Notice and Agenda Regular Meeting of the Beaumont Basin Watermaster

Wednesday, October 5, 2022 at 11:00 a.m.

Meeting Location: Beaumont-Cherry Valley Water District 560 Magnolia Avenue • Beaumont, California 92223

This meeting is hereby noticed pursuant to California Government Code Section 54950 et. seq.

Members of the Watermaster Committee: City of Banning Beaumont-Cherry Valley Water District City of Beaumont South Mesa Water Company Yucaipa Valley Water District

COVID-19 NOTICE

This meeting of the Watermaster Committee is open to the public who would like to attend in person. COVID-19 safety guidelines are in effect pursuant to the Cal/OSHA COVID-19 Prevention Emergency Temporary Standards and the California Department of Public Health Recommendations

- Face coverings are recommended for all persons and should be properly worn over the nose and mouth at all times
- Maintain 6 feet of physical distancing from others in the building who are not in your party

Online Meeting Participation Link:

https://us02web.zoom.us/j/81638720446?pwd=UnNZcC9TbGZzTGFuMHdhVkRMblczQT09

Telephone: (669) 900-9128 / Meeting ID: 816-3872-0446 / Passcode: 636756 One-Tap Mobile: +16699009128,,81638720446#,,,,*636756#

For Public Comment, use the "**Raise Hand**" feature if on the video call when prompted, if dialing in, please **dial** *9 to "**Raise Hand**" when prompted

Meeting materials are available on the Watermaster website: https://beaumontbasinwatermaster.org/

I. Call to Order

II. Roll Call

Committee Member Agency	Primary Representative	Alternate
City of Banning	Arturo Vela, Chair	VACANT
City of Beaumont	Jeff Hart	Robert Vestal
Beaumont-Cherry Valley Water District	Daniel Jaggers	Mark Swanson
South Mesa Water Company	George Jorritsma	Dave Armstrong
Yucaipa Valley Water District	Joseph Zoba	Jennifer Ares

III. Pledge of Allegiance

IV. Public Comments At this time, members of the public may address the Beaumont Basin Watermaster on matters within its jurisdiction; however, no action or discussion may take place on any item not on the agenda. To provide comments on specific agenda items, please complete a Request to Speak form and provide that form to the Secretary prior to the commencement of the meeting, or, RAISE HAND electronically or Press *9 when prompted for public comment.

ACTION ITEMS

Action may be taken on any item on the agenda.

V. Consent Calendar

- A. Resolution 2022-07: Authorizing Public Meetings to be Held via Teleconferencing Pursuant to Government Code Section 54953(e) and Making Findings and Determinations Regarding Same [Memorandum No. 22-26, Page 6]
- B. Meeting Minutes
 - a. August 3, 2022 Regular Meeting [Page 9]
- C. Status Report on Water Level Monitoring throughout the Beaumont Basin through September 19, 2022 [Page 16]
- D. A Comparison of Production versus Extraction Credits through August 2022 [Page 27]

VI. Reports

- A. Report from Engineering Consultant Hannibal Blandon, ALDA Engineering
- B. Report from Hydrogeological Consultant Thomas Harder, Thomas Harder & Co.
- C. Report from Administrative Consultant Steve Stuart, Dudek
- D. Report from Legal Counsel Thierry Montoya/Keith McCullough, Alvarado Smith

VII. Discussion Items

A. Consideration of Proposals to and Award of Contract to Provide Professional Engineering Services to the Beaumont Basin Watermaster [Memorandum No. 22-27, Page 29]

> Recommendation: Award Contract to Thomas Harder & Company for Professional Engineering Services for a sum of \$315,805 and send invoices to each Watermaster Committee member for 20% of the approved amount

B. Draft Groundwater Water Well Level Measuring Procedures [Memorandum No. 22-28, Page 33] Recommendation: Review, Comment, and Provide Direction Regarding Subject Item

VIII. Topics for Future Meetings

- A. Draft Groundwater Water Well Level Measuring Procedures
- B. Procurement Policy
- C. Evaluation of Storage Issues in the Basin (tabled from 12/2/2021 meeting)
- D. Development of a methodology and policy to account for groundwater storage losses in the basin / groundwater management
- E. Incidental discharge
- F. Development of a Recycled Water Policy
- G. Development of a return flow accounting policy

IX. Comments from the Watermaster Committee Members

X. Announcements

- A. The next regular meeting of the Beaumont Basin Watermaster is scheduled for Wednesday, December 7, 2022, at 11:00 a.m.
- B. Future Meeting Dates:
 - December 7, 2022 at 11:00 a.m.
 - February 1, 2023 at 11:00 a.m.
 - April 5, 2023 at 11:00 a.m.
 - June 7, 2023 at 11:00 a.m.
 - August 2, 2023 at 11:00 a.m.
 - October 4, 2023 at 11:00 a.m.
 - December 6, 2023 at 11:00 a.m.

XI. Adjournment

NOTICES

AVAILABILITY OF AGENDA MATERIALS - Agenda exhibits and other writings that are disclosable public records distributed to all or a majority of the members of the Beaumont Basin Watermaster Committee in connection with a matter subject to discussion or consideration at an open meeting of the Committee are available for public inspection in the Office of the Watermaster Secretary, at 560 Magnolia Avenue, Beaumont, California ("Office"). If such writings are distributed to members of the Committee less than 72 hours prior to the meeting, they will be available on the Committee website at the same time as they are distributed to Members: website: https://beaumontbasinwatermaster.org/.

REVISIONS TO THE AGENDA - In accordance with §54954.2(a) of the Government Code (Brown Act), revisions to this Agenda may be made up to 72 hours before the Board Meeting, if necessary, after mailings are completed. Interested persons wishing to receive a copy of the set Agenda may pick one up at the Office, located at 560 Magnolia Avenue, Beaumont, California, or download from the website up to 72 hours prior to the Meeting.

REQUIREMENTS RE: DISABLED ACCESS - In accordance with §54954.2(a), requests for a disability related modification or accommodation, including auxiliary aids or services, in order to attend or participate in a meeting, should be made to the Office, at least 48 hours in advance of the meeting to ensure availability of the requested service or accommodation. The Office may be contacted by telephone at (951) 845-9581, email at <u>info@bcvwd.org</u> or in writing to the Beaumont Basin Watermaster Committee, c/o Beaumont-Cherry Valley Water District, 560 Magnolia Avenue, Beaumont, California 92223.

CERTIFICATION OF POSTING

A copy of the foregoing notice was posted near the regular meeting place of the Beaumont Basin Watermaster Committee and to its website at least 72 hours in advance of the meeting (Government Code §54954.2(a)).

Consent Calendar

BEAUMONT BASIN WATERMASTER MEMORANDUM NO. 22-26

Date:	October 5, 2022	
From:	Dan Jaggers, Secretary	
Subject:	Consideration of Resolution No. 2022-07: Authorizing Public Meetings to be Held via Teleconferencing Pursuant to Government Code Section 54953(e) and Making Findings and Determinations Regarding Same	
Recommendation:	Adopt Resolution No. 2022-07	

This item has been placed on the agenda so that the Watermaster Committee can continue to meet via teleconference pursuant to the special Brown Act requirements outlined in AB 361. These requirements give local public agencies greater flexibility to conduct teleconference meetings when there is a declared state of emergency and either social distancing is mandated or recommended, or an in-person meeting would present imminent risks to the health and safety of attendees.

To continue to hold meetings under the special teleconferencing requirements, a legislative body of a local public agency must make two findings pursuant to Government Code Section 54953(e)(3). First, there must be a declared state of emergency and the legislative body must find that it has "reconsidered" the circumstances of such emergency. Second, the legislative body must find that such emergency continues to directly impact the ability of the legislative body must find that state or local officials continue to impose or recommend social distancing measures. These findings must be made within 30 days after the legislative body teleconferences for the first time under AB 361 and on a monthly basis thereafter.

The Committee may consider the following findings:

- 1. The state of emergency due to the spread of COVID-19 in California as proclaimed by Governor Gavin Newsom on March 4, 2020, is still in effect
- 2. The California Department of Public Health recommends indoor masking
- 3. Cal/OSHA has issued Emergency Temporary Standards for Requirements to Protect Workers from Coronavirus which include recommendations for social distancing

RESOLUTION NO. 2022-07

A RESOLUTION OF THE BEAUMONT BASIN WATERMASTER AUTHORIZING PUBLIC MEETINGS TO BE HELD VIA TELECONFERENCING PURSUANT TO GOVERNMENT CODE SECTION 54953(E) AND MAKING FINDINGS AND DETERMINATIONS REGARDING SAME

WHEREAS, the Beaumont Basin Watermaster (BBWM) is committed to preserving public access and participation at its meetings which are open and public, as required by the Ralph M. Brown Act (Cal. Gov. Code 54950 – 54963), so that any member of the public may attend, participate, and observe; and

WHEREAS, pursuant to Assembly Bill 361 effective September 16, 2021, the Brown Act, Government Code section 54953(e), makes provisions for remote teleconferencing participation in meetings by members of a legislative body, without compliance with the requirements of Government Code section 54953(b)(3), subject to the existence the following conditions:

- 1. The legislative body holds a meeting during a proclaimed state of emergency, and state or local officials have imposed or recommended measures to promote social distancing.
- 2. The legislative body holds a meeting during a proclaimed state of emergency for the purpose of determining, by majority vote, whether as a result of the emergency, meeting in person would present imminent risks to the health or safety of attendees.
- 3. The legislative body holds a meeting during a proclaimed state of emergency and has determined, by majority vote, that, as a result of the emergency, meeting in person would present imminent risks to the health or safety of attendees.

WHEREAS, such conditions now exist in the area of jurisdiction of the Beaumont Basin Watermaster, specifically, a State of Emergency was proclaimed by California Governor Gavin Newsom on March 4, 2020 due to an outbreak of the COVID-19 respiratory illness due to a novel coronavirus; and

WHEREAS, the Riverside County / Riverside University Health System - Public Health has documented great spread of the coronavirus in the County of Riverside; and

WHEREAS, the California Department of Public Health has asserted that indoor settings are especially high risk for transmission, and that the COVID-19 respiratory illness continues to present imminent risk to health and safety of attendees at meetings; and

WHEREAS, the Centers for Disease Control and Prevention continue to advise that COVID-19 spreads more easily indoors than outdoors and that people are more likely to be exposed to COVID-19 when they are closer than six feet apart from others for longer periods of time; and

WHEREAS, the Watermaster Committee does hereby find that given the continued proclaimed state of emergency by the Governor of the State of California, and that the sustained transmission rate of coronavirus has caused, and will continue to cause, conditions of peril to the safety of persons within the area of the Beaumont Basin; and

WHEREAS, the Watermaster does hereby find that the legislative bodies of the BBWM shall conduct meetings without compliance with paragraph (3) of subdivision (b) of Government Code section 54953, as authorized by subdivision (e) of section 54953, and that such legislative bodies shall comply with the requirements to provide the public with access to the meetings as prescribed in paragraph (2) of subdivision (e) of section 54953; and

WHEREAS, BBWM will assure the right of the public to attend public meetings and address the Committee by continuing to provide teleconferencing access to meetings to the public via an identified call-in / internet-based option, allowing a public comment opportunity at meetings as required by the Brown Act; and

WHEREAS, in the event of a disruption in teleconferencing capability, the Watermaster Committee will take no action on agenda items until the technology issue is resolved,

NOW, THEREFORE, BE IT RESOLVED, by the Beaumont Basin Watermaster Committee that:

- 1. <u>Recitals</u>. The Recitals set forth above are true and correct and are incorporated into this Resolution by this reference.
- 2. <u>Governor's Proclamation of a State of Emergency</u>. The Committee members hereby acknowledge the proclamation of State of Emergency made on March 4, 2020.
- 3. <u>Remote Teleconference Meetings</u>. The members of the Watermaster Committee are hereby authorized and directed to take all actions necessary to carry out the intent and purpose of this Resolution including, conducting open and public meetings in accordance with Government Code section 54953(e) and other applicable provisions of the Brown Act.
- 4. <u>Effective Date of Resolution</u>. This Resolution shall take effect immediately upon its adoption and shall be effective for 30 days.

PASSED AND ADOPTED this _____ day of _____, 2022 by the following vote:

AYES: NOES: ABSTAIN: ABSENT:

BEAUMONT BASIN WATERMASTER

BY:

ART VELA, CHAIR BEAUMONT BASIN WATERMASTER

Item V - B

Record of the Minutes of the Beaumont Basin Committee Meeting of the Beaumont Basin Watermaster Regular Meeting Wednesday, August 3, 2022

Meeting Location:

Beaumont-Cherry Valley Water District 560 Magnolia Ave. Beaumont, CA 92223

I. Call to Order

Chair Arturo Vela called the meeting to order at 11:03 a.m.

II. Roll Call

Arturo Vela	Present
Jeff Hart	Present
Dan Jaggers	Present
David Armstrong	Present
Jennifer Ares	Present
	Arturo Vela Jeff Hart Dan Jaggers David Armstrong Jennifer Ares

Hannibal Blandon and Thomas Harder were present as engineers for the BBWM.

Thierry Montoya was present as BBWM legal counsel.

Members of the public who registered and / or attended: Joyce McIntire, Yucaipa Valley Water District Madeline Blua, Yucaipa Valley Water District Nyles O'Harra, Yucaipa Valley Water District Mike Kostelecky, Yucaipa Valley Water District Mia Preciado, Yucaipa Valley Water District Lance Eckhart, San Gorgonio Pass Water Agency Steve Stuart, Dudek Mark Swanson, Beaumont-Cherry Valley Water District

III. Pledge of Allegiance

Chair Vela led the pledge.

IV. Public Comments:

None.

V. Consent Calendar

- A. Resolution 2022-06: Authorizing Public Meetings to be Held via Teleconferencing Pursuant to Government Code Section 54953(e) and Making Findings and Determinations Regarding Same
- B. Meeting Minutes
 - a. June 1, 2022 Regular Meeting
- C. Status Report on Water Level Monitoring throughout the Beaumont Basin through July 20, 2022
- D. A Comparison of Production versus Extraction Credits through June 2022

It was moved by Member Jaggers and seconded by Member Armstrong to approve Consent Calendar items A – D.

AYES:Hart, Armstrong, Swanson, Vela, AresNOES:NoneABSTAIN:NoneABSENT:NoneSTATUS:Motion Approved

VI. Reports

A. Report from Engineering Consultant – Hannibal Blandon, ALDA Engineering

Mr. Blandon reported that the annual 2021 Consolidated Engineering Report has been submitted as final. An email link to download the file was sent to committee members.

Blandon reported issues with vandalism at Summit Cemetery. The probe and communications cable were stolen. A couple more cables and transducers are not working properly, and he is working with Ms. Ares to reorder components.

A spreadsheet mistake on Beaumont Cherry Valley Well 2 is being corrected and the new figure will be reported at the next meeting. Chair Vela asked if it would impact the data in the annual report; Mr. Blandon responded that it would have a minor impact on storage as reported water levels were lower than they should have been. All will be revisited in 2023 when the safe yield review is conducted, he added.

B. Report from Hydrogeological Consultant – Thomas Harder, Thomas Harder & Co.

No report.

C. Report from Legal Counsel – Thierry Montoya, Alvarado Smith

Mr. Montoya pointed to the Memoranda included with the agenda packet and said he is working with Dudek to modify their contract proposal. The focus was on tying the work activities to the discreet items in the contract and further tying payment to an amount up to their anticipated budget. He said he also reviewed their standard provisions and they're fine under California law. The agreement was finalized and sent to Mr. Jaggers for execution.

Jaggers advised it has been executed.

VII. Discussion Items

A. Introduction to Dudek, and Discussion and Prioritization of Assignments

Recommendation: Direct staff as desired

Chair Vela introduced Steven Stuart of Dudek, newly engaged consultant. Mr. Stuart thanked the Committee and acknowledged the work with Mr. Montoya to adjust the proposal for the work desired.

Chair Vela pointed to the Topics for Future Meetings and indicated that items may be identified based on this discussion.

Member Jaggers suggested the role of Dudek will be to move forward some of the projects as an extension of the Watermaster, helping formulate an approach to issues identified and making recommendations.

The Committee tasked Dudek with the following:

A. RFP for engineering services. Member Hart said this is intended to be brought back for discussion at the October 5 meeting. It was advertised today, he noted. Chair Vela said it is intended for Dudek to take over the process, working with Member Hart, compiling the proposals, potentially setting up an ad hoc committee, and determining how to evaluate the proposals. Jaggers suggested each agency add a link to the City of Beaumont's procurement to their respective websites.

- a. Develop / provide a scoring / matrix sheet for each of the Committee members
- *b.* Prepare to make a recommendation for award of contract at the October 5 meeting
- c. Determine whether interviews are recommended
- d. Call a special meeting if needed
- B. Groundwater Water Well Level Measuring Procedures. Chair Vela advised that Member Jaggers has prepared the draft document and it needs to come back to the Committee for final approval, with incorporation of comments from Member Zoba.
- C. Procurement policy. Member Hart indicated the project was started but was shelved in favor of the RFP for engineering services. It needs to be finalized in order to move forward.
- D. Coordinator / Facilitator for future workshops. Chair Vela indicated this was part of the impetus for administrative services. Dudek would either be the coordinator or assist with finding a coordinator to facilitate the various topics that will make up a series of workshops. He suggested preparing a strategy based on meeting minutes or previous agendas. Member Ares indicated she is struggling with the difference between this activity and the role of Dudek; Vela acknowledged the gray area. Member Jaggers recollected some history and noted the purpose was to assure there was an approach that was fair to all. A facilitator was considered, then the workshops were stalled, and Dudek was brought in. The intent was to start with that condition to see if Dudek could spur forward movement. It may not need facilitation as much as a straightforward approach offering the opportunity for all to comment, with Dudek putting together a presentation and acting as a go-between with the Committee members and the engineering firm. Vela agreed and suggested a first step would be to summarize the topics of interest and develop a framework of next steps.
- *E.* Evaluation of Storage Issues in the Basin. Chair Vela noted this item is related to the Coordinator / Facilitator / Workshop task.
- F. Recycled Water Policy. Jaggers noted that the YVWD meeting agenda included discussion on aquifer storage and recovery wells, and it appears to be the intent of YVWD to recharge recycled water. The policy is of interest to the City and BCVWD, he said.

Ms. Ares said there are regular meetings on the topic in which Mr. Stuart is welcome to participate to get up to speed.

G. Development of a methodology and policy to account for groundwater storage losses in the basin / groundwater management. Member Jaggers advised that there is discussion of what was supposed to be taken out of storage and what the balances are, and it sounds like there is an update to the Well 2 condition that may change the look of storage on the east side of the basin. Tracking this and gaining and understanding will help focus on an approach, Jaggers noted. The expectation would be to work with Mr. Blandon and Mr. Harder to move the projects forward this year, and figure out where it is headed in the future.

Member Armstrong noted that he has had a great working relationship with Mr. Stuart and believes he is the right person for the job.

Chair Vela indicated that the other items listed in Topics for Future Meetings are more mid-term objectives and said he would like to see them wrapped up at some point.

Mr. Stuart said that as he becomes more familiar, he will communicate and follow up to move items forward.

Jaggers redirected the discussion to the Engineering services RFP. The final date for return of proposals is September 16. Jaggers expressed concern with the review and scoring of proposals and recommended consideration of an award of contract at the October 5 meeting, as it will be close to the end of the year and time will be needed for onboarding. Hart assured that is the goal, and Vela agreed. Armstrong reminded that the re-evaluation of the safe yield is due, and Montoya pointed out the annual report is due in April, so the earlier the approval the better. After discussion, a timeline was determined, and tasks enumerated.

VIII. Topics for Future Meetings

- A. Responses to the Request for Proposal for Engineering Services
- B. Draft Groundwater Water Well Level Measuring Procedures
- C. Procurement Policy
- D. Engagement of Coordinator / Facilitator to lead future Workshops
- E. Evaluation of Storage Issues in the Basin (tabled from 12/2/2021 meeting)

- F. Development of a methodology and policy to account for groundwater storage losses in the basin / groundwater management
- G. Incidental discharge
- H. Development of a Recycled Water Policy
- I. Development of a return flow accounting policy

Chair Vela invited public comment. Mr. Lance Eckhart of the San Gorgonio Pass Water Agency (SGPWA) advised that a coordinator / facilitator was a move in the right direction, and this is a formal process for a workshop type of atmosphere in determining the operations of the Basin. "We are all in this together," he stated.

Eckhart pointed to the importance of the evaluation of storage issues, developing an operational range, looking at storage losses and said that SGPWA went through similar discussions with the Groundwater Sustainability Plan, of which Dudek was a part. He encouraged the Watermaster Committee to have the discussions and include the SGPWA, and to move forward the importation and storage of water as aggressively as possible. Chair Vela stated that he did not expect the SGPWA not to participate.

IX. Comments from the Watermaster Committee Members

Member Jaggers advised that BCVWD is providing some water to the City of Banning via co-owned wells and provided some water to Tukwet Canyon Golf Course while one of their wells was being repaired this past month.

BCVWD has left the big producing Well 29 off since December in an effort to pump down the previous few years' mounds, Jaggers indicated. Pumping in the recharge area is being done as much as possible to avoid a mound and move the recharge westerly. This is in preparation for a potential wet year to avoid potential imbalance in the system.

Chair Vela pointed out a vacancy for the City of Banning on the Committee. He said he will submit a resume and request for appointment of Nathan Smith, the City of Banning Deputy Public Works Director and City Engineer to Mr. Montoya.

The City of Banning is working on installing a new well, Well C8 within the Beaumont Basin boundary, north of Wilson, west of Highland Home Road at the southeast boundary within the Antelope development. It is partially grant funded and is awaiting State approval, likely four to six months away from beginning construction, Vela reported.

The City of Banning is also working to reestablish Well M12 which had suffered a catastrophic failure three to four years ago. An RFP is out for well design,

and it could be 12 to 18 months from construction, Vela said. He noted that the City is obtaining water from BCVWD primarily due to the development of this well, and development within the City is the most active it has been in the last 15 years. Part of the project includes an interconnection facility to BCVWD at Meline and Highland Springs which is under construction.

Jaggers reminded that the Watermaster requires new wells to have two monitoring locations, and notification. He suggested the agencies provide a letter to document the plans and said he would have a draft at the October 5 meeting. Member Ares pointed to required notification to Riverside County, also. Vela recognized that an acknowledgement letter from the Groundwater Sustainability Agency (GSA) would be needed.

X. Announcements

- a. The next regular meeting of the Beaumont Basin Watermaster is scheduled for Wednesday, October 5, 2022 at 11:00 a.m.
- b. Future Meeting Dates:
 - i. December 7, 2022 at 11:00 a.m.
 - ii. February 1, 2023 at 11:00 a.m.
 - iii. April 5, 2023 at 11:00 a.m.

XI. Adjournment

Chairman Vela adjourned the meeting at 11:48 a.m.

Attest:

Daniel Jaggers, Secretary Beaumont Basin Watermaster

BEAUMONT BASIN WATERMASTER

Date: October 5th, 2022

From: Hannibal Blandon, ALDA Inc.

Subject:Status Report on Water Level Monitoring throughout the Beaumont
Basin through Sep 19, 2022

Recommendation: Presentation - No recommendation.

At the present time, there are 11 monitoring wells equipped with pressure transducers collecting water level information on an hourly basis at various locations throughout the basin. Probes at four additional dedicated monitoring wells are not collecting data at this time due to equipment malfunction. In addition, there are two monitoring probes collecting barometric pressures at opposite ends of the Beaumont Basin. The location of active monitoring wells is depicted in the attached Figure No. 1. The location of two potential monitoring wells currently being considered are identified in red in this figure.

Water levels at selected locations are depicted in Figures 2 through 7 and are described as follows:

- ✓ Figure No. 2 Water levels at YVWD Well No. 34 and Oak Valley Well No. 5 are considered representative of basin conditions in the Northwest portion of the basin. Through the summer of 2019 water levels at these two wells have been fairly steady; however, over the last three years a significant declined has been observed. A 16-foot decline has been recorded at YVWD 34 over this period. The decline at Oak Valley 5 has been steeper with a drop 24 feet in the first half of 2020 despite the fact that this well has not been pumped since the fall of 2019. Oak Valley 5 is no longer being monitored, as of the Summer of 2020, as it has been destroyed.
- ✓ Figure No. 3 Two of the Noble Creek observation wells are presented in this figure representing the shallow and deep aquifers. From the summer of 2016 through the spring of 2018, the water level in the shallow aquifer monitoring well increased over 80 feet to an elevation of 2,422 ft. Water level continued to increase, although at a lower rate, over the ensuing 18 months reaching a peak elevation of 2,431 ft in the fall of 2019. Since, it has declined 78 feet to the current elevation of 2,353 ft. A decline of seven feet has been recorded since our previous visit in late July 2022. In the deeper aquifer, the increase in water level was steady from the summer of 2016 through the spring of 2020 reaching a peak elevation of 2,302 ft.; a decline of 45 feet has been recorded since to the current elevation of 2,257 ft with over half of the decline taking place over the last eight months. The decline in water level at this well has steepen in the last four months.
- ✓ Figure No. 4 Southern Portion of the Basin. The water level at the Summit Cemetery well is highly influenced by a nearby pumping well that is used to irrigate the cemetery grounds. Since monitoring began, the water level at this well has fluctuated over a 20-foot band. During the March and May 2022 visits, the water level probe and communications

cable did not work and the collected information could not be extracted. During our July visit, it was determined that the site had been vandalized as both the communications cable and probe were removed. New water level monitoring equipment has been ordered and is anticipated to be installed at the November visit.

- ✓ Also depicted in Figure No. 4 is the water level at the Sun Lakes well site. Water level at this site has fluctuated minimally between 2015 and the end of 2021, when it began to drop. Between November 2021 and May, 2022, the water level at this well dropped by eight feet to 2,405 ft. Water level information could not be retrieved from this well during our last two visits and it is recommended that a new 200 ft. communications cable and recording probe be installed.
- ✓ Figure No. 5 illustrates water levels at three wells owned by the City of Banning in the Southeast portion of the basin. While water level at the Old Well No. 15 (Chevron Well) has been fairly flat over the last six years, a somewhat significant and steady decline, close to 39 feet, has been recorded at Banning M-8 between the summer of 2015 and the present to its current elevation of 2,040 ft. Water level at Banning M-9 has fluctuated in a 19-foot range, between 2,128 ft and 2,147 ft. Since the beginning of the year, it has declined 11 feet to the current elevation of 2,127 ft. at the bottom of the historical elevation range. Over the last year, two communications cables have been replaced at this well due to the failure of the water seal at the bottom of the cable. A new replacement cable has been ordered and is anticipated to be replaced at the November visit.
- \checkmark Figure No. 6 illustrates recorded water level at BCVWD No. 2 and BCVWD No. 25. Water level at these two wells follow the same seasonal pattern rising in the fall through the spring months and falling during the summer as production increases. The water level at BCVWD No. 25 has been fluctuating over a 15 ft range between 2,200 ft and 2,215 ft in elevation; however, this summer it has declined more than normal to the current elevation of 2,196 ft. Water level at BCVWD No. 2 was previously reported in the 2,160 ft to 2,180 ft in elevation; approximately 35 ft lower than those recorded at BCVWD No. 25. In January 2017, the measuring location at BCVWD No. 2 was changed from a side port to the center of the well. Prior to 2017, recorded water levels were inconsistent as variations of 50 ft or more were recorded from one day to the next without a plausible explanation. At that time, a series of constants were introduced in the spreadsheet to adjust these variations and develop a water level pattern; ultimately, recorded levels prior to 2017 were discarded. After the probe was relocated to the center of the well, inadvertently one of the constants was not removed from the spreadsheet resulting in 35 ft lower levels. This error has been corrected and level adjusted, as depicted in Figure No. 6. Water level at BCVWD No. 2 is correctly displayed in the 2,190 ft to 2,215 ft in elevation similar to those recorded at BCVWD No. 25.
- ✓ Figure No. 7 depicts the recorded water level at the two newest observation wells, BCVWD No. 29 and Tukwet Canyon Well "B". BCVWD No. 29 is a pumping well that is now more actively used to meet peak summer demands. A decline in water level of nine feet has been recorded at this well since monitoring began in the spring of 2019. During the May 2021 visit, the communications cable could not be pulled and information from the water level probe could not be downloaded as reported in the June and August meetings. During our January 2022 visit, the water level meter got lodged between the pump column and the well casing and could not be removed; it has been there since. There is a chance that

the water level meter may not be recovered until the column is pulled from the well and the equipment recovered. Tukwet B is a dedicated monitoring well in the southern portion of the basin with minimal fluctuations in elevation since the probe was installed in the spring of 2019. Current water level elevation is at 2,213 ft representing a decline of two feet since monitoring began.

New Monitoring Wells

No additional monitoring wells were added during this reporting period.

Equipment Installation and Replacement

During the August 2022 regular Watermaster Committee meeting, replacement water level monitoring probes and communications cables were requested for YVWD No. 34, Sun Lakes, and Summit Cemetery wells. Both components, communications cable and probes, are needed for these three wells as the old type of communication cable is no longer manufactured by Solinst Canada. Solinst now uses a new optical reader that is not compatible with the original probes installed.

In addition, a communications cable of the new optical type was ordered to replace the existing communications cable at Banning M-9. This cable has been replaced twice before as the water seal at the lower end of the cable continues to fail. Solinst continues to assure us that their new optical readers have been improved; however, we continue to experience failure at this location.

The equipment for the four above referenced wells was not delivered on time for installation during the September 20, 2022 field visit; it will be installed during the November 2022 field visit.

A new communications cable and water level monitoring probe needs to be ordered for the Mountain View monitoring well. This well was selected earlier in the year after Bonita Vista No. 2 collapsed and could no longer be used as a monitoring well. While this is not an optimal location due to the presence of a production well nearby, the data acquired could be cleaned and used to establish static conditions. A 150-ft communications cable is recommended for this site.

Troubleshooting Issues

The following malfunctioning issues were encountered during our field visit.

1.- Data from YVWD 34 and Banning M-9 was downloaded directly from the probe as communications cables were not working.

2.- Water level data from Mountain View and Sun Lakes wells could not be downloaded from the probe.

3.- No data was recorded at the Summit Cemetery well since the equipment was stolen, as reported during the August meeting.

Potential Monitoring Sites

Two production wells have been identified as potential monitoring wells recently. The owners have been contacted and the sites visited. The first well is owned by the Beaumont-Cherry Valley Recreation and Park District. The well is located on the north side of Cherry Valley Blvd and has been recently used to supply water during grading for construction of two warehouses nearby. Upon construction of these facilities, this well will be available to irrigate nearby lands and a monitoring probe installed with minor modifications to the well head.

The second well is owned by Plantation on the Lake. The site has been visited and owner is considering drilling a hole on the well head to accommodate the monitoring probe.

Other potential well sites include:

- ✓ Catholic Dioceses of San Bernardino-Riverside counties, near Rancho Calimesa Mobile Home Park has three abandoned wells. Two of these wells cannot be used at this time because the probe could not be lowered; however, the third site has great potential. This well is approximately 400 ft deep and the water level is at approximately 160 feet below ground.
- ✓ Sharondale Well No. 1 This well is operated by Clearwater Operations. We initiated contact with this company to install a water level probe at this well, but progress has not been made.















BEAUMONT BASIN WATERMASTER

Date:	October 5 th , 2022
From:	Hannibal Blandon, ALDA Inc.
Subject:	A Comparison of Production vs Extraction Credits through August 2022
Recommendation:	No recommendation - For informational purposes only

This Technical Memorandum presents a comparison of extraction credits from the Basin against actual production by Appropriator. At the beginning of each year, Appropriators have certain Extraction Credits resulting from: a) unused production by overlying users from 2017 and/or b) permanent transfers of overlying water rights. Extraction credits for individual Appropriators can be increased through the course of the year by spreading imported (supplemental) water.

Total production by Appropriators for the first eight months of 2022 was 11,857 ac-ft while extraction credits for the same period were only 4,860 ac-ft resulting in a negative credit balance of 6,997 ac-ft, as presented in the table below. This credit imbalance is primarily related to BCVWD's production exceeding its extraction credits and the City of Banning to a lesser degree. Spreading of imported water has been minimal at 382 ac-ft for the year. YVWD and SMWC have a positive credit balance. Appropriators that produce less than their individual extraction credits can add the positive difference to their storage accounts at the end of the Calendar Year, as listed in the table.

	City of Beaumont City of Cherry Banning Valley W. D.		South Mesa Mutual W. C.	Yucaipa Valley W. D.	Total
Transfer of Overlying Rights from 2017	1,350	1,826	536	583	4,295
Transfer of Overlying Rights - OVP to YVWD	0	0	0	183	183
Imported Water	0	382	0	0	382
Total Extraction Credits	1,350	1,350 2,208 536		766	4,860
Production	1,863	9,337	405	252	11,857
Credit Balance	-513.0	-7,129	131	514	-6,997
Water in Storage as of Dec 2021	48,778	32,081	10,263	15,957	107,078

There have been no transfers from SGPWA's storage account to Appropriators during Calendar Year 2022.

Discussion Items

Item VII - A

BEAUMONT BASIN WATERMASTER MEMORANDUM NO. 22-27					
Date:	October 05, 2022				
From:	Jeff Hart, Committee Member				
Subject:	Consideration of Proposals to and Award of Contract to Provide Professional Engineering Services to the Beaumont Basin Watermaster				
Recommendation:	Award Contract to Thomas Harder & Company for Professional Engineering Services for a sum of \$315,805				

On January 05, 2022, the Watermaster Committee discussed the desire to develop a Request for Proposals (RFP) for Professional Engineering Services in order to ensure that the Committee has retained the best consultant(s) suited for the Beaumont Basin goals and objectives. Based on feedback received at the January 05, 2022, meeting, as well as subsequent meetings, an RFP was developed and released on August 4, 2022.

One proposal was received in response on September 16, 2022 by Thomas Harder & Company (TH&Co) of Anaheim, California. The proposal was received before stated deadline of 11:00 AM on September 16, 2022.

TH&Co will team with ALDA, Inc. to provide services for all tasks included in the scope of work presented in the RFP. Thomas Harder will serve as the lead consultant and main point of contact under this contract. ALDA, Inc. will provide support and be responsible for developing the annual reports and provide engineering support. TH&Co provided a detailed approach to conduct the 10-year safe yield redetermination. TH&Co proposes to update the existing groundwater flow numerical model to complete this task. Approximately 70% of the total fee, or \$218,430, is proposed by TH&Co/ALDA to complete the 10-year Safe Yield Redetermination. This is a reasonable estimate given TH&Co's previous experience with this particular model, the tasks of updating, calibrating, preparing 50-year future projects based on historical information, and developing a model report.

The TH&Co/ALDA team included a fee and short description of services for Task 4, Review of Rules & Regulations, but that task was removed from the scope of work by the BBWM on September 13, 2022. The fee proposed by TH&Co/ALDA for this task was \$1,800, which is 0.6% of their total fee.

The proposal provided by TH&Co/ALDA satisfied all proposal requirements presented in the RFP. The respondent did not disclose any personal or professional financial, business, or other relationships with the Watermaster that may have an impact on the outcome of this contract or

any resulting project. The respondent did not provide a list of current clients who may have a financial interest in the outcome of this contract.

Included is a scoring matrix for the TH&Co/ALDA team. The score is 4.35 out of 5, or 87 points out of 100 (per the scoring criteria presented in the RFP).

Recommendation is to award the contract to TH&Co for the 3-year term of the contract, but to remove Task 4, Review of Rules and Regulations, from their scope of work.

Proposal Evaluation Scoring Metric for On-Call Professional Engineering Services Proposals Received by Sept. 16, 2022

 Proposing Firm:
 Thomas Harder & Co/ALDA, Inc.

 Date Proposal Received:
 9/16/2022

 Reviewing Agency/Individual:
 S. Stuart, Dudek

 Bate Of

 Review:
 9/27/2022

Weighted Your Score Weighted Revised Proposal Scoring Criteria Description Weight Revised (0 - 5) Score Score Score Respondent adequately addresses the requested services: collection and organization of data, Completeness and preparation of annual report, calculation of operating safe yield, meeting attendance, special Understanding of the Scope of Proposal Scoring Criterion #1 25% 4 1 0 projects, and redetermination of safe yield. Respondent provides clear and comprehensive Services understanding of the objectives for each task. Respondent provides a complete organization chart that clearly defines staff roles (e.g., Principal-in-Demonstrated Quality Team, charge, project manager, support staff), full resumes are provided for key personnel, a full Qualifications, Availability, and description of the proposing firm, a detailed desciption of at least 3 projects of similar scope in the 20% 4.5 0.9 0 Proposal Scoring Criterion #2 Approach last 5 years, and comprehensive approach to performing tasks, communicating with BBWM, and adhering to schedules. Demonstrated Experience with Respondent provides detailed descriptions of previous project experience (see Criterion #2), Proposal Scoring Criterion #3 Local, State, and Federal particularly with complying with local, state and federal requirements, including permitting, 20% 4.5 0.9 0 Requirements monitoring and reporting requirements. Respondent provided 3 to 5 references with description of services provided related to services Proposal Scoring Criterion #4 References 15% 5 0.75 0 requested in this RFP. Positive references from four provided (checked) recieves all points. Respondent provided detailed fee schedule identifying staff that will work on project, their respective billing rates (including escalating annual rates for term of contract), expenses associated Proposal Scoring Criterion #5 Proposed Fee Schedule 20% 0.8 0 4 with performing each task, and identifies subcontractors and their associated costs to complete the tasks. 4.35 Total 0.00

Score	Scoring Metric Key			
0	ils to meet minimum requirements/specifications and/or information is missing.			
1	Meets minimum requirements with exception and/or information is unclear.			
2	Aeets minimum requirements and required information is complete and understandable.			
3	omewhat exceeds requirements and/or provides a somewhat enhanced solution(s), feature(s), or functionality.			
4	sreatly exceeds requirements and/or provides greatly enhanced solution(s), feature(s), or functionality.			
5	Provides superior solutions, features, or functionality.			

BEAUMONT BASIN WATERMASTER

Office of the Secretary Attn: William Clayton C/O Beaumont-Cherry Valley Water District 560 Magnolia Avenue Beaumont, CA 92223 Office (951)845-9581

Email: william.clayton@bcvwd.org Website: www.beaumontbasinwatermaster.org

September 9, 2022

ADDENDUM No. 1

Request for Proposals for On-Call Professional Engineering Services for the Beaumont Basin Watermaster

Proposers:

This is a notification to all that Task 4 – Review of Rules & Regulations listed in the Detailed Scope of Services in Exhibit A, Scope of Services, of the RFP is no longer requested by the Beaumont Watermaster. This task is hereby removed from the scope of services requested for the On-Call Professional Engineering Services for the Beaumont Watermaster.

Sincerely, Beaumont Basin Watermaster

Art Vela, PE Chair, Beaumont Watermaster Committee

Item VII - B

BEAUMONT BASIN WATERMASTER MEMORANDUM NO. 22-28

Date:	March 10, 2022
From:	Dan Jaggers, Watermaster Secretary
Subject:	Draft Groundwater Water Well Level Measuring Procedures
Recommendation:	Review, Comment and Provide Direction regarding Subject Item

At the Watermaster meeting held on February 2, 2022, the Watermaster Legal Counsel and members of the Watermaster Committee discussed preparing a draft water well level measuring procedure for review and possible adoption by the Beaumont Basin Watermaster. Mr. Jaggers was tasked with preparing a draft of said procedure.

Mr. Jaggers has reviewed the Beaumont Basin Watermaster Rules and Regulations Section 3 (attached for reference) and has also prepared a draft Groundwater Water Level Measuring Procedure for review and discussion. Mr. Jaggers further proposes that the attached draft ground water level monitoring procedure (Attachment No. 2) could be added to the Beaumont Basin Watermaster Rules and Regulations as an amendment to Section 3, specifically added as a new subsection identified hereafter as Section 3, Item 3.3, **Groundwater Water Level Measuring**.

Mr. Jaggers recommends that the Watermaster Committee Members review and discuss this item and consider providing comment regarding proposed procedure and/or direction to Mr. Jaggers to prepare a Resolution amending the Beaumont Basin Watermaster Rules and Regulations, Section 3 as proposed herein for consideration at an upcoming Watermaster Meeting.

Attached:

- 1. Beaumont Basin Watermaster Rules and Regulations, Section 3 Monitoring
- 2. Proposed Draft "Section 3.3 Groundwater Water Level Measuring" for Consideration to be Added to Beaumont Basin Watermaster Rules and Regulations, Section 3 Monitoring
- Draft "Form 9 Groundwater Water Level Measuring". Proposed for Consideration to be Added to Beaumont Basin Watermaster Rules and Regulations, Section 10 Watermaster Forms

BEAUMONT BASIN WATERMASTER Rules and Regulations

> SECTION 3 Monitoring

PROPOSED AMENDMENT TO

BEAUMONT BASIN WATERMASTER Rules and Regulations

SECTION 3 Monitoring

3.3 Groundwater Water Level Measuring. The watermaster will carry out all groundwater measuring activities in accordance with the procedures identified hereafter and in accordance with all requirements of the California Department of Water Resources, California Well Standards including but not limited to Bulletin 74-81and Bulletin 74-90 the Groundwater Elevation Monitoring Guidelines issued by the California Department of Water Resources (DWR, 2010) for the California Statewide Groundwater Elevation Monitoring (CASGEM) program and the Monitoring Protocols, Standards, and Sites Best Management Practices issued by DWR to assist in the development of monitoring protocols for Groundwater Sustainability Plans (DWR, 2016).

To the extent possible, groundwater level monitoring events shall be coordinated so that measurements are taken in the late spring and late fall to record the annual highs and lows, respectively, in groundwater levels in the Beaumont Basin.

(a) Monitoring Well Network

a. Existing Wells

- i. The monitoring well network used by the Watermaster for purposes of characterizing groundwater conditions in the Beaumont Basin shall include all accessible production and monitoring wells owned by the Appropriators, Overlying Parties, and other stakeholders.
 - 1. Wells in the monitoring network shall be screened in the unconsolidated Quaternary alluvium and upper portion of the San Timoteo Formation, together comprising the water-bearing aquifer of the Beaumont Basin.
- ii. Groundwater level measurements shall be taken from a clearly marked and permanent reference point on the top of a sounding tube, well casing, or other permanent feature.
- iii. Reference points shall be surveyed by a California licensed surveyor. The survey shall include the following details:

- 1. Well locations (center point of well casing) shall be referenced to the North American Datum of 1983 (NAD83) and reported in decimal degrees for latitude and longitude.
- 2. Elevations shall be referenced to the North American Vertical Datum of 1988 (NAVD88) with an accuracy, at a minimum, of 0.5 foot. The following features, if applicable, shall be surveyed at each well point:
 - a. Top of Well Casing or Sounding Tube (i.e., TOC)
 - b. Top of protective steel riser or monument cover
 - c. Land surface

b. New Wells

- i. New wells installed in the Beaumont Basin shall be equipped with dedicated sounding tubes (if a production well) or have open casing to facilitate the use of a water level metering device to measure groundwater elevations. The new well shall be constructed to also accommodate the installation of a dedicated pressure transducer.
- ii. New wells that are screened in the unconsolidated Quaternary alluvium and upper portion of the San Timoteo Formation, together comprising the water-bearing aquifer of the Beaumont Basin, will be included in the monitoring well network for the Beaumont Basin.
- iii. Groundwater level measurements shall be taken from a clearly marked and permanent reference point on the top of a sounding tube, well casing, or other permanent feature.
- iv. Reference points shall be surveyed by a California licensed surveyor. The survey shall include the following details:
 - 1. Well locations (center point of well casing) shall be referenced to the North American Datum of 1983 (NAD83) and reported in decimal degrees for latitude and longitude.
 - 2. Elevations shall be referenced to the North American Vertical Datum of 1988 (NAVD88) with an accuracy, at a minimum, of 0.5 foot. The following features, if applicable, shall be surveyed at each well point:
 - a. Top of Well Casing or Sounding Tube (i.e., TOC)

- b. Top of protective steel riser or monument cover
- c. Land surface

(b) Groundwater Water Level Measuring Devices.

a. Electric Water Level Sounder

i. Where possible, groundwater levels shall be manually measured with an electric water level sounder calibrated to the nearest 0.01 ft. All equipment must be in good working condition. No damaged or refurbished electric sounding tape should be used, unless specifically approved by the Watermaster.

b. Dedicated Pressure Transducers

- i. Dedicated pressure transducers shall be installed in monitoring and production wells identified as representative monitoring sites. The pressure transducers shall be installed below the groundwater level and pressure-rated for the range of anticipated groundwater level fluctuations due to seasonal fluctuations and/or groundwater production.
- ii. Dedicated pressure transducers shall be equipped with a datalogger that is programmable to measure and record water levels at a desired frequency. Each dedicated pressure transducer shall measure absolute pressure in units of pounds per square inch (psia) and/or feet of water. The Watermaster shall use separate pressure transducers dedicated to measure barometric pressure in units of psia and/or feet of water to provide a general characterization of barometric pressure in the Beaumont Basin.
- (c) Manual Groundwater Level Measurements. The following procedures shall be used to obtain manual groundwater level measurements in the field:
 - a. Upon arrival at each well site, the field technician shall note the following information on a standardized Water Level Field Form (see Appendix A):
 - i. Name of well owner
 - ii. Well Identifier (e.g. well owner name, State Well ID)
 - iii. Date (mm/dd/yyyy) and time (24 hr) of measurement
 - iv. Climate conditions (e.g., sunny, light breeze, air temp is 80 °F, etc.)

- v. Type of well (e.g., municipal, monitoring, agricultural, etc.)
- vi. Status of water level and/or well: Static, Recovering (i.e., rising), Pumping, Artesian (i.e., flowing), Falling.
- vii. Time since pumping stopped (i.e., idle time) if well was previously active.
- viii. Method of water level measurement (e.g., electric water level sounder, airline, sonic, dedicated pressure transducer)
- ix. Field technician and/or representative measuring the water level
- x. Any additional comment
- b. Use one Water Level Field Form for each well. If possible, the same field form should be used at each well during each monitoring event.
- c. Where possible, groundwater level measurements must be representative of static (i.e. non-pumping) groundwater level conditions. To ensure measurements of static groundwater levels in active pumping wells, the field technician collecting the data shall coordinate, verify, and/or confirm that the pump has been off for at least 24 hours prior to collecting the data (wherever possible).
- d. All water level measuring equipment shall be cleaned prior to lowering it into the well(s) using the following decontamination procedure:
 - i. Wash equipment with an Alconox solution which is followed by a deionized water rinse.
 - ii. Triple rinse equipment with deionized water.
- e. Conduct the following steps when using an electric water level sounder:
 - i. Before making a measurement:
 - 1. Inspect the sounding tape for wear, kinks, frayed electrical connections, and possible stretch.
 - 2. Test that the battery and replacement batteries are fully charged.

- 3. Test the circuit by dipping the probe into tap water and observe whether the sounder indicator turns on and/or makes a sound to indicate the circuit is closed when in contact with water.
- 3.4. Verify actual length of electrical sounder. Sounder lengths are subject to stretching when stuck and recovered or shortening when broken and repaired
- ii. Making the measurement:
 - Lower the electrode probe slowly into the designated sounding port for production wells and into the main well for monitoring wells. Lower the probe until the circuit is closed and contact with the water surface in the well is made.
 - 2. Measure the depth-to-water (DTW) by placing the sounder tape next to the dedicated and clearly marked reference point on the top of the sounding tube or well casing. Measure the DTW to the nearest 0.01-foot. The DTW shall be recorded as feet below reference point (or ft brp).
 - 3. Lift the probe slowly up a few feet and make second measurement by repeating the step above. If the 2nd measurement is more than 0.02-ft different from the first measurement, collect and record a third measurement. If more than two measurements are taken, record the average of all reasonable readings.
 - 4. If the groundwater level is not static, stay at the well long enough (if reasonable time allows) for a static groundwater level. If that wait is more than 1 hour or not possible, make ten (10) or more measurements at 1-minute minimum intervals to document the rate of groundwater level rise or fall per 5 minutes for the non-static measurements. If necessary, use additional sheets of the Water Level Field Form to document all measurements. Document possible reason for the rise or fall of the water level in the comment section.
 - 5. All DTW measurements shall be immediately recorded on the Water Level Field Form (see Appendix A). The DTW shall be compared to previous measurements in the field and remeasured if significantly different.
- iii. After making the measurement:

- 1. Wipe down the sounder tape and electrode probe as you retrieve them from the sounding tube or well. Use a clean paper towel or disinfectant wipe.
- 2. Refer to Section (c)d for disinfection procedures.
- 3. Replace the cap to the sounding tube or well.
- 4. Where applicable, secure the riser with the dedicated lock.
- 5. Prior to leaving the monitoring well site, the field representative shall note any physical changes in the concrete well pad and riser pipe, such as erosion, cracks, or damage. All changes shall be recorded on the Water Level Field Form.

(d) OTHER METHODS TO COLLECT MANUAL MEASUREMENTS

- i. Steel tape? ii. Airline? iii. Sonic?
- a. Whenever possible, an electric water level sounder should be used to record DTW measurements. The use of an airline or sonic water level meter should only be used when well conditions do not allow for electric water level sounder measurements.

b. Airline measurements

c. Sonic Water Level Meter

- i. Sonic water level meter procedures vary by meter manufacture. Refer to the meter operating instructions for procedures.
- ii. Sonic water levels should not be used if the casing diameter is greater than 8-inches in diameter, air temperature inside the well is not known, there is an obstruction in the well casing that is close to half the well diameter or more, and there is no cover surrounding the meter in open wells.

(e) Automatic Groundwater Level Measurements

a. Installation of Dedicated Pressure Transducers

- i. Before installing a pressure transducer in a well, the water level in the well shall be confirmed at a static condition using an electric water level sounder (see Section (c)b through Section (c)e).
- ii. The dedicated pressure transducer shall be lowered below the water level in the well to a depth within the transducer's pressure rating. The device shall be set at a depth to accommodate the anticipated fluctuations in the water level due to seasonal effects and pumping (if applicable).
- iii. Once the desired depth setting of the pressure transducer is set, secure the transducer to the wellhead, casing, or other permanent structure.
- iv. Collect a real-time reading of the pressure head (in feet of water) from the pressure transducer once it has been set and given time to equilibrate to the temperature of the water.
- v. Add the measured DTW by the electric sounder to the height of water measured above the transducer's sensor to calculate the depth of the pressure transducer from the well's reference point.
- vi. Record the depth the transducer is set below the reference point, the make, model, and serial number of the pressure transducer, and battery life remaining (or usage) at time of deployment in a Water Level Field Form.

b. Installation of barometric pressure transducers

- i. Barometric pressure transducers shall be installed in the protective steel casings of wells, well houses, or other protected structure that is open and/or in contact with the atmosphere.
- ii. Record the location of the barometric pressure transducer, the make, model, and serial number of the pressure transducer, and battery life remaining (or usage) at time of deployment in a Water Level Field Form.

c. Frequency of Water Level Measurements

- i. Dedicated pressure transducers equipped with internal dataloggers shall be programmed to measure and record water levels in units of psi or feet of water at a frequency of once per hour at the top of the hour.
- ii. Water level data will be collected from each pressure transducer at least once every other month.

iii. During each download session, the field technician will also obtain a manual groundwater level measurement to verify transducer readings and ensure that the instruments are working properly.

d. Frequency of Barometric Pressure Measurements

- i. Barometric pressure transducers shall be programmed to measure and record barometric pressure in units of psi or feet of water at a frequency of once per hour at the top of the hour.
- ii. In the event any pressure transducer assembly must be removed from any particular well for download, the removed assembly shall be disinfected in accordance with decontamination procedures outlined under Section (c)d.

Water Level Field Form

Well Nar	ne/Owner			Well ID		
Type of	Well: Municipal /					
SECTIO	N 1: Reference Po	pints (RP): Please update if the reference point c	hanges.	Reference Point Sketch:		
RP Number	Month/ Day /Year	feet +/- land surface*	Description			
1						
2						
3						
* feet above	* feet above (+) or below (-) land surface.					

SECTION 2: Water Levels Measurements

Date and Time			ES=Electic Sounder AL=Airline S=Sonic PT=Pressure Transducer	Feet below RP	From Section 1	1=Static 2=Rising 3=Pumping 4=Falling 5=Flowing	Time (minutes) or UNK	Field Staff Initials		
Month	Day	Year	Time (24 Hour)	Measurement Method	Depth to Water Measurement	RP Number	Well Status	Pump Idle Time	Measured By:	Comment