOTTOM FIGURE PERIOD IN BOTH ZONE 1 AND ZONE 2

OF COURSE SEA WATER INTRUSION IS ENTERING INTO INLAND AREAS AND PROPPING OF GROUNDWATER LEVELS!!

Salt and Nutrient Plan-Chapter 7.1, the existing chloride groundwater concentrations in each zone was assessed using the average chloride data from 308 groundwater wells sampled from **2002 to 2011**

2002- 2011

Table 7.4: *Assimilative capacity for groundwater chloride.*

Chloride (Cl) Assimilative Capacity (AC) Threshold = 150 (mg/L)				
	% of PVGB Area	Average Concentration (mg/L)	Remaining AC* (mg/L)	Remaining AC (%)
Zone 1 (inland)	77%	46	104	69%
Zone 2 (coastal)	23%	198	-48	-32%
PVGB Average	100%	83	67	45%

*Remaining AC is the difference between the AC Threshold and the average concentration. Negative values suggest AC Threshold has been exceeded.

2016- 2020

Table 2. Water Quality Minimum Thresholds and 2016-2020 Average Concentrations by SNMP Zone

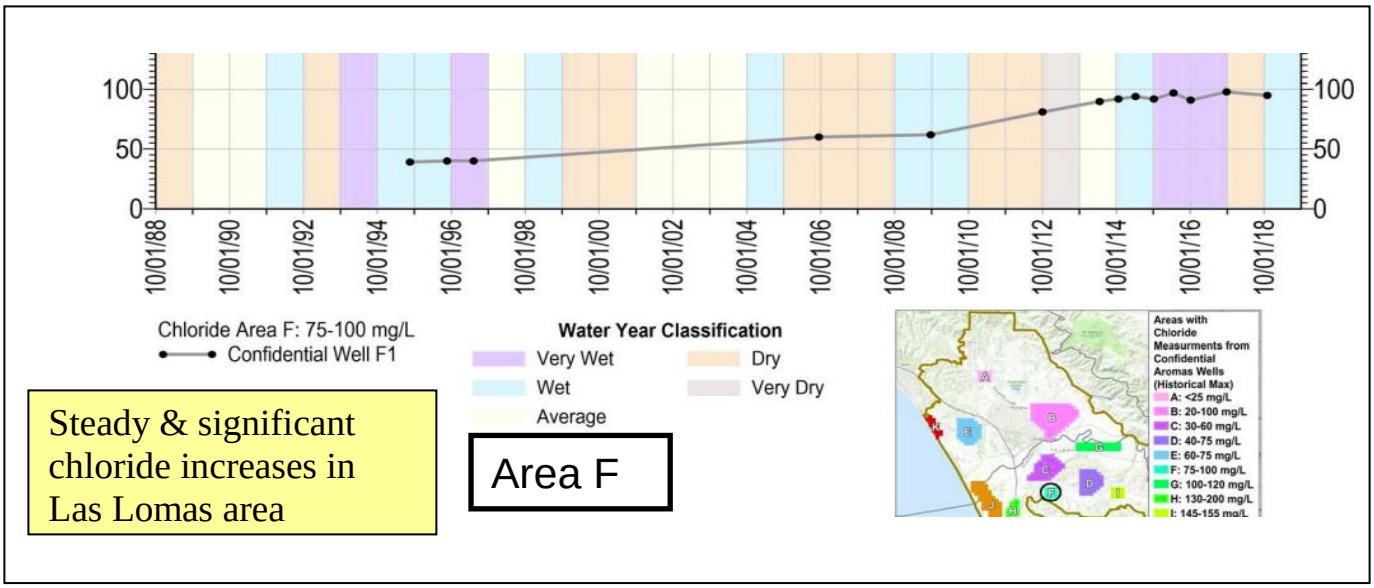
Constituent	Minimum Threshold (mg/L)	SNMP Inland Zone (Zone 1) and Non-Jurisdictional Area[1]	SNMP Coastal Zone (Zone 2)
TDS	1,000	475	816
Chloride	150	61	273*
Nitrate (NO_3)	45	24	52

[1] Combined area is area of Basin inland of Zone 2

* Chloride concentrations above the minimum threshold in the coastal zone are due to seawater intrusion, which is evaluated with the seawater intrusion SMC. Therefore, this is not a water quality undesirable result.

Red denotes water quality undesirable result.

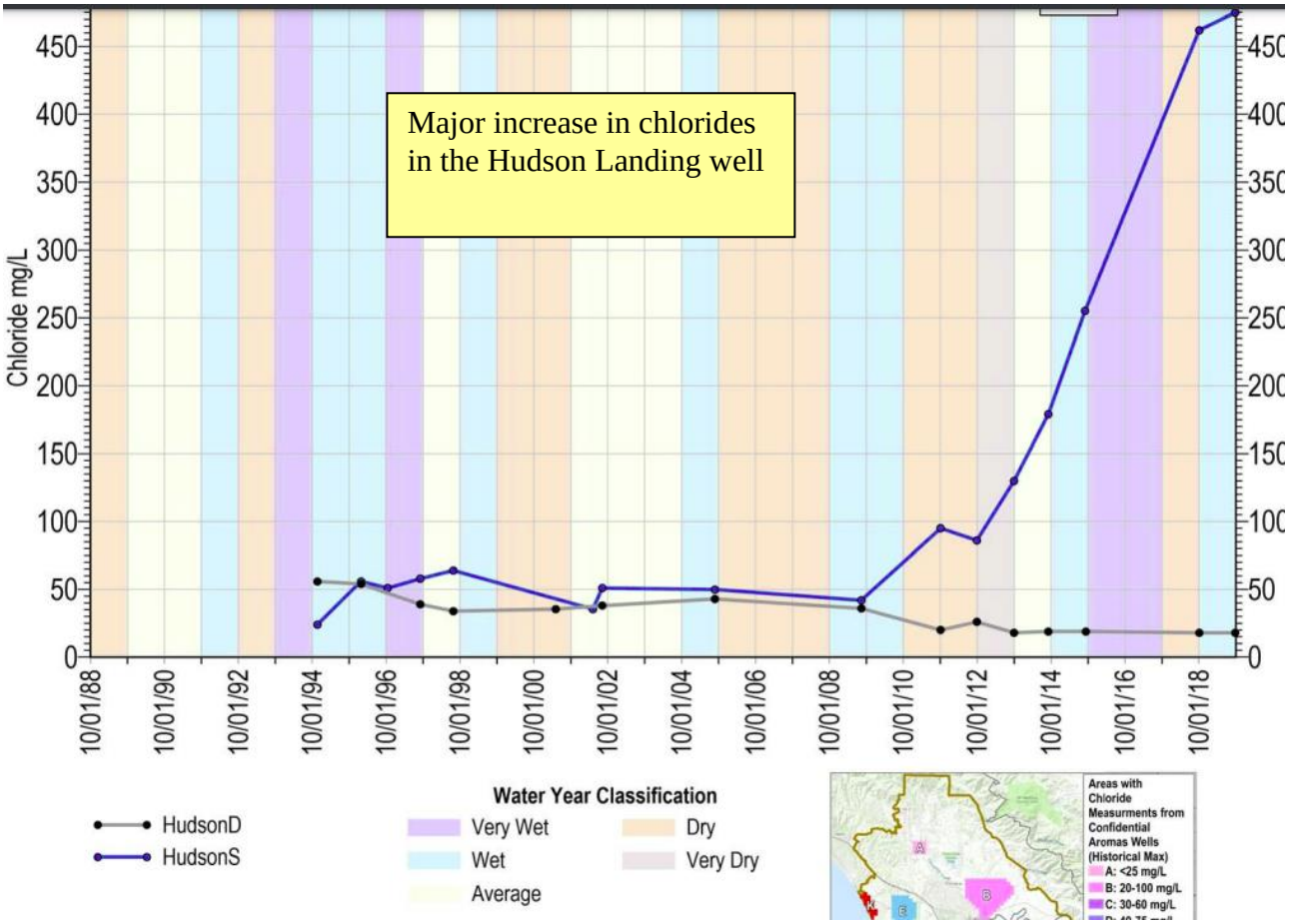
THE ABOVE SHOWS CLEAR EVIDENCE THAT SWI HAS HELPED TO PROP UP GWLS. THIS NEEDS TO BE ADMITTED TO IN BOTH SECTIONS 3 AND SECTIONS 7.7 IN THE GSU 22 PLAN



Steady & significant chloride increases in Las Lomas area

Area F

Click above and below for figures



7.7 –Groundwater Storage

13). RRW – Why does figure 7-27 display an increase in groundwater in storage from the previous year while figure 7-28 displays an increase in pumping from the previous year? A dry year with an increase in pumping should not display an increase in groundwater in storage

The Consultants response has conflicting information and fails to address our concern /comment regarding data integrity: " In their response, they state, "while it is true that 2020 was a dry year and pumping was up from the previous year. . . . In WY2020, groundwater elevations across the Basin increased an average of approximately 2 feet primarily due to the reduced pumping associated with impacts from the COVID-19 pandemics impact. . ."

So which is it? Was pumping up or down in 2020? It can't be both.

The consultants response to our comment did not address our concern about conflicting data contained in the groundwater storage status. This one of many examples of inconsistent data in the draft plan.

7.10 Groundwater Quality

14). RRW - The GSU 22 plan needs to be amended to correct errors and better address **groundwater quality objectives and assimilative policies that are pro-degradatory instead of anti-degradatory. Policies of the Central Coast Region Water Quality Control Board (SWRCB) have not been consistent in our dealings regarding this issue. We have received conflicting information about how the State has guided local GSAs in these areas. We have been guided to links that summarize State law regarding the maintenance of the highest quality of water as possible as measured against current median levels. If the rules are in flux, we maintain that if an assimilation policy exists that allows a basin average for a contaminant to double, as is the case for both chlorides and nitrates in the PV Basin, those policies need to be changed at both the State and the local levels. Doubling of nitrates creates nitrate levels so high, that reverse osmosis filters will not be able to make drinking water safe. Doubling of chlorides renders thousands of acre-feet of groundwater unsuitable for agriculture. Doubling of TDS also renders thousands of acre feet of groundwater as unsuitable for agriculture.**

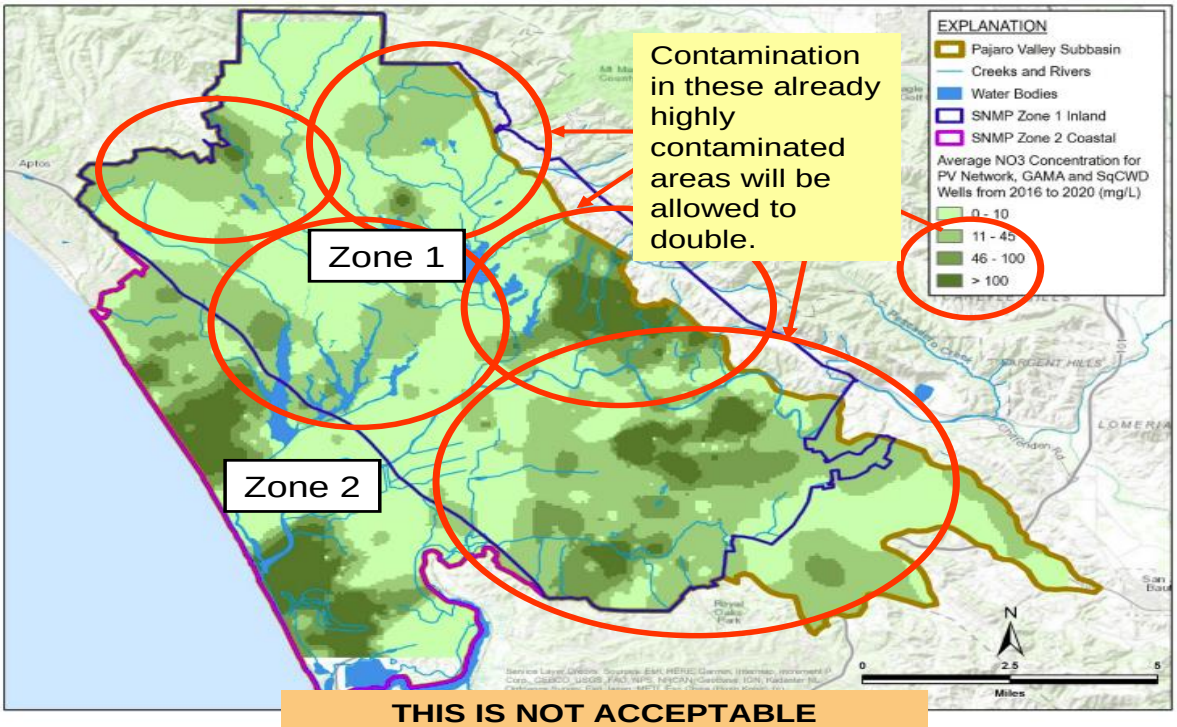
Click below for figure

Two Examples of Unacceptable Pro-degradation Policies in SNP Plan

Table 15. Water Quality Minimum Thresholds and 2016-2020 Average Concentrations by SNMP Zone

Constituent	Minimum Threshold (mg/L)	SNMP Inland Zone (Zone 1) and Non-Jurisdictional Area[1]	SNMP Coastal Zone (Zone 2)
TDS	1,000	475	816
Chloride	150	61	273*
Nitrate (NO_3)	45	24	52

Assimilative criteria allows nitrate level almost double in Zone 1



THIS IS NOT ACCEPTABLE AS ASSIMILATIVE CRITERIA!!

The State and local "assimilation" policies are creating a de facto land use planning mechanism that can result when groundwater is no longer suitable for agriculture and creates an urban conversion pressure.

Rural Residents requested in two different letters with two additional follow-up phone calls to the Central Regional Water Quality Control Board to explain why pro-degradation policies are being

allowed to set groundwater quality objectives at levels more than double the current median level for constituents. We have not received a response to our request for this information.

15). RRW- In our Oct. 3 comment letter to PVWater regarding the GSU22 plan, we requested the standards for assimilation policy be changed to be more protective of groundwater quality so as not to allow a doubling of contamination. Our request was to limit concentrations to no more than the following incremental percentages between now and 2039. We did not receive a response to our comment

- **by 2027- average concentration not to increase above the 2020 level by more than 10%**
- **by 2033- average concentration not to increase above the 2027 level by more than 5%**
- **by 2039- average concentration not to increase above the 2033 level by more than 5%**

PV Water can set an example of a much better assimilation policy by adopting a reasonable assimilative policy such as shown above. . . . . an assimilation policty that provides better protection of groundwater quality. They can set an example for DWR to consider in evaluating other GSU plans.

16). RRW- In our prior comment letter, we pointed out that the average chloride level in the Coastal zone if 273 mg/L is higher than the 250 mg/L isocontour line shown for sea water intrusion. According the Salt and Nutrient Plan's current Assimilation Policy, this constitutes an undesirable result. We asked that this fact be written into the GSU 22 section for Groundwater Quality.

The consultant responded that because because the average level of chloride is in the SWI zone, it is not an exceedance or an undesirable result. This is conflicting information. Our concern is worthy of being addressed in a more meaningful way in the GSU22 plan.

Table 15. Water Quality Minimum Thresholds and 2016-2020 Average Concentrations by SNMP Zone

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