LOS OSOS GROUNDWATER BASIN, BASIN MANAGEMENT COMMITTEE

NOTICE OF MEETING

NOTICE IS HEREBY GIVEN that the Los Osos Groundwater Basin, Basin Management Committee Board of Directors will hold a **Regular Board Meeting** at **1:30 P.M.** on **Wednesday, May 19, 2021.** Based on the threat of COVID-19 as reflected in the Proclamations of Emergency issued by both the Governor of the State of California and the San Luis Obispo County Emergency Services Director, as well as the Governor's Executive Order N-29-20 issued on March 17, 2020 relating to the convening of public meetings in response to the COVID-19 pandemic, this meeting will be conducted as a phone-in/web-based meeting only. There will be no physical meeting location for this BMC Meeting. Members of the public can participate via phone or by logging into the web-based meeting.

For quick access, go to https://us04web.zoom.us/j/778762508
(This link will help connect both your browser and telephone to the call)
If not using a computer, dial 1 (669) 900-6833 or 1 (346) 248-779 and enter **778 762 508**

All persons desiring to speak during any Public Comment can submit a comment by:

- Email at dheimel@wsc-inc.com by 5:00 PM on the day prior to the Committee meeting.
- Teleconference by phone at 1 (669) 900-6833 and enter **778 762 508**
- Teleconference by phone at 1 (346) 248-7799 and enter **778 762 508**
- Teleconference meeting at https://us04web.zoom.us/j/778762508
- Mail by 5:00 PM on the day prior to the Committee meeting to:
  Attn: Dan Heimel (Basin Management Committee)
  2122 9th St.
  Suite 110
  Los Osos, CA 93402

Additional information on how to submit Public Comment is provided on page 3 of this Agenda

Directors: Agenda items are numbered for identification purposes only and may not necessarily be considered in numerical order.

NOTE: The Basin Management Committee reserves the right to limit each speaker to three (3) minutes per subject or topic. In compliance with the Americans with Disabilities Act and Executive Order N 29-20, all possible accommodations will be made for individuals with disabilities, so they may participate in the meeting. Persons who require accommodation for any audio, visual or other disability in order to participate in the meeting of the BMC are encouraged to request such accommodation 48 hours in advance of the meeting from Dan Heimel at dheimel@wsc-inc.com.

BASIN MANAGEMENT COMMITTEE BOARD OF DIRECTORS AGENDA

1. **CALL TO ORDER**

2. **ROLL CALL**

3. **BOARD MEMBER COMMENTS**

   Board members may make brief comments, provide project status updates, or communicate with other directors, staff, or the public regarding non-agenda topics.

4. **SPECIAL PRESENTATION**

   None.

5. CONSENT AGENDA

The following routine items listed below are scheduled for consideration as a group. Each item is recommended for approval unless noted and may be approved in their entirety by one motion. Any member of the public who wishes to comment on any Consent Agenda item may do so at this time. Consent items generally require no discussion. However, any Director may request that any item be withdrawn from the Consent Agenda and moved to the "Action Items" portion of the Agenda to permit discussion or to change the recommended course of action. The Board may approve the remainder of the Consent Agenda on one motion.

a. Approval of Minutes from March 25, 2021 Meeting
b. 2021 Budget Update and Invoice Register

6. PUBLIC COMMENTS ON ITEMS NOT APPEARING ON THE AGENDA

The Basin Management Committee will consider public comments on items not appearing on the agenda and within the subject matter jurisdiction of the Basin Management Committee. The Basin Management Committee cannot enter into a detailed discussion or take any action on any items presented during public comments at this time. Such items may only be referred to the Executive Director or other staff for administrative action or scheduled on a subsequent agenda for discussion. Persons wishing to speak on specific agenda items should do so at the time specified for those items. The presiding Chair shall limit public comments to three minutes.

7. EXECUTIVE DIRECTOR'S REPORT

8. ACTION ITEMS

a. Presentation of Draft 2020 Annual Report

Recommendation: Receive a presentation from BMC staff regarding the draft 2020 Annual Report and confirm June date for BMC meeting to approve final 2020 Annual Report for submission to the Court.

9. ADJOURNMENT

Notice of Meeting

LOS OSOS GROUNDWATER BASIN, BASIN MANAGEMENT COMMITTEE

*****CONFERENCE CALL/WEBINAR ONLY*****

Thursday, May 19, 2021 at 1:30 PM

Important Notice Regarding COVID-19: Based on guidance from the California Department of Public Health and the California Governor's Office, in order to minimize the spread of the COVID-19 virus, please note the following:

1. The meeting will only be held telephonically and via internet via the number and website link information provided on the agenda. After each item is presented, Committee Members will have the opportunity to ask questions. Participants on the phone or on the computer will then be provided an opportunity to speak for 3 minutes as public comment prior to Committee deliberations and/or actions or moving on to the next item. If a participant wants to provide public comment on an item they should select the "Raise Hand" icon on the Zoom Online Meeting platform or press *9 if on the phone. The meeting host will then unmute the participant when it is their turn to speak and allow them to provide public comment.

2. The Committee's agenda and staff reports are available at the following website: https://www.slocounty.ca.gov/Departments/Public-Works/Committees-Programs/Los-Osos-Basin-Management-Committee-(BMC).aspx

3. If you choose not to participate in the meeting and wish to make a written comment on any matter within the Committee's subject matter jurisdiction, regardless of whether it is on the agenda for the Committee's consideration or action, please submit your comment via email or U.S. Mail by 5:00 p.m. on the day prior to the Committee meeting. Please submit your comment to Dan Heimel at dheimel@wsc-inc.com. Your comment will be placed into the administrative record of the meeting.

4. If you choose not to participate in the meeting and wish to submit verbal comment, please call (805) 457-8833 x104 and ask for Dan Heimel. If leaving a message, state and spell your name, mention the agenda item number you are calling about and leave your comment. The verbal comments must be received by no later than 9:00 a.m. on the morning of the noticed meeting and will be limited to 3 minutes. Every effort will be made to include your comment into the record, but some comments may not be included due to time limitations.

Mailing Address:
Attn: Dan Heimel
Basin Management Committee
2122 9th St.
Suite 110
Los Osos, CA 93402

All Americans with Disabilities Act (ADA) accommodations shall be promptly reviewed and resolved. Persons who require accommodations for any audio, visual or other disability in order to review an agenda, or to participate in the meeting of the Basin Management Committee per the ADA, are encouraged to request such accommodation 48 hours in advance of the meeting from Dan Heimel at (805) 457-8833 x104.

BASIN MANAGEMENT COMMITTEE BOARD OF DIRECTORS

Agenda Item 4a: Minutes of the Meeting of March 25, 2021

Agenda Item	Discussion or Action
1. CALL TO ORDER **2. ROLL CALL**	Chairperson Ochylski called the meeting to order at 1:30 pm. Daniel Heimel, Executive Director, called roll to begin the meeting. Chairperson Marshall Ochylski, Director Charlie Cote, and Vice Chairperson Mark Zimmer were present; Director Bruce Gibson was absent, but joined meeting at Item 4.
3. BOARD MEMBER COMMENTS	**Board Comment** None.
4. Special Presentation	Presentation on nitrate removal improvements and efficiencies. Introduced by Director Zimmer, with following comments encouraging Pilot Test concept for the BMC. Purolite Groundwater Remediation Specialist Kathy Swanson spoke about Nitrate Removal Overview, SST Resin, and Alternative Regenerants. Proposed Pilot program. Pilot unit will be automated, remote and will be available in 2-3 months. **Board Comment** **Cote:** Very interested in learning more. **Zimmer:** Decide if BMC or Golden State move forward on Pilot. **Ochylsk**i: Very interested as well to talk about it with staff. **Cote**: Possible to test on individual septic system? **Gibson**: Clarified County requirements for effluent discharge. **Public Comment** **Linde Owen**: Would the process contain toxins such as medical residual in the sludge? **Patrick McGibney**: How is this cost effective, compared to other nitrate removal, for the community? **Response to Public Comment** **Zimmer**: Brine waste stream disposal is the expensive but substantial savings achieved by regenerative. **Kathy Swanson**: Ion Exchange for nitrate removal would not remediate toxin residue, but process is focused on drinking water, rather than toxic-laden sewage.
5. CONSENT AGENDA	
5a. Approval of Minutes of January 20, 2021 Meeting.	Review of minutes from January 20, 2021 meeting. **Public Comment** **Linde Owen**: Appreciate extended minutes that are more understandable; budget question regarding AGP video services, and Monthly Meeting Administration cost is also very high.
5b. Approval of Budget Update and Invoice Register through December 2020	**Heimel response:** Open to input between balance of full transcript and time and effort; AGP reduced rate from $800 to $150 for editing and posting recording; Meeting Facilitation costs includes meeting, staff meetings, overseeing annual report – description will be updated.

	Board Comment **Cote**: Pull 5b for discussion.
5c. Approval of 2021 Budget Update and Invoice Register	**Board Action** The Board of Directors approved Item 5a and 5c. Item 5b deferred until after Executive Directors Report. **Ayes: Chairperson Ochylski, Director Gibson, and Vice Chairperson Zimmer** **Nays: None** **Abstain: Director Cote** **Absent: None**
6. PUBLIC COMMENTS ON ITEMS NOT APPEARING ON THE AGENDA	**Public Comment** **Linde Owen**: Inequity of private wells not contributing to Basin Management, hope it will be rectified possibly by ordinance; serious concern with drought. **Jeff Edwards**: Sustainability Group concern on several topics. **Patrick McGibney:** Read excerpt of letter from 2014 re: seawater intrusion. **Board Comment** None
7. EXECUTIVE DIRECTOR'S REPORT	**Board Comment** **Director Zimmer**: Sustainable Yield was revised from original and therefore needs vetting due to impact to basin yield metrics. Glad to see transducers going in. Evaluating basin metric is key analysis, and adaptive management is component. Water conservation: indoor use or total accurate today, or taken from previous report? **Heimel:** Update of Basin Yield Metric is crucial; envisions collaborative process on BMC making warranted changes; details will be discussed at future meetings. Water Conservation number has not been updated since 2019. County is evaluating conservation potential. **Director Gibson: T**ech memo on conservation potential is included in the Community Plan. **Public Comment** **Jeff Edwards:** Broderson needs loading; take water from Seapines. Funding Plans is unnecessary. Community Plan: Coastal Commission staff has not received as of March 10; ADUs will stay until Community Plan is done. **Keith Wiener:** Los Osos Sustainability Group, would like to present in future to explain points; support basin-wide funding plan. Nitrate removal. Conservation needs to be left for emergency situations. **Linde Owen:** ADU/retrofit program: there is a way to see how many have retrofitted from County. Only way to control water usage with ADUs is to charge for it. Broderson/mandate from Coastal Commission to offset ag use. **Patrick McGibney**: ADU/offset programs have no study to show effectiveness; rough estimate only. County is re-doing metrics on how offsets should be metered. **Board Direction** **Dan Heimel**: Respond to Public Comment.
8. ACTION ITEMS	

5b. Approval of Budget Update and Invoice Register through December 2020	**Board Comment** **Director Cote:** Are we still approving budget items for 2020; if so, it seems to be a violation of normal rules of budget; discuss at staff meeting. Heimel: Due to 4 separate parties, with billing procedures developed by BMC in 2020. At this time, the Cost Summary Table tracks this information but no mechanism to distinguish years. **Heimel:** Funding and Organizational working group is examining options to address budgeting and accounting limitations, as well as funding for all basin pumpers. **Public Comment** Linde Owen **Board Direction** Receive and file motion. **Board Action** **Ayes: Chairperson Ochylski, Director Gibson, Chris Gardner, and Vice Chairperson Zimmer** **Nays: None** **Abstain: None** **Absent: None**
8a. Review Preliminary Annual Report Findings	Recommendation: Receive and update on preliminary findings from 2020 Annual Report and provide direction to staff. **Board Comment** **Director Zimmer:** Use caution when changes are made; sustainable yield has changed once before. We've changed the Basin Yield Metrics, and now looking at another change; will affect analysis; Critical to look at projects, metrics and funding mechanisms before making additional changes today. **Heimel**: Correct; updates have been made to basin yield; updated number to account for completion of Basin Plan components. Comprehensive review of any changes by staff and BMC is critical. Next item will address. **Director Cote:** Concerned about small amount of time to review complicated document. **Heimel:** Sustainable yield metric is same used in 2017. **Director Gibson:** Need to move to transient model. **Public Comment** **Linde Owen** **Keith Wiener:** Error in draft; chloride level underestimated. **Patrick McGibney:** Why pending metric? **Jeff Edwards:** Include well abandonment program part of 2020 well monitoring, address with funding; make purveyor interconnectedness permanent.
8b. Formalize the Process for Implementation of Adaptive Management Plan	Recommendation: Approve the proposed approach and resolution for formalizing the procedures of implementing the Adaptive Management Plan or provide alternate direction to staff. **Public Comment** **Jeff Edwards: C**ontinue this item off calendar since it's been on since Jan. 20th.

	Patrick McGibney: If this is adopted, will it slow or defer programs for population now; what is fiscal impact? **Linde Owen:** Costs, did the County write the resolution? Show process, who involved and how long? **<u>Board Action</u>** Defer
9. ADJOURNMENT	Meeting was adjourned at approximately 4:19 PM. The next regularly scheduled meeting is on June 16, 2021 at 1:30 PM.

Attachment 1: Cost Summary (January 2021 to Current Date) for Calendar Year 2021 Budget

Item	Description	Budget Amount	Approved Contingency Allocation	Updated Allocated Budget Amount	Costs Incurred	Percent Incurred	Remaining Budget
1	BMC Executive Director Facilitation- meeting facilitation, including preparation, staff coordination, and attendance	$70,000		$70,000	$9,167.50	13.1%	$60,833
2	Meeting Expenses - facility rent	$1,500		$1,500	$0.00	0.0%	$1,500
3	Meeting expenses - audio and video services	$6,000		$6,000	$150.00	2.5%	$5,850
4	Technical Support/Adaptive Management Services	$15,000		$15,000	$930.00	6.2%	$14,070
5	Semi Annual Seawater Intrusion Monitoring	$52,000		$52,000	$17,918.80	34.5%	$34,081
6	2020 Annual Report	$56,000		$56,000	$26,181.42	46.8%	$29,819
7	Grant Pursuit Contingency	$5,000		$5,000	$0.00	0.0%	$5,000
8	Funding and Organization Studies	$40,000		$40,000	$0.00	0.0%	$40,000
9	Recycled Water Beneficial Use Evaluation	$15,000		$15,000	$0.00	0.0%	$15,000
10	Implementation Initiative Evaluation	$25,000		$25,000	$0.00	0.0%	$25,000
	Subtotal	$285,500		$285,500	$54,348		$231,152
	10% Contingency (rounded to nearest $100)	$28,600					
	Total	**$314,100**			**$54,348**	**17.3%**	**$259,752**
	LOCSD (38%)	$119,358					
	GSWC (38%)	$119,358					
	County of SLO/SLOCFC&WCD (20%)	$62,820					
	S&T Mutual (4%)	$12,564					

Attachment 2: Invoice Register for Los Osos BMC May 2021 Meeting

Vendor	Invoice No.	Amount	Month of Service	Description	Budget Item	Date Executive Director Approved	Date BMC Chairperson Approved	Date BMC Approved
WSC	5558	$9,167.50	Jan-Mar-21	BMC Executive Director Facilitation	1		May-21	
CHG	20210404	$7,110.00	Apr-21	Annual Report Preparation	6	May-21		
CHG	20210405	$11,079.62	Apr-21	Semi Annual Seawater Intrusion Monitoring	5	May-21		
CHG	20210406	$930.00	Apr-21	LOSG Meeting and Response to Comments	4			May-21
	2021 Total	**$28,287.12**						

To be approved

TO: **Los Osos Basin Management Committee**

FROM: **Dan Heimel, Executive Director**

DATE: **May 19, 2021**

SUBJECT: **Item 7 – Executive Director's Report**

Recommendations

Staff recommends that the Committee receive and file the report and provide staff with any direction for future discussions. Sections of the Executive Director's Report that have been updated or significantly changed from the previous meeting's version are underlined.

Discussion

This report was prepared to summarize administrative matters not covered in other agenda items and to provide a general update on staff activities.

Funding and Financing Programs to Support Basin Plan Implementation

Prop 1 GWGP: As indicated in the January 2018 meeting, the State Board confirmed that sea water intrusion mitigation projects under Program C are eligible for low interest loans but are not currently eligible for grants under the Proposition 1 Groundwater Grant Program (GWGP). New wells in the upper and lower aquifer are viewed as aquifer management, not aquifer clean-up as defined by the State, therefore we will need to look for future funding rounds and other opportunities. Round 3 of the Prop 1 GWGP is anticipated to be released in July of 2021. If aquifer clean-up projects (e.g. Community Nitrate Facility, Upper Aquifer Capture and Treatment) are proposed for further implementation of the Basin Plan the BMC could consider pursuing grant funding through this program.

IRWM: The Program A upper aquifer well at 8th Street was submitted by Los Osos CSD to the local IRWM process in 2019 and was subsequently selected to be a part of the application for the current funding opportunity. The application for this grant was submitted in December 2019 and the Project was included in the Department of Water Resource's July 2020 Final Funding Award List for the full grant request ($238,000).

Prop 1 SWGP: The concept of urban storm water recovery at 8th and El Moro was ranked in the County Stormwater Resource Plan, and a grant opportunity may be available through the Prop 1 Storm Water Grant Program (SWGP). The application period for Round 2 of SWGP funding has closed. The Stormwater Resource Plan can be found here:
https://www.slocounty.ca.gov/Departments/Public-Works/Committees-Programs/Stormwater-Resource-Plan.aspx
And information about the Storm Water Grant Program can be found here:
https://www.waterboards.ca.gov/water_issues/programs/grants_loans/swgp/prop1/

WRFP: The State Water Resource Control Board (SWRCB) recently increased the amount for Water Recycled Program Planning (WRFP) grants from $75k to $150k. This could provide a grant funding opportunity to advance Basin Plan initiatives, with a reduced cost to the community of Los Osos, through preparation of a Recycled Water Facilities Planning Study (RWFPS). Potential scope items for the RWFPS could include:

- Transient Groundwater Model Development
- Soil Aquifer Treatment (SAT) Assessment
- Broderson/Creek Discharge Scenario Analysis
- Stormwater and Perched Water Recovery Project – Feasibility Study
- Adaptive Management Groundwater Modeling
- RWFPS Report Development

Status of BMC Initiatives

Formalize Sustainable Yield: Updated production capacity at purveyor wells received for two of the three purveyors. Recycled water distribution updated. Will update sustainable yield for year-end 2020 and incorporate into 2021 Annual Report. Current draft BYM of 73 based on sustainable yield of 2,760 AFY from 2019 and 2020 production of 2010 AF (2010/2760*100 = 73).

Lower Aquifer Transducer Installation: Lower Aquifer Transducer Installation: In March CHG initiated requests for permission to access and install transducers in several County monitoring wells, a private well, and a purveyor well. The requests are still in process.

Basin Metric Evaluation: Analysis of alternative metric approaches in progress. This will be a separate TM for review after completion of annual report. Alternative metrics will be evaluated in 2021 and incorporate into the 2021 Annual Report. Draft TM anticipated in Summer/Fall 2021.

Recycled Water Beneficial Use Evaluation: Work on initiative to begin following completion of Annual Report preparations. Draft TM anticipated in August 2021.

Status of Basin Plan Implementation and Funding Plans

The BMC has requested an integrated funding plan for project implementation and BMC monitoring and administration. BMC Staff and BMC Party Staff have formed a Funding and Organizational Working Group to identify and evaluate potential future funding and organization structures for the BMC and implementation of the Basin Plan. Consistent with the Basin Plan, the Working Group is identifying and evaluating funding and organizational structures that will provide a long-term mechanism for funding BMC Administration and Basin Plan Implementation costs and that allocate costs equitably amongst all who benefit from the Basin's water resources.

The Working Group is reviewing previously completed analysis on BMC funding and organization structures, documenting the different alternatives and identifying data/information

gaps that may require outside technical support. It is envisioned that the Working Group will prepare a summary of the different funding and organization structures, an outline scope of work for the Funding and Organization Study and recommended next steps for the BMC to consider for future funding of BMC Administration and Basin Plan Implementation costs.

JPA Formation: Staff level discussions continue to focus on the need for, and benefits of, forming a JPA, see table below, to assist with implementation of the Basin Plan.

Table 1. JPA Formation Considerations

Pros	Cons
• Common ownership of basin assets	• Complexity and community perception
• Ability to contract for services as an entity	• Potential for more difficulty in formal proceedings - less nimble
• GSWC can participate as a director	• More difficult to exit/change if needed
• Could cover entire limits of basin for funding	
• If carefully done, incremental costs could be limited to insurance and up-front legal expenses	
• Ability to carry-over funds from one budget year to another	

As indicated in previous meetings, it was determined that GSWC could serve as an appointed JPA director without forming a separate Mutual Water Company entity, which would simplify the process.

Discussions with BMC Party Staff indicate that the BMC Parties would like to execute the Implementation Plan initiative to first develop a roadmap for the BMC and then evaluate the potential formation of a JPA or other governance structure once there is a more defined plan for future BMC initiatives.

Program B Implementation Process and Funding: The existing nitrate removal facility owned by GSWC is intended to serve existing development, so it is likely that a Program B facility intended for future development would be jointly owned by either a JPA or by one of the public agencies.

- Likely next steps for the implementation of Program B projects include:
    - Technical Studies to validate and update cost estimates
    - Siting Studies to identify project locations
    - AB 1600 analysis to evaluate funding options relative to future development in coordination with the Los Osos Community Plan
    - Environmental Review (CEQA)
    - Land Use Permitting (e.g. Coastal Development Permits, etc.)

Land Use Planning Process Update

Los Osos Retrofit-to-Build Program (Title 19 Water Offset Requirement) Update:

The County Department of Planning and Building is in the process of hiring a consultant to update the retrofit-to-build program for Los Osos to: 1) update the water savings calculation assumptions, 2) identify initiatives to expand the program; 3) create a framework to administer new initiatives with an ongoing monitoring and reporting component; 4) estimate administrative staffing costs; 5) estimate the water savings potential remaining in Los Osos; and 6) recommend Title 19 ordinance amendments.

Los Osos Community Plan:

The Los Osos Community Plan is being reviewed by the California Coastal Commission and a hearing date has not yet been scheduled. On December 15, 2020, the County Board of Supervisors adopted the Los Osos Community Plan ("LOCP") update and Final Environmental Impact Report and tentatively adopted amendments to the Growth Management Ordinance that would establish a residential growth rate for the Los Osos urban area. The LOCP policies are still subject to change based on California Coastal Commission review. If the LOCP is certified by Coastal Commission with no changes, the Growth Management Ordinance amendments to establish a growth rate for Los Osos are effective upon certification. If the LOCP requires changes, then the growth rate would need to be established at another Board hearing. The LOCP and Growth Management Ordinance policies considered by the Board on December 15 are available at: https://agenda.slocounty.ca.gov/iip/sanluisobispo/agendaitem/details/12683.

Background

The Board authorized preparation of this update on December 11, 2012. A series of community outreach meetings to unveil the Community Plan were conducted in the Spring of 2015. The plan was prepared to be consistent and coordinated with the draft groundwater basin management plan and the draft Habitat Conservation Plan ("HCP"). The draft Environmental Impact Report was released on September 12, 2019; comments were due December 11, 2019. A Community Meeting on the Draft Environmental Impact Report for the LOCP, HCP, and associated Environmental Documents was held on October 28, 2019. The Final Environmental Impact Report and Public Hearing Draft were released on June 8, 2020. The Planning Commission held hearings on July 9, 2020, August 13, 2020, and October 8, 2020. At the October 8, 2020 hearing, the Planning Commission recommended approval of the Plan to the Board of Supervisors.

Accessory Dwelling Units (ADU):

On January 28, 2020, the Board of Supervisors considered and adopted a resolution to amend Title 22 and 23 for the replacement of the Secondary Dwelling Ordinance with a new ordinance for Accessory Dwelling Units (ADUs). The Board of Supervisors adopted amendments to Table “O” of the Coastal Framework on June 16, 2020. These amendments would allow ADUs to be established in the Community of Los Osos. The amendments to Title 23 and Table “O” of the Coastal Framework for Planning are currently under review by the California Coastal Commission. Until such amendments are approved by the California Coastal Commission, the County will review ADU applications for consistency with State ADU law, which would allow for

the construction of ADUs in the Coastal Zone. On March 12, 2021, Coastal Commission found that Los Osos ADU projects approved by the County thus far raise a substantial issue and did not hold a hearing on the question. The Commission took jurisdiction over the projects and voided the County's prior approval. The next step in the process is the de novo hearing, which has not yet been scheduled. The Commission would prefer to take an action on the County's proposed ADU Ordinance before taking an action on individual projects. The Commission has requested additional information from the County about the ADU Ordinance. The County is preparing a response, which includes coordinating with the Los Osos water purveyors regarding ADUs.

Los Osos Wastewater Project Flow and Connection Update

The following table summarizes flows from the LOWRF based on the available data. Cells highlighted in yellow indicate data that was not available at the time the Executive Director's Report was developed.

LOWRF Wastewater and Recycled Water Flows

Year	Month	Influent	Broderson	Bayridge	Sea Pines	Giaco-mazzi	Construction Water	Ag Users	Discharge/ Recycled Water Delivery Total (AF)
2021	Jan	48.7	38.0	1.1	1.7	0.0	0.0	0.1	42.6
2021	Feb	43.0	47.3	1.7	1.0	0.0	0.0	0.0	50.5
2021	Mar	47.5	47.2	1.9	1.0	0.0	0.0	0.0	50.3
2021	Apr								
2021	May								
2021	Jun								
2021	Jul								
2021	Aug								
2021	Sept								
2021	Oct								
2021	Nov								
2021	Dec								
Total									

Enforcement: A list of properties that were not connected were transferred to County Code Enforcement and Notice of Violations were issued last year in Feb. 2019. That list was about 70 properties. As of 5/12/2021, the sewer service area has a 99.4% connection status with a total of 36 properties not yet connected. Of those, one is not required to connect because there is no structure (demolished), 18 have expired building permits, and the rest have an open Code Enforcement case.

The County has assigned staff in code enforcement to Los Osos. Expired permits did not receive a Code Enforcement case because those properties have their own noticing process through the Building Department which, if not corrected, could result in a Notice of Violation.

Water Conservation Update

Rebate Update: Average indoor water usage for 2019 was estimated to be 40 gpd per person and remains at that number currently.

Cannabis and Hemp Information

Hemp: According to the Ag Commissioners Office there is no hemp cultivation currently registered in Los Osos.

Cannabis: On January 28, 2021, the County Planning Commission approved a request by Wild Coast Farms for a Coastal Development Permit / Development Plan (DRC2018-00215) and adopted the Mitigated Negative Declaration (MND) prepared for the project to allow for the phased development to establish 27,500 sf of indoor cannabis cultivation area (22,000 sf canopy); 12,600 sf of ancillary and commercial indoor nursery area; a 1,472 sf metal building for indoor ancillary processing, a cloning area, a restroom, storage, and an office; Ancillary Transport; and related site improvements (e.g., composting area, trash / recycling area, parking, general storage, etc.). A parking modification is requested to allow 9 parking spaces instead of the required 81. The project will result in the disturbance of approximately 3 acres on a 73.5 acre parcel located at 2198 Los Osos Valley Road, approximately 0.5 miles northwest of the Los Osos Valley Road/Clark Valley Road intersection and directly west of the Los Osos Wastewater Facility (LOWWF). The site is in the Agriculture land use category and within the area governed by the Estero Area Plan. The project site is outside the Los Osos Urban Reserve and the Los Osos Community Services District boundary and is within the Coastal Appeal Area.

The Planning Commission approval has been appealed to the County Board of Supervisors. An appeal hearing date has not yet been scheduled.

The Planning Commission hearing item documents (staff report, findings, presentation, conditions of approval, MND, etc.) are available at:
https://agenda.slocounty.ca.gov/iip/sanluisobispo/agendaitem/details/12865

The permit Conditions of Approval require the applicant to submit a Water Conservation Plan for review and approval by the Department of Planning and Building prior to building permit issuance to implement a water demand offset of 3.5 acre-feet per year (AFY), to be verifiable and permanent.

Sustainable Groundwater Management Act (SGMA)

SGMA Overview: The SGMA took effect on January 1, 2015.[1] SGMA provides new authorities to local agencies with water supply, water management or land use responsibilities and requires various actions be taken in order to achieve sustainable groundwater management in high and medium priority groundwater basins. Los Osos Valley Groundwater Basin (Los Osos Basin) was subject to SGMA based on the 2014 Basin Prioritization by the California Department of Water Resources (DWR) that listed the Los Osos Basin as high priority and in critical conditions of overdraft.[2]

Basin Prioritization: On December 18, 2019, DWR released the SGMA 2019 Basin Prioritizations. Basins or subbasins reassess to low or very low priority basins or subbasins are not subject to SGMA regulations. A summary of DWR's Final SGMA Prioritizations for the Los Osos Area Subbasin and Warden Creek Subbasin are listed below:

- Los Osos Area Subbasin is listed as **very low** priority for SGMA[3] and in critical conditions of overdraft[4]
  - SGMA does not apply to the portions of Los Osos Basin that are adjudicated provided that certain requirements are met (Water Code §10720.8).
- Warden Creek Subbasin is listed as **very low** priority for SGMA[3]

For more information on DWR's basin boundary modification and prioritization process, please visit: https://water.ca.gov/Programs/Groundwater-Management/Basin-Prioritization

Additional Attachments:

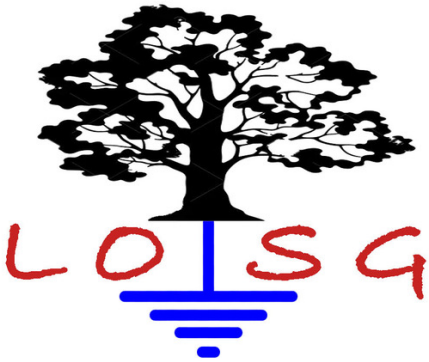
1. LOSG Comment Letter_3-16-21
2. BMC Staff Response to LOSG Comment Letter
3. LOCAC Land Use Committee Letter
4. Wild Coast Farms Water Management Plan

[1] On September 16, 2014, Governor Jerry Brown signed into law a three-bill legislative package, composed of AB 1739 (Dickinson), SB 1168 (Pavley), and SB 1319 (Pavley), collectively known as SGMA

[2] SGMA mandates that all groundwater basins identified by DWR as high- or medium-priority by January 31, 2015, must have groundwater sustainability agencies established by June 30, 2017. The act also requires that all high- and medium-priority basins classified as being subject to critical conditions of overdraft in Bulletin 118, as of January 1, 2017, be covered by groundwater sustainability plans, or their equivalent, by January 31, 2020. Groundwater sustainability plans, or their equivalent, must be established for all other high- and medium-priority basins by January 31, 2022.

[3] As noted by DWR, the priority for the subbasin has been set to very low (0 total priority points) as a result of conditions being met under sub-component C of the Draft SGMA 2019 Basin Prioritizations.

[4] Critical conditions of overdraft have been identified in 21 groundwater basins as described in Bulletin 118 (Water Code Section 12924). Bulletin 118 (updates 2003) defines a groundwater basin subject to condition of critical overdraft as: "A basin is subject to critical conditions of overdraft when continuation of present water management practices would probably result in significant adverse overdraft-related environmental, social, or economic impacts."



March 12, 2021

Los Osos Basin Management Committee
Los Osos, CA

Dear Committee Members:

Subject: Concerns and requests regarding the status and management of the Los Osos Groundwater Basin (with underlined corrections to our March 3, 2021 letter)

I am writing on behalf of the Los Osos Sustainability Group (LOSG).

We would, first, like to thank the three purveyors on the BMC for the letters you submitted to the County regarding the Los Osos Community Plan (LOCP). Your letters, which ask the County to slow down on the push to develop the area, reflect our concerns as homeowners and as water customers. We agree with the LOCSD and Golden State Water Company that not enough reliable data is available to conclude that the Basin can support further development, and that the first priority of the Basin Plan and the BMC is to provide a sustainable water supply for the current population. We also agree with S & T Mutual that the Basin is not sustainable under current conditions due to the threat that active seawater intrusion and nitrate contamination pose to existing production wells.

Our other purpose for writing is to provide you with an overview of our concerns relating to the Basin Plan and Basin management, including our concerns that some of your actions may enable unsustainable development over the Basin via the LOCP and most

recent Growth Management Ordinance. As property owners and water customers, like some of you, we have a very large investment in the Basin, having helped fund the wastewater project, which recently had a cost increase, and having invested in the Basin Plan and Basin management through increased water rates. Our members have also invested a good deal individually to install conservation measures including rainwater and grey water systems, and water-saving indoor measures. As a group, the LOSG also invested considerable time, energy, and money in advocating for the sustainability of the Basin during the wastewater project review process, in front of the Regional Water Quality Control Board, and at BMC meetings. Along with the Sierra Club and Surfrider Foundation, we were instrumental in encouraging the Coastal Commission to include Special Conditions 5 and 6 in the Coastal Development Permit for the wastewater project.

After reviewing BMC documents, we have submitted comments to the County regarding the water-supply aspects of the LOCP, the Basin Plan, and basin management. We hope BMC members have had a chance to review them. A summary of our concerns follows, along with related specific requests.

Summary of Concerns

Concerns relating to BMC priorities

A main concern for us is for the BMC not to lose its focus on prioritizing the first two immediate goals of the Basin Plan—to stop and/or to the extent possible reverse seawater intrusion, and to provide a sustainable water supply for the current population.

When referring to seawater intrusion in the lower aquifer and nitrate contamination in the upper aquifer, the Basin Plan states on Page 1, "It is vital that bold, decisive and immediate actions be taken to solve these twin challenges and protect the sustainability of the Basin." The Basin Plan later states:

> *Seawater intrusion has caused some municipal wells in Los Osos to become unsuitable as sources of drinking water due to high levels of salts, and threatens to affect many other wells in the community. Currently, and for the foreseeable future, seawater intrusion is the most serious challenge facing the Basin* (p. 93).

Since 2015 when the Basin Plan was finalized, seawater intrusion appeared to be retreating based on the Chloride Metric in 2017 and 2018, only to move back in, so that by fall of 2020, it was near its original 2016 position when intrusion was at its worst. Seawater intrusion in Zone E, the most severe and advanced intrusion into the Basin—possibly reaching as far inland as the commercial area—has continued to destroy substantial Basin capacity and may be moving in across a wider front than originally estimated. A September 2019, TM confirms that Zone E intrusion is moving in at LA11 in

the northern Basin, and the new Zone E monitoring well, LA40, confirms it is moving in further to the south along the syncline. The 2019 Annual Monitoring Report states that not enough data is available to accurately track Zone E intrusion, but assumes it has intruded into most of the Western Area of the Basin (p. D2). We note that, until 2018 the Annual Monitoring Reports (AMRs) indicated that intrusion in Zone E was likely through "a relative narrow preferential pathway," but in 2019 the AMR no longer included that assumption, implying that it is intruding via a wider front (e.g., 2018 ARM, p. 54).

Despite this continuing and severe seawater intrusion, the BMC has not taken "bold, decisive, and immediate actions" to address the problem. In the past six years since beginning operation, the BMC has implemented a voluntary conservation program with low participation, a recycled water program (the largest part of which, Broderson leach fields, have yet to push back seawater intrusion, and may never live up to modeling predictions), and one Program C expansion well (2019 AMR, pp. 81, 84 & 87).

At the same time, the BMC has spent over $600,000 on administration, monitoring reports, studies, and technical memoranda (TMs). One of these TMs, the 2018 Adaptive Management TM released in February 2019, found the Basin to be sustainable for the current population based on modeling and Chloride and Water Level Metric results, which showed positive "trends" at the time. Since then, the metric trends reversed and the Chloride Metric now shows conditions are almost as bad as they were at their worst. The Water Level Metric shows little improvement, remaining at about 1.8' above mean sea level in 2020, well below the 8' target.

However, the BMC did not reject the Adaptive Management TM's findings when the metrics reversed, reaffirming a commitment to implementing all the programs needed to stop and reverse seawater intrusion to provide a sustainable water supply for the current population. Instead, the BMC last month voted to revise the metrics.

This month the BMC is considering a proposal to change adaptive management procedures, which we understand may formalize the findings of the 2018 Adaptive Management ™, effectively reserving some or all of the remaining Basin Plan mitigation programs for future development. If this action has the potential to delay or reduce the programs or actions that support Basin sustainability for the current population, it would be inconsistent with Basin Plan priorities, the basic purpose of adaptive management, and sound management practices. Inconsistency with sound management practices would be shown by the BMC's basing a decision that has long-term irreversible consequences on a modeling prediction not supported by adequate monitoring data.

The LOSG has pointed out in the past that Basin Plan metrics and monitoring in general have significant problems, and we recommend changes in our attached requests. However,

the BMC's inconsistent use of the metrics and data to justify delays in implementing programs, apparently to reserve programs for new development, is very troubling and signals to us a shift in BMC priorities from immediate goals to the support of further development.

Another example of the BMC's shift away from stopping seawater intrusion as soon as possible is the BMC's failure to object to the use of the Title 19 program. The program directly competes with the BMC and purveyor programs for the remaining conservation potential. The Basin Plan points out that aggressive conservation, as current residents have implemented in the Basin, can result in a "hardening of demand," which precludes the effective use of conservation to respond to droughts and water shortage emergencies (p. 112).

We are also concerned about the apparent inconsistent use of modeling to support new development. The BMC continues to allow what are likely best-case scenarios to be used in TMs to arrive at findings that support development, without considering modeling uncertainties and less-than-best-case scenarios. For instance, though rainfall over the past 15 years has averaged 13% less than assumed in the model, the BMC is not assuming the Yield Metric Target has been reduced by about 350 AFY based on a 2017 TM (see BYM Response Analysis TM, Table 4, p.10). It is also not challenging the finding of a TM sponsored by the LOCSD, included in the June 2020 BMC agenda packet, that 150 AFY of "marginal yield" exists for future development, when that 150 AFY would be more than offset by the last 15 years of lower rainfall (see Program Update TM, p. 3).

Further, the BMC is not having Cleath-Harris Geologists run scenarios where Broderson leach fields are ineffective at pushing back seawater intrusion to see where the model would locate the seawater intrusion fronts in Zones D and E, or what the new Yield Metric Target would have to be to maintain the seawater intrusion fronts offshore as currently predicted with the model assuming operational leach fields. In addition, the BMC is not requiring updates of the model, a range of less-than-best-case modeling scenarios (e.g., related to relocating wells), nor having an objective outside expert do an uncertainty analysis or a peer review of the model as provided for in the Stipulated Judgment (p. 22).

<u>Concerns relating to costs</u>

We appreciate that the BMC has attempted to reduce costs to residents for Basin Plan programs and BMC operation by seeking grant funding and paying for programs through periodic water rate increases. However, the Stipulated Judgment gives the BMC explicit authority to raise funds, citing the urgent need to implement programs.

> *The parties shall make every reasonable and practical effort to implement a plan to fund the administration of the Basin Management Committee and its implementation of the Basin Plan as promptly and timely as possible, with the full knowledge that the implementation of the Basin Plan is crucial to preserve the long-term integrity of Basin groundwater resources. (p.13)*

On Page 31, the Stipulated Judgment provides explicit direction for creating a zone of benefit if necessary, stating in part:

> *The parties anticipate that the San Luis Obispo County Flood Control and Water Conservation District (Flood Control District) will establish a Zone of Benefit coterminous with the area subject to this Action and seek approval of a special tax or assessment within said Zone to cover the administrative costs of the Basin Management Committee and such other costs as deemed appropriate by the parties and the Flood Control District.* (p. 31)

Further, the Basin Plan sets a goal and provides a plan for spreading costs Basin-wide to relieve the cost burden on residents within the wastewater service area and purveyor service areas (p. 22). Spreading the costs of the recycled water, conservation, and infrastructure programs to residents outside the wastewater service area—especially if residents within the wastewater and purveyor service areas are credited with disproportionate prior costs—will relieve much of the burden on those paying the most for Basin sustainability until now. The Basin Plan provides a plan for spreading the costs on Pages 307 to 311.

The Basin Plan further sets a goal to "establish mandatory standards and policies that promote water use efficiency" (conservation) and it makes "…water use efficiency…the highest priority program (for) …preventing further seawater intrusion" (pp. 21 & 141). The Basin Plan also provides for the County to administer a Basin-wide conservation program using the $5 million the wastewater project CDP (Special Condition 5) requires it to spend, in addition to $500,000 in new funding for properties outside of the wastewater service area (pp. 141, 198 & 199).

The County, of course, has never implemented a Basin-wide conservation program, except programs tied to development and home sales, and it has never, to our knowledge, spent the entire $5 million, which the Basin Plan indicates has been paid for by wastewater facility rates and charges (p. 199). Besides requiring the County to spend the $5 million "to help Basin residents to reduce potable water use as much as possible," Special Condition 5 also requires the County to implement measures with "enforceable

mechanisms," and the Basin Plan indicates that the County has the authority to implement both a mandatory conservation program and private well monitoring program if the County chooses, the latter costing only $150,000 (pp. 138 & 139).

Opportunities

Despite our significant concerns, we are encouraged that the BMC has seen a need to re-evaluate the metrics. Being a substantive aspect of the Basin Plan, which requires a unanimous vote of the BMC per the Stipulated Judgment, this decision opens up the opportunity for the BMC to make other substantive changes in order to make progress toward sustainability and to avoid unsustainable development.

As we have indicated since 2013, the definition of "sustainable yield" is not consistent with accepted definitions or even the Stipulated Judgment, which defines "safe yield" and "sustainable yield," as a yield that causes no undesirable results (pp. 9 & 10). As currently defined in the Basin Plan, the "sustainable yield" allows seawater intrusion to move further into the Basin (see Figure 38, p. 111). Figure 38 doesn't specify whether it is showing modeling results for Zone D or Zone E intrusion. However, in either case, pumping at "sustainable yield" causes seawater intrusion to move further into the Basin and other undesirable results. The Basin Plan recognizes that allowing seawater intrusion to remain in the Basin to this extent is an undesirable condition, which is why it recommends moving the front offshore by pumping at or below the Basin Yield Metric of 80 (80% of "sustainable yield" (p. 110).

The BMC's decision in January to revise the metrics and to update the "sustainable yield" of the Basin provides an opportunity to revise the definition of sustainable yield. It also provides the opportunity to update and recalibrate the model and/or to run multiple less-than-best-case modeling scenarios, e.g., with reduced rainfall, Broderson leach fields not pushing back seawater intrusion, and different estimates of Basin-wide water use. The Basin Plan estimates that annual water use figures have at least 5% uncertainty levels (Basin Plan, p. 47). Running multiple scenarios is an important use of the model, which enables the BMC and other stakeholders to have a realistic understanding of the range of possible outcomes of management actions and the challenges the BMC faces.

Conclusion

We believe you'll agree, after reviewing our requests and the support we provide, that the actions we request are reasonable and necessary for the BMC and other decision makers

to be fully informed about Basin conditions and to have the tools necessary to establish a sustainable Basin for the current and future populations.

Again, we thank you for your letters to the County and would appreciate your prompt attention to the following requests. If you have any questions, need further information, and/or would like to share information that you believe we don't currently have, please contact us at theLOSG@gmail.com.

Sincerely,

Patrick McGibney, Chair,
Los Osos Sustainability Group (LOSG)

Specific requests with reasons and support

The LOSG requests that the BMC:

1. **Immediately declares seawater intrusion into Zone E a significant threat to Basin sustainability and devises and implements a plan to stop and reverse it.**

   Reasons and support: In late 2019 the BMC asked for a review of seawater intrusion into Zone E, and the 2019 Adaptive Management TM (which we also refer to as the Nitrate and Seawater Intrusion TM) presented you with a clear and unqualified conclusion that the front is moving in at Well LA 11. Data at new observation Well LA40, to the south of LA11, also confirmed very high chloride levels in late 2019 (1460 mg/l). By spring of 2020, the levels at LA40 rose to 2190 mg/l. and by fall of 2020 to 2290 mg/l, indicating active seawater intrusion in Zone E, possibly across a wide front.

   Zone E is the largest and deepest aquifer, having the largest volume of water and comprising most of the Basin's capacity. When seawater intrusion moves into Zone E, it is destroying substantial amounts of freshwater that may need to be accessed to a greater extent in the future—most purveyor production is currently from Zone D. Because it is the deepest aquifer, Zone E also has the most severe and advanced seawater intrusion. In 2012, chloride levels measured 1910 mg/l at the Zone E level of the Palisades Well (LA15), and in 2013 the Zone E level of the wells was sealed off in order to continue pumping from Zone D (Nitrate and Seawater Intrusion TM, p. 7 and 2019 AMR, p. 55).

   In 2015, the Basin Plan estimates that the Zone E intrusion front had reached the commercial area where there is a very large pumping depression (p. 88 & 90). Both Eugene Yates and CHG indicate that Zone E intrusion can upcone into Zone D

wells (see Nitrate and Seawater Intrusion TM, p. 8 and Yates 2014 Review, p. 8). The Basin Plan also states that the clay layer separating Zones D and E may be "discontinuous," which may allow Zone E intrusion to enter Zone D (p. 65). The front is not mapped and could be moving into or under the large depression, especially since the deepest part of the front forms a wedge that extends further inland than the parts of the wedge likely to be measurable, e.g., at LA18 (see Basin Plan, Figure 27, p. 90).

Eugene Yates points out in his 2014 review of the Basin Plan that the plan abandons Zone E and he indicates that doing so is a mistake (p. 8). He states that the Water Level Metric target should be set at 12' instead of 8' to push back Zone E intrusion to the bottom of the aquifer. Clearly, the Basin is not sustainable if seawater intrusion in Zone E is allowed to move into or under the large pumping depression. Failing to stop and push back seawater intrusion in Zone E allows it to threaten Zone D and all but one or two supply wells in the Basin—effectively threatening the entire purveyor system.

Stakeholders in the Basin cannot afford for the BMC to abandon Zone E. Over a year has passed since release of the Nitrate and Seawater Intrusion TM, and the BMC has done nothing to address it. Recently, budget items were passed to install transducers in some wells downslope of Broderson leach fields to measure the potential rise of water levels in the lower aquifers. The BMC is also having CHG revise the metric and evaluate recycled water use. However, this does not constitute a plan to address Zone E intrusion. In 2019, CHG recommended that that the BMC consider implementing Infrastructure Program B, and in 2020, CHG recommended converting several lower aquifer wells to dedicated Zone E wells to track seawater intrusion into Zone E, but the recommendations were not considered (see Nitrate and Seawater Intrusion TM, p. 11, and 2019 ARM, pp. 55 & D2).

As homeowners with a stake in the Basin, we are extremely concerned that the BMC is abandoning Zone E. Allowing seawater intrusion to destroy a major part of the Basin's freshwater capacity is not in our best interest as homeowners and water customers, nor is it consistent with the BMC's obligation to preserve and responsibly manage the Basin. We ask that you act immediately and decisively to address it by devising a plan and following through.

2. **Reaffirms its commitment to the first two immediate goals of the Basin Plan (to stop and/or to the extent possible reverse seawater intrusion and to provide a sustainable water supply for current development) by committing to maximizing conservation, recycled water reuse, infrastructure programs, grey water reuse, storm water reuse, injection wells, and all other mitigation programs short of imported water and desalination to achieve the immediate goals as soon as possible.**

   Reasons and Support: Since mid to late 2019, when the County began an effort to complete the LOCP, the priority of the BMC, it appears to us, has shifted from

stopping seawater intrusion as soon as possible to taking a "wait and see" approach to management that assumes seawater intrusion will stop at some point in the future and the Basin can support added development at some level without permanent harm. That shift has been shown in the lack of attention to Zone E, the decision to change the metric when it began to show worsening conditions unfavorable to adding development, and acceptance of the widespread use of Title 19, though it uses the limited remaining conservation potential within the Basin and wastewater service area. The shift is also shown in two TMs prepared for the BMC since early 2019 that find the Basin to be sustainable without Infrastructure Program C completed. The Basin Plan indicates that Infrastructure Program C will be used to support the current population (e.g., p. 308).

We understand that the BMC is considering a proposal to revise the "adaptive program." The program was never fully developed as an adaptive program and consists primarily of the same mitigation programs, implemented in the same ways, as Basin Plan mitigation programs. The adaptive management proposal would apparently formalize the program in a way that preserves some or all of the remaining mitigation programs to support future development. The goal, as we understand it, is to support the proposed LOCP and Growth Management Ordinance, which is subject to review and approval by the Coastal Commission later this year. Reserving mitigation programs to support further development rather than using them to stop and reverse seawater intrusion as soon as possible is not consistent with the Basin Plan and it limits the potential of the current population to have a sustainable water supply. We request that you specifically do not reserve adaptive programs for development but instead maximize all mitigation programs to stop and reverse seawater intrusion as soon as possible to provide a sustainable Basin and water supply for the current population and dependent sensitive habitat.

3. **Sets time-specific goals, objectives, and interim objectives for stopping and reversing seawater intrusion as soon as possible, including specific measurable goals and objectives for water and chloride levels that reverse seawater intrusion fronts in Zones D and E to points offshore under the estuary, which can be confirmed with the conclusive physical evidence provided by the monitoring grid we request in #5.**

   Reasons and Support: Whereas the Basin Plan includes Water Level and Chloride Metric targets of 8' above mean sea level (msl) and 100 mg/l of chlorides respectively, and whereas the BMC has set a Basin Yield Metric Target of 80 that, when modeled, moves the fronts in Zones D and E offshore of the landed portion of the Basin under the estuary, and whereas the BMC has now indicated it is changing the metrics; the BMC has an opportunity to set clear and measurable goals and objectives, including interim objectives, that can be shown with conclusive evidence from sufficient reliable well data to have been reached or not reached, providing clear and unambiguous indicators of Basin seawater intrusion conditions and Basin sustainability. Such goals and objectives would be consistent with the requirements of the wastewater CDP, Special Condition 5C, which requires

"…measurable goals and interim and long-term success criteria… including at a minimum clear criteria that demonstrate that the health and sustainability of the Plan area resources are steadily improving over time, including with respect to seawater intrusion."

Given the importance of the Basin as a sole water source, how much of the Basin has been destroyed, and the need for a significant freshwater barrier and buffer between the estuary and commercial area to protect the main pumping center and preserve as much of the Basin as possible, including as many active and inactive wells as possible, the measurable goal should be to move Zone D and E fronts offshore. We believe this goal is imperative for the Basin's long-term sustainability, given uncertainties associated with climate change and other impacts. Thus, the measurable goals (e.g., projected seawater intrusion contour lines) should be the same as those modeled for the current Basin Yield Metric target of 80 (see Figure 38, p. 111), and the water level goals should be 12' to stop and reverse seawater intrusion in Zones E at its deepest levels. Interim seawater intrusion objectives should be contour lines somewhere to the west of Well LA5 to protect active Wells LA 8 and LA9, and water levels should be 4-6 feet above mean sea level (msl) between the estuary and key wells within the large pumping depression (e.g., LOSG supply well LA32 and GSWC supply well LA39).

4. **Water purveyors not issue will-serve letters until seawater intrusion and water levels in Zones D and E are shown with conclusive evidence, including adequate reliable and accurate well monitoring data, to meet the appropriate measurable physical objectives requested in Request #3 determined to be necessary to establish conclusively (with a margin of safety) that the Basin will sustainably support that development long-term through droughts, climate change, and other impacts.**

   Reasons and Support: Recently the BMC acknowledged that the current metrics are not accurately measuring seawater intrusion and possibly water levels, and the 2019 Annual Monitoring Report states that there is not enough information to track seawater intrusion in Zone E (p. 55). At the same time, available evidence (rising chloride levels at key wells) shows that seawater intrusion is advancing and conditions have not improved significantly from when they were at their worst in 2016. The BMC and CHG have also indicated that production well LA10 may be shut down and Wells LA8 and LA9 may be threatened due to well-bore leakage and a high-nitrate water source flowing into the Basin. At the same time Expansion Well #2 is not installed and Expansion Well #3 is not planned and may be difficult to site due to private well owner objections, as evidenced by neighborhood concerns voiced during the siting of Expansion Well #2 (see LOCSD November 5 agenda packet, pdf pp. 47-55 on line). All in all, the condition of the Basin is clearly not sustainable for the present population and will require significant further mitigation to become sustainable. For these reasons, and the ones we cite in other requests (e.g., #1), stopping the issuance of will-serve letters is necessary to protect the water supply for its continued beneficial use. Further, the failure of the metrics to provide reliable and accurate evidence of conditions is reason to put off

decisions that can have irreversible long-term consequences until a reliable and accurate system of monitoring wells are developed and protective physical objectives are set (see Requests #3 & #5-#7).

5. P**lans and installs a network of lower aquifer monitoring sites to track water levels and water quality, including chloride levels, like the new dual-well (nested) Zone D and E site off Lupine Avenue, which will provide conclusive evidence of seawater intrusion conditions, including the exact positions of seawater intrusion fronts that can be rendered as contour lines based on the data and the exact heights of water levels in Zones D and E, which grid also provides conclusive evidence that seawater intrusion-related physical goals, objectives, and interim objectives have been reached.**

   Reasons and support: The current monitoring system consists almost entirely of old wells, many of which are screened in more than one aquifer and/or have well bore leakage. Further, there are significant gaps in the system, including almost no wells in the northern Basin and significant gaps along the intrusion pathway and southern Basin (e.g., gaps in reliable monitoring sites). Eugene Yates in his 2014 Basin Review indicates that many more monitoring wells are needed, including along the seawater intrusion pathway and along the estuary (p. 10). For the BMC and other decision makers to accurately assess seawater intrusion conditions and to provide conclusive evidence that goals and objectives are reached, a significantly upgraded system of monitoring wells is needed. To provide conclusive evidence of Basin conditions, the system must be upgraded with multiple new wells positioned closely enough to measure the exact location of the fronts and water levels wherever the Basin is susceptible to seawater intrusion in Zones D and E. As Eugene Yates points out, seawater intrusion can move around wells and progress along relatively narrow preferred pathways (see Yates 2014 Review, pp. 8 & 9). Therefore, the network must be sufficiently dense to detect seawater intrusion at any point in the western portion of the Basin between the estuary and points east of Well LA12 in the northern Basin and east of Well LA39 in the southern Basin and along the seawater intrusion pathway. The cost of a dual-well monitoring site like the new monitoring site installed off Lupine Avenue is $115,000 per the 2019 Annual Monitoring Report (p. 7). Thus, for a cost of $2 million (about the cost of an expansion well), about 17 new dual-well monitoring sites can be installed.

6. **Abandons the use of metrics that provide single metric values (averages) for assessing Basin conditions, in favor of minimum threshold values at each well in a series or group of wells in a monitoring grid, said thresholds having to be maintained for a given period of time to meet goals and objectives, including interim objectives.**

   Reasons and support: As we understand SGMA requirements, measurable objectives are achieved by meeting minimum thresholds at individual wells over a given period of time, which precludes problems developing in any monitored part of a Basin. Metrics expressed as single average values can allow seawater

intrusion, for instance, to move into the Basin even though the objective is being met.

7. **Plans and installs a network of lower aquifer monitoring sites to track water levels and water quality throughout the Western and Central Areas of the Basin, and that the BMC divides the Basin into sub-areas setting objectives, including interim objectives, for each sub-area, said objectives being represented as minimum thresholds at individual monitoring sites for key parameters that conclusively ensure all areas of the Basin have the water levels and water quality, with precautionary margins of safety, necessary to support present and future development through climate change and other adverse impacts on the Basin.**

   Reasons and support: Due to the major changes in recharge from dispersed septic system recharge to point source recharge with recycled water primarily at Broderson leach fields, low water levels and related problems such as aquifer damage may develop. Further, salt build up may occur as recycled water is used and higher conservation levels concentrate salts and other constituents in recycled water. Yates warns of salt buildup in a closed Basin system (see Yates 2014 Review, p. 4). To avoid these eventualities, a complete monitoring grid should be designed and implemented for the Western and Central Areas of the Basin. The grid will also improve the accuracy of water level contour mapping and storage estimates, while providing important information about water movement within the Basin and Basin structure for improving the BMC's understanding of the Basin and modeling accuracy.

8. **Declares that the County's use of a Title 19 retrofit program must immediately stop because it reduces the mitigation potential of BMC and purveyor conservation programs to halt and reverse seawater intrusion into the Basin and provide a sustainable water supply for the current population, further removing one of the primary means for addressing emergency water shortage conditions and impending harm to the Basin, including from droughts, natural disasters, or other causes that may put the Basin and water supply into a crisis condition.**

   Reasons and support: The County is using the Title 19 conservation retrofit offset program to approve development. The ordinance allows the applicants for new development to use the remaining conservation potential of the Basin for what the County claims offsets the water use of the new development at a 2:1 ratio, resulting in a theoretical net benefit to the Basin. Although Title 19 provides a means to verify the water use reductions from the program, neither the County nor BMC has apparently done a review of the program to verify the claimed reductions in water use. This review should be done for homes and businesses that have received and provided the retrofits, and the review should cover at least a 5-year period to determine if the program results in a net reduction over time--since the benefit of the program must be long-term to benefit the Basin. If a review is done, we request that the BMC receive updated records of Title 19 use from the County and

selects an objective third party with input from the public to complete an audit of the program, which should also include the adequacy of offset amounts and formulas for crediting offsets.

Even if some net benefits are found to result from the program, however, the program should not be used to approve new development until seawater intrusion is shown with conclusive evidence to be stopped and reversed as confirmed by reaching measurable physical objectives as described in Request #3, and Basin sustainability is established for the current population with a margin of safety. It should also not be used until and unless an evaluation of the remaining conservation potential in the Basin shows that enough remains to support the existing population during droughts and other emergencies. In June of 2020, the Planning and Building Department estimated that 160 to 350 AFY of conservation potential remained, but the estimate has not been reviewed or confirmed by any hard data.

The Title 19 program results in hardening of demand and a reduction in what is likely to be limited remaining conservation potential in the urban part of the Basin, especially within the wastewater service area. A careful evaluation of conservation potential remaining in the Basin must be done to ensure enough remains to reverse seawater intrusion and respond to severe droughts and other emergencies with the current population. The wastewater project coastal development permit (CDP Special Condition 5) requires the County to maximize conservation for "Basin residents" with $5 million, which we understand has not been exhausted, and to use enforceable mechanisms as needed.

9. **Develops and implements within six months, in cooperation with the County as needed, a funding mechanism that spreads the costs of all projects, programs, measures, and BMC-related activities needed to establish a sustainable Basin equitably among all users of the Basin, including the costs of all Basin Plan programs, all related wastewater project measures and programs, and programs not yet implemented and/or considered that may be needed, short of imported water and desalination, to achieve Basin sustainability as soon as possible and to meet the physical objectives described in Request #3 above, said programs including but not limited to injection to remedy Zone E intrusion, Basin-wide conservation, rainwater/ storm water capture and reuse, and nitrate remediation.**

   Reasons and support: One goal of the Basin Plan is to ensure costs are shared equitably Basin-wide among all users of the Basin (p. 22). This will require a Basin-wide funding mechanism, which will most likely require the County to establish a zone of benefit and conduct the assessment through the Flood Control and Conservation District as provided for in the Stipulated Judgment (p. 31). The BMC (parties to the Stipulated Judgment) should take these steps immediately to meet the obligations of the parties as stated in the Basin Plan and Stipulated Judgment:

The parties shall make every reasonable and practical effort to implement a plan to fund the administration of the Basin Management Committee and its implementation of the Basin Plan as promptly and timely as possible, with full knowledge that the implementation of the Basin Plan is crucial to preserve the long-term integrity of Basin groundwater resources (Stipulated Judgment, p. 13).

A funding mechanism that spreads costs Basin-wide is important for the success of a funding effort because the people living within the sewer service area, who make up about 85% of the residents in the community, will be reluctant to support another assessment after having a recent sewer rate increase. Currently, residents living within the wastewater service area pay all sewer costs and most of the costs for Basin management. Residents living within purveyor service areas outside of the wastewater service area pay the remaining costs of Basin management, and residents with private wells living outside of both service areas pay none of the costs for restoring the Basin and maintaining Basin sustainability (e.g., mitigating nitrate contamination and seawater intrusion).

The cost sharing--if appropriately structured in a Prop 218 assessment to repay residents living within the wastewater service area and within purveyor customer areas for disproportionate earlier costs--would most likely be approved by voters. Most voters, we think, would agree that everyone should pay their fair share for a sustainable water supply.

The Basin Plan provides a plan for cost sharing, which recommends sharing Basin Plan monitoring and seawater intrusion mitigation program costs, i.e., for conservation, recycled water use, and infrastructure programs. (Basin Plan, pp. 307-310). One of the Basin Plan programs now covered by wastewater project costs paid solely by residents within the wastewater service area is the recycled water program (referred to as the Urban Water Reinvestment Program). The Basin Plan estimates the program costs about $18 million (Basin Plan, p. 308).

Other wastewater project costs should also be shared, including the costs for nitrate remediation and monitoring programs, and for programs to protect riparian and aquatic habitat dependent on the Basin. The latter is required by the Coastal Commission as part Special Condition 5 of the wastewater project permit. Habitat protection is a "principle" of the Basin Plan but not included in the Plan. The County is now responsible for it (Basin Plan, pp. 22 & 122). Habitat protection programs should be administered by the BMC to ensure integrated management of Basin resources. Also, the sharing of nitrate remediation costs and other sewer related costs are justifiable given that all users of the Basin derive benefits from a sustainable Basin. Equitable sharing of costs is critical to effective Basin management because it ensures all users of the Basin are equally invested in and responsible for its sustainability.

10. **Negotiates an agreement with the County within six months, in which the County implements a Basin-wide conservation program with a County**

ordinance that requires all users of the Basin to meter and report water use and to participate in a Basin-wide conservation program.

Reasons and support: An ordinance that includes these mandatory measures is essential for effective management of the Basin because it is essential for obtaining accurate water use data and for ensuring the participation of all users of the Basin in a conservation program. The 2019 AMR reports that unmetered water use accounts for about 50% of water use in the Basin (p. 37). The Basin Plan indicates that underestimating water use (which can happen because so much of the Basin's water use is now estimated) may result in irreversible harm to the Basin because the error may not be detected for 15 years when it is too late to remedy (Basin Plan, p. 137). The Basin Plan describes estimated water use as one of the main sources of uncertainty in modeling, contributing about 5% of uncertainty (p. 47). The Basin Plan also outlines how an ordinance requiring monitoring can be implemented at a cost of about $150,000 (p. 138 & 139). The same ordinance, using the same process, could be used to implement the Basin-wide conservation program recommended in the Basin Plan (pp. 198 & 199).

As mentioned, the wastewater project permit requires the County to implement enforceable mechanisms to "help Basin residents reduce potable water use as much as possible," and the third immediate goal of the Basin Plan calls for mandatory conservation standards (p. 21). Achieving sustainability goals and objectives within a reasonable time frame with a reasonable level of certainty is not possible without Basin-wide water-use reporting and conservation. A well-crafted ordinance with the right combination of incentives, including both positive and negative monetary incentives, possibly incorporated into the County-wide funding mechanism described in Request #9, will provide the most cost-effective and efficient way—likely the only way—to preserve the Basin and establish Basin sustainability long-term for the current and future populations.

11. **Investigates the source(s) of high-nitrate groundwater entering the lower aquifers of the Basin, including from well-bore leakage and other sources, and devises and implements a plan to remedy the inflow and contamination, in order to protect and preserve affected wells and the lower aquifers of the Basin.**

    Reasons and support: According to the Nitrate and Seawater Intrusion TM, several production wells are affected by well-bore leakage that results in nitrate levels rising much faster than the long-term trend in the lower aquifers. The TM estimates that nitrate levels in some lower aquifer wells will exceed the maximum contaminant level of 10 mg/l (e.g., Wells LA8, LA9, LA22, and LA17E11) (pp. 3-5). The TM also reports that a high nitrate source of groundwater may be contaminating Wells LA8 and LA9 and suggests that the source could be septic discharge from Cabrillo Estates (see Nitrate and Seawater Intrusion TM, p. 3).

    To address well-bore leakage, the TM recommends nitrate treatment and blending (pp. 6 & 11). Nitrate treatment and blending may not be available or cost-effective

for a well owner, resulting in the owner being forced to shutdown the well(s). If this occurs, or if affected wells are shut down for other reasons, the well bore leakage is likely to continue and may worsen causing further contamination of the lower aquifer. Further, the TM does not recommend a remedy for contamination from the inflow of ongoing septic discharge.

The 2019 Annual Monitoring Report (AMR) indicates that rising nitrate levels in affected lower aquifer community supply wells will be addressed in strategic planning (2019 AMR, p. 76). However, the problem was not included in strategic planning options developed late in 2020. We request that the BMC investigates the inflow of high nitrate water to the lower aquifers as needed, and formulates a plan and set of actions to address the problem, so that the use of all wells is preserved and the lower aquifers in all parts of the Basin remain a source of water that can be used without nitrate treatment and blending. Protecting and preserving all parts of the Basin for cost-effective use is important for long-term Basin sustainability (also see Request #17).

12. **Has the Basin model peer reviewed, within six months, by a neutral third party expert chosen with public input and, as part of the review, fully updates the model and performs complete sensitivity and uncertainty analyses that estimate and quantify the uncertainties associated with all basin parameters and assumptions used in modeling that have uncertainty.**

    The model has not had thorough sensitivity and uncertainties analyses done on all parameters having uncertainty to our knowledge, and the only related uncertainty analysis done was a generalized analysis prepared for the LOSG in 2010 by Eugene Yates (see Yates Review, Jan. 2010). Although Yates in his 2014 Basin Plan review endorses the Plan's 20% "buffer" for uncertainty--which the Basin Plan attributes to the model without an uncertainty analysis or specific justifications--Yates' 2010 review indicates that the model is likely to have much greater levels of uncertainty than the 20%. [We note that Yates states in the Basin review that he does not "investigate the strengths and weaknesses of the groundwater flow model in detail," and he adds that his intent is "not to discredit or delay" the Basin Plan but "to amplify and accelerate" it (p. 2).]

    Further, the model has not been updated with the most recent data available and must be recalibrated to capture current conditions, including less rainfall than assumed, Broderson leach fields not pushing back seawater intrusion, the current use of recycled water, a revised understanding of Basin structure based on an LOCSD test well for Expansion Well #2, the current location of Expansion Well #2, and any other data and other evidence since 2010 that would affect modeling results.

13. **Has a transient model developed as soon as grant funding is available or the County provides the funding, which is calibrated with the most recent data and has thorough sensitivity and uncertainty analyses completed.**

Reasons and support: Stetson Engineers, who reviewed the model in 2010, recommended that a transient model be developed for the current steady state model. We believe a transient model may more accurately predict outcomes of conditions such as the temporary advance or retreat of the seawater intrusion front or low water levels from year to year. However, given the depth of the lower aquifers and likely timescales involved in responses to changing conditions and implementation of management actions (e.g., less rainfall and new expansion wells), the transient model may not significantly improve management effectiveness. Successful management will continue to require careful long-term planning that builds adequate margins of safety into measurable objectives and management actions.

Instead, we believe updating the current steady-state model with the most recent data, completing thorough sensitivity and uncertainty analyses per Requests #12 and #16, and running numerous modeling scenarios to show a range of possible outcomes from various management options under various conditons; may provide the best tool for planning. In any case, a transient model should be calibrated with the most current data and have sensitivity and uncertainty analyses done that inform decision makers of its potential inaccuracy, which could then also be used to determine protective margins of safety in sustainable yield predictions once sustainable yields are redefined per Request #17.

14. Immediately rescinds two technical memoranda (TM) and the findings, which have been refuted by available data.

Reasons and support: The 2018 Adaptive Management TM prepared for the BMC, as well as the June 2020 Program Update TM prepared for the LOCSD and included in the June 2020 BMC agenda packet, find that the Basin is sustainable with Expansion Well #1 in place (in the case of the 2019 TM) and with Expansion Wells #1 and #2 in place (in the case of the 2020 TM). The findings of these two TMs are based on modeling (the Basin Yield Metric being at or below 80 since 2016). The TMs also cite metric results, which were positive in 2018 but reversed in 2019. The BMC recently recognized that the metrics (at least the Chloride Metric) have significant reliability and/or accuracy problems, and the BMC voted to have one or both metrics evaluated and modified.

We note that the "trends" identified in the 2018 Adaptive Management TM were questionable to begin with. The Chloride Metric "trend" indicated that the target of 100 mg/l of chlorides would be reached by 2019, about 25 years ahead of predictions in the Basin Plan and before water levels were high enough to reverse seawater intrusion (Basin Plan pp. 108-110 & Figure 37). The 2020 TM acknowledges problems with the metrics and bases the finding almost solely on the model (Program Update TM, p. 4). In lieu of any clear metric support, the 2020 TM indicates the Water Level Metric needs updating and a mound is forming under Broderson leach fields as evidence that seawater intrusion will stop and modeling predictions that the Basin is sustainable for the current population are accurate. Clearly the measurable evidence provided is not enough to confirm modeling

predictions and, in fact, the evidence provided only shows that the predictions are not confirmed.

15. **Has Cleath-Harris Geologists run modeling scenarios with the model recalibrated for (1) Broderson leach fields being ineffective at pushing back seawater intrusion, and (2) the fifteen-year average rainfall total as reported in the 2019 Annual Monitoring Report of 15.14", 13% less than the 17.5" assumed in current modeling.**

Reasons and support: In our letter to the Board of Supervisors in December of 2020, we estimate how much the above recalibrations would reduce the Yield Metric Target value based on the modeling scenario run for the Program Update TM, which is included in the June 2010 BMC agenda packet. The point we were making, of course, is that continuing seawater intrusion was reported in the 2019 Nitrate and Seawater Intrusion TM (aka the 2019 Adaptive Management TM) to be the cause of continuing seawater intrusion into Zone E. The TM reports that the mound is not supposed to fully form and begin to push through the Regional Aquitard for at least 5 years, although the TM also states that the timing of leach field effectiveness is uncertain (p. 10). If Broderson leach field ineffectiveness results in seawater intrusion in Zone E according to the model, it also results in intrusion into Zone D according to the model.

The BMC recently voted to fund transducer installation in several wells down gradient from the leach fields, but we would like to know—and the public has a right to know—what the sustainable yield of the Basin is and has been until the leach fields are pushing back seawater intrusion. These modeling results will provide a picture of what the model predicts based on current conditions. The results will also help show why development decisions should not be based on the model—but instead on sufficient reliable and accurate well monitoring data in conjunction with clearly stated measurable objectives.

Since the model is supposed to be capable of predicting sustainable yields, the position of seawater intrusion fronts, and water levels; the scenarios should provide graphics of the predicted inland progress of the fronts and water levels in in Zones D and E with Broderson leach fields not pushing back seawater intrusion. Scenarios should also provide the predicted Yield Metric of 80% of target values needed to move seawater intrusion fronts to the current targeted locations offshore.

Supervisor Gibson has stated that use of the steady model is appropriate for long-term planning, and the transient model should be used for shorter-term planning. However, multiple scenarios for steady state models are also important for the BMC to consider, and are justified and reasonable, given that several scenarios already run for the BMC have included shorter-term assumptions than the ones we are requesting. For instance, the 2018 Adaptive Management TM and 2020 Program Update TM required recalibrations of the model based on production and recycled water use levels at the time that have since changed.

Each of the BMC members has the right and responsibility to have modeling scenarios run, especially scenarios that have significant implications for Basin management and Basin sustainability, and the Stipulated Judgment does not preclude it, so this should not require a unanimous vote.

16. **Has CHG complete sensitivity and uncertainty analyses on the steady state model, along with multiple modeling scenarios showing less-than-best-case outcomes based on the analyses, so that the BMC can better understand the range of possible outcomes of management actions, e.g., moving wells to the upper aquifer and inland.**

    SGMA's BMP recommends that multiple scenarios are run using various climactic conditions to better inform decision makers of possible outcomes of management actions and relative risks of actions. Being more aware of the uncertainties and potential error in the model, as well as a range of potential outcomes from management options would give the BMC a more realistic and complete picture of what can be expected and what is needed in the way of margins of safety, redundancy in programs, and program options to reverse seawater intrusion as cost-effectively as possible, while avoiding costly undesirable consequences. In general, the analyses and multiple less-than-best-case scenarios would give the BMC and other stakeholders a better understanding and appreciation of what is needed to establish and maintain a sustainable Basin.

17. **Revises the definition of "sustainable yield" so that it avoids undesirable results and targets the same outcomes as the Basin Yield Metric of 80 (BYM 80), the retreat of seawater intrusion fronts in Zones D and E to points offshore under the estuary.**

    Reasons/Support: As mentioned above, the Basin Plan definition of "sustainable yield" is not consistent with accepted definitions or even the definition provided in the Stipulated Judgment. In the Stipulated Judgment, "safe yield" and "sustainable yield," are defined as a yield that does not cause an "undesirable result" (p. 9). As defined in the Basin Plan currently, "sustainable yield" results in seawater intrusion moving inland. It also results in the loss of Basin capacity and pumping capacity, and it could result in the loss of the Basin as a viable sole water source.

    Figure 38 of the Basin Plan provides a plan view (overhead) map showing where the intrusion front would end up with Basin production at the "sustainable yield." The figure shows the front moving into the large pumping depression under the commercial area to about 10th Street (p. 111). The figure does not specify whether the front is in Zone D or Zone E. We assume Figure 38 shows Zone E intrusion based on the Yates 2014 Basin Plan review (e.g., pp. 4, 7 & 8). The 2019 AMR indicates that plotting the exact location of the Zone E intrusion in plan view (from above) is not possible due to insufficient monitoring sites. However, it concludes based on chloride levels at LA18 that the front (250 mg/l isomere) is located

between Well LA15 and Well LA18 at the edge of the commercial area (west of 10th Street) (2019 AMR, pp. 55 & D2). Thus, Figure 38 indicates that the Zone E front would move further inland if the Basin were pumped at the "sustainable yield."

As discussed in Request #1, Zone E intrusion into the large pumping depression threatens the sustainability of the Basin by threatening key supply wells in the commercial area via upconing and/or holes in the AT3 layer. Zone E intrusion also threatens wells to the west of the commercial area via upconing and, at a minimum, it will likely result in reduced production capacity as chloride levels rise in two active wells screened in Zones D and E—LA10, a community supply well, and LA16, a private well.

As Eugene Yates points out, Zone E should not be abandoned in this area of the Basin because additional Basin capacity may be needed in the future (Yates 2014 Review, p. 8). This is important advice given the major impacts the Basin is undergoing from shifts in pumping and recharge, in addition to climate change impacts. The BMC may find, for instance, that moving wells inland and to the upper aquifer overdrafts those parts of the Basin resulting in far less available yield than modeled.

The Basin Plan recognizes that allowing seawater intrusion to remain in the Basin to the extent modeled and shown in Figure 38 is an undesirable condition, and it sets a goal of pumping at or below the Basin Yield Metric (BMY) target of 80 (80% of "sustainable yield") (p. 110). The BYM of 80 is modeled to move the Zone E front and apparently the Zone D front offshore to points under the estuary (see Figure 38, p. 111). Yates also points out that the BYM of 80 or under is needed to avoid salt build up in the Basin (Yates 2014 Review, p. 4). Because the BYM of 80 would avoid undesirable results, including seawater intrusion, adverse impacts to wells and Basin capacity, and salt build up in the Basin; the modeled outcomes for the BYM of 80 are more consistent with accepted definitions of sustainable yield than the outcomes of the current Basin Plan definition. Thus, "sustainable yield" for the Basin should be redefined as a yield that moves the fronts in Zones D and E offshore, also avoiding salt buildup.

The Los Osos Basin has lost substantial Basin capacity due to severe seawater intrusion resulting from more than 35 years of severe overdraft. A definition of sustainable yield that moves seawater to under the estuary, maintains and restores the integrity of all production wells by creating a freshwater barrier between the wells and fronts, that also maximizes all usable Basin capacity; is an appropriate definition for sustainable yield and an appropriate sustainability goal for the Los Osos Basin. The Basin Plan implies as much by setting the BYM 80 target. Aligning this definition of sustainable yield with this goal removes any confusion about what the goal is. We believe these actions are both reasonable and necessary to ensure the long-term integrity of the Basin and to provide a resilient and sustainable water supply for the present and future populations. The target also helps ensure ample groundwater is available for dependent sensitive habitat.

18. **Bases any decisions that can result in irreversible harm to the Basin, such as whether to increase demand with further development, on ample reliable water level and chloride well monitoring data, as well as measurable objectives which have pre-determined margins of safety deemed necessary for a sustainable Basin under various conditions, including droughts and other adverse impacts at various levels of development.**

    Reasons/Support: Decisions that can result in permanent harm and even loss of the Basin must be based on ample reliable well monitoring data and measurable objectives with margins of safety rather than a model with inherent levels of uncertainty.

Documents Cited

Annual Monitoring Reports prepared for the BMC

1. 2018 AMR -- *Los Osos Basin Plan Groundwater Monitoring Program 2018 Annual Monitoring Report*, Cleath-Harris Geologists, Inc, June 2019.

2. 2019 AMR -- *Los Osos Basin Plan Groundwater Monitoring Program 2019 Annual Monitoring Report,* Cleath-Harris Geologists, Inc, June 2020.

Technical memoranda prepared for the BMC

3. Response Analysis TM -- *Technical Memorandum, Basin Yield Metric response to reduced long-term precipitation in the Los Osos Groundwater Basin,* Cleath-Harris Geologists, Inc, March 3, 2017

   2018 Adaptive Management TM -- *Technical Memorandum, Metric Trends Review and Infrastructure Program C Evaluation,* Cleath-Harris Geologists, Inc, February 28, 2019

   Nitrate and Seawater Intrusion TM (aka. 2019 Adaptive Management TM) -- *Technical Memorandum, "Lower Aquifer nitrate concentration trends review and LA11 seawater intrusion evaluation,"* Cleath-Harris Geologists, Inc, November 6, 2019

   Program Update TM -- *Technical Memorandum, Update of Los Osos Basin Plan Programs U and C with respect to Basin Sustainable Yield,* Cleath-Harris Geologists, Inc, June 10, 2020 (Included in the BMC Meeting Agenda Packet 6-17-20, pdf pp. 65 to 68)

Other documents cited or referenced

1. CSUMB Report, 2010
2. LOCSD November 5, 2020, agenda packet (Neighbor petition against location of Expansion Well #2) pdf pp. 47-55
3. SGMA BMPs 1, 2 & 5
4. Special Condition 5 & 6
5. Stipulated Judgment
6. Yates Basin Plan Review (2014)
7. Yates Review (Jan. 2010)

All documents cited can be accessed on the BMC website or on the LOSG website at thelosg.com

BMC Staff Responses - Los Osos Sustainability Group 3-16-21 Comment Letter

Specific Request	Summary Description	Detailed Request	BMC Staff Response
1	Seawater Intrusion in Zone E	Immediately declares seawater intrusion into Zone E a significant threat to Basin sustainability and devises and implements a plan to stop and reverse it.	Seawater intrusion into Zone E is a significant threat to basin sustainability and has been for decades. One of the primary goals of the 2015 LOBP is to implement actions that will halt seawater intrusion. Current plans to update the sustainable yield estimate and basin metrics will help to inform the BMC of any further modifications and additions to the LOBP needed as part of adaptive management.
2	Basin Plan Program Implementation	Reaffirms its commitment to the first two immediate goals of the Basin Plan (to stop and/or to the extent possible reverse seawater intrusion and to provide a sustainable water supply for current development) by committing to maximizing conservation, recycled water reuse, infrastructure programs, grey water reuse, storm water reuse, injection wells, and all other mitigation programs short of imported water and desalination to achieve the immediate goals as soon as possible.	The BMC's Purpose & Goals continues to include protecting and enhancing the long-term integrity of the Basin through implementation of the Basin Plan. The recent implementation plan initiative was completed to identify, prioritize and gaining consensus on the critical initiatives needed to support the sustainability of the basin and include those initiatives (e.g. Recycled Water Beneficial Use Evaluation, Broderson Transducer Installation, Updated Evaluation of Basin Metrics, Updated evaluation of Sustainable Yield) in the CY 2021 BMC Budget and Workplan. These initiatives are currently underway and will better inform the BMC's understanding of basin conditions and guide the BMC in future initiatives/actions to achieve sustainability.
3	Set up goals for stopping & reversing Seawater Intrusion	Sets time-specific goals, objectives, and interim objectives for stopping and reversing seawater intrusion as soon as possible, including specific measurable goals and objectives for water and chloride levels that reverse seawater intrusion fronts in Zones D and E to points offshore under the estuary, which can be confirmed with the conclusive physical evidence provided by the monitoring grid we request in #5.	The development of time-specific goals and objectives is important to basin management and will be evaluated as part of the 2021 basin metric review. With respect to the final position of the seawater intrusion fronts in Zones D and E, the goal is to push the front to points mostly beneath the estuary but, due to uncertainty, intrusion may persist beneath portions of the Western Area.
4	Stop will-serve letters	Water purveyors not issue will-serve letters until seawater intrusion and water levels in Zones D and E are shown with conclusive evidence, including adequate reliable and accurate well monitoring data, to meet the appropriate measurable physical objectives requested in Request #3 determined to be necessary to establish conclusively (with a margin of safety) that the Basin will sustainably support that development long-term through droughts, climate change, and other impacts	This issue is complicated by the fact that the three water purveyors are very different in their organizational and regulatory structures. LOCSD is a public agency which has the ability to discontinue the issuance of will-serve letters based on findings established by the Board of Directors. Golden State Water Company (GSWC) which is an investor-owned utility and is regulated by the California Public Utilities Commission (CPUC). The CPUC limits GSWC ability to deny access to their water system so they must rely on the land use agency (SLO County) to help regulate new connections. S&T Mutual Water Company (S&T) is property owner owned (shareholders) which means each property (vacant or developed) within their service area boundary has some degree of say on if new connections are allowed or not. Their Board of Directors does have the ability to limit new connections under certain conditions.
5	Improve lower aquifer monitoring	Plans and installs a network of lower aquifer monitoring sites to track water levels and water quality, including chloride levels, like the new dual-well (nested) Zone D and E site off Lupine Avenue, which will provide conclusive evidence of seawater intrusion conditions, including the exact positions of seawater intrusion fronts that can be rendered as contour lines based on the data and the exact heights of water levels in Zones D and E, which grid also provides conclusive evidence that seawater intrusion-related physical goals, objectives, and interim objectives have been reached.	Additional Lower Aquifer monitoring wells would allow better definition of seawater intrusion. Even with more wells, however, the exact position of the front cannot be fully represented by a contour line, given that the front is a complex surface. Exact heights of water levels also only apply to the specific depth interval screened by a well, and not to all locations in the borehole. Nevertheless, more Lower Aquifer monitoring wells are needed, given the problems noted with respect to borehole leakage. Additionally, BMC Staff recently re-initiated discussions with Cal Poly to partner on a geophysics project that will hopefully improve the characterization of the seawater intrusion front in critical areas of the basin. This data, if successfully collected, will allow for better definition of the seawater intrusion front.
6	Update Metrics/Minimum Thresholds	Abandons the use of metrics that provide single metric values (averages) for assessing Basin conditions, in favor of minimum threshold values at each well in a series or group of wells in a monitoring grid, said thresholds having to be maintained for a given period of time to meet goals and objectives, including interim objectives.	The current basin metrics will be re-evaluated this year with the goal of providing more than a single average value per metric.
7	Improve lower aquifer	Plans and installs a network of lower aquifer monitoring sites to track water levels and water quality throughout the Western and Central Areas of the Basin, and that the BMC divides the Basin into sub-areas setting objectives, including interim	There are already 41 Lower Aquifer wells in the groundwater monitoring network, of which 26 are in the Western and Central areas. The current priority with respect to Lower Aquifer monitoring is to address

	monitoring/Subarea Objectives	objectives, for each sub-area, said objectives being represented as minimum thresholds at individual monitoring sites for key parameters that conclusively ensure all areas of the Basin have the water levels and water quality, with precautionary margins of safety, necessary to support present and future development through climate change and other adverse impacts on the Basin.	seawater intrusion. Adoption of the SGMA terminology and regulatory framework may be considered by the BMC, but would not significantly change the focus or objectives of the LOBP and its programs.
8	Stop Title 19 Water Conservation Program	Declares that the County's use of a Title 19 retrofit program must immediately stop because it reduces the mitigation potential of BMC and purveyor conservation programs to halt and reverse seawater intrusion into the Basin and provide a sustainable water supply for the current population, further removing one of the primary means for addressing emergency water shortage conditions and impending harm to the Basin, including from droughts, natural disasters, or other causes that may put the Basin and water supply into a crisis condition.	BMC Staff are currently discussing the need for a water conservation potential study to better understand the water savings potential within the community and the effectiveness of the existing water conservation programs, including the Title 19 retrofits. Since indoor per capita water use is very low in Los Osos, most water use reductions during a water supply emergency would likely come from outdoor irrigation and other outdoor uses.
9	Formal BMC Funding Mechanism	Develops and implements within six months, in cooperation with the County as needed, a funding mechanism that spreads the costs of all projects, programs, measures, and BMC-related activities needed to establish a sustainable Basin equitably among all users of the Basin, including the costs of all Basin Plan programs, all related wastewater project measures and programs, and programs not yet implemented and/or considered that may be needed, short of imported water and desalination, to achieve Basin sustainability as soon as possible and to meet the physical objectives described in Request #3 above, said programs including but not limited to injection to remedy Zone E intrusion, Basin-wide conservation, rainwater/ storm water capture and reuse, and nitrate remediation.	BMC Staff have formed a Funding and Organizational Subcommittee to re-visit the different funding options available to the BMC to spread basin management costs equitably amongst all basin users. Unfortunately many, if not all, of the options require voter / landowner approval, including 2/3 registered voter approval for the previously contemplated special tax, which may be difficult to achieve. Never the less, Subcommittee is continuing its evaluation of the different options with the intention of bring forth recommendations for establishing a more formal funding mechanism for Basin management and BMC activities to the BMC in the near future.
10	Basin Wide Water Use Monitoring & Reporting	Negotiates an agreement with the County within six months, in which the County implements a Basin-wide conservation program with a County ordinance that requires all users of the Basin to meter and report water use and to participate in a Basin-wide conservation program.	Metering of private wells is an initiative included in the 2020 implementation plan initiatives evaluation. Unfortunately, due to budget and staffing limitations it was not included in the BMC CY 2021 Budget. However, the BMC will review this and other potential initiatives for inclusion in future BMC budgets on a periodic basis, typically in the fall.
11	Nitrate Contamination of Lower Aquifer	Investigates the source(s) of high-nitrate groundwater entering the lower aquifers of the Basin, including from well-bore leakage and other sources, and devises and implements a plan to remedy the inflow and contamination, in order to protect and preserve affected wells and the lower aquifers of the Basin.	A nitrate source investigation has been initiated by S&T Mutual Water Company. Any remediation plan would follow the results of the investigation, in consultation with the Central Coast Regional Water Quality Control Board.
12	Groundwater Model Peer Review	Has the Basin model peer reviewed, within six months, by a neutral third-party expert chosen with public input and, as part of the review, fully updates the model and performs complete sensitivity and uncertainty analyses that estimate and quantify the uncertainties associated with all basin parameters and assumptions used in modeling that have uncertainty.	Performing a peer review of the model is an initiative included in the 2020 implementation plan initiatives evaluation and was ranked highly. Unfortunately, due to budget limitations it was not included in the BMC CY 2021 Budget. However, the BMC will review this and other potential initiatives for inclusion in future BMC budgets on a periodic basis, typically in the fall.
13	Transient Model Development	Has a transient model developed as soon as grant funding is available or the County provides the funding, which is calibrated with the most recent data and has thorough sensitivity and uncertainty analyses completed.	Developing a transient model was an initiative included in the 2020 implementation plan initiatives evaluation and was ranked highly. Unfortunately, due to budget limitations it was not included in the BMC CY 2021 Budget. However, the BMC will review this and other potential initiatives for inclusion in future BMC budgets on a periodic basis, typically in the fall.
14	Adaptive Management	Immediately rescinds two technical memoranda (TM) and the findings, which have been refuted by available data.	Previously completed Adaptive Management Technical Memorandums were developed to better inform the BMC's understanding of basin conditions and how to best manage the implement of the Basin Plan. Included in the CY 2021 is an initiative to update the Sustainable Yield estimates and re-evaluate the basin metrics. If through these initiatives, it is determined by the BMC that Adaptive Management modifications to the Basin Plan are needed, then it is envisioned that a formalized process for making Adaptive Management modifications

			to the Basin Plan would be approved, followed by approval of the agreed upon Basin Plan Adaptive Management modifications.
15	Additional Modeling Scenarios	Has Cleath-Harris Geologists run modeling scenarios with the model recalibrated for (1) Broderson leach fields being ineffective at pushing back seawater intrusion, and (2) the fifteen-year average rainfall total as reported in the 2019 Annual Monitoring Report of 15.14", 13% less than the 17.5" assumed in current modeling.	The BMC is continually evaluating the need for and budget available to run additional modeling scenarios and make model modifications to improve the understanding of potential future conditions. As the BMC considers when and what type of additional model scenarios to run, the requested scenario will be included in the discussion.
16	Groundwater Model Sensitivity Analysis	Has CHG complete sensitivity and uncertainty analyses on the steady state model, along with multiple modeling scenarios showing less-than-best-case outcomes based on the analyses, so that the BMC can better understand the range of possible outcomes of management actions, e.g., moving wells to the upper aquifer and inland.	The BMC is continually evaluating the need for and budget available to run additional modeling scenarios and make model modifications to improve the understanding of potential future conditions. As the BMC considers when and what type of additional model scenarios to run, the requested scenario will be included in the discussion.
17	Revised Sustainable Yield Calculation	Revises the definition of "sustainable yield" so that it avoids undesirable results and targets the same outcomes as the Basin Yield Metric of 80 (BYM 80), the retreat of seawater intrusion fronts in Zones D and E to points offshore under the estuary.	An update to the definition of sustainable yield may be considered in connection with the planned sustainable yield update.
18	Base decisions on empirical data	Bases any decisions that can result in irreversible harm to the Basin, such as whether to increase demand with further development, on ample reliable water level and chloride well monitoring data, as well as measurable objectives which have pre-determined margins of safety deemed necessary for a sustainable Basin under various conditions, including droughts and other adverse impacts at various levels of development.	BMC Staff is in agreement that data-based decision making is critical for the sustainability of the basin. BMC Staff intends to continue to utilize a combination of monitoring and modeling to best understand current and potential future conditions within the basin. Monitoring provides the best available information we can obtain regarding current conditions within the Basin but does not allow us to predict future conditions. Modeling allows us to predict what we think future conditions will look like but rely upon numerous assumptions and contain a larger degree of uncertainty. The Basin Plan included estimates of anticipated future conditions and the BMC is tracking actual conditions relative to these predictions through the Basin Metrics. BMC Staff will continue track actual conditions, compare against anticipated conditions and present findings for the purpose of enabling the BMC to make informed decisions on how to best implement the Basin Plan to ensure the sustainability of the Basin.

From: Land Use Committee of the Los Osos Community Advisory Council
April 6, 2021

Dear Basin Management Committee,

This letter comes to you from the Land Use Committee of the Los Osos Community Advisory Council. Because of conversations that will occur next week, we felt it urgent that we get a letter to you that addresses our concerns regarding the health and sustainability of the Los Osos water supply.

Because of timing, this letter has not yet been presented to LOCAC so at this point we are not authorized to speak for them. Today we only speak for the Land Use Committee as it represents the residents of Los Osos.

To whom it may concern,

There is no conclusive evidence to show that Los Osos has enough of a sustainable water supply to support the current population of Los Osos nor that the water usage of any new development will not threaten that supply.

The Los Osos Sustainability Group and the California Coastal Commission Staff have expressed concerns about the Los Osos water supply and its sustainability, we have heard that even our Water Purveyors have stated doubts about the sustainability of the Basin.

The Land Use Committee would like to express our concerns as well.

SLO County Local Coastal Program provisions on water supply include those that require denial of projects where adequate water and wastewater services are not available. Los Osos is a community that has traditionally suffered from an inadequate water source in terms of water supply from an over drafted groundwater basin with impacted water quality due to sea water intrusion and nitrate contamination.

The Land Use Committee feels that before we move forward with new construction in Los Osos there should be conclusive proof that we have enough water, a water supply that can be maintained and proven to be sustainable.

Thank you for your consideration,

Larry Bender, Chair
Land Use Committee, Los Osos

MONSOON CONSULTANTS

P.O. Box 151 San Luis Obispo, California 93406 Tel 805-280-1051
breely@monsoonconsultants.com

June 06, 2019

Wild Coast Farms
Attn: Adam Kirchner
2198 Los Osos Valley Road
Los Osos, CA 93402

Re: **DRAFT: WATER MANAGEMENT PLAN FOR WILD COAST FARMS CANNABIS CULTIVATION OPERATION (Revised May 5, 2021)**

Dear Mr. Kirchner,

At your request, Monsoon Consultants (Monsoon) has prepared this Water Management Plan for the proposed Wild Coast Farms Cannabis Cultivation Farm (Wild Coast). The subject property includes approximately 13.65 acres, upon which the cannabis cultivation farm will be operated. The property is owned by Adam Kirchner and is located off 2198 Los Osos Valley Road, east of the town of Los Osos, in San Luis Obispo County (County) (APN 067-011-057). The subject parcel is adjacent to APN 067-011-021, which contains approximately 60.24 acres. These two properties are collectively considered a single legal parcel, based on information provided by the County. For the purposes of this plan, the historic water usage for both properties was considered in establishing the baseline usage. A Project Location Map and Los Osos Groundwater Basin Map are included as Attachments A and B in this report.

PROJECT DESCRIPTION

The owner of Wild Coast plans to grow cannabis in a greenhouse for year-round cultivation, climate control, and controlled exposure to sunlight. Each plant will be grown in 5-gallon pots. The pots contain an organic potting soil blend formulated to retain as much moisture as possible, reducing watering needs. The plants are delivered an exact amount of a proprietary blend of cannabis specific nutrients with each

watering. The plants are watered with an automated drip system when needed. The fully automated drip system, utilizing 1 gallon per hour (GPH) drip low flow emitters from DRAMM, uses just enough water to soak the root zone and shuts off just before any runoff occurs. This slow soak occurs in the irrigation system early in the morning or late in the evening to reduce as much evaporation during the middle of the day as possible. This allows more water and food to soak in and become available to the plant.

The proposed cannabis cultivation farm will cover approximately 36,000 square feet and will be supplied with water from a single existing on-site well. The cultivation area will be divided into 22,000 square feet of flowering plants and 12,600 square feet of nursery plants. When the proposed operation is fully operational, between flowering and nursery, the farm will house approximately 18,400 potted plants. This will add an additional 15,000 plants to the 3,400 existing plants, for a total crop of 18,400 plants. The existing well will provide water for the entire property including the cannabis cultivation and a small existing residential unit with two occupants. In the event of a power or pump failure, water will be supplied to the crops from storage tanks that can store up to 20,000 gallons. An additional 10,000 gallons will be stored on the site for property fire protection and to satisfy building code requirements. These storage tanks will be strategically located throughout the cannabis cultivation operation premises and the property.

REGULATORY REQUIREMENTS

This Water Management Plan was developed to comply with the requirements of the County of San Luis Obispo Department of Planning & Building (SLO County), and in response to a letter from the county, dated January 14th, 2019. A copy of this letter is included as Attachment C. The requirements set forth in the subject letter include, among other items, that the applicant for cannabis cultivation permit provide the following.

- *A detailed plan that includes the proposed water supply, proposed conservation measures, and any water offset requirements. Your project is located within the Los Osos Groundwater Basin. The Cannabis Ordinance, Section 22.40.050 D 5 requires the applicant to provide an estimate of water demand prepared by a licensed professional engineer or other expert on water demand as approved by the County's Planning Director, and a detailed description of how the new water demand will be offset. For each project cannabis component/activity please provide a water use estimate from a "licensed professional engineer" or "other expert". Also have the "expert" identify if and how offsets can be provided onsite.*

The information requested in the subject letter is summarized below:

HISTORIC WATER USAGE

Historic water usage on the two parcels that collectively comprise the subject parcel was estimated based on information provided to Monsoon by the managers of each property. With regard to the 60.24-acre parcel (APN 062-011-021), it is understood that Dohi Farms has been actively farming the property since year 2000. On a normal rain year two crops are grown on each acre. Romaine, green cabbage, broccoli, and cilantro are currently grown on this property. The average annual amount of irrigation water supplied is estimated to be 126 acre-feet. The existing irrigation system is comprised of a system of 3700 "full circle" reciprocating sprinkler heads that emit 2.18 GPM @ 40 psi. Under historical conditions, each sprinkler head applies approximately 30.4 gallons per day, which equates to approximately 41,054,428 gallons per year (126 AF/YR).

With regard to the 13.65-acre parcel (APN 0667-011-057), the water usage was estimated for the years following the 2016 purchase of the property by the current property owner. Prior to 2016, the previous owner's land usage was primarily cover crop with a small portion of land dedicated to a personal vegetable garden. From January 2016 to April 2018, for the purpose of cannabis cultivation, the owners reportedly used approximately 430 gallons per day (GPD) or 0.32 Acre-feet (AFY). After April 2018, water use increased to approximately 545 GPD or 0.61 AFY. The increase in water usage was the result of a transition from growing *Cannabis sativa* to *Cannabis indica*. Before April 2018, the property contained 33 large *Cannabis sativa* plants. In April 2018, Wild Coast switched to growing an estimated 3,400 of the smaller *Cannabis indica* plants using pots on approximately 5,000 square feet of land. Cannabis water usage from 2016 to the present are summarized in Tables 1 and 2 below.

Table 1. January 2016-April 2018 Water Usage for Wild Coast Farms Cannabis Sativa Cultivation

2016-April 2018 WATER USAGE FOR WILD COAST FARMS CANNABIS SATIVA CULTIVATION	
	Per Year
number of waterings	145
gallons used per plant	3,192
gallons used per 33 Plants	105,329
ACRE-FEET	0.32
*based on water needs of the plants	

Table 2. April 2018- Present Water Usage for Wild Coast Farms Cannabis Indica Cultivation

Post April 2018 WATER DEMAND FOR WEST COAST FARMS CANNABIS CULTIVATION	
	Per Year
number of waterings	145
gallons used per plant	58
gallons used per 3400 Plants	197,744
ACRE-FEET	0.61
*based on 1 gal/hr water rate per Plant	

In addition to growing cannabis, Wild Coast allocated part of the land for sheep grazing (2016-2018). Sheep grazing occurred on approximately 1 acre of land and demanded water usage of approximately 630 GPD or 0.71 AFY. The associated water usage for this operation is summarized in Table 3 below. The remainder of the land is composed of unirrigated cover crop. A location map which depicts the areas dedicated to these operations is presented in Attachment A.

Table 3. 2016-2018 Water Usage for Wild Coast Farms Sheep Grazing Practices

2016-2018 WATER USAGE FOR WILD COAST FARMS SHEEP GRAZING	
	Per Year
number of watering	64
gallon uses	230,400
acre-feet	0.71
*based on 3 GPH water rate/ emitter @ 3 Hrs of irrigation per week	

In addition to the historical water use described above, the on-site residential domestic water use was considered. Based on discussions with the property owner, Monsoon estimated that the historical total residential domestic usage is approximately 120 gallons per person per day. Based on the water summarized above, Monsoon estimates that the historical (Pre-Project) water usage on the subject

property is approximately 1.92 AFY. A summary of the historical water usage, by category, is presented in Table 4.

Table 4. Historical Water Usage for Wild Coast Farms

HISTORICAL WATER DEMAND USAGE FOR WILD COAST FARMS CANNABIS CULTIVATION		
	GPD	**AFY**
Indica Cultivation	545	0.61
Sheep Grazing	630	0.71
Erosion Control	295	0.33
Domestic Use	240	0.27
Total Usage	1710	1.92

The combined historic water usage for the subject parcels is estimated to be 127.92 acre-feet.

FUTURE WATER USAGE

The future cannabis cultivation water usage on the Wild Coast property can be broken down into four categories.

- Indoor cultivation
- Nursery
- Processing
- Miscellaneous cannabis activities proposed onsite

Under the proposed expansion, approximately 12,000 plants will be incorporated into the flowering greenhouse, with a daily average water usage of 0.20 gallon/ day per plant, which equates to 2400 GPD or 2.69 AFY. Approximately 6400 plants will be incorporated into the nursery facility where the amount of water used during watering is 0.20 gallon/ plant and the average watering frequency is less than in the greenhouse. The nursery water usage is estimated to be 704 GPD or 0.79 AFY. In addition to the irrigation requirements of the plants, there will also be a relatively small volume of water used for the processing of cannabis and minor clean-up. The volume of water that is estimated for this use is approximately 10 GPD or 0.01 AFY. Lastly, additional general water uses for the cannabis facility including bathroom use and spraying down of hoops twice a year, are estimated to be 10 GPD or 0.01 AFY. A summary of the total estimated water usage for the proposed cannabis cultivation operation is presented in Table 5.

Table 5. Future Greenhouse Cannabis Population

ESTIMATED INDIVIDUALIZED CANNABIS PROCESSES WATER USAGE FOR WILD COAST FARMS CANNABIS CULTIVATION				
	Indoor Cultivation	Nursery	Processing	Other
Number of Plants	12,000	6,400	18,400	18,400
GPD	2400	704	10	10
GPY	876,000	256,960	3650	3650
AFY	2.69	0.79	0.01	0.01
Total Estimated Cannabis Water Usage				**3.50**

The estimated water use for cannabis crops on Wild Coast was compared to published estimates of water use on cannabis farms (Reference Jain Irrigation Article in Appendix D). Based on estimates from Jain Irrigation and the California Department of Fish and Wildlife, the water demand per plant can vary from 0.17 GPD to 6 GPD. This discrepancy is based on several factors including plant species, humidity, lighting, and temperature. Jain Irrigation estimates the daily watering demand within a greenhouse with temperatures between 70 and 80 degrees, an ET value of 0.18, and two 10-hour lighting cycles, to be 0.36 inches of water per day. Based on this estimation, assuming that each plant is within a 5-gallon pot with a diameter of 11 7/8 inches, the average water demand for a plant at Wild Coast would be 0.17 GPD. This estimate is close to the gallons per plant per day that is estimated by Wild Coast.

Based on information provided by the managers of Dohi Farms, they are in agreement that Wild Coast Farms can retrofit their existing irrigation system to reduce the volume of groundwater to be used for crop irrigation in the future to provide a 1:1 offset for the estimated water needs for the proposed cannabis operation. Therefore, the future annual water usage for the combined properties will not exceed 127.92 acre-feet. A description of the proposed offset strategy is described in a subsequent section of this report.

REQUIRED OFFSET

Based on the results of our analysis, Monsoon determined that the future water usage at the Wild Coast property is approximately 4.48 AFY (3.5 AFY from Cannabis operations, 0.71 AFY from Sheep Grazing, and 0.27 AFY from Domestic Use). Under the existing County regulations, Wild Coast will need to provide a 1:1

offset for any cannabis cultivation or operation, which accounts for an annual 3.50 AFY of water usage. The water usage by Dohi Farms on the adjacent parcel will be reduced to meet the required water reduction associated with the 1:1 water offset that is required.

WATER SUPPLY

Each of the two parcels which are the subject of this report are served by separate irrigation wells. The sole source of water that is supplied to the Wild Coast Operations comes from an existing well which is located on the southern property line of parcel APN 067-0011-021. A Project Location Map, with the supply well graphically depicted, is included in Appendix A. A water quality analysis of the source water was conducted by BSK Associates. The sampling plan included the collection of one 24-hour composite sample and multiple grab samples. The samples were tested for various organic and inorganic constituents. The results of the groundwater quality testing are presented in Attachment E. Based on the sampling results, the groundwater to be utilized by Wild Coast is suitable for cannabis irrigation.

A well pump test was performed by Pro-H_20 Drilling and Pump Company. The pump was operated over a 4-hour period to evaluate pumping capacity and associated drawdown. The results of the pump test are presented in Attachment F. The static water level within the well is 28 feet below ground surface. Under pumping conditions, the well-produced approximately 24 GPM with a drawdown of 8 feet. With an average demand of 3,126 GPD, the pump would only need to run for 2.22 hours at 23.5 GPM to meet the daily demand. Based on our review of the well pump testing results, it is our opinion that the well will supply sufficient water to meet cannabis operation and residential use.

The sole source of water that supplies the Dohi Farms row crop farming operation comes from an existing well which is also located on the southern property line of parcel APN 067-0011-021. The location of this well is graphically depicted the Location Map (Appendix A).

WATER OFFSET STRATEGIES

Effective on December 31, 2017, the County of San Luis Obispo Board of Supervisors adopted Ordinance No. 3358, which is a permanent cannabis ordinance regulating commercial and personal cannabis cultivation in unincorporated areas of the county. The ordinance sets parameters for the number of permits to be issued for cannabis sites, the location and operation of cannabis sites, and the allowable water usage for cultivation.

Cannabis cultivation and nursery sites located in the Los Osos Groundwater Basin must offset their projected water use at a 1:1 ratio. Offsets can be achieved in the Los Osos Groundwater Basin area by:

- Retrofitting plumbing fixtures (toilets, showerheads, clothes washers, and faucet aerators) within the same groundwater basin; and/or
- Removing existing crops on-site.
- Other means of approved 1:1 offset

Based on water offset strategies that are acceptable in the Los Osos Groundwater Basin, Monsoon looked at viable offset alternatives. Monsoon evaluated replacing Wild Coast existing toilet and shower head on the property with modern water efficient fixtures. Mr. Kirchner's current washing machine is listed as an energy star water efficient washing machine, therefore it was not included in the offset proposal. A summary of the allowable water credits associated with the replacement of toilets and shower heads is summarized in Attachment G. Table 6 identified retrofit offset associated with plumbing fixtures.

Table 6. WILD COAST FARMS RETROFIT OFFSET

WILD COAST FARMS PLUMBING FIXTURES							
Item	total amount	Current Rate	Proposed Rate	Single Credit -Gallons Saved/Day	Total Credit - Gallons Saved/Day	Total Credit - Gallons Saved/Week	Total Credit - Gallons Saved/Year
toilets	1	(3.5 gallons/ flush)	(0.8 gallons/ flush)	30	30	210	10,920
showers	1	(2.5 gallons/ minute)	(1.0 gallons/ minute)	11	11	77	4,004
Acre-Feet/Year							0.046

Based on a meeting with Jan Dileo and Kylie Hensley of SLO County, sheep grazing was identified as a possible means of offset method. Table 3 identifies number of acre-feet of offset that can be associated with sheep grazing based on amount currently used as a water demand.

Mr. Kirchner also contacted the Dohi Farms to explore the possibility of implementing modifications to their existing irrigation system to reduce the annual amount of water applied to the existing fields. Based on mutual agreement, it was determined that Wild Coast Farms could replace a sufficient number of existing "full circle" reciprocating sprinkler heads containing 7/64 " tips that emit 2.18 GPM @ 40 psi, with more water efficient heads containing a 3/32" tips that emit 1.62 GPM @ 40 psi. The corresponding water savings equates to 0.56 GPM per tip or an average of 30 gals per day per replaced sprinkler head. Based

on the required 1:1 annual offset requirement of 3.5 AF, the sprinkler retrofit alternative would require that a minimum of 105 sprinkler heads be retrofitted with the more efficient heads.

CONCLUSION

Based on the results of our analysis, Monsoon recommends that Wild Coast Farms replace a minimum of 105 existing "full circle" reciprocating sprinkler heads containing 7/64 " tips that emit 2.18 GPM @ 40 psi, with more water efficient heads containing a 3/32" tips that emit 1.62 GPM @ 40 psi. The corresponding water savings equates to 0.56 GPM per tip or an average of 30 gals per day per replaced sprinkler head.

This requirement meets the needs of water offset required by SLO County. If you have any questions or require additional information, please do not hesitate to contact me.

Sincerely,

06-06-19

Blaine T. Reely, PhD, PE

Attachments:

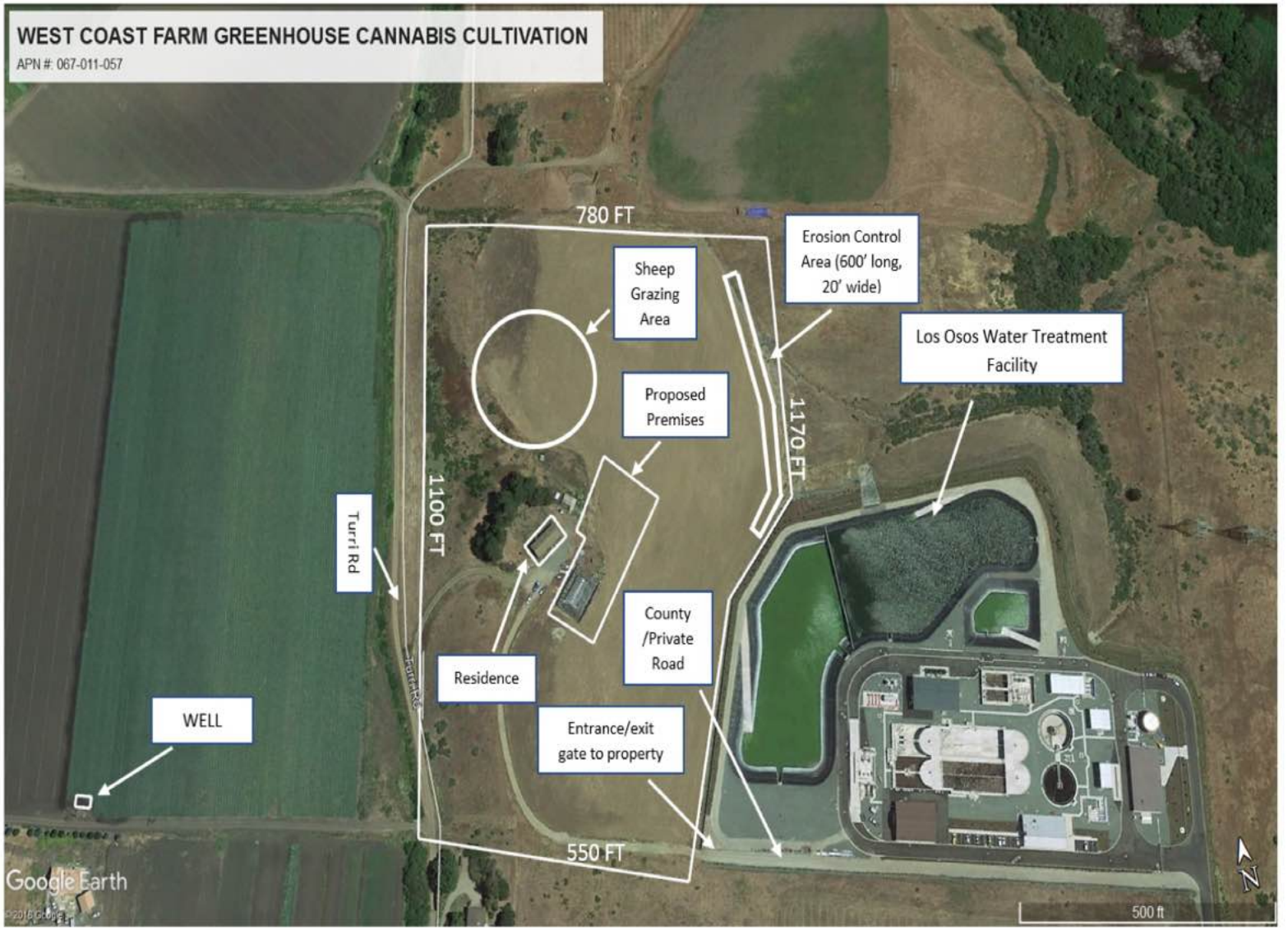
ATTACHMENT A: Project Location Map
ATTACHMENT B: Los Osos Groundwater Basin Map
ATTACHMENT C: County of SLO Information Hold Letter
ATTACHMENT D: Jain Irrigation Article: Water Demands for Cannabis
ATTACHMENT E: Groundwater Test Results
ATTACHMENT F: Pump Test Results
ATTACHMENT G: Title 19: Los Osos Retrofit Credit Table

ATTACHMENT A: PROJECT LOCATION MAP

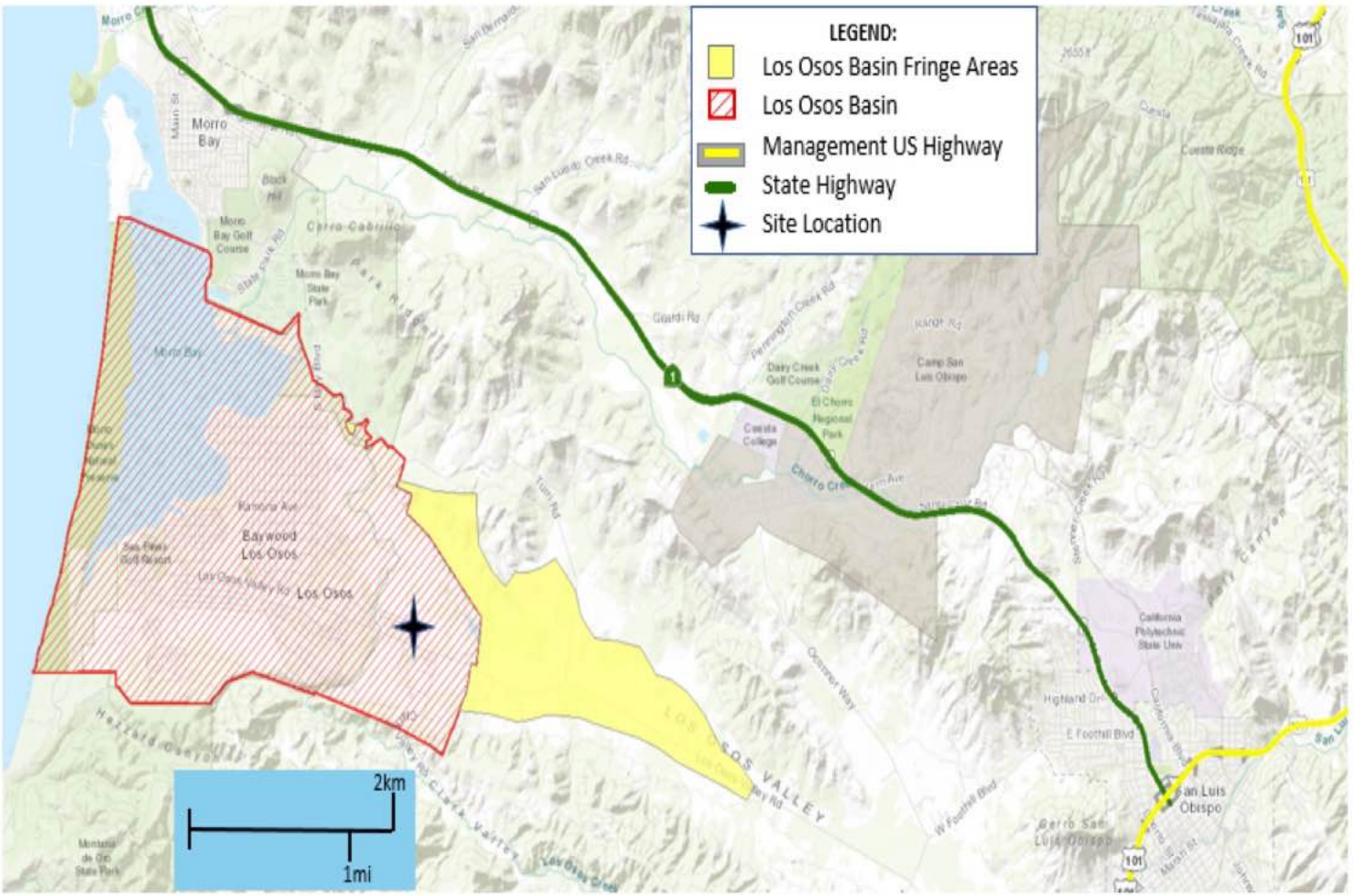
Location Map

2019.03.002 - Wild Coast Farms

MONSOON CONSULTANTS
CIVIL ENGINEERING / HYDROLOGY
P.O. BOX 151 SAN LUIS OBISPO, CA 93406
BREELY@MONSOONCONSULTANTS.COM (805) 476 6168


WEST COAST FARM GREENHOUSE CANNABIS CULTIVATION
APN #: 067-011-057
780 FT
Sheep Grazing Area
Erosion Control Area (600' long, 20' wide)
Los Osos Water Treatment Facility
Proposed Premises
1170 FT
1100 FT
Turri Rd
County /Private Road
Residence
WELL
Entrance/exit gate to property
550 FT
Google Earth
500 ft
N

ATTACHMENT B: LOS OSOS GROUNDWATER BASIN MAP


LEGEND:
Los Osos Basin Fringe Areas
Los Osos Basin
Management US Highway
State Highway
Site Location
Morro Bay
Los Osos
Baywood
Los Osos
LOS OSOS VALLEY
San Luis Obispo
2km
1mi

ATTACHMENT D: WATER DEMANDS FOR CANNABIS CALCULATION VIA JAIN IRRIGATION

Water Demands for Cannabis

Tuesday, June 20, 2017 Michael Derewenko

Recently doing some legwork on a design request I found myself making incorrect assumptions about the water demands of Cannabis. The overall demand of the plant *is* a little misleading. While Cannabis does in fact require quite a bit of water it prefers the application be across a long period of time and evenly distributed above the root base. Fortunately for growers, application options are plentiful and automation has made the waiting game not quite as painful as it used to be. For the project at hand I decided to dig deeper...and put the findings on paper.

Starting from the top; Cannabis like any plant is constantly using valuable energy trying to grow a root base. To be sure there are no interruptions in growth we must provide the plant with a combination of nutrients and water. As the plant uses water to grow we are left with a depletion level that must be replenished. In simple terms the water used or burned up by the plant is the plant's Crop Coefficient. Knowing the Crop Coefficient of many comparable species to Cannabis we're given a value of 1.0. The Crop Coefficient combined with the environments, soon to be explained ET value, is going to help guide a grower down the path of efficiency.

The ET value of our growing environment is going to help determine how much water we should apply to refill our plants depletion. Figuring out the ET value of an indoor environment can be a bit tricky. Fortunately the same variables that apply to our outdoor environments also apply to our indoor environments. Along with a plants growth stage and maturity level; humidity, temperature and solar radiation are all things to consider when determining an ET value for your room. For reference it's currently 72 degrees in San Diego with a nice cool breeze and...ok sorry, and the Daily ET is .12. Not too far removed from coastal SoCal in Phoenix it is a very exciting 116 degrees, if I had to guess it's a dry air. Current ET in Phoenix? .33 This pattern tells us that with dryer, warmer air our plants need more water.

Understandably growers do their best to keep rooms cool and well ventilated but with most conventional lighting setups creating room temperatures between 70 and 80 degrees we will use .18 as our value. With the majority of humidity coming from irrigation and what the plants emit our ET value should be relatively low. In other words our Cannabis needs .18 inches of water per day to thrive.

"No way!"

- Naysayers

They are actually correct! Keep in mind, not all the water leaving your emission device is making it ***into*** the plant. Stay with me here; on average, drip irrigation has what we call a **DU** or Distribution Uniformity rate of .9, meaning 90% of the water leaving the device makes it where we need it to go. With environmental conditions eating away at 10% of our water and multiple lighting cycles expediting photosynthesis we'll now need to apply 2 X our previously calculated .18 demand.

Here is our formula:

1.0 x **.36** = .36 inches of water per day

1.0 is the Crop Coefficient of Cannabis

.18 x **2** = **.36** ET Value (based on **two** 10 hour lighting cycles)

.36 is the plants daily watering demand

We've now determined that Cannabis needs approximately .36 inches of water per day to replenish what the plant has used for energy. We can now move on to the fun part, the application of water!

ATTACHMENT E: GROUNDWATER QUALITY SAMPLING RESULTS

BSK Associates Laboratory Fresno
1414 Stanislaus St
Fresno, CA 93706
559-497-2888 (Main)
559-485-6935 (FAX)

A8B2052
3/01/2018
Invoice: A805733

Caitlin Galloway
Abalone Coast Analytical, Inc.
141 Suburban, Suite C-1
San Luis Obispo, CA 93401

RE: Report for A8B2052 Main Project - e COC MCL (Non-EDT)

Dear Caitlin Galloway,

Thank you for using BSK Associates for your analytical testing needs. In the following pages, you will find the test results for the samples submitted to our laboratory on 2/16/2018. The results have been approved for release by our Laboratory Director as indicated by the authorizing signature below.

The samples were analyzed for the test(s) indicated on the Chain of Custody (see attached) and the results relate only to the samples analyzed. BSK certifies that the testing was performed in accordance with the quality system requirements specified in the 2009 TNI Standard. Any deviations from this standard or from the method requirements for each test procedure performed will be annotated alongside the analytical result or noted in the Case Narrative. Unless otherwise noted, the sample results are reported on an "as received" basis.

If additional clarification of any information is required, please contact your Project Manager, Michelle Kawaguchi , at 559-497-2888.

Thank you again for using BSK Associates. We value your business and appreciate your loyalty.

Sincerely,

Michelle Kawaguchi

Michelle Kawaguchi, Project Manager

Accredited in Accordance with NELAP
ORELAP #4021-009

BSK ASSOCIATES

Case Narrative

Project and Report Details		Invoice Details	
Client:	Abalone Coast Analytical, Inc.	**Invoice To:**	Abalone Coast Analytical, Inc.
Report To:	Caitlin Galloway	**Invoice Attn:**	Caitlin Galloway
Project #:	18-0995 Adam Kirchner	**Project PO#:**	-
Received:	2/16/2018 - 17:15		
Report Due:	2/27/2018		

Sample Receipt Conditions

Cooler: Default Cooler Initial receipt at BSK-FAL

Data Qualifiers

The following qualifiers have been applied to one or more analytical results:

BS	Blank spike recoveries did not meet acceptance limits.
BS1.0	Blank spike recovery for this analyte was biased high; no material impact on reported result as sample is ND for this parameter.
HT1.0	Holding time exceeded. Sample was received at the lab past holding time.
MS1.0	Matrix spike recoveries exceed control limits.

Report Distribution

Recipient(s)	Report Format	CC:
Caitlin Galloway (reports)	MCL.RPT	

Certificate of Analysis

Sample ID: A8B2052-01
Sampled By: Adam Kirchner
Sample Description: Faucet/Hose Bib

Sample Date - Time: 02/09/18 - 11:30
Matrix: Drinking Water
Sample Type: Grab

BSK Associates Laboratory Fresno

General Chemistry

Analyte	Method	Result	RL	Units	RL Mult	MCL	Batch	Prepared	Analyzed	Qual
Aggressive Index		**13**					A802778	02/28/18	02/28/18	
Alkalinity as CaCO3	SM 2320B	**410**	3.0	mg/L	1		A802255	02/18/18	02/18/18	
Bicarbonate as CaCO3	SM 2320B	**410**	3.0	mg/L	1		A802255	02/18/18	02/18/18	
Carbonate as CaCO3	SM 2320B	ND	3.0	mg/L	1		A802255	02/18/18	02/18/18	
Hydroxide as CaCO3	SM 2320B	ND	3.0	mg/L	1		A802255	02/18/18	02/18/18	
Chloride	EPA 300.0	**82**	1.0	mg/L	1		A802238	02/16/18	02/16/18	
Conductivity @ 25C	SM 2510B	**1100**	1.0	umhos/cm	1		A802255	02/18/18	02/18/18	
Langelier Index	SM 2330B	**1.1**					A802818	03/01/18	03/01/18	
MBAS, Calculated as LAS, mol wt 340	SM 5540C	ND	0.050	mg/L	1		A802226	02/16/18 16:55	02/16/18	HT1.0
Nitrate as N	EPA 300.0	**0.97**	0.23	mg/L	1	10	A802238	02/16/18 21:30	02/16/18	HT1.0
Orthophosphate as PO4	EPA 300.0	**2.7**	0.60	mg/L	1		A802238	02/16/18 21:30	02/16/18	HT1.0
pH (1)	SM 4500-H+ B	**8.1**		pH Units	1		A802255	02/18/18	02/18/18	
pH Temperature in °C		**23.6**								
Sulfate as SO4	EPA 300.0	**70**	1.0	mg/L	1		A802238	02/16/18	02/16/18	
Total Dissolved Solids	SM 2540C	**630**	5.0	mg/L	1		A802369	02/21/18	02/26/18	HT1.0

Metals

Analyte	Method	Result	RL	Units	RL Mult	MCL	Batch	Prepared	Analyzed	Qual
Boron	EPA 200.7	**0.13**	0.10	mg/L	1		A802367	02/22/18	02/26/18	
Calcium	EPA 200.7	**89**	0.10	mg/L	1		A802367	02/22/18	02/26/18	
Copper	EPA 200.7	ND	0.050	mg/L	1		A802367	02/22/18	02/26/18	
Hardness as CaCO3		**520**	0.41	mg/L						
Iron	EPA 200.7	ND	0.030	mg/L	1		A802367	02/22/18	02/26/18	
Magnesium	EPA 200.7	**71**	0.10	mg/L	1		A802367	02/22/18	02/26/18	
Manganese	EPA 200.7	**0.90**	0.010	mg/L	1		A802367	02/22/18	02/26/18	
Potassium	EPA 200.7	ND	2.0	mg/L	1		A802367	02/22/18	02/26/18	
Silver	EPA 200.7	ND	0.010	mg/L	1		A802367	02/22/18	02/28/18	
Sodium	EPA 200.7	**46**	1.0	mg/L	1		A802367	02/22/18	02/26/18	
Zinc	EPA 200.7	ND	0.050	mg/L	1		A802367	02/22/18	02/26/18	BS1.0

BSK Associates Laboratory Fresno

General Chemistry Quality Control Report

Analyte	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Date Analyzed	Qual
EPA 300.0 - Quality Control											
Batch: A802238										Prepared: 2/16/2018	
Prep Method: Method Specific Preparation										Analyst: BCB	
Blank (A802238-BLK1)											
Chloride	ND	1.0	mg/L							02/16/18	
Nitrate as N	ND	0.23	mg/L							02/16/18	
Orthophosphate as PO4	ND	0.60	mg/L							02/16/18	
Sulfate as SO4	ND	1.0	mg/L							02/16/18	
Blank Spike (A802238-BS1)											
Chloride	100	1.0	mg/L	100		101	90-110			02/16/18	
Nitrate as N	22	0.23	mg/L	23		99	90-110			02/16/18	
Orthophosphate as PO4	16	0.60	mg/L	15		101	90-110			02/16/18	
Sulfate as SO4	100	1.0	mg/L	100		101	90-110			02/16/18	
Matrix Spike (A802238-MS1), Source: A8B1755-04											
Chloride	59	1.0	mg/L	50	8.8	101	80-120			02/16/18	
Nitrate as N	13	0.23	mg/L	11	1.9	98	80-120			02/16/18	
Orthophosphate as PO4	7.5	0.60	mg/L	7.7	ND	94	80-120			02/16/18	
Sulfate as SO4	62	1.0	mg/L	50	11	102	80-120			02/16/18	
Matrix Spike (A802238-MS2), Source: A8B1997-01											
Chloride	59	1.0	mg/L	50	8.3	102	80-120			02/16/18	
Nitrate as N	12	0.23	mg/L	11	1.0	99	80-120			02/16/18	
Orthophosphate as PO4	7.9	0.60	mg/L	7.7	ND	99	80-120			02/16/18	
Sulfate as SO4	54	1.0	mg/L	50	2.8	103	80-120			02/16/18	
Matrix Spike Dup (A802238-MSD1), Source: A8B1755-04											
Chloride	60	1.0	mg/L	50	8.8	103	80-120	2	20	02/16/18	
Nitrate as N	13	0.23	mg/L	11	1.9	100	80-120	1	20	02/16/18	
Orthophosphate as PO4	8.0	0.60	mg/L	7.7	ND	101	80-120	7	20	02/16/18	
Sulfate as SO4	63	1.0	mg/L	50	11	105	80-120	2	20	02/16/18	
Matrix Spike Dup (A802238-MSD2), Source: A8B1997-01											
Chloride	60	1.0	mg/L	50	8.3	104	80-120	2	20	02/16/18	
Nitrate as N	12	0.23	mg/L	11	1.0	101	80-120	2	20	02/16/18	
Orthophosphate as PO4	8.2	0.60	mg/L	7.7	ND	102	80-120	4	20	02/16/18	
Sulfate as SO4	55	1.0	mg/L	50	2.8	105	80-120	2	20	02/16/18	
SM 2320B - Quality Control											
Batch: A802255										Prepared: 2/18/2018	
Prep Method: Method Specific Preparation										Analyst: CEG	
Blank (A802255-BLK1)											
Alkalinity as CaCO3	ND	3.0	mg/L							02/18/18	
Bicarbonate as CaCO3	ND	3.0	mg/L							02/18/18	
Carbonate as CaCO3	ND	3.0	mg/L							02/18/18	
Hydroxide as CaCO3	ND	3.0	mg/L							02/18/18	
Blank Spike (A802255-BS1)											

BSK Associates Laboratory Fresno

General Chemistry Quality Control Report

Analyte	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Date Analyzed	Qual
SM 2320B - Quality Control											
Batch: A802255										Prepared: 2/18/2018	
Prep Method: Method Specific Preparation										Analyst: CEG	
Blank Spike (A802255-BS1)											
Alkalinity as CaCO3	90	3.0	mg/L	100		90	80-120			02/18/18	
Blank Spike Dup (A802255-BSD1)											
Alkalinity as CaCO3	91	3.0	mg/L	100		91	80-120	1	20	02/18/18	
Duplicate (A802255-DUP1), Source: A8B1818-01											
Alkalinity as CaCO3	200	3.0	mg/L		210			1	10	02/18/18	
Bicarbonate as CaCO3	200	3.0	mg/L		210			1	10	02/18/18	
Carbonate as CaCO3	ND	3.0	mg/L		ND				10	02/18/18	
Hydroxide as CaCO3	ND	3.0	mg/L		ND				10	02/18/18	
SM 2510B - Quality Control											
Batch: A802255										Prepared: 2/18/2018	
Prep Method: Method Specific Preparation										Analyst: CEG	
Blank Spike (A802255-BS1)											
Conductivity @ 25C	1400	1.0	umhos/cm	1400		96	90-110			02/18/18	
Blank Spike Dup (A802255-BSD1)											
Conductivity @ 25C	1300	1.0	umhos/cm	1400		95	90-110	0	20	02/18/18	
Duplicate (A802255-DUP1), Source: A8B1818-01											
Conductivity @ 25C	510	1.0	umhos/cm		510			0	20	02/18/18	
SM 2540C - Quality Control											
Batch: A802369										Prepared: 2/21/2018	
Prep Method: Method Specific Preparation										Analyst: DEH	
Blank (A802369-BLK1)											
Total Dissolved Solids	ND	5.0	mg/L							02/26/18	
Blank Spike (A802369-BS1)											
Total Dissolved Solids	990	5.0	mg/L	1000		99	70-130			02/26/18	
Duplicate (A802369-DUP1), Source: A8B1566-01											
Total Dissolved Solids	190	5.0	mg/L		190			3	20	02/26/18	
Duplicate (A802369-DUP2), Source: A8B2137-03											
Total Dissolved Solids	140	5.0	mg/L		140			0	20	02/26/18	
SM 4500-H+ B - Quality Control											
Batch: A802255										Prepared: 2/18/2018	
Prep Method: Method Specific Preparation										Analyst: CEG	
Duplicate (A802255-DUP1), Source: A8B1818-01											
pH (1)	7.9		pH Units		7.9			0	20	02/18/18	

BSK Associates Laboratory Fresno

General Chemistry Quality Control Report

Analyte	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Date Analyzed	Qual
SM 4500-H+ B - Quality Control											
Batch: A802255										Prepared: 2/18/2018	
Prep Method: Method Specific Preparation										Analyst: CEG	
Duplicate (A802255-DUP1), Source: A8B1818-01											
SM 5540C - Quality Control											
Batch: A802226										Prepared: 2/16/2018	
Prep Method: Method Specific Preparation										Analyst: SYY	
Blank (A802226-BLK1)											
MBAS, Calculated as LAS, mol wt 340	ND	0.050	mg/L							02/16/18	
Blank Spike (A802226-BS1)											
MBAS, Calculated as LAS, mol wt 340	1.1	0.050	mg/L	1.0		107	82-112			02/16/18	
Blank Spike Dup (A802226-BSD1)											
MBAS, Calculated as LAS, mol wt 340	1.1	0.050	mg/L	1.0		106	82-112	1	20	02/16/18	
Matrix Spike (A802226-MS1), Source: A8B1921-01											
MBAS, Calculated as LAS, mol wt 340	0.73	0.050	mg/L	1.0	ND	73	80-112			02/16/18	MS1.0 ***Low***
Matrix Spike Dup (A802226-MSD1), Source: A8B1921-01											
MBAS, Calculated as LAS, mol wt 340	0.74	0.050	mg/L	1.0	ND	74	80-112	2	20	02/16/18	MS1.0 ***Low***

BSK Associates Laboratory Fresno

Metals Quality Control Report

Analyte	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Date Analyzed	Qual	
EPA 200.7 - Quality Control												
Batch: A802367										Prepared: 2/22/2018		
Prep Method: EPA 200.2										Analyst: MDS		
Blank (A802367-BLK2)												
Boron	ND	0.10	mg/L							02/26/18		
Calcium	ND	0.10	mg/L							02/26/18		
Copper	ND	0.050	mg/L							02/26/18		
Iron	ND	0.030	mg/L							02/26/18		
Magnesium	ND	0.10	mg/L							02/26/18		
Manganese	ND	0.010	mg/L							02/26/18		
Potassium	ND	2.0	mg/L							02/26/18		
Silver	ND	0.010	mg/L							02/26/18		
Sodium	ND	1.0	mg/L							02/26/18		
Zinc	ND	0.050	mg/L							02/26/18		
Blank Spike (A802367-BS2)												
Boron	0.20	0.10	mg/L	0.20		100	85-115			02/26/18		
Calcium	4.0	0.10	mg/L	4.0		101	85-115			02/26/18		
Copper	0.20	0.050	mg/L	0.20		100	85-115			02/26/18		
Iron	0.20	0.030	mg/L	0.20		102	85-115			02/26/18		
Magnesium	4.2	0.10	mg/L	4.0		104	85-115			02/26/18		
Manganese	0.20	0.010	mg/L	0.20		101	85-115			02/26/18		
Potassium	4.1	2.0	mg/L	4.0		103	85-115			02/26/18		
Silver	0.10	0.010	mg/L	0.10		102	85-115			02/26/18		
Sodium	4.1	1.0	mg/L	4.0		102	85-115			02/26/18		
Zinc	0.20	0.050	mg/L	0.20		102	85-115			02/26/18		
Blank Spike Dup (A802367-BSD2)												
Boron	0.20	0.10	mg/L	0.20		102	85-115	2	20	02/26/18		
Calcium	4.1	0.10	mg/L	4.0		102	85-115	1	20	02/26/18		
Copper	0.20	0.050	mg/L	0.20		102	85-115	2	20	02/26/18		
Iron	0.23	0.030	mg/L	0.20		113	85-115	10	20	02/26/18		
Magnesium	4.3	0.10	mg/L	4.0		107	85-115	2	20	02/26/18		
Manganese	0.20	0.010	mg/L	0.20		101	85-115	0	20	02/26/18		
Potassium	4.1	2.0	mg/L	4.0		102	85-115	1	20	02/26/18		
Silver	0.10	0.010	mg/L	0.10		102	85-115	1	20	02/26/18		
Sodium	4.1	1.0	mg/L	4.0		103	85-115	1	20	02/26/18		
Zinc	0.67	0.050	mg/L	0.20		333	85-115	106	20	02/26/18	BS	***High***
Matrix Spike (A802367-MS3), Source: A8B1955-01												
Boron	0.31	0.10	mg/L	0.20	0.10	100	70-130			02/26/18		
Calcium	100	0.10	mg/L	4.0	100	NR	70-130			02/26/18	MS1.0	***Low***
Copper	0.20	0.050	mg/L	0.20	ND	98	70-130			02/26/18		
Iron	0.21	0.030	mg/L	0.20	ND	105	70-130			02/26/18		
Magnesium	51	0.10	mg/L	4.0	49	45	70-130			02/26/18	MS1.0	***Low***
Manganese	0.20	0.010	mg/L	0.20	ND	99	70-130			02/26/18		
Potassium	4.8	2.0	mg/L	4.0	ND	121	70-130			02/26/18		
Silver	0.10	0.010	mg/L	0.10	ND	102	70-130			02/26/18		
Sodium	41	1.0	mg/L	4.0	38	65	70-130			02/26/18	MS1.0	***Low***
Zinc	0.21	0.050	mg/L	0.20	ND	105	70-130			02/26/18		

BSK Associates Laboratory Fresno

Metals Quality Control Report

Analyte	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Date Analyzed	Qual
EPA 200.7 - Quality Control											
Batch: A802367										Prepared: 2/22/2018	
Prep Method: EPA 200.2										Analyst: MDS	
Matrix Spike (A802367-MS4), Source: A8B1997-06											
Boron	0.25	0.10	mg/L	0.20	ND	99	70-130			02/26/18	
Calcium	20	0.10	mg/L	4.0	16	105	70-130			02/26/18	
Copper	0.20	0.050	mg/L	0.20	ND	101	70-130			02/26/18	
Iron	0.27	0.030	mg/L	0.20	0.061	104	70-130			02/26/18	
Magnesium	12	0.10	mg/L	4.0	8.1	102	70-130			02/26/18	
Manganese	0.30	0.010	mg/L	0.20	0.10	98	70-130			02/26/18	
Potassium	8.2	2.0	mg/L	4.0	4.1	104	70-130			02/26/18	
Silver	0.10	0.010	mg/L	0.10	ND	103	70-130			02/26/18	
Sodium	22	1.0	mg/L	4.0	18	106	70-130			02/26/18	
Zinc	0.21	0.050	mg/L	0.20	ND	103	70-130			02/26/18	
Matrix Spike Dup (A802367-MSD3), Source: A8B1955-01											
Boron	0.31	0.10	mg/L	0.20	0.10	101	70-130	0	20	02/26/18	
Calcium	100	0.10	mg/L	4.0	100	18	70-130	1	20	02/26/18	MS1.0 ***Low***
Copper	0.20	0.050	mg/L	0.20	ND	98	70-130	0	20	02/26/18	
Iron	0.21	0.030	mg/L	0.20	ND	106	70-130	1	20	02/26/18	
Magnesium	52	0.10	mg/L	4.0	49	62	70-130	1	20	02/26/18	MS1.0 ***Low***
Manganese	0.20	0.010	mg/L	0.20	ND	100	70-130	1	20	02/26/18	
Potassium	4.8	2.0	mg/L	4.0	ND	120	70-130	1	20	02/26/18	
Silver	0.10	0.010	mg/L	0.10	ND	105	70-130	2	20	02/26/18	
Sodium	41	1.0	mg/L	4.0	38	73	70-130	1	20	02/26/18	
Zinc	0.21	0.050	mg/L	0.20	ND	106	70-130	0	20	02/26/18	
Matrix Spike Dup (A802367-MSD4), Source: A8B1997-06											
Boron	0.25	0.10	mg/L	0.20	ND	101	70-130	2	20	02/26/18	
Calcium	20	0.10	mg/L	4.0	16	113	70-130	2	20	02/26/18	
Copper	0.20	0.050	mg/L	0.20	ND	101	70-130	0	20	02/26/18	
Iron	0.27	0.030	mg/L	0.20	0.061	106	70-130	2	20	02/26/18	
Magnesium	12	0.10	mg/L	4.0	8.1	107	70-130	1	20	02/26/18	
Manganese	0.30	0.010	mg/L	0.20	0.10	99	70-130	1	20	02/26/18	
Potassium	8.2	2.0	mg/L	4.0	4.1	104	70-130	0	20	02/26/18	
Silver	0.10	0.010	mg/L	0.10	ND	102	70-130	1	20	02/26/18	
Sodium	22	1.0	mg/L	4.0	18	116	70-130	2	20	02/26/18	
Zinc	0.21	0.050	mg/L	0.20	ND	105	70-130	2	20	02/26/18	

Certificate of Analysis

Notes:

- The Chain of Custody document and Sample Integrity Sheet are part of the analytical report.
- Any remaining sample(s) for testing will be disposed of according to BSK's sample retention policy unless other arrangements are made in advance.
- All positive results for EPA Methods 504.1 and 524.2 require the analysis of a Field Reagent Blank (FRB) to confirm that the results are not a contamination error from field sampling steps. If Field Reagent Blanks were not submitted with the samples, this method requirement has not been performed.
- Samples collected by BSK Analytical Laboratories were collected in accordance with the BSK Sampling and Collection Standard Operating Procedures.
- J-value is equivalent to DNQ (Detected, not quantified) which is a trace value. A trace value is an analyte detected between the MDL and the laboratory reporting limit. This result is of an unknown data quality and is only qualitative (estimated). Baseline noise, calibration curve extrapolation below the lowest calibrator, method blank detections, and integration artifacts can all produce apparent DNQ values, which contribute to the un-reliability of these values.
- (1) - Residual chlorine and pH analysis have a 15 minute holding time for both drinking and waste water samples as defined by the EPA and 40 CFR 136. Waste water and ground water (monitoring well) samples must be field filtered to meet the 15 minute holding time for dissolved metals.
- Summations of analytes (i.e. Total Trihalomethanes) may appear to add individual amounts incorrectly, due to rounding of analyte values occurring before or after the total value is calculated, as well as rounding of the total value.
- RL Multiplier is the factor used to adjust the reporting limit (RL) due to variations in sample preparation procedures and dilutions required for matrix interferences.
- Due to the subjective nature of the Threshold Odor Method, all characterizations of the detected odor are the opinion of the panel of analysts. The characterizations can be found in Standard Methods 2170B Figure 2170:1.
- The MCLs provided in this report (if applicable) represent the primary MCLs for that analyte.

Definitions

mg/L:	Milligrams/Liter (ppm)	MDL:	Method Detection Limit	MDA95:	Min. Detected Activity
mg/Kg:	Milligrams/Kilogram (ppm)	RL:	Reporting Limit: DL x Dilution	MPN:	Most Probable Number
µg/L:	Micrograms/Liter (ppb)	ND:	None Detected at RL	CFU:	Colony Forming Unit
µg/Kg:	Micrograms/Kilogram (ppb)	pCi/L:	PicoCuries per Liter	Absent:	Less than 1 CFU/100mLs
%:	Percent	RL Mult:	RL Multiplier	Present:	1 or more CFU/100mLs
NR:	Non-Reportable	MCL:	Maximum Contaminant Limit		

Please see the individual Subcontract Lab's report for applicable certifications.

BSK is not accredited under the NELAP program for the following parameters:
Aggressive Index Langelier Index

Certifications: **Please refer to our website for a copy of our Accredited Fields of Testing under each certification.**

Fresno

EPA - UCMR4	CA00079	NELAP certified	4021-010	State of California - ELAP	1180
State of Hawaii	4021	State of Nevada	CA000792018-1	State of New York	12073
State of Oregon - NELAP	4021-010	State of Washington	C997-17b		

Sacramento

State of California - ELAP	2435				

San Bernardino

NELAP certified	4119-002	State of California - ELAP	2993	State of Oregon - NELAP	4119-002

Vancouver

NELAP certified	WA100008-010	State of Oregon - NELAP	WA100008-010	State of Washington	C824-17

A8B2052

02162018

Abalo1080

Turnaround: Standard
Due Date: 3/6/2018

Abalone Coast Analytical, Inc.

Printed: 2/16/2018 4:49:11PM
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Abalo1080 02/16/2018
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BSK Associates
Engineering & Laboratories

1414 Stanislaus St.
Fresno, CA 93706
559.497.2888

COC # 20180209004

Client: Abalone Coast Analytical, Inc.
Project: Main Project - e COC MCL (Non-EDT)

VB- 0905
Sampler: Adam Kirchner
Project #: Adam Kirchner

Internal Use Only
Temperature 5.8° #45 °C Has the chilling process begun? Yes No
Delivery Method: Ontrac | UPS | GSO | Fedex | Walk-In | BSK: ____

Primary Bacti Contact
Secondary Bacti Contact

No.	Sample Description	Date / Time	Client Matrix	Sample Type	Comments
1	Faucet/Hose Bib	02/09/18 11:30	Drinking Water		

Analyses: Nitrate-N / General Mineral / Boron, CA DW ICP / Phosphate ICNA / 1D HNO3

Additional Comments: OK to run out of HT

Relinquished By: (Signature and Printed Name)	Company	Date	Time	Received By: (Signature and Printed Name)	Company
S. Perez	ABC Coast	2/9/18	1800		
Relinquished By: (Signature and Printed Name)	Company	Date	Time	Received By: (Signature and Printed Name)	Company
Received at Lab By: (Signature and Printed Name)		Date	Time	Payment Received at Delivery:	Check / Cash
Ronny Weber		2/12/18	17:15	Date: Amount:	PIA#: Init:

Payment for services rendered as noted herein are due in full within 30 days from the date invoiced. If not so paid, account balances are deemed delinquent. Delinquent balances are subject to monthly service charges and interest specified in BSK's current Standard Terms and Conditions for Laboratory Services. The person signing for the Client/Company acknowledges that they are either the Client or an authorized agent to the Client, that the Client agrees to be responsible for payment for the services on this Chain of Custody, and agrees to BSK's terms and conditions for laboratory services unless contractually bound otherwise. BSK's current terms and conditions can be found at www.bskassociates.com/BSKLabTermsConditions.pdf

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BSK Associates Engineers & Laboratories

Integrity
COC # 20180209004

Received By: Donald Weber
Received Date/Time: 02/12/2018 17:15
Delivery Method: Ontrac

Integrity Checks	Yes	No	NA
1. Did the samples meet temperature requirements?	✓		
Cooler 1 5.8°C			
2. Did all bottles arrive unbroken and intact?	✓		
3. Did all bottle labels agree with COC?	✓		
4. If cyanide containers were received, were the containers either free of chlorine or, if present, was the chlorine removed?			✓
5. Were correct containers and preservatives received for the tests requested?	✓		
6. Were there bubbles in the VOA vials? **(Volatiles Only)**			✓
7. Was a sufficient amount of sample received?	✓		
8. Do samples have a hold time <72 hours?	✗		
9. Were any bottles split and/or preserved?		✓	

Additional Comments	Initials	Date
Ok to run out of HT as per client 02/16/18 SAZ	SAZ	02/16/2018 15:50:24
Cooler 1: Blue. B/W	DRW	

A8B2052 02/16/2018
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BSK Associates Engineers & Laboratories

Integrity
COC # 20180209004

Please carefully review the following information for any errors. If you find that any of the information below is incorrect, please contact your Project Manager immediately.

Sample 1		Faucet/Hose Bib	
Sampled:	02/09/2018 11:30	**Sample Matrix:**	Water
Sample Type:		**Regulatory ID:**	
Alias:			
Comments:			
Analyses:	Nitrate-N / General Mineral / Boron, CA DW ICP /		
Containers:	1L P / None, 500mL P / HNO3		

Labeled By: Date/Time: 2/16 1612
Checked By: SL Date/Time: 2/16/18 1
Rush Paged By: Date/Time:

ATTACHMENT F: WELL PUMP TEST

Pro- H2o Drilling and Pump Company

P.O. Box 5055
Paso Robles, Ca. 93447
Gen. Engineer/C-57 Lic. # 767541

New Well Test Report

Date: 11/05/2018

Address of test: 2198 Los Osos Valley Rd

Time	H20 Condition	H20 Level	G.P.M.	Comments: Static H20 Level: 28
12:25 P	Clear	28	24	Owner provided info :
12:30	"	33	23.5	Totalizer:
1:00	"	36	23.5	Pump Depth:
1:30	"	36	23.5	T.D.:690'
2:00	"	36	23.5	Casing Size:
2:30	"	36	23.5	Prod. Tee size:
3:00	"	36	23.5	Boosted ter size/ Make/
3:30	"	36	23.5	Size press. Tank?
4:00	"	36	23.5	Size Storage tank/Steel or plastic?
4:30 PM	"	36	23.5	Owner Name: __
				Address of well: 2198 Los Osos Valley Rd APN # ~

Recovery: (at least 15 min)

Time	H20 Level	Time	H20	Time	H20 Level	Comments:
1:31	33	1:37	33	1:43	33	Escrow
1:32	33	1:38	33	1:44	33	
1:33	33	1:39	33	1:45	33	Phone Numbers
1:34	33	1:40	33	1:46	33	Realtor:
1:35	33	1:41	33			e-mail:
1:36	33	1:42	33			

TO: **Los Osos Basin Management Committee**

FROM: **Dan Heimel, Executive Director**

DATE: **May 19, 2021**

SUBJECT: **Item 8a– Presentation of Draft 2020 Annual Report**

Recommendations

Recommendations: Receive a presentation from BMC staff regarding the draft 2020 Annual Report and confirm June date for BMC meeting to approve final 2020 Annual Report for submission to the Court.

Discussion

Section 5.8.3 of the Final Judgment requires that the preparation of an Annual Report by June 30 of each year. The BMC retained Cleath Harris Geologists (CHG) to prepare the fifth Annual Report for calendar year 2020. The draft work product prepared by CHG is attached, and a staff summary will be provided at the meeting.

Financial Considerations

Budget items 5 and 6 in the adopted calendar year 2021 budget address monitoring and preparation of the annual report.