



# Public Services

128 North Second Street • Fourth Floor Courthouse • Yakima, Washington 98901  
(509) 574-2300 • 1-800-572-7354 • FAX (509) 574-2301 • [www.co.yakima.wa.us](http://www.co.yakima.wa.us)  
VERN M. REDIFER, P.E., Director

October 24, 2016

David Bowen  
Department of Ecology, Central Region Office  
1250 West Alder Street  
Union Gap, WA 98903

Re: **Lower Yakima Valley GWMA - 2016 Third-Quarter Report (IAA No. C 1200235)**

Dear David:

Enclosed please find one (1) copy of Yakima County's third-quarter report as required under Attachment A, Statement of Work, Agreement No. C 1200235 between the State of Washington Department of Ecology and Yakima County.

This report addresses deliverables 1.1 and 2.2 as required under the agreement.

Deliverable 2.1, invoices, to be sent under separate cover.

If you have any questions, please let me know.

Thank you.



Lisa H. Freund, Administrative Manager  
Yakima County Public Services

enclosure

*Yakima County ensures full compliance with Title VI of the Civil Rights Act of 1964 by prohibiting discrimination against any person on the basis of race, color, national origin, or sex in the provision of benefits and services resulting from its federally assisted programs and activities. For questions regarding Yakima County's Title VI Program, you may contact the Title VI Coordinator at 509-574-2300.*

*If this letter pertains to a meeting and you need special accommodations, please call us at 509-574-2300 by 10:00 a.m. three days prior to the meeting. For TDD users, please use the State's toll free relay service 1-800-833-6388 and ask the operator to dial 509-574-2300.*

**IAA No. C 1200235 – Third Quarter 2016 Report**  
**Lower Yakima Valley GWMA**  
**September 30, 2016**

**TASK 1 - ADMINISTRATIVE FUNCTIONS**  
**DELIVERABLES**

**1.1 Meeting Records**

*For each meeting of the GWAC, submit a copy of the agenda, minutes, attendance and public meeting notice at the end of each quarter.*

Attachment [A] includes the final GWAC meeting summary of June 16, 2016; the draft GWAC meeting summary of August 18, 2016; the Education and Public Outreach (EPO) Working Group summary of July 6, 2016; the Irrigated Ag Working Group (IAWG) summaries of July 19, and September 27, 2016; the Residential, Commercial, Industrial, and Municipal (RCIM) Working Group summaries of July 18 and September 12, 2016; the Data Collection, Characterization and Monitoring Working Group summaries of July 13 and August 10, 2016; the Regulatory Framework Working Group summaries of July 13, August 10, and September 14, 2016; and the Livestock/CAFO Working Group summaries of July 7, August 4, and September 1, 2016. The Funding Working Group did not hold a meeting in this quarter.

**TASK 2 - PROGRAM FUNCTIONS**  
**DELIVERABLES**

**2.2 Status Report**

*Submit written quarterly status reports summarizing GWAC plans, activities and work products, and describing any interlocal agreements or other contracts by the end of each quarter.*

The GWAC held one meeting on August 18. Public Services Director Vern Redifer distributed the "GWMA Expenditures through July 31, 2016" document to the committee, noting that the original Ecology grant was for \$2.3 million and to date, \$1.4 million had been spent. He indicated this should be sufficient to fund activities through December 2017. Long-term funding requests, however, e.g., long-term monitoring and testing of the Ambient Network Monitoring program, would still need to be sought. It had been determined that Ecology would put a placeholder in its legislative budget request for this purpose.

The committee was asked to approve a six-month "Test Your Well" billboard campaign in the amount of \$19,000 proposed by the EPO. The three bilingual billboards, in the heart of the Lower Yakima Valley, would direct readers to the GWMA website and provide Yakima County Public Services as a point of contact (574-2300). Following discussion, the GWAC approved the proposal unanimously.

The "GWMA Expenditures through July 31, 2016" document is included as Attachment [B]

The "Test Your Well" billboard proposal and backup documents are included as Attachment [C]

## Work Plans and Products

**Nitrogen Loading Assessment.** The draft was completed by Washington State Department of AG (WSDA) and Yakima County. Peer review is underway. The review process includes peer review, workgroup review and GWAC review.

**Ambient Groundwater Monitoring Network.** PGG completed a final draft the Ambient Groundwater Monitoring Network in this quarter. The Data Collection Working Group reviewed the document, provided comments, and PGG addressed these comments. The final draft will be presented to the GWAC in October for its approval.

**2016 Health Fair Education and Outreach.** GWAC and EPO volunteers staffed five health fairs between May and August in the Lower Yakima Valley GWMA (Sunnyside, Mabton, Zillah, Granger and Toppenish). Approximately 250 bilingual, one-on-one contacts were made with Lower Valley residents through this effort. Visitors to the GWMA booth received information on private wells, nitrate in groundwater, and new mom flyers. Visitors were also asked to complete the GWAC's public survey and were offered nitrate test strips if they self-identified as receiving their drinking water from a private or shared well in the GWMA.

Self-addressed, stamped envelopes were included with the test strips so people could return their test results directly to the county. They also received testing instructions and a list of local certified labs in the test strip packet.

Lessons learned from this campaign: this was a time and labor intensive effort that required two volunteers (a bilingual Spanish speaker and an English speaker) and a county staff member to set up, man the three to four hour event, and take down the booth. In addition, over 100 test strips were distributed with the self-addressed stamped envelope to expedite returns, but only one resident returned her results. On the plus side, most visitors were within the GWAC's target audience: GWMA residents, new moms, young families with children, and many people who were served by private wells. It showed the "face" of the GWAC and GWMA to hard-to-reach audiences and allowed the EPO to learn more about local residents and their concerns in a structured environment.

## Working Group Activities

### Education and Public Outreach (Lisa Freund, Chair)

The EPO met on July 6. The group debriefed the Fred Hutch Health Fairs that the EPO had participated in thus far (Sunnyside and Mabton) and made plans for the remaining three fairs in Zillah, Granger and Toppenish. Volunteers were sought for the remaining fairs.

The outreach *ad hoc* committee presented its billboard proposal for a “Test Your Well” campaign in the Lower Yakima Valley GWMA. Several different proposals with price lists and a map with the billboard locations were reviewed. The *ad hoc* committee asked the group to reach a decision regarding whether or not to recommend this outreach vehicle to the GWAC. Following discussion, the majority of members present supported the concept but asked for revisions to the proposal, and proposed billboard mockups, for their review before making a final decision.

Following the meeting a revised proposal in the amount of \$19,000 was sent to the group, which approved the revised plan via e-mail and recommended presenting it to the GWAC for its review and approval at the August meeting.

### Data Collection (Melanie Redding, Chair)

The Data Collection working group met on July 13 and August 10, 2016. The September 14 meeting was canceled due to low member RSVPs.

*Note: Data’s progress on the Nitrogen Loading Assessment and Ambient Monitoring Network is discussed on page two.*

**Other Monitoring Initiatives and Considerations.** The workgroup discussed and prioritized the other monitoring initiatives presented in PGG’s document “Potential Groundwater Monitoring Stations” (12/3/2013). This work would augment the ambient network already approved. The Data workgroup’s top two recommendations are:

1. Common Water Supply Aquifers—this initiative would focus on sampling existing private domestic wells. These wells are not typically sampled by the Health Department, but they provide drinking water to residents in rural areas. These wells are usually screened in the uppermost aquifer that produces a reliable water supply. The Data working group felt this was the highest priority since this assesses the health of the water supply for residents. The costs would be significantly lower than the ambient monitoring network since the targeted wells already exist.
2. Hot Spots—PGG identified 71 hot spots where the maximum nitrate concentrations were in excess of 20 mg/L. The goal of this initiative is to continue monitoring the wells where nitrate has already been identified to be the biggest concern.

**Particle Tracking Model.** An overview of the particle tracking model was presented by Matt Bachmann (USGS). The goal was to see how this work could benefit current or future efforts.

**Education.** Groundwater primer—An optional presentation on groundwater basics was developed to present prior to the October GWAC meeting. Ginny Stern (DOH) and Melanie

Redding (Ecology) offered to develop a sand tank aquifer model to demonstrate groundwater movement and how surface activities can impact groundwater quality. They would also discuss the nitrogen cycle, Darcy's Law (groundwater movement), how models work, and answer questions.

#### **Irrigated Ag (IAWG) (Troy Peters, Chair)**

The group met on July 19 and September 27. Paul Stoker, former executive director of the Columbia Basin GWMA (CBGWMA) (1998-ca. 2013), joined the July meeting by phone to share his experiences heading up that organization, to discuss which nitrate mitigation projects worked for that GWMA, and how they decided to do what they did. Among other efforts, the CBGWMA sponsored a Deep Soil Sampling program carried out by the local conservation districts. The sampling was a precursor to its Irrigation Water Management Cost Share Program, which offered farmer subsidies in exchange for completing a 10-point checklist.

Its Water on Wheels (WOW) program still functions in Franklin County and has been well received in schools. Legacy effects of the CBGWMA include changes in water management practices by potato farmers; local agencies of the fertilizer industry becoming more sensitive to nitrate; and residents paying more attention to their drinking water systems.

The IAWG concluded that it would be helpful to obtain Columbia Basin's 700-page list of every proposal made to the CBGWMA.

At its September meeting, the group received a presentation from Regulatory Framework Working Group Chair Jean Mendoza and Ginny Prest (WSDA) regarding federal and state directives that regulate nitrate in groundwater. The group was also tasked with considering solutions within its purview. Following that discussion, Troy summarized the group's guiding principles and its recommendations for the GWAC. The latter included IAWG's full endorsement for increased education and outreach (e.g., Water on Wheels or a mobile irrigation lab); cost share or help with soil sampling and nutrient management; cost share for irrigation scheduling to limit deep percolation; and to encourage the Natural Resources Conservation Service (NRCS) to focus its funding on nutrient and water management in the valley.

#### **Residential, Commercial, Industrial, and Municipal (RCIM) (Dan DeGroot, Chair)**

The group met on July 18 and September 12.

In an effort to judge the committee's progress in regards to the Work Plan, Chair Dan DeGroot had requested that Jim Davenport have a discussion with Ecology on the commercial, industrial and municipal portion of the group's work. When the working group was originally formed it was decided that most commercial, industrial and municipal sources of Nitrogen were more than likely regulated and reported regularly to Ecology. As a first step to determining the validity of this assumption, the Chair was to ask the Department of Ecology to give the group a presentation of these areas and the reports that were generated by the permitted entities. This would help the group determine if all sources in these sectors were permitted and if trend analysis was being done on any Nitrogen being applied or otherwise utilized in the GWMA. Since this had not been done to the working group's satisfaction, Jim Davenport agreed to investigate and report back to the group but he was unsuccessful in obtaining the information. David Bowen was then asked to assist as he has oversight of this Ecology permitting process.

Onsite Sewage Systems (OSS) continued to generate discussion. This is a subject that is not only of concern to the Lower Valley GWMA but also to areas around the USA and, as was reported from the recent San Francisco Conference, around the world. The areas of concern for the GWMA are outdated systems, systems that are not maintained, systems that have a larger population than they were engineered for and the density of systems. Since properly designed, installed and maintained OSS do a good job of treating bacteria and most pollutants except for Nitrogen, OSS of any condition remain a source of concern. However, the systems that are not correctly engineered, installed and maintained are of particular concern. EPA has also expressed concern on the density of systems. Of particular interest are areas that have high density, and are more than 40 systems per square mile (16 acres per system). When density reaches this level the groundwater begins to receive more Nitrogen that it can dilute adequately before the next well is encountered. The GWMA features many areas that have a high density attribute to them.

Membership update: Ryan Ibach resigned from the working group and Dave Cole, the new Environmental Director of the Yakima Health District, replaced him.

#### **Regulatory Framework (Jean Mendoza, Chair)**

The Regulatory Group met on July 13, August 10, and September 14. At the July meeting, the group learned more about the Yakima County Voluntary Stewardship Program and discussed upcoming presentations to the three technical working groups. It was decided that the presentations would encompass an overview of the relevant laws and programs, and to describe both regulatory and volunteer programs. It was determined that the three technical groups would need to expand on the discussion and look at alternative regulations and policies and suggestions for model ordinances, etc.

On September 27, Chair Jean Mendoza and Ginny Prest (WSDA) made a presentation to the Irrigated AG working group (IAWG).

#### **Livestock/CAFO (David Bowen, Chair)**

The Livestock/CAFO Working Group met July 7, August 4 and September 1. The group continued its ongoing Best Management Practices (BMP) discussion regarding pens, corrals, lagoons/ponds, composting, feed storage and animal mortality operations. The group agreed to use the NRCS practices relevant to the LYV GWMA Livestock/CAFO as the foundation of BMPs to be recommended for use within the boundaries of the GWMA and may augment with other scientifically-based methods, where appropriate.

Updates were provided in regards to the Department of Ecology draft CAFO General Permit, hearings, and comment period, which closed August 31. Ecology received 4,565 total comments, 269 unique comments and 4,296 form letters. Ecology is currently reviewing the comments to consider any amendments to the permit prior to issuance. Frequent comments from the dairy perspective were the cost analysis and setbacks, and for other interests it was not lining the lagoons and no requirement to monitor the groundwater.

The Regulatory Framework Working Group provided a presentation to this group regarding the results of their research of rules, regulations, and laws that govern operations of Livestock and CAFO operations. Further discussion of this topic was scheduled for the November and December meetings.

**GWMA Website**

The GWMA website continued to be updated in real time.

**Contracts and Interlocal Agreements**

No contracts were executed in this quarter.

## Attachment A

- Final GWAC meeting summary of June 16, 2016.
- Draft GWAC meeting summary of August 18, 2016.
- GWAC agenda, attendance roster record and public meeting notice for August 18, 2016.
- Education and Public Outreach (EPO) Working Group summary of July 6, 2016.
- Irrigated Ag Working Group (IAWG) summaries of July 19 and September 27, 2016.
- Data Collection, Characterization and Monitoring Working Group summaries of July 13 and August 10, 2016.
- Regulatory Framework Working Group summaries of July 13, August 10 and September 14, 2016.
- Residential, Commercial, Industrial and Municipal (RCIM) Working Group summaries of July 18 and September 12, 2016.
- Livestock/CAFO Working Group summaries of July 7, August 4, September 1, 2016.

1                   **YAKIMA VALLEY GROUNDWATER MANAGEMENT AREA ADVISORY COMMITTEE**  
2                   **(GWAC)**

3                   **MEETING SUMMARY**

4                   **Thursday, June 16, 2016 – 5:00 p.m. – 7:00 p.m.**

5                   **Radio KDNE Conference Rooms 1 & 2**  
6                   **121 Sunnyside Avenue, Granger, WA**

7  
8                   **Note: This document is only a summary of issues and actions of this meeting. It is not intended to be**  
9                   **a transcription of the meeting, but an overview of points raised and responses from Yakima County**  
10                   **and Groundwater Advisory Committee members. It may not fully represent the ideas discussed or**  
11                   **opinions given. Examination of this document cannot equal or replace attendance.**

12                   **I. Call to Order: This meeting was called to order at 5:05 PM by Jim Davenport, Facilitator.**

<b>Member</b>	<b>Seat</b>	<b>Present</b>	<b>Absent</b>
Stuart Turner	Agronomist, Turner and Co.		✓
Chelsea Durfey			✓
Bud Rogers	Lower Valley Community Representative Position 1	✓	
Kathleen Rogers	Lower Valley Community Representative Position 1 (alternate)	✓*	
Patricia Newhouse	Lower Valley Community Representative Position 2	✓	
Sue Wedam	Lower Valley Community Representative Position 2 (alternate)	✓	
Doug Simpson	Irrigated Crop Producer	✓	
Jean Mendoza	Friends of Toppenish Creek	✓	
Eric Anderson	Friends of Toppenish Creek (alternate)		✓
Jan Whitefoot	Concerned Citizens of the Yakama Reservation		✓
Jim Dyjak	Concerned Citizens of the Yakama Reservation (alternate)	✓	
Steve George	Yakima County Farm Bureau	✓	
Frank Lyall	Yakima County Farm Bureau (alternate)		✓
Jason Sheehan	Yakima Dairy Federation		✓
Dan DeGroot	Yakima Dairy Federation (alternate)	✓	
Ron Cowin	Roza-Sunnyside Joint Board of Control	✓	
	Roza-Sunnyside Joint Board of Control (alternate)		
Laurie Crowe	South Yakima Conservation District		✓

Jim Newhouse	South Yakima Conservation District (alternate)		✓
Robert Farrell	Port of Sunnyside		✓
John Van Wingerden	Port of Sunnyside (alternate)	✓	
Rand Elliott	Yakima County Board of Commissioners	✓	
Vern Redifer	Yakima County Board of Commissioners (alternate)	✓	
Ryan Ibach	Yakima Health District	✓	
Dr. Troy Peters	WSU Irrigated Agriculture Research and Extension Center		✓
Lucy Edmondson	U.S. Environmental Protection Agency	✓	
Marie Jennings	U.S. Environmental Protection Agency (alternate)		✓
Elizabeth Sanchez	Yakama Nation		✓
Tom Ring	Yakama Nation (alternate)		✓
Virginia "Ginny" Prest	WA Department of Agriculture	✓	
Jaclyn Hancock	WA Department of Agriculture (alternate)		✓
Andy Cervantes	WA Department of Health		✓
Ginny Stern	WA Department of Health (alternate)	✓	
David Bowen	WA Department of Ecology	✓	
Sage Park	WA Department of Ecology		✓
Lino Guerra	Hispanic Community Representative		✓
Rick Perez	Hispanic Community Representative (alternate)		✓
Jessica Black	Heritage University		✓
Matt Bachmann	USGS	✓	

\*via phone

13    **II. Welcome & Meeting Overview**

14    Facilitator Jim Davenport invited the group to set aside the day and think about a positive outcome  
 15    as the group worked through its agenda. General introductions followed. Jim observed that the  
 16    group had gained a great deal of knowledge through this process and although he sensed some  
 17    people's frustration he felt that the group was further ahead at this point than most. Jim asked Pat  
 18    Newhouse to share about her recent experience as a participant in the EPO outreach at the May 19  
 19    Sunnyside Health Fair. Pat explained that she and two others had interacted with and provided  
 20    written brochures to approximately 120 people about the nitrate issues in the GWMA. Some  
 21    people filled out informational questionnaires. She recommended that the group have something  
 22    for children at the next event and at least one Spanish speaking volunteer. She encouraged  
 23    everyone to volunteer. Jim added that he had also been encouraged because he received a letter  
 24    from Yakima County stating that they would be through in the next few months to clean out 130  
 25    County-owned septic systems in the Buena area.

26  
27

28 **III. Working Group Reports:**29 **Data Working Group – Report prepared by Melanie Redding and given by David Bowen**

30 Nitrogen Loading Assessment (NLA): Melanie reviewed the purpose and goals of this  
31 assessment. Gary Bahr of WSDA hoped to have the final assessment to the GWAC in  
32 October. Four WSDA staff are working on information and data layer updates and verifying  
33 the accuracy of the calculations. Ambient Groundwater Monitoring Network: PGG  
34 completed a review draft of its report which includes methodology, preliminary drill sites,  
35 drain monitoring, estimated costs, and installation process and schedule and it is being  
36 reviewed by the group and will be presented to the GWAC at its August meeting. Drilling  
37 could begin in the spring of 2017 and monitoring in July. Cost estimates are \$250,000 plus  
38 sampling personnel and hydrogeologist. Groundwater Primer: Melanie will talk with EPO  
39 about providing a tabletop sand tank model prior to the August GWAC meeting to visually  
40 illustrate groundwater, how it moves, and how it can be impacted by what we do on the  
41 land surface. Long-Term Initiatives: The Data group was concerned about long-term  
42 funding/support for on-going programs and monitoring. Questions: Jean asked if the NLA  
43 could be to the GWAC in August as she felt the report was holding everything else up. Gary  
44 Bahr said an October presentation was more likely. Jim agreed the delay was unfortunate  
45 but noted that the groups were progressing and working on solutions. He added that when  
46 the ranges were available the groups could then determine the priority of the solutions.

47

48 **Livestock/CAFO – David Bowen**

49 David informed the group that Livestock/CAFO held its first meeting this year on June 2.  
50 The group spent time discussing the progress they had made and David now believed he  
51 could review the plan and prepare a list of next steps. David also reported on the Ecology  
52 Washington Nitrate Prioritization Project (Link to site):

53 <http://ecologywa.blogspot.com/2016/05/new-report-compiles-information-about.html> and  
54 the Ecology CAFO General Permit update which was released June 15. A comment period  
55 and meetings will be held. More information can be obtained at:

56 (<http://www.ecy.wa.gov/programs/wq/permits/cafo/publicinvolvement.html>). The group  
57 agreed to proceed with identifying solutions and didn't feel that the delay would keep the  
58 group from moving forward. The group will also begin to answer the questions: "who do  
59 we need to educate" and what do we want them to know" so that it might pass this  
60 information on to EPO. When questioned, David noted that he expected the  
61 Livestock/CAFO work group to be briefed on and discuss the new CAFO permit. A member  
62 clarified that individuals were invited to comment and not the GWAC as a whole. David  
63 added that there was also another literature review done by Melanie Redding which had

64        been released on the impact of manure on the groundwater. David would provide this link  
65        to Yakima County support staff to get out to the group.

66        **Irrigated Ag Working Group (IAWG)**

67        Troy Peters was absent but Jim reported that the May meeting summary was in the group's  
68        packet. He indicated that the group had been discussing solutions and ideas and he  
69        anticipated one to two more meetings on this.

70

71        **RCIM Working Group – Ryan Ibach**

72        Ryan reported that the group had met this past Monday (June 13) and began working on  
73        solutions. They also discussed the status of the RCIM loading assessment and focused  
74        mainly on the contribution by septic systems but also discussed hobby farms, biosolids,  
75        lawns and fertilizers. Ryan also announced that he had accepted a new position with the  
76        Yakima Health District and that the participants had agreed that Dan DeGroot would  
77        become the new chairperson.

78

79        **Regulatory Framework Working Group – Jean Mendoza**

80        The group met and discussed priority questions and how to interact with the other groups  
81        when presenting the laws and policies applicable to each of the three working groups. The  
82        rough presentation plan is to identify the problems from the other group's perspective,  
83        identify voluntary and least costly interventions, prioritize and discuss, ask whether there  
84        should be "hand slapping" and ask how that might be codified. Jean anticipated two  
85        meetings with the Livestock/CAFO group.

86

87        **Education and Public Outreach (EPO) Working Group – Lisa Freund**

88        Lisa displayed the new GWMA banner, tablecloth and a variety of handouts being used at  
89        various outreach events. The handouts included brochures, a groundwater color page for  
90        kids, a public survey and private well testing kits. The kits are being tracked and provide the  
91        group with the person's name and telephone number. Outreach photos are being posted on  
92        the GWMA website. Lisa encouraged members to consider signing up to help in the health  
93        fair booths which would allow the group to have one-on-one contact with 1000+ people in  
94        the Lower Valley. Looking to the future Lisa indicated that the group is considering and  
95        acquiring costs for a billboard campaign. This information would be presented at the August  
96        meeting for the group to consider. EPO has also asked the working groups to identify their  
97        target audiences (who) and the messages they want delivered (what) so that EPO can develop  
98        proposed campaigns for the working groups' consideration.

99

100 Jim gave Jean Mendoza a chance to voice her concerns. Jean was concerned that because of  
101 the delays the GWAC will be stuck with the nitrogen loading assessment and would be unable  
102 to look at alternate studies. Jean desired to propose that the GWAC accept the 2012 EPA  
103 study which she felt was a reasonable option as it was similar and the science was based on  
104 local data. She encouraged the group to abandon its assessment. Members agreed there  
105 were a variety of other possible studies and options, but were happy to see this GWMA doing  
106 one of their own. And, while they understood the delay was frustrating, they felt it was good  
107 the group had done its own. They believed the delay had allowed time for good discussions.  
108 The members disagreed that the delay of the assessment had stopped the process as many  
109 working groups had already reported they were working on solutions. The group had no  
110 objection to Jean's request to distribute the EPA Lower Yakima Valley Project Nitrogen  
111 Loading Screening Analysis at this meeting. Jean was also concerned that the group hadn't  
112 done a mid-term review. A member didn't recall a mid-term review in the the group's master  
113 plan and is therefore not frustrated that one hadn't been done.  
114

115 **IV. Don Stuart Presentation**

116 David Bowen advised the group that Melanie Redding was recommending that the group  
117 invite Don Stuart to speak at the next GWAC meeting. Don Stuart authored a book entitled  
118 "Barnyard and Birkenstocks: Why Farmers and Environmentalists Need Each Other." Don  
119 made a presentation at the DOE which Melanie attended and she felt the GWAC could benefit  
120 from inviting him as a guest speaker/collaborator. A link had been provided with a 5 minute  
121 clip for the group's consideration. Several members indicated that they had not been able to  
122 view the presentation as the link failed. David said he would look into this. The group agreed  
123 to postpone this item until the next meeting to give everyone a chance to first review the  
124 link. Jean Mendoza asked how to get an item on the GWAC Agenda. Vern said that it  
125 depended on the agenda item. If it was something for discussion it was very easy to get on  
126 the agenda but there was a protocol established early on if someone desired a guest speaker  
127 to make a presentation. Instead of inviting a speaker it is put on the agenda for the group to  
128 decide. Jim Dyjak asked who approves the agenda. Vern said that he did with the help of Jim  
129 and David. Any agenda requests should be made in writing.  
130

131 **V. Potential Requests to the Legislature**

132 Vern and Jim explained to the group that funding requests could be made through the  
133 legislature or through different agencies' budgets. They believed it was important for the  
134 group to begin to consider what requests should be made and which agency would govern  
135 each project. Agency budget requests must be made as soon as possible and Legislative  
136 requests need to be in before the session begins in January. Funding from these requests  
137 would be available in July 2017. If the legislative ask wasn't made until January 2018, the  
138 funding wouldn't be available until July 2018.  
139

140 Vern believed the group should consider a request for long-term funding for the monitoring  
141 program under design now. He stated that the current budget would cover the installation  
142 and the first year's worth of data collection if the network was in the ground by spring 2017.  
143 However, the funding ends December 2017, and the success of the system is long-term  
144 sampling. In addition the group needed to decide who should be responsible for the  
145 monitoring – Yakima County, Yakima Health District, Ecology, EPA, or the Department of  
146 Health. Steve George agreed that the established well monitoring needs to be ongoing and  
147 believed that the County should be the lead entity as he felt they were central to everyone  
148 and the project needed a local presence not a State agency. Ginny Stern said that in other  
149 GWMA's the local county handled this. The County is prepared to have lead entity status.  
150 Rand added that an ongoing program like well monitoring would need to be funded through  
151 a State agency's budget. This request would need to be made immediately so it could be  
152 included in the the Department of Ecology budget. He added that if the request was for a  
153 one-time effort the request could be made legislatively and would need to be in by the end  
154 of the year. Jean was concerned as the Data group was not in agreement yet about the  
155 monitoring plan. Vern explained that while there may be differences of opinion, in general  
156 those differences won't substantially change the ongoing costs. David said that he would talk  
157 to his Program Manager about putting a placeholder in the budget but noted that they would  
158 need concrete information by September/October. Rand suggested that Vern talk to David  
159 to come up with a number and then refine the plan over the next several months. Ginny  
160 Stern encouraged the group not to assume all the funding would come from one source but  
161 to seek funding from every angle.

162  
163 Members suggested other items for funding consideration: expanding the monitoring  
164 network, options for community outreach, education on the importance of pumping private  
165 septic systems, funding to identify and decommission abandoned wells, identifying high  
166 priority wells to see if they were properly constructed, drilling new wells for people, soil  
167 sampling before planting and education on water management. A member suggested that  
168 the work groups put together lists of their top three priorities in the next month and get them  
169 to the GWAC. Proposals should include the benefits of the proposal and what the likely costs  
170 would be. Another member was concerned that a cost benefit analysis should be done before  
171 requests for money were made. Jim responded and said that's why he encouraged the work  
172 groups to put together their ideas and bring them to the GWAC. Rand asked if the group was  
173 willing to allow the County to discuss with its lobbyist an effort to fund the ongoing testing of  
174 the Ambient Monitoring Network. The group agreed with no objections.

175  
176 **VI. Committee Business**

177 After confirmation that a quorum was present the committee approved the April 21, 2016,  
178 meeting summary as presented.

179

180 **VII. Public Comment**

181        None.

182

**183 VIII. Next Meeting**

184        Thursday, August 18, 2016, 5:00 PM, Location: *Denny Blaine Board Room, Sunnyside School District No. 201, 810 East Custer Avenue, Sunnyside, WA 98944*

186

**187 IX. Next Steps**

188        The meeting was adjourned at 6:53PM.

189        Meeting summary approved by the GWAC on August 18, 2016.

1                   **YAKIMA VALLEY GROUNDWATER MANAGEMENT AREA ADVISORY COMMITTEE**  
 2                   **(GWAC)**

3                   **MEETING SUMMARY**

4                   **Thursday, August 18, 2016 – 5:00 p.m. – 7:00 p.m.**

5                   **Radio KDNA Conference Rooms 1 & 2**  
 6                   **121 Sunnyside Avenue, Granger, WA**

7  
 8                   *Note: This document is only a summary of issues and actions of this meeting. It is not intended to be*  
 9                   *a transcription of the meeting, but an overview of points raised and responses from Yakima County*  
 10                   *and Groundwater Advisory Committee members. It may not fully represent the ideas discussed or*  
 11                   *opinions given. Examination of this document cannot equal or replace attendance.*

12                   **I. Call to Order: This meeting was called to order at 5:05 PM by Jim Davenport, Facilitator.**

Member	Seat	Present	Absent
Stuart Turner	Agronomist, Turner and Co.,		✓
Chelsea Durfey		✓	
Bud Rogers	Lower Valley Community Representative Position 1	✓	
Kathleen Rogers	Lower Valley Community Representative Position 1 (alternate)	✓	
Patricia Newhouse	Lower Valley Community Representative Position 2	✓	
Sue Wedam	Lower Valley Community Representative Position 2 (alternate)	✓	
Doug Simpson	Irrigated Crop Producer	✓	
Jean Mendoza	Friends of Toppenish Creek	✓	
Eric Anderson	Friends of Toppenish Creek (alternate)		✓
Jan Whitefoot	Concerned Citizens of the Yakama Reservation		✓
Jim Dijk	Concerned Citizens of the Yakama Reservation (alternate)	✓	
Steve George	Yakima County Farm Bureau	✓	
Frank Lyall	Yakima County Farm Bureau (alternate)		✓
Jason Sheehan	Yakima Dairy Federation		✓
Dan DeGroot	Yakima Dairy Federation (alternate)		✓
Ron Cowin	Roza-Sunnyside Joint Board of Control	✓	
	Roza-Sunnyside Joint Board of Control (alternate)		
Laurie Crowe	South Yakima Conservation District	✓	

Jim Newhouse	South Yakima Conservation District (alternate)		✓
Robert Farrell	Port of Sunnyside	✓	
John Van Wingerden	Port of Sunnyside (alternate)		✓
Rand Elliott	Yakima County Board of Commissioners	✓	
Vern Redifer	Yakima County Board of Commissioners (alternate)	✓	
Dave Cole	Yakima Health District		✓
Ryan Ibach	Yakima Health District		✓
Dr. Troy Peters	WSU Irrigated Agriculture Research and Extension Center		✓
Lucy Edmondson	U.S. Environmental Protection Agency	✓	
Marie Jennings	U.S. Environmental Protection Agency (alternate)		✓
Elizabeth Sanchez	Yakama Nation		✓
Stuart Crane	Yakama Nation (alternate)	✓	
Virginia "Ginny" Prest	WA Department of Agriculture	✓	
Jaclyn Hancock	WA Department of Agriculture (alternate)		✓
Andy Cervantes	WA Department of Health	✓	
Ginny Stern	WA Department of Health (alternate)		✓
David Bowen	WA Department of Ecology		✓
Sage Park	WA Department of Ecology	✓	
Lino Guerra	Hispanic Community Representative	✓	
Rick Perez	Hispanic Community Representative (alternate)		✓
Jessica Black	Heritage University	✓	
Matt Bachmann	USGS	✓	

\*via phone

13 **II. Welcome & Meeting Overview**

14 Jim Davenport called the meeting to order at 5:04 PM and asked the group to pause briefly  
 15 in a moment of silence. The members and guests then introduced themselves.

16 **III. Working Group Reports**

17 **RCIM Working Group:** No report presented.

18 **Irrigated Ag Working Group (IAWG):** No report presented.

19 **Data Working Group:** Melanie Redding updated the group on the status of the Ambient  
 20 Monitoring Network (AMN). She pointed out that the GWAC has yet to decide who would

21 run the AMN program, who would analyze the data, and how it will be funded long term.

22 Melanie went on to say that the Data group had discussed other previously identified  
 23 monitoring options. The group's goal was to vote and prioritize their top three choices, but  
 24 had been unable to do so at the August meeting because of low member turnout. The  
 25 group also discussed other methods of useful monitoring networks. In addition, Matt

26 Bachmann from the USGS presented his Particle Tracking Model and the group  
27 contemplated how it could be used with current and future GWMA initiatives. Melanie  
28 gave an update on the Nitrogen Loading Assessment which she hoped would be to the  
29 committees soon. Finally, Melanie provided information compiled from the Yakima County  
30 and Department of Ecology websites on what other GWMA's were doing (Washington,  
31 Oregon and California) as a source for other potential monitoring options. Melanie  
32 reminded the GWAC committee that she and Ginny Stern would be presenting a basic  
33 groundwater presentation one hour prior to the October 20 GWAC meeting. She is working  
34 with EPO to coordinate outreach and Spanish translation.

35 **Livestock/CAFO:** – The group's report was prepared by Chair David Bowen and given by Sage  
36 Park. The major areas of discussion included meeting the GWAC timeline, anticipation of  
37 receipt of the Nitrogen Loading Study, review, refining and prioritization of best management  
38 practices (BMP's), regulatory framework, implementation funding, and the recent release of  
39 Ecology's draft CAFO General Permit (the comment period for this has been extended to  
40 August 31, 2016). The Regulatory Framework working group provided an overview of the  
41 rules, laws, and voluntary programs at the group's August meeting. Next steps for the group  
42 will be to identify any regulatory gaps and areas of improvement of potential regulatory  
43 changes that could or should be implemented.

44 **Regulatory Framework Working Group:** Jean Mendoza handed out a copy of her report  
45 which included directions to view videos of the 2016 GWAC and Regulatory Framework  
46 meetings. Jean has also posted Regulatory Framework meeting summaries and supporting  
47 documents to her website. In the last few months the Regulatory group heard a  
48 presentation on the Yakima County Voluntary Stewardship Program which is an effort to  
49 provide solutions to protect water and preserve farm land. In addition, the group worked  
50 on their presentations for the Livestock/CAFO, Irrigated Ag (IAWG) and RCIM working  
51 groups. Jean provided an outline. The group presented to Livestock/CAFO in August and  
52 hoped to present to Irrigated Ag and RCIM at their October meetings. The group had also  
53 discussed both the application of fertilizers and manures to crop land and atmospheric  
54 deposition. These sources will be presented to the IAWG for their consideration. Ginny  
55 Prest asked that the information she had handed out to the GWAC (WSDA "Implementation  
56 of Nutrient Management Training Program for Farmers") be included in the presentation.  
57 Jean noted that she had raised the issue of doing a cost benefit analysis to the group,  
58 however, the group was reluctant to take on the task and asked Jean to come back with  
59 more specific proposals before considering the topic again. Vern clarified and said that  
60 while he was interested in identifying the cost of each proposed strategy for  
61 implementation, the difficulty lies in quantifying the benefits of subjective strategies.

62       **Education and Public Outreach (EPO) Working Group:** Lisa Freund announced that the  
63       outreach group had staffed five health fairs between May and August in the GWMA and  
64       thanked all those who volunteered. The health fairs had allowed one-on-one contact with  
65       approximately 250 Lower Valley residents and volunteers passed out surveys, test strips and  
66       brochures with other pertinent information. Their greatest take-away was that many people  
67       still had not heard the GWAC's message and, therefore, the EPO group was proposing a  
68       billboard campaign which would be outlined later on in the agenda. Lisa added that the group  
69       had not been contacted by any of the working groups after the June GWAC call for legislative  
70       proposals. A member asked what the EPO Working Group had done in the last three years  
71       to educate the public about protection, prevention and participation. Lisa noted several  
72       activities including the door-to-door campaign done by Heritage University, informational  
73       posters and banners in the County Courthouse, television and radio ads, the well assessment  
74       survey and the five health fairs in addition to the proposed billboard campaign. Lisa went on  
75       to say that all of these endeavors provided the public with a contact phone number and  
76       directions to the website so that individuals could get questions answered and obtain  
77       additional information. The member (a participant in the EPO working group) stated that she  
78       had several educational ideas and wanted to know how those should be presented. Both Lisa  
79       and Jim Davenport responded that any recommendations for education should be brought to  
80       the EPO. If the EPO working group felt they met the GWAC's goals the group would then  
81       make recommendations to the GWAC. The member replied that they did not believe that  
82       the GWAC approved EPO's presence at the health fairs; Lisa responded that approval had  
83       been sought by the EPO and received at the April GWAC meeting and noted that she would  
84       not disrespect the GWAC by not asking for their approval.

85 **IV. Don Stuart Presentation:**

86       Jim Davenport reminded the group that this item had been tabled from the previous meeting.  
87       Melanie stated that she had heard Don Stuart speak at a seminar and believed his  
88       presentation would be beneficial to the group as they were deciding how to move forward  
89       and thinking about how to work together. She recommended the members look at the  
90       presentation which would be available soon on the County website or read the book Mr.  
91       Stuart had written, "Barnyards and Birkenstocks – Why Farmers and Environmentalists Need  
92       Each Other." Lucy Edmondson also believed it could cause agricultural and environmental  
93       communities to think differently. A member objected, desiring additional background  
94       information. A discussion ensued and the presentation was tabled until the next meeting as  
95       the group could not reach a consensus.

96 **V. Working Groups' Requests to the Legislature:**

97       Vern handed out a document entitled "GWMA Expenditures through July 31, 2016" which he  
98       noted was a condensed version (like columns were combined) of a 50 page document. He  
99       noted that the original Ecology grant was for \$2.3 million and to date \$1.4 million had been  
100       spent which should be sufficient to fund activities through December 2017. Long-term  
101       funding requests, i.e., ambient network monitoring and testing, however, would still need to  
102       be sought. Vern spoke with David Bowen and requested that he put a placeholder for long-

103 term funding in the Ecology budget. Sage said she would double check on the placeholder.  
104 A member asked about funding for the items remaining after December 2017, as she assumed  
105 that the SEPA process and public meetings would take place after this deadline. Vern said he  
106 hoped all of this would be done before the end of 2017 thus negating the need for additional  
107 funding but stated that the group would continue until the Department of Ecology accepted  
108 the program. The member was also concerned that there were only eight more GWAC  
109 meetings and suggested the group return to meeting monthly. Vern felt the group could wait  
110 until there were more substantive things to discuss; however, working groups might want to  
111 consider meeting more frequently. A member desired an explanation of the column entitled  
112 "equipment rental." Vern explained these charges were for County vehicles used to transport  
113 staff and equipment to meetings and outreach events. Another member wanted to affirm  
114 that if Rand went to the legislature for additional funding that the request would be approved  
115 by the committee prior to Rand making the request.

116 **VI. Report on International Groundwater Conference (San Francisco):**

117 Rand Elliott, Ginny Prest and Ginny Stern attended this conference in June. Rand reported  
118 hundreds of people attended with 60 countries represented. He came away with a clear  
119 realization that the problem is not unique and there is no "one size fits all" solution. He was  
120 reminded at the conference to look at the whole water picture and not get too focused on a  
121 single aspect. Rand also noted the following points: 1) If there is no agriculture there is no  
122 food. 2) There is a cost to everything – industry, farming, coming to the GWAC meeting in a  
123 car – none of these things can be eliminated and actions create unintended consequences.  
124 3) The group should be aware of septic sources and legacy nitrogen and answers must be  
125 through science not emotions. 4) Farming can be a green renewable industry but nitrogen is  
126 essential to produce crops and timing, rate, source, rainfall, soil types all must be considered  
127 for proper nitrogen management. 5) Farmers need information and shared data if they are  
128 to change. 6) Who can do that? Perhaps an extension service but each group should do what  
129 works, what is economical, and education should be provided by someone they are willing to  
130 listen to. 7) The conference also confirmed the need for soil testing and water monitoring for  
131 measuring success and that fertilizer, manure and septic show up differently. 8) There are  
132 ways to measure, e.g., borax would indicate septic as it's in a lot of household products.  
133 Iodine is attributable most likely to dairies as it is used as an antiseptic. In conclusion, Rand  
134 reminded everyone of the importance to improve water quality and preserve profitability –  
135 there needs to be a balance between economics and environment. He added that there are  
136 many barriers to change: economic, cultural, demographics, institutional, and  
137 environmental. Each affects a farmer's decision to varying degrees, but only one keeps a  
138 farmer from changing. Figure out that barrier and you could solve the problem. Ginny Prest  
139 stated that she heard many times about legacy nitrates and the lag time between making  
140 changes on the surface and the difference in the nitrate levels. Ginny was encouraged by  
141 Rand's attendance and desire to listen and learn as it reinforced to her that the GWAC had  
142 good leadership. A member asked if the members would have access to the materials from  
143 the conference. Ginny said all had been recorded and that she would advise as soon as the

144 presentations were posted to the web. The member appreciated Rand's comments on the  
145 need for data noting that people were reluctant to share soil sampling results. Rand  
146 responded that there continued to be barriers to publicly putting this information on the  
147 internet but ultimately the GWAC would decide this issue. Rand also felt that there was  
148 already lots of data out there for education that the industry could use.

149 **EPO Recommendation to the GWAC: "Test Your Well" Billboard Campaign:**

150 Lisa Freund asked the members to look at the billboard proposals. She explained that EPO  
151 suggested three billboards (five sides) in three locations in the heart of the GWMA. Lisa also  
152 provided mock-ups and pointed out that the actual ad would include the website and phone  
153 number and two of the five would be in Spanish. Lisa advised that member Pat Newhouse  
154 knew of a family with two sons (ages 2 and 3) that reflect the demographics and are willing  
155 to appear in the ads and sign a release. Another member noted that these kids were not in  
156 the age group at risk. A member wondered if the well tests would be part of the GWMA cost  
157 – Lisa said no but that the County still had a number of test strips that could be mailed out.  
158 A member suggested that the ad read: "Test your private well." Jim Davenport asked the  
159 group if anyone objected to the proposal. A member stated that she thought the work should  
160 be done by the Department of Health. Another member believed that a significant number  
161 of people were not aware of the GWMA's message and the billboards provided a continual  
162 presence. Another member noted that he was supportive of the effort, felt that the  
163 location/area targeted was appropriate and that people impacted by nitrates would drive by  
164 the sign day after day allowing the message to sink in. The objecting member withdrew her  
165 objection and approval of the billboard proposal was unanimous.

166 **VII. Committee Business:**

167 After confirmation that a quorum was present the committee approved the June 16, 2016,  
168 meeting summary as presented.

169 **VIII. Public Comment:**

170 None. Jim Davenport announced that he would be leaving for England to visit family and  
171 would be travelling indefinitely through the fall. Therefore, he was going off-contract with  
172 the County and did not anticipate attending the October 2016, GWAC meeting. He and Vern  
173 would be in touch to work out a plan for the future. A member wondered who would be  
174 doing the writing for the GWAC (documents summarizing the rules and regulations and the  
175 characterization in Jim's absence). Vern said he would work that out with Jim Davenport,  
176 Rand and David Bowen. The meeting was adjourned at 6:43 PM.

177 **IX. Next Meeting:**

178 Thursday, October 20, 2016, 5:00-7:00 PM, Location: *Denny Blaine Boardroom, 810 East*  
179 *Custer Ave., Sunnyside, WA.*

180 **X. Next Steps:**

181 XI. Meeting summary approved by the GWAC on \_\_\_\_\_.

### Meeting Time and Location

**Thursday, August 18, 2016 5:00 p.m. – 7:00 p.m.**

Radio KDNA Conf. Rooms 1 & 2  
 121 Sunnyside Ave.  
 Granger, WA 98932

### Regular GWAC Meeting Agenda **Revision 1**

Time	Topic	
<b>5:00 – 5:10 p.m.</b>	Welcome, Meeting Overview and Introductions: <ul style="list-style-type: none"> <li>• Committee members</li> <li>• Others attending the meeting</li> </ul>	Jim Davenport, Facilitator
<b>5:10 – 5:55 p.m.</b>	Working Group Reports <ul style="list-style-type: none"> <li>• Data Collection</li> <li>• Livestock/CAFO</li> <li>• IAWG</li> <li>• RCIM</li> <li>• Regulatory Framework</li> <li>• EPO</li> </ul>	Melanie Redding David Bowen Troy Peters Dan DeGroot Jean Mendoza Lisa Freund
<b>5:55 – 6:05 p.m.</b>	[Placeholder] Don Stuart Presentation	Melanie Redding
<b>6:05 – 6:25 p.m.</b>	Working Groups' Requests to the Legislature	
<b>6:25 – 6:35 p.m.</b>	EPO Recommendation to the GWAC: "Test Your Well" Billboard Campaign	Lisa Freund
<b>6:35 – 6:45 p.m.</b>	Report on International Groundwater Conference (San Francisco)	Rand Elliott Ginny Prest & Ginny Stern
Committee Business		
<b>6:45 – 6:50 p.m.</b>	Approve the June 16, 2016 GWAC Meeting Summary	Jim Davenport

Time	Topic
6:50 – 6:55 p.m.	Public Comment
7:00 p.m.	Adjourn

### Committee Members

Stuart Turner, agronomist, Chelsea Durfey (alternate)	Turner and Co.
Bud Rogers, Kathleen Rogers (alternate)	Lower Valley Community Representative Position 1
Patricia Newhouse, Sue Wedam (alternate)	Lower Valley Community Representative Position 2
Doug Simpson	Irrigated Crop Producer
Dr. Jessica Black	Heritage University
Jean Mendoza, Eric Anderson (alternate)	Friends of Toppenish Creek
Jan Whitefoot, Jim Dyjak (alternate)	Concerned Citizens of the Yakama Reservation
Steve George, Frank Lyall (alternate)	Yakima County Farm Bureau
Jason Sheehan, Dan DeGroot (alternate)	Yakima Dairy Federation
Ron Cowin	Sunnyside-Roza Joint Board of Control
Laurie Crowe, Jim Newhouse (alternate)	South Yakima Conservation District
Robert Farrell, John Van Wingerden (alternate)	Port of Sunnyside
Rand Elliott, Vern Redifer (alternate)	Yakima County Commission
Dave Cole, Ryan Ibach (alternate)	Yakima Health District
Dr. Troy Peters	WSU Irrigated Agriculture Research and Extension Center
Lucy Edmondson, Marie Jennings (alternate)	U.S. Environmental Protection Agency
Elizabeth Sanchez, Stuart Crane (alternate)	Yakama Nation
Virginia "Ginny" Prest Jaclyn Hancock (alternate)	Washington Department of Agriculture
Andy Cervantes, Ginny Stern (alternate)	Washington Department of Health
David Bowen, Sage Park (alternate)	Washington Department of Ecology
Lino Guerra, Rick Perez (alternate)	Hispanic Community Representative
Matt Bachmann	U.S. Geological Survey

**Committee Ground Rules:**

- Come to committee meetings prepared
- Treat one another with civility
- Respect each other's perspectives
- Listen actively
- Participate actively
- Honor time frames
- Silence electronic devices during meetings
- Speak from interests, not positions.

**2016 Meeting Dates:**

February 18  
April 21

June 16  
August 18

October 20  
December 15

**Groundwater Management Area (GWMA):**

The purpose of the GWMA is to reduce nitrate contamination concentrations in groundwater below state drinking water

**Meeting Materials:**

Name	Date Provided	From
2016_0616_GWAC_DraftMeetingSummary	6/27/2016 & 8/12/2016	<a href="mailto:lisa.freund@co.yakima.wa.us">lisa.freund@co.yakima.wa.us</a>
Meeting Agenda	8/12/2016	<a href="mailto:lisa.freund@co.yakima.wa.us">lisa.freund@co.yakima.wa.us</a>
Meeting Agenda <b>Revision 1</b>	8/15/2016	<a href="mailto:lisa.freund@co.yakima.wa.us">lisa.freund@co.yakima.wa.us</a>
Data Collection Working Group Reports of June 8 and July 13, 2016	8/12/2016	<a href="mailto:lisa.freund@co.yakima.wa.us">lisa.freund@co.yakima.wa.us</a>
Livestock/CAFO Working Group Reports of July 7 and August 4, 2016	8/12/2016	<a href="mailto:lisa.freund@co.yakima.wa.us">lisa.freund@co.yakima.wa.us</a>
IAWG Working Group Reports of June 28 and July 19, 2016	8/12/2016	<a href="mailto:lisa.freund@co.yakima.wa.us">lisa.freund@co.yakima.wa.us</a>
Regulatory Framework Working Group Reports of June 8 and July 13, 2016	8/12/2016	<a href="mailto:lisa.freund@co.yakima.wa.us">lisa.freund@co.yakima.wa.us</a>
RCIM Working Group Reports of June 13 and July 18, 2016	8/12/2016	<a href="mailto:lisa.freund@co.yakima.wa.us">lisa.freund@co.yakima.wa.us</a>
EPO Working Group Report of July 6, 2016	8/12/2016	<a href="mailto:lisa.freund@co.yakima.wa.us">lisa.freund@co.yakima.wa.us</a>
“Test your Well” Budget Proposal, Billboard Map and Billboard Mock-ups	8/15/2016 & At Table	<a href="mailto:lisa.freund@co.yakima.wa.us">lisa.freund@co.yakima.wa.us</a>

## GWAC Attendance Roster

Member	18-Aug-2016
Stuart Turner	Absent
Chelsea Durfey	Present
Bud Rogers	Present
Kathleen Rogers	Present
Patricia Newhouse	Present
Sue Wedam	Present
Doug Simpson	Present
Jean Mendoza	Present
Eric Anderson	Absent
Jan Whitefoot	Absent
Jim Dyjak	Present
Steve George	Present
Frank Lyall	Absent
Jason Sheehan	Absent
Dan DeGroot	Absent
Ron Cowin	Present
Laurie Crowe	Present
Jim Newhouse	Absent
Robert Farrell	Present
John Van Wingerden	Absent
Rand Elliott	Present
Vern Redifer	Present
Ryan Ibach	Absent
David Cole	Absent
Dr. Troy Peters	Absent
Lucy Edmondson	Present
Marie Jennings	Absent
Elizabeth Sanchez	Absent
Stuart Crane	Present
Virginia "Ginny" Prest	Present
Jaclyn Hancock	Absent
Andy Cervantes	Present
Ginny Stern	Absent
David Bowen	Absent
Sage Park	Present
Lino Guerra	Present
Rick Perez	Absent
Jessica Black	Present
Matt Bachmann	Present

40460

# YAKIMA HERALD REPUBLIC

## INVOICE

114 N. 4th Street

PO Box 9668

Yakima, WA 98909

Date: 08/10/16

Account #: 110536

Company Name: YAKIMA COUNTY SURFACE WATER MANAGEMENT

Contact: Tina Beck, AP

Address: 128 NORTH 2ND STREET ROOM 408

YAKIMA, WA 98901

Telephone: (509) 574-2343 Fax:

Account Rep: Simon Sizer- Legals - 398

Phone #: (509) 577-7740

Email: ssizer@yakimaherald.com

### Your Ad:

Yakima County

Notice of Public Meeting  
Lower Yakima Valley  
Groundwater Advisory  
Committee

**NOTICE IS HEREBY GIVEN**  
that Yakima County is holding  
a public meeting of the Lower  
Yakima Valley Groundwater  
Advisory Committee on  
Thursday, August 18, 2016, at  
5:00 PM at Radio KDNA, 121  
Sunnyside Avenue, Granger,  
WA 98932 pursuant to Chapter  
173-100-080 WAC Ground  
Water Management Areas and  
Programs.

**For Additional Information**  
To learn more about the  
Lower Yakima Valley Ground-  
water Management Area,  
the Groundwater Advisory  
Committee, and its goals and  
objectives, please see the  
Lower Yakima Valley Ground-  
water Management Area on  
the County webpage at: <http://www.yakimacounty.us/gwma/>

For more information about the  
meeting, please contact Lisa  
Freund, Yakima County Public  
Services Administrative Manager  
at 574-2300.

If you are a person with a dis-  
ability who needs any accom-  
modation in order to participate  
in this program, you may be  
entitled to receive certain assis-  
tance at no cost to you. Please  
contact the ADA Coordinator  
at Yakima County no later than  
five (5) working days prior to  
the date service is needed.

*FC 3463 - 100-120*  
Funding Control  
Authorized *JKL*  
Date Authorized *8/7/16*  
Yakima County ADA  
Coordinator  
128 N. 2nd Street, Room B27  
Yakima, WA 98901  
(509) 574-2210  
7-1-1 or 1-800-833-6384  
(Washington Relay Services  
for deaf and hard of hearing)

Dated this Thursday, August  
4, 2016

(667525) August 10, 2016

RECEIVED  
AUG 12 2016  
PS ACCOUNT

# YAKIMA HERALD REPUBLIC

## Affidavit of Publication

STATE OF WASHINGTON, )

)

COUNTY OF YAKIMA )

Debbie Martin, being first duly sworn on oath deposes and says that she/he is the Accounting clerk of Yakima Herald-Republic, Inc., a daily newspaper. Said newspaper is a legal newspaper approved by the Superior Court of the State of Washington for Yakima County under an order made and entered on the 13th day of February, 1968, and it is now and has been for more than six months prior to the date of publication hereinafter referred to, published in the English language continually as a daily newspaper in Yakima, Yakima County, Washington. Said newspaper is now and has been during all of said time printed in an office maintained at the aforesaid place of publication of said newspaper.

That the annexed is a true copy of a:

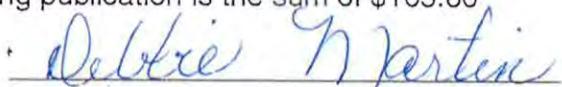
Yakima County Notice of Public Meeti

it was published in regular issues (and not in supplement form) of said newspaper once each day and for a period of 1 times, the first insertion being on 08/10/2016 and the last insertion being on 08/10/2016

Yakima Herald-Republic 08/10/16

YakimaHerald.com 08/10/16

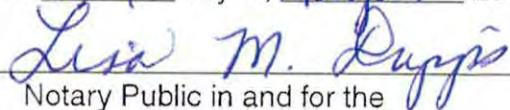
and the such newspaper was regularly distributed to its subscribers during all of the said period. That the full amount of the fee charged for the foregoing publication is the sum of \$105.60



Accounting Clerk



Sworn to before me this 10th day of August 2016



Notary Public in and for the  
State of Washington,  
residing at Yakima

**Yakima County**

**Notice of Public Meeting**  
**Lower Yakima Valley**  
**Groundwater Advisory**  
**Committee**

**NOTICE IS HEREBY GIVEN**  
that Yakima County is holding  
a public meeting of the Lower  
Yakima Valley Groundwater  
Advisory Committee on  
**Thursday, August 18, 2016, at**  
**5:00 PM at Radio KDNA, 121**  
**Sunnyside Avenue, Granger,**  
**WA 98932** pursuant to Chapter  
173-100-080 WAC Ground  
Water Management Areas and  
Programs.

**For Additional Information**  
To learn more about the  
Lower Yakima Valley Ground-  
water Management Area,  
the Groundwater Advisory  
Committee, and its goals and  
objectives, please see the  
Lower Yakima Valley Ground-  
water Management Area on  
the County webpage at: <http://www.yakimacounty.us/gwma/>

For more information about the  
meeting, please contact Lisa  
Freund, Yakima County Public  
Services Administrative Manager  
at 574-2300.

If you are a person with a dis-  
ability who needs any accom-  
modation in order to participate  
in this program, you may be  
entitled to receive certain assis-  
tance at no cost to you. Please  
contact the ADA Coordinator  
at Yakima County no later than  
five (5) working days prior to  
the date service is needed.

*Yakima County ADA  
Coordinator  
128 N. 2nd Street, Room B27  
Yakima, WA 98901  
(509) 574-2210  
7-1-1 or 1-800-833-6384  
(Washington Relay Services  
for deaf and hard of hearing)*

Dated this **Thursday, August**  
**4, 2016**

(667525) August 10, 2016

**Yakima County**

**Notice of Public Meeting  
Lower Yakima Valley  
Groundwater Advisory  
Committee**

NOTICE IS HEREBY GIVEN that Yakima County is holding a public meeting of the Lower Yakima Valley Groundwater Advisory Committee on Thursday, August 18, 2016, at 5:00 PM at Radio KDNA, 121 Sunnyside Avenue, Granger, WA 98932 pursuant to Chapter 173-100-080 WAC Ground Water Management Areas and Programs.

**For Additional Information**  
To learn more about the Lower Yakima Valley Groundwater Management Area, the Groundwater Advisory Committee, and its goals and objectives, please see the Lower Yakima Valley Groundwater Management Area on the County webpage at: <http://www.yakimacounty.us/gwma/>

For more information about the meeting, please contact Lisa Freund, Yakima County Public Services Administrative Manager at 574-2300.

If you are a person with a disability who needs any accommodation in order to participate in this program, you may be entitled to receive certain assistance at no cost to you. Please contact the ADA Coordinator at Yakima County no later than five (5) working days prior to the date service is needed.

Yakima County ADA Coordinator  
128 N. 2nd Street, Room B27  
Yakima, WA 98901  
(509) 574-2210  
7-1-1 or 1-800-833-6384  
(Washington Relay Services for deaf and hard of hearing)

Dated this Thursday, August 4,  
2016

Publish: DAILY SUN NEWS  
August 10, 2016

## **[Education and Public Outreach]**

### **Charge from Groundwater Management Area Advisory Committee**

#### **Working Group Members**

Andres Cervantes (GWAC-DOH), Jean Mendoza (GWAC-Friends of Toppenish Creek), Elizabeth Torres (Citizen), Gretchen Stewart (EPA), Nieves Negrete (Citizen), Patricia Newhouse (GWAC-Citizen Rep Position #2), Joye Redfield-Wilder (Ecology), Stuart Turner (GWAC-Turner & Co), Ignacio Marquez (AGR), Jessica Black (GWAC); Lisa Freund (Yakima County-Chair)

#### **Meetings/Calls Dates**

Meeting: Wednesday, July 6, 2016 from 1:30 p.m. to 3:30 p.m.

#### **Participants**

Lisa Freund (Chair-Yakima County), Jean Mendoza (GWAC-Friends of Toppenish Creek), Patricia Newhouse (GWAC-Citizen Rep Position #2), Joye Redfield-Wilder (Ecology), Jessica Black (GWAC), Lisa Freund (Yakima County), Karri Espinoza (Yakima County), \*Andres Cervantes (GWAC-DOH)

\*Via phone

#### **Key Discussion Points**

The meeting was called to order at 1:30 p.m. Lisa reviewed the agenda, no additional items were added.

#### **Mabton Health Fair**

Pat, Andy, and Ginny Prest hosted the GWMA booth at the Mabton Health Fair on June 18. The outdoor event had low attendance due to rainy weather. Although the event was scheduled to begin at noon, the community-days parade finished early and people started arriving at 11:30 AM before all the volunteers were on site. It was suggested that volunteers plan to arrive 30 minutes prior to an event. County staff will also be briefed on distributing the well testing kits and materials. It was estimated that approximately 50 people visited the booth and approximately 20 well testing kits were distributed. Some community surveys were filled out. Pat stated that it was nice to have coloring sheets and crayons to give the children to keep them occupied.

Nuestra Casa offered to take testing kits to the homes they visit and have the residents test their well water. The Yakama Nation invited EPO to set up the booth at their Health Fair on June 29<sup>th</sup>. However, when Pat contacted the Nation for details, she was told the Health Fair was an Alcohol Symposium, not a health fair.

It was suggested that a list of the certified labs be distributed with the test kits and talking points (instructions) made available to volunteers regarding well testing. Also, purchasing a hand cart to help haul things to and from the cars and booth would be helpful.

**Upcoming fairs and call for volunteers:** The next Health Fair is Sunday, July 17 in Zillah. Sue Wedam, Pat Newhouse and Dean Effler have signed up to staff the booth. Andy Cervantes and Jim Davenport will attend the Saturday, August 6<sup>th</sup> Health Fair at Radio KDNA and on Sunday August 7<sup>th</sup>, Ignacio Marquez will attend the Toppenish Health Fair. One more volunteer is needed to assist at the Toppenish fair. Pat invited members who had not yet volunteered to sign up for a health fair. The sign-up sheet was circulated to the members present.

### EPO Billboard Proposal

The ad hoc committee presented its billboard proposal. Five billboards in the GWMA (Sunnyside and Grandview) have been identified for the proposed “test your well” campaign. Several different proposals with the price list, and a map with the billboard locations, had been distributed to the group prior to the meeting. The ad hoc committee asked the group to review the proposals and to reach a decision regarding whether to recommend this outreach vehicle to the GWAC (or not).

A lengthy discussion ensued regarding the purpose, messaging and timeliness of a billboard campaign. A concern was expressed that a billboard campaign could be taken in a negative light, given EPA's recent political fallout to its “What's Upstream” campaign. While the majority of members present supported the concept, the group agreed that billboard mockups would be useful for members to reach a decision regarding its recommendation to the GWAC.

**ACTION: Members will be sent several mockups and asked to reply with their text and content revisions. A revised billboard schedule and budget will also be prepared for the group's review and response.**

Members were asked to reply timely to the mockups and modified budget in order to be prepared for the GWAC's August meeting. The table below summarizes two members' questions and the answers:

<u>What Is Our Campaign Message?</u>	<u>Concerns:</u>	<u>What are the GWAC's Outreach Goals?</u>
“Test your well” “Be sure your drinking water is safe” Test your well	<ul style="list-style-type: none"><li>• Political Fall Out</li><li>• Is the timing right given EPA's recent campaign?</li></ul>	<ul style="list-style-type: none"><li>• Prevention</li><li>• Protection</li><li>• Participation</li></ul>

	<ul style="list-style-type: none"><li>• Are we spending taxpayer \$ “just to spend it”?</li><li>• How does a billboard campaign inform/support the bigger GWMA program?</li></ul>	
<b><u>What about the website on the billboard?</u></b> <ul style="list-style-type: none"><li>• GWAC website, with link(s) to YHD website or build GWMA page with contact info</li></ul>	<b>Who will be the contact listed on the billboards?</b> <ul style="list-style-type: none"><li>• Yakima County Public Services - 509-574-2300</li></ul>	

**ACTIONS:**

Lisa will find out if the prices that were provided for the billboards are for single sided or double sided and if both sides are available for the dates provided. She will work with Pat to modify the billboard schedule.

Lisa will have the mock-ups for the billboards created and will distribute it to the group via-email along with the list of location and prices.

Members will return their edits to the mockups and the revised proposal.

**National Protect Your Groundwater Day - September 6, 2016**

A suggestion was made that the Yakima Health District and other agencies be contacted to find out if they have campaigns related to this event. No decisions were reached.

**GWAC Call for Legislative Proposals**

Due to lack of time, limited discussion took place. Lisa invited the group to submit outreach proposals to her no later than Thursday, August 4. Proposals must be “GWAC Ready”: clearly defined, state the benefit to the GWMA program, and include a proposed budget. Proposals must also be reviewed and agreed to by the EPO before forwarding to the GWAC.

Due to vacation schedules, the next EPO meeting is scheduled for Wednesday, September 7, 2016

The meeting adjourned at 3:30 pm.

**Resources Requested**

**None**

---

**Deliverables/Products Status**

Billboard Proposal-

- Lisa will work with the photographer to develop several billboard mock-ups
- Pat and Lisa will develop a modified proposal (location and pricing) based on today's discussion.
- Both the mock-ups and the revised proposal will be circulated to members for text, graphic and layout edits.
- Members will return their edits to the mockups and the revised proposal no later than Thursday, August 4.

---

**Proposed Next Steps**

---

1. Reach a final decision regarding whether to propose a billboard campaign to the GWAC at its August meeting.
2. If the group agrees to proceed, reach a decision regarding the text, layout, budget and campaign schedule proposal by August 4, 2016.
3. Members are invited to submit detailed "GWAC Ready" outreach legislative proposals for the EPO's consideration no later than August 4, 2016.

## Irrigated Ag Working Group (IAWG)

### Charge from Groundwater Management Area Advisory Committee

---

#### **Working Group Members**

---

Dr. Troy Peters (GWAC-WSU); Bob Stevens (interested party) Bud Rogers (GWAC-Citizen), Chelsea Durfey (GWAC), Dan McCarty (interested party), Dave Cowan (interested party), Dave Fraser (Interested Party - Simplot Agronomist), Donald Jameson (interested party), Doug Simpson (GWAC-Farmer), Frank Lyall (GWAC-Farm Bureau), Ginny Prest (GWAC-Dept. of Ag), Jean Mendoza (GWAC-Friends of Toppenish Creek), Jim Newhouse (GWAC), Kevin Lindsey (interested party), Kirk Cook (GWAC-WSDA), Laurie Crowe (GWAC-South Yakima Conservation District), Melanie Redding (Ecology), Mike Shuttleworth (interested party), Ralph Fisher (EPA), Ron Cowin (GWAC-SVID), Scott Stephen (interested party), Stuart Turner (GWAC-Turner & Co.), Tom Tebb (GWAC-Department of Ecology), Rosario Brambila (interested party), Vern Redifer, Jim Davenport.

#### **Meetings/Calls Dates**

---

Meeting: Sunnyside Valley Irrigation District Office, 120 S. Eleventh Street, Sunnyside

When: July 19, 2016, from 1:30 pm to 3:30 pm.

Call: (509) 574-2353 – Pin # 2353

#### **Participants**

---

Troy Peters (Chair), Vern Redifer, Dan McCarty, Anthony Dorsett, Kathleen Rogers, Frank Lyall, Doug Simpson, Jim Davenport, Ron Cowin, Paul Stoker\*, Chris Saunders (Yakima County Support Staff)

\*via telephone

#### **Key Discussion Points**

---

Chair Troy Peters convened the meeting at 1:45pm. Paul Stoker, former executive director of the [Columbia Basin GWMA \(CBGWMA\)](#), joined the group by phone. After the customary introductions, Troy asked Paul to give a background sketch of his experience heading up the organization, which nitrate mitigation projects worked for them, and how they decided to do what they did.

Paul began by describing the local mood 20 years ago. The CBGWMA was formed in 1998, growing out of controversy surrounding a [1995 USGS report](#) on nitrate contamination in the Central Columbian Plateau, containing Adams, Douglas, Franklin, Grant, Lincoln, Whitman, and parts of Spokane and Latah (Idaho) Counties. The report concluded that the main source of nitrates in the groundwater were agricultural fertilizers.

There was a great deal of suspicion and mistrust in the air when the CBGWMA, initially comprising Adams, Franklin, and Grant Counties, (and later including Lincoln County), was set up. Roughly 2,000 people participated in the process. One of the earliest ground rules was that only local residents could be voting members of the GWAC and its working groups. State and federal employees could attend meetings and offer their perspectives, but were not allowed to cast votes or make decisions. (They are listed as “technical advisors” on the [CBGWMA’s organizational chart](#).) Paul said this helped build political support for the CBGWMA’s activities among the populace, and did not appear to harm relations with government entities.

The CBGWMA was structured similarly to the Yakima GWMA. Adams, Franklin, and Grant Counties were the lead agencies. A central GWAC set the overall policy direction and approved projects from five working groups: 1) Irrigated & Dryland Agriculture, 2) Sprayfields & Wastewater, 3) Dairy, Feedlots & Cattlemen, 4) Environment & Recreation, and 5) Urban & Rural Residential. The Irrigated & Dryland Agriculture group had 50 voting members at one point.

The process for choosing mitigation projects began at the working group level, where any and all suggestions would be recorded, some of which were more feasible than others. The full 700-page list of every suggestion was given to the Department of Ecology (DOE), and is presumably in a filing cabinet somewhere. The GWAC would then take the top three ideas from all five working groups, making 15 total, and seek funding for the individual projects as the opportunities arose. This list was also given to DOE and is possibly still in CBGWMA’s possession as well, although it’s not readily available on their website. The dollars were brought in through legislative mandate with no agency matching funds required. Paul spent a lot of time in Olympia and Washington, D.C. meeting with legislators and lining up funds. The key factor in getting money was having the support of the local population.

In addition to the five items listed on page 4 of the [June 28<sup>th</sup> meeting summary](#), some of the projects that received funding were a one-year “blue baby” study in partnership with the Centers for Disease Control in Atlanta, Georgia. Nurses would travel to people’s homes in shallow-well areas with large migrant populations and test the water and the babies. They discovered that almost all the households were already avoiding the tap water and drinking bottled water instead, with virtually no babies with blue baby syndrome.

GIS mapping the area’s hydrology became a huge project that took years to complete. This project had its roots in feedback the GWAC had received from DOE. Many people with technical backgrounds on the working groups had good ideas, but were advised that because they didn’t know where the recharge water was being recharged from, they wouldn’t know if their solutions were having any effect. Very little data on nitrates traveling through high-recharge areas existed at the time, so the CBGWMA undertook a long mapping process to learn more about hydrology and why there were more nitrates in some areas than others.

The CBGWMA also set up a well-monitoring program. Out of 15,000 wells in the four-county area, they monitored approximately 500 wells of which they had detailed histories, and where GIS could pinpoint their locations. In 2005, USGS published a [report](#) concluding that between 1998 and 2002, there had been a statistically-significant decline in nitrate concentrations in the most highly-contaminated wells in Adams and Franklin Counties. Paul stated that the Columbia Basin was the only area in the country that had seen a statistically significant decline in nitrate levels.

Proximity to a body of surface water was the most common correlation between high and low levels of nitrates. If a well was located near a large irrigation ditch, for example, there would be lower nitrate levels. If a well was far away from surface water, there would be high nitrates. Jim Davenport asked whether proximity to surface water wouldn't just move the nitrates elsewhere. Paul responded that groundwater is always moving somewhere, the questions are where and why. The Columbia Basin has porous soil, and heavier nitrate areas also drain into it.

The Deep Soil Sampling effort described in the [June IAWG meeting](#) was carried out by the local Conservation Districts (CDs), which had preexisting relationships and a level of trust with farmers in the area. The CDs would offer free soil sampling 10 feet deep, and reveal to the farmer their level of nitrate contamination. Some of the more outspoken farm leaders volunteered to have their fields tested first. When the results came back low, they would tell their neighbors about it, and then their neighbors would volunteer. As word of mouth spread, they eventually tested hundreds of farmers' fields over four years. The highest result they found was 1,900 pounds of nitrates in the top 10 feet of soil. The lowest results were found in the orchards.

The deep soil sampling was a precursor to the Irrigation Water Management Cost-Share Program, also previously discussed during the June IAWG meeting. The program ran for five years, with 2006 being their last year of funding. There was a 10-point checklist that farmers had to meet to get the subsidy at the end of the year. They would prove farmers had followed the checklist by installing probes at one foot, two feet, three feet of soil, etc., and carry on season-long moisture-counting. The key was the third foot. If there was no significant increase in nitrates for the entire year, you could be pretty confident there were no leachates. If there was a significant increase, you could be confident that human activities on the surface were having an impact. It became a very consultant-driven process, with the consultant writing up the end-of-year documents, the farmer delivering them, the CBGWMA reimbursing the farmer, and the farmer paying the consultant. Ultimately, it became clear that over-watering your fields was not a good business practice. The money for ongoing operations came from state and federal sources, although these sources got cut off once it became clear there was no local match. Of all the programs the CBGWMA pursued, the Irrigation Cost-Share program was the most expensive.

The Water on Wheels (WOW) program is still functioning in Franklin County, and has been very well-received in schools. Oftentimes the truck would be staffed by teachers seeking work. Lessons would often be fun, with WOW teachers sometimes using squirt guns to explain the process of water permeating soil layers to children.

Paul attributed several positive legacy effects to the efforts of the CBGWMA. Potato farmers changed water management practices. Local agencies and the fertilizer industry became more sensitive to nitrates. People paid more attention to their drinking water systems. But the bottom line is that after all of the programs pursued by the CBGWMA, there is still a nitrate contamination problem in the four-county area. In its later years, the CBGWMA lost momentum as the nitrate problem disappeared from the headlines.

Beyond WOW, Troy asked about the effectiveness of education and public outreach (EPO) efforts in the Columbia Basin, the approach favored by many members of the Yakima Irrigated Ag Work Group. The CBGWMA would do presentations at trade shows, and communicate with ag consultants about best management practices. These had positive effects in getting farmers to

change practices. Of all the different sectors of the Columbia Basin ag economy, the dairies were the hardest to convince to change. Troy observed that dairies are a much bigger component of the ag economy in the Lower Yakima Valley than in the Columbia Basin, and asked for any ideas on how to deal with that. Paul observed that in the dairy industry, as in all walks of life, there are good actors and bad actors. In his view, EPO is effective with the good actors, and ineffective with the bad actors, and the only way to get a bad actor to do good is for someone to hold a hammer over them. Paul stated that if he was working for DOE or the EPA, he would look for a regulatory mechanism. Jim Davenport asked if he had observed any correlation between good actors and bad actors and the size of the dairy operation. Paul said not really. While it was hard to speculate on all the factors that come into play for every farmer, the most likely difference between dairies and other forms of agriculture is that nitrate contamination has a greater negative impact on non-dairy operations, giving them greater incentive to be concerned about it.

Troy thanked Paul for his presentation. Paul signed off at this point in the meeting.

Troy asked the group for comments on what they had heard. Jim was glad to have heard more details about how the Irrigation Water Management program had worked. Troy was interested in the role of communication between consultants in changing management practices. Other members began thinking of additional questions, such as the total budget for the CBGWMA over its course of operations. Vern had heard \$20 million as a possible figure. Members discussed the cost/benefit ratio, with some being wary of spending a large amount of money for a relatively small amount of mitigation, and others stating that groundwater mitigation is a very slow process (23 years before noticeable effects in the Umatilla Basin), and that the important thing was to start getting things moving in the right direction.

Discussion ensued on the effects of weather and market conditions in affecting nitrate levels. A member stated that the Landau presentation at the June IAWG meeting didn't show nitrates below the root zone, indicating that crops were in-taking nitrogen, and that this hadn't changed over the dry winter of 2014/15. In the member's view, there was no indication that a shortage of water had changed anything, and that low commodity prices combined with a floor on the fixed cost of fertilizer would lead to less nitrates being applied. Asked for clarification, the member stated that as the price of oil goes down, the cost of commercial nitrogen also goes down, leading to diminished profitability in manufacturing nitrogen-rich products, leading to a decline in commercial nitrogen production. Hence, less application of nitrogen-rich products on fields.

Jim asked the group if everyone wanted to see the 700-page list and/or the top-priority list of 15 items. Several members said yes.

Vern observed that the CBGWMA had been defunded after staying in business for at least 15 years, while the Yakima GWMA expires in December 2017. The Yakima GWMA has at least one advantage, in Vern's view, in that USGS has done a lot of work charting groundwater flow in the Lower Valley, and we generally know which way the water is moving.

Vern referred to the Residential, Commercial, Industrial, and Municipal working group meeting, held the day before. There are approximately 6,400 residential dwellings in the GWMA on septic systems, so presumably there would be a similar number on private wells. On the wells tested by the GWMA so far, about 12% sampled high (>10mg/L). The EPA had found 18% testing high in

their efforts, although they had gone about it purposely looking for high results. Information is incomplete regarding all the wells in the GWMA regarding depth and exact locations, which were drawn up before GIS systems, and are plotted on quarter-by-quarter plat maps. If there was more than one well in any given section, it would be difficult to match up the existing data. The estimated cost of drilling everyone new 1,500-feet wells would be about \$12 million. Members cautioned that at that price tag, you would certainly want to share the costs with other entities, and with many parts of Eastern Washington depopulating, and farms consolidating, it wouldn't necessarily be cost-effective to offer new well-drilling on all farm properties.

With the meeting winding down, Jim Davenport stated that while the group had identified its most desirable approaches, it still had no idea of the curriculum or cost. Vern stated that the group is still in the process of moving from the general to the specific, and when things get specific, there will be a better idea of the costs. A member observed that the political and economic situation today is much different than in the late '90s and 2000s, in such a way that funding for these types of projects at the state and local level would be harder to come by.

Troy asked the group whether they would like to invite Paul Stoker to make a presentation before the GWAC. Members felt that it would be premature to invite him before they had fleshed out more details on what nitrate mitigation measures they wanted to recommend. Troy ended the meeting by noting the CBGWMA's method of letting everyone submit ideas to the project list, and suggested this should be a model and attitude to emulate.

The meeting adjourned at 3:40pm.

### **Recommendations for GWAC**

#### **Resources Requested**

Jim Davenport will attempt to procure the approximately 700-page list of every proposal made at the CBGWMA working group meetings, currently believed to be in the Department of Ecology's possession, as well as the top 15 items on the GWAC's priority list.

#### **Deliverables/Products Status**

#### **Proposed Next Steps**

## Irrigated Ag Working Group (IAWG)

### Charge from Groundwater Management Area Advisory Committee

#### Working Group Members

Dr. Troy Peters (GWAC-WSU); Bob Stevens (interested party) Bud Rogers (GWAC-Citizen), Chelsea Durfey (GWAC), Dan McCarty (interested party), Dave Cowan (interested party), Dave Fraser (Interested Party - Simplot Agronomist), Donald Jameson (interested party), Doug Simpson (GWAC-Farmer), Frank Lyall (GWAC-Farm Bureau), Ginny Prest (GWAC-Dept. of Ag), Jean Mendoza (GWAC-Friends of Toppenish Creek), Jim Newhouse (GWAC), Kevin Lindsey (interested party), Kirk Cook (GWAC-WSDA), Laurie Crowe (GWAC-South Yakima Conservation District), Melanie Redding (Ecology), Mike Shuttleworth (interested party), Ralph Fisher (EPA), Ron Cowin (GWAC-SVID), Scott Stephen (interested party), Stuart Turner (GWAC-Turner & Co.), Tom Tebb (GWAC-Department of Ecology), Rosario Brambila (interested party), Vern Redifer, Jim Davenport.

#### Meetings/Calls Dates

Meeting: Sunnyside Valley Irrigation District Office, 120 S. Eleventh Street, Sunnyside

When: September 27, 2016, from 1:30 pm to 3:30 pm.

Call: (509) 574-2353 – Pin # 2353

#### Participants

Troy Peters (Chair), Vern Redifer, Kathleen Rogers, Frank Lyall, Doug Simpson, Ginny Prest, Stu Turner, Perry Beale, Jean Mendoza, Scott Stephen, Laurie Crowe, \* and Bobbie Brady(Yakima County Support Staff) \*via telephone

#### Key Discussion Points

Chair Troy Peters opened the meeting and stated his goal was to receive the presentation from the Regulatory Framework Working Group (Regulatory) and discuss ideas and solutions. One member desired to discuss how to bring the commercial fertilizer industry to the meetings to learn more about their current practices in comparison to practices common five or ten years ago since it is a source of nitrate contribution. A member agreed. Another member pointed out that they had participated early on in the GWAC discussions.

Regulatory Framework Working Group (Regulatory) Presentation: Jean began by reading the group's purpose statement from the "Analysis of Regulatory Statutes, Voluntary Incentives and Regulatory Assistance Programs Lower Yakima Valley GWMA Regulatory Work Group – August, 2016" which had been provided to the group and included Ginny's comments. She noted that it was the responsibility of the Irrigated Ag Working Group (IAWG) to recommend changes or

identify gaps/weaknesses that need improvement as they pertain to irrigated agriculture which would include the application of manures and synthetic fertilizers to agricultural lands.

In items 1 and 2 (EPA under the Safe Drinking Water Act – groundwater and EPA under the Clean Water Act - surface water) Jean noted that the Environmental Protection Agency (EPA) directs the Department of Ecology (Ecology) as to how to regulate the waters of the State and EPA has the power to withhold funding. Jean stated that the Clean Water Act is effective as it pertains to point source pollution, but non-point source pollution has not been as effective. The State of Washington is working on a regulating plan for non-point source pollution but is unhappy with the agriculture portion.

No. 3 (Ecology under RCW 90.48 Water Pollution Control and WAC 173-200. WA Department of Health under RCW 43.20). Jean said these were carrot types of regulation. A discussion ensued about EPA's requirement for Ecology to develop BMP's for non-point source pollution. Vern wanted to know if EPA gave Ecology a deadline as the task is similar to what this group is doing. Jean and Ginny could not remember the deadline but Ginny will follow up on this. Ginny noted that ag in particular doesn't want mandatory BMP's because they are not site specific whereas the NRCS is. Another member agreed that all BMP's are not effective for all operators as some are seasonal, some specific to soil and crop types, and would like to see the NRCS utilized instead.

No. 4 a (Ecology discharge permitting under WAC 173-0216). David Bowen from Ecology provided the group with a status update (emailed to the group the previous day) on the Draft CAFO General Permit. A member said that he believed that Ecology promised to have the permit out by the end of the year.

Jean believed that everyone was familiar with 4b, 5 and 6 and moved on to No. 7 (Washington State Department of Agriculture (WSDA) Dairy Nutrient Management Program (DNMP)) which Ginny Prest from the WSDA was present to discuss. The group had already received her comments on this section (which had been updated from the time of the last Regulatory meeting). In addition, Ginny brought a copy of an inspection report. Ginny explained that WSDA relies on the record-keeping piece which includes soil samples and information on land application. She reiterated that while the DNMP is not enforceable, if an issue is identified during the inspection process, the DNMP does have enforcement options. Ginny added the caveat that their current soil test is only for the top foot which she explained was the common practice at the point it was implemented. She went on to say the CAFO permit currently under consideration samples at two feet. Troy asked how long the WSDA had been working with the DNMP. A member explained that it came to the WSDA in 2003 and took about three years to get up and organized. Troy asked if Ginny had any evidence that the DNMPs have made an impact. Ginny referred him to page 4 of the sample inspection report and added that she had seen operators make changes to their land balance and even decreased the number of cows in their operation in response. Another member commented that the EPA's presence and environmental groups like Jean's caused producers to change their practices as well.

Troy then asked what could be done if someone refused to change. Ginny responded and said there is an annual record-keeping cap in RCW 90.64 of \$5,000 and only one violation has been issued in the Yakima Valley. A member asked Ginny the cost per acre for her to administer the program. Ginny said that the dairies bear the cost of sampling and the State general fund bears

the cost of Ginny's group (she has four personnel across the State – one of whom is in eastern Washington). Troy asked what it cost a dairy to write their annual nutrient plans and do testing. Another member responded and said approximately \$5,000 for a smaller dairy and \$45-50,000 for a larger dairy. They believed that number would go up because regulations continue to increase. Ginny expressed her opinion that all of the tools for dairies to do a great job exist and the problem is implementation. Other members agreed and said that application of the NRCS works as well. Ginny believes that cost and education are the two greatest priorities. Jean voiced that Ecology doesn't have sufficient staff for oversight as well.

Troy asked another member if he saw a way for the public sector to strengthen incentives to do a better job at nutrient/water management. He responded and said that when the cost of fertilizers is low, then the use of fertilizers increase, but when the cost is high, less is spent on nutrients. Troy noted that the government had implemented a tax on gas with the hope that high prices would decrease consumption and would make money available for associated costs. A member commented that if there was an increase in fees it would drive the smaller guys out. This concerned the members. Another member said that when a target number is issued it may work well for regulatory purposes, but it doesn't necessarily mean success as success can vary from field to field. However, consistent records over time can make for good decisions.

Jean noted that dairies have control over 28,000 acres in the Yakima Valley and the DNMP reviews land application records for those fields. She voiced a concern that there is therefore a large amount of additional acreage with no oversight. A member believed that producers self-regulate if they desire to grow a crop as they would limit the amount of nutrient applications or be subject to lower crop yields. Another member stated that producers are looking for a maximum economic yield and over-application would decrease the yield to the point of a declining return. Troy vocalized that he did not believe it would be good for the committee to come to the conclusion that "yeah, that's a hard problem, but not a good recommendation for the committee to make." Ginny added that everyone has an interest but she wasn't hearing the group come up with solutions. Another member believed the solution is embodied in the education and outreach efforts by groups like WSU, the Conservation District and WSDA. Others agreed. A member desired that the commercial fertilizer groups be brought back into the meetings to be a part of the process.

At this point Troy began to summarize the solutions he was hearing. The following represents solutions previously discussed at other meetings (per the recommendation by Kathleen Rogers to include the group's May 17 list) and solutions raised during the meeting. Troy included those items he believed had already received universal support by the working group under "Recommendations for GWAC" found below and while they may need cost estimates and implementation details, those things can be worked out after the GWAC supports moving forward on each particular item. The items below represent ideas discussed that NOT everybody supports:

1. Dilution through artificial recharge using SVID and Roza canals during the winter.
2. Additional regulations (these can be effective, but can have large negative economic impacts to farmers).
  - Limits on time and amounts and also database tracking of what, how much, and when it is applied (Jean said this many times).

3. Well monitoring program.
4. Irrigation districts require nutrient management for water delivery.
5. Establish aquifer protection area (property tax) to fund these programs.
6. Tax commercial fertilizers – raises costs of nitrogen and increases the incentives to conserve and the demand and economic drivers to transport CAFO manure. Use funds for nutrient and water management incentives. (Growers hate this).
7. A 10 year study of various nutrient management scenarios.

Troy also began summarizing guiding principles the group agreed on:

1. There are various regulatory vehicles that exist on CAFO's that are effective at an expense to the State and regressively expensive to growers. The targets that are used are somewhat arbitrary and oftentimes more cumbersome.
2. It is possible to effect change by regulation but that may not be the most effective route and will cause collateral damage.
3. Policies and regulations could be added to those already in place, but may not be necessary and the existing policies and regulations "need time to cook."
4. Solutions must consider the economic impact to the grower.
5. Agriculture is complex and highly variable and is affected by a large number of variables. This must be taken into account.

Jean noted that she had not been able to complete her presentation which included information about atmospheric deposition. This was important as atmospheric deposition will be left to the Irrigated Ag group to deal with. Jean added that the group had agreed its contribution was 4 percent but Jean believed the number is higher. However, both Vern and Perry Beale pointed out that the number was derived from the experts at Ecology.

Troy said that the group would continue to discuss options at its next meeting and adjourned at 3:40 pm.

### **Recommendations for GWAC**

1. IAWG fully endorses support for increased education and outreach (ideas include Water on Wheels or mobile irrigation lab).
2. Cost share or help with soil sampling and nutrient management.
3. Cost share for irrigation scheduling to limit deep percolation (may include soil moisture sensors).
4. Encourage NRCS to focus their funding on nutrient and water management in the valley.

### **Resources Requested**

### **Deliverables/Products Status**

### **Proposed Next Steps**

Ginny will follow up and find out the deadline EPA gave to Ecology to develop BMP's for non-point source pollution.

## Data Collection, Characterization, Monitoring

### Charge from Groundwater Management Area Advisory Committee

#### Working Group Members

---

Melanie Redding (Chair); Andres Cervantes; Bob Stevens; Charles (Pony) Ellingson; David Bowen; Chelsea Durfey; Dave Cowan; Donald Brown; Doug Simpson; Elizabeth Sanchez; Eric Winiecki; Frank Lyall; Ginny Stern; Jaclyn Hancock; Jan Whitefoot; Jean Mendoza, Jennifer MacDonald; John Van Wingerden, Kevin Lindsey; Laurie Crowe; Lino Guerra; Mike Shuttleworth; Ralph Fisher; René Fuentes; Robert Farrell; Ron Cowin, Scott Stephen; Sheila Fleming; Steve Swope; Stuart Turner; Dr. Troy Peters

#### Meetings/Calls Dates

---

Meeting: Wednesday, July 13, 2016, 1:00-3:00 PM

Call Number: 509-574-2353 pin: 2353#

#### Participants

---

Present: Melanie Redding (Chair), Jean Mendoza, Steve George, Jim Davenport, David Bowen, Matt Bachmann, Andy Long (USGS), Sandy Braden (FOTC), Cindy Kozma, Vern Redifer, Gary Bahr\*, Ginny Stern\*, Laurie Crowe\*, Pony Ellingson\*, Steve Swope\*, Chris Saunders (County Support Staff)

\*via phone

#### Key Discussion Points

---

The meeting convened at 1:00pm. Members made the customary introductions.

**Particle Tracking Model Overview:** Matt Bachmann from the U.S. Geological Survey presented the group with a PowerPoint summary of his report, “Particle Tracking for Selected Groundwater Wells in the Lower Yakima River Basin”, [<http://pubs.usgs.gov/sir/2015/5149/sir20155149.pdf>] published on October 21<sup>st</sup>, 2015. The report was a follow-up to a 2011 joint effort between USGS, DOE, the Bureau of Reclamation, and the Yakama Nation, “Numerical Simulation of Groundwater Flow for the Yakima River Basin Aquifer System”, [<http://pubs.usgs.gov/sir/2011/5155/pdf/sir20115155.pdf>]. The two reports were an attempt to trace the direction and velocity of groundwater flow in the Yakima River Basin from October 1959 to 2001.

The fourth slide lays out the dimensions of the model. Each cell is 1,000 x 1,000 feet, approximately the same size as some farm fields. Slide 6 shows the grid overlaid on satellite photo of the Yakima Area Arboretum. If two fields share a cell, there are limits on what the model can project for any specific field.

USGS pulled every well log in the Lower Yakima Basin. They looked at where the molecules in the wells came from using the 2011 groundwater flow model, and a reverse particle tracking program called MODPATH-2000, to predict the recharge areas contributing water to the specific well locations with a particular cell or cells. A member of the group asked how far in the future this framework would still be valid. Matt replied that while the Lower Yakima Basin's groundwater system had probably changed a little bit between 2001 and 2015, it likely would not have seen any great changes, since not many new wells have been added in that period of time.

Slide 8 depicts a relief map of the Lower Valley, with 121 green dots representing groundwater samples with nitrate concentrations exceeding 10 mg/liter. The dots were generalized to within 1,000 feet of their true locations in order to protect people's privacy. Most of the dots are located north of Sunnyside and Granger, with another cluster south and east of Mabton.

Slide 9 depicts the same relief map as the previous slide, with fields of red dots portraying the aquifer recharge area for all 121 contaminated wells. What this means according to the model is that if you own property in the red area, you contributed water to the wells. The nitrates could still have been contributed from outside the area.

Slide 10 laid out "What we didn't do" in the USGS report:

- Generate a nitrate budget
  - No nitrate concentrations simulated
  - No nitrate attenuation
  - No physical dispersion or spreading of plumes
  - Determine relative importance of nitrate sources
- Analyze land uses
  - No satellite photos
  - No comparisons of various nitrate sources
- Simulate the vadose zone
  - Assumed instantaneous delivery to water table
  - Assumed only vertical migration in unsaturated sediments

Slide 11 laid out "What we DID do."

- Estimate travel times
  - Median of less than 3 years
- Document groundwater flow directions
  - Towards the river in most cases
  - Highlights the importance of flow barriers
- Relate recharge area to depth of well
  - Shallow wells draw from small nearby areas
  - Deeper wells draw from larger areas, farther away

- Address limitation of EPA analysis
  - Provides an explicit accounting of groundwater motion
- Provide a tool
  - Allows anyone to simulate the recharge area of their well

The projected median travel time of three years could vary by a factor of ten based on the porosity and depth of the soil the water is traveling through. The shortest travel time for a particle to reach a well was 19 days. Some were still traveling after the 42 years of the study.

Slides 12 and 13 depict the erratic courses that particles can travel. In Slide 12, an anticlinal ridge acts as a hydrologic flow barrier that diverts groundwater flow. Slide 13 depicts how areas with high recharge rates influenced by seasonal irrigation can cause particles to follow a crooked, and in some cases, looping path. A group member contended that irrigation would play less of a factor in affecting groundwater flow than the water that goes into canals, especially after technological changes over the last decade. Matt agreed that canals contribute to altering groundwater flow, and that “human impact” was the best way to talk about it. Another member asked if this model could account for variables in this respect. For example, if we assume that all the canals are lined, would the model show the particles traveling a different path? Matt replied that the model would tell you what it thinks would happen. Jim Davenport asked whether the green cell on Slide 13 represented one well, or many. Matt clarified that it represented at least one well, and potentially more. Each cell contains 27 dots, representing particle flow based on depth. If you plug in a specific well, you can get a more exact path.

Slide 14 illustrates two different ways of defining a recharge area. The map on the left highlights in red the cells in which water particles originate before traveling to a well. The map on the right highlights the cells in which the particles originate, plus all the cells they traverse in their journey. It is possible that human activities in the traverse zone contribute towards elevated nitrate levels. Vern stated that there are approximately 6,400 septic tanks in the GWMA, and that the entire GWMA would be colored red using the map on the right.

Slide 15 showed examples of what happens when you have a dense cluster of wells. It becomes visually confusing for a person to track all of the overlapping particle tracks.

Slide 16, “Adding new wells”, contains a screen shot of a text file containing starting locations for all particles. The software for running this file can be installed from USGS.

Slide 17 listed the complications of applying the results of the USGS study:

- Technical Limitations
  - Well depth picks are inferred, not measured
  - Screened intervals are unknown (assumed one cell)
  - Model resolution is relatively coarse (1,000 ft)
  - Tracking is only for 42 years, ends in 2001
  - S properties are poorly constrained

- Legal sensitivities
  - Generalized locations of contaminated wells were released
  - Study was classified as “Influential Scientific Information”, thus requiring additional levels of review
  - Ongoing litigation may attempt to re-interpret USGS results

Slide 18 was labeled “What’s Next”

- Potential Future Work
  - Quantify nitrate budget in GWMA and surrounding areas
  - Measure seasonal nitrate area loading rates and sources
  - Measure natural nitrate breakdown rates during transport
  - Simulate nitrate transport in groundwater including breakdown
- Potential Model Uses
  - Estimate relative contributions from various sources
    - By area or to individual wells
  - Identify areas that have potential to accept more nitrogen loading
  - Assess impacts of current nitrate loading rates
  - Assess impacts of proposed mitigation strategies
  - Safely manage manure and fertilizer application rates

Slide 19 returned to the first relief map, and illustrated what the Lower Valley looked like when the particle flows for all 121 contaminated wells were shown. Jim Davenport remarked that all the overlapping colored lines made it look like a Jackson Pollock painting.

Discussion ensued on how different tracking models could contribute to the GWMA’s efforts. Matt had talked with people in the GWMA about combining the MT3D MODFLOW software application to the vadose zone, where most of the nitrates would likely be applied. USGS would like to use each known location of high nitrate contamination in the vadose zone and compare to the model. Matt could differentiate between potential nitrate sources by taking all applications of nitrates, layering them on top of each other, and then subtracting given sources. The model could be applied looking backwards, as well as making predictions going forward. Some members expressed reservations about the usefulness of models, since the potential always exists for people to see generalized estimates, and take them as gospel.

**Nitrogen Loading Assessment – Status Update:** Gary Bahr informed the group that WSDA had received the RCIM chapter from Vern. The Irrigated Ag chapter had been completed. They were finishing up work on Livestock/CAFO, going over GIS layers as to lagoon locations so as to identify dairy vs. non-dairy sources. It should be available for peer review by late July/early August.

**Ambient Groundwater Monitoring Network – Status Update:** Pacific Groundwater Group had submitted a draft report, which in Melanie’s view, had received a lot of good comments, some of which were outside the scope of the GWMA’s mission. PGG is in the process of revising the document.

**Other Monitoring Initiatives:** Melanie began by stating that there wasn't money in the GWMA budget to pay for long-term sampling and data analysis, and that other funding avenues would have to be pursued if the group felt they were necessary. Melanie asked the group what other initiatives they could pursue, and what people felt were important things to propose to the GWAC. Jim felt that the GWAC was still on Chapter 1 with the ambient monitoring, and needed to take any future work one chapter at a time. Vern noted that the GWAC's mandate expires in December 2017, and that there isn't enough time left to pursue every idea. A member suggested finding a list of what other GWMA's had done, and if replicable, pursue those strategies. Steve Swope stated that PGG has a document from two or three years ago looking at what other GWMA's had done. Matt stated that USGS maintains some monitoring networks and invited Vern to contact him about acquiring the relevant documents.

Members disagreed on the relative importance of monitoring the effectiveness of BMPs. Some felt that since we already have data from existing BMPs, and that any monitoring would be *post hoc*, that it should not be a high priority. Other members saw it as likely that the GWAC would push for new and improved BMPs, and that if the public was going to buy in – whether in the area of RCIM, Irrigated Ag, or Livestock/CAFO – they would need to see how it will affect them personally.

Monitoring nitrate "hotspots" through deep soil sampling emerged as a topic of discussion. Some members felt that keeping track of CAFOs and non-dairy spots to characterize whether they were the worse source areas was where the GWMA's limited dollars should go. Others questioned what the nature of the end goal was supposed to be: identifying high nitrates in all groundwater, identifying high nitrates that pose a high public health risk, promoting more sustainable agricultural practices, or all of the above. Matt stated that USGS has old file logs for existing wells it can consult to see which ones were sampled. His organization could potentially assist in conducting groundwater monitoring with data the GWMA has compiled. Vern and Matt agreed to keep in touch about coming up with something to present to the GWAC at their next meeting.

The meeting adjourned at 3:15pm.

### **Resources Request**

#### **Recommendations for GWAC**

#### **Deliverables/Products Status**

#### **Proposed Next Steps**

---

Melanie will provide the group with the comments submitted to PGG's draft report on their ambient groundwater monitoring network, as well as PGG's responses.

Steve Swope will provide the group with a document PGG produced two or three years ago, looking at what various GWMA's did regarding monitoring wells.

Vern Redifer and Matt Bachmann will get in touch about procuring documents regarding USGS's groundwater monitoring programs. Matt will also provide the group with a ballpark estimate of how much it would cost for USGS to assist with groundwater monitoring so it can be presented at the August 18<sup>th</sup> GWAC meeting.

## Data Collection, Characterization, Monitoring

### Charge from Groundwater Management Area Advisory Committee

#### Working Group Members

Melanie Redding (Chair); Andres Cervantes; Bob Stevens; Charles (Pony) Ellingson; David Bowen; Chelsea Durfey; Dave Cowan; Donald Brown; Doug Simpson; Elizabeth Sanchez; Eric Winiecki; Frank Lyall; Ginny Stern; Jaclyn Hancock; Jan Whitefoot; Jean Mendoza, Jennifer MacDonald; John Van Wingerden, Kevin Lindsey; Laurie Crowe; Lino Guerra; Mike Shuttleworth; Ralph Fisher; René Fuentes; Robert Farrell; Ron Cowin, Scott Stephen; Sheila Fleming; Steve Swope; Stuart Turner; Dr. Troy Peters

#### Meetings/Calls Dates

Meeting: Wednesday, August 10, 2016, 1:00-3:00 PM

Call Number: 509-574-2353 pin: 2353#

#### Participants

Present: Ginny Stern (Acting Chair)\*, Jean Mendoza, Vern Redifer, Jim Davenport, Gary Bahr\*, Matt Bachmann\*, Pony Ellingson\*, Chris Saunders (Support Staff)

\*via phone

#### Key Discussion Points

The meeting began at 1:05pm. Melanie Redding had notified members in advance she would be absent for family business, and that Ginny Stern would be chairing the working group. After the customary introductions established that only seven members were present, Ginny asked whether this was a sufficient number to cast a vote to bring a recommendation to the GWAC. Vern and Jim desired to go ahead with the discussion and poll those members present. Absent members could be contacted for their views later before any formal recommendation might be presented to the GWAC.

#### Other Monitoring Objectives

Ginny stated her desire to get group members on-record as to where the ambient groundwater monitoring program should go next, or where any future investments should be focused. She referred group members to the Pacific Groundwater Group's (PGG's) December 3<sup>rd</sup>, 2013 document, "Potential Groundwater Monitoring Stations: Yakima Groundwater Management Area", which contained six potential objectives a monitoring program could seek to address. Each objective would be summarized and discussed, and at the end, each member would rank their top three choices. Each member had been furnished with a copy of the PGG report as part of the meeting materials. Summaries below are quoted from the report.

1. **Spatial Data Gaps:** “The largest five areas without nitrate data were identified as spatial data gaps. The areas range from 4.7 to 12.9 square miles. Existing wells were identified in those areas for field verification with the goal of identifying a single well in each area to serve as a monitoring station.” [Figure 16 in PGG’s report shows a map of the spatial data gaps.]

Vern observed that in the roughly two-and-a-half years since PGG’s report was issued, Yakima County has acquired approximately 450 new data points covering a broader geographic distribution through their wellhead program. Those locations have been entered in the county’s database and can be plotted on GIS maps.

Matt stated that when trying to build a map of Lower Valley wells without data gaps, location was only one factor, but well depth was another. Data gaps among shallow wells may have been filled by this point, but if deep wells were sparsely monitored, the public would not be getting a complete picture. Vern agreed, stating that these had been residential wells that were tested, which rarely go deep.

Gary asked whether the county had done an inventory on when all the wells had been sampled, and whether they were still being sampled today. Vern stated that the original PGG database went back to the late ‘70s, and had been compiled from various studies, some of which are readily available today, and some of which are not. Samples taken in recent years contain more detailed information. Others are spotty when it comes to matching Department of Ecology (DOE) well data with what is presently known. Ginny stated that DOE has the wells recorded according to the original property owner, not necessarily the current owner, on which the well was located. Vern stated that the only thing the county was certain of when it came to well data were the X and Y coordinates on a map, and the nitrate concentration on the day it was sampled. Everything else was based on the memory or data of the people surveyed. Ginny offered the following summary of the discussion: We have enough data to fill the gaps identified in the PGG report, but we’re not sure how to fit it all in. Vern was comfortable with the summary.

2. **Hot Spots:** “PGG identified 71 ‘hot spots’ with maximum nitrate concentrations in excess of 20 mg/L. Assuming an acceptance of 15 percent (owner acceptance, good physical conditions, etc.) to be verified by field visits, we expect to monitor approximately 15 percent of these hot spots (10 monitoring stations).” [Figure 17 shows a map of the hot spots and spatial data gaps.]

Jim questioned whether the 15 percent figure was realistic. If this component was to be pursued, he saw two parts to its implementation. The first was to see what the inventory was on the full list of 71 identified hot spots. The second was continuing to monitor them. It was the second point that posed the most difficulties, i.e., would the property owners let us, were there any construction issues, has anything changed on the ground since 2013?

Vern stated that of the 450 new wells sampled since 2013, about 15 percent were exceeding nitrate concentrations of 10 mg/L. He was unaware how many were over 20 mg/L. Of those highly-contaminated wells, he was not aware if they were clustered together. Jean pointed out the maps on Figures 16 and 17, and Vern stated that the county could produce a 2013 vs. 2016 comparison map.

Gary asked what Vern meant by 450 "new" wells, and Vern clarified that they were not newly-drilled wells, but existing wells that were sampled on a voluntary basis through an assessment on well features over the last few years since the PGG report.

Matt questioned how much confidence should be placed in the high nitrate contamination figure of 15 percent of wells, since the EPA had stated 30 percent at one point. Vern stated that the EPA's original assessment had given a 20 percent figure. Six years ago, another assessment had shown 12 percent, and the last round had shown 16 to 17 percent. Vern felt comfortable that 15 percent was a reasonable figure to work with. Ginny offered that the EPA sampling had been conducted on a voluntary basis. The county had a larger sample size and saw similar results. Vern returned to the point that some of the PGG data was 30 years old. Some of the identified hot spots may be cold by now, and conversely, some of the cold spots could be hot.

The purpose of conducting a continual monitoring of hot spots, in Ginny's view, was to compile all the information we knew on public health exposure in one place. Matt thought that was more of an EPA function, and that the county was better off focusing on gathering information in areas without much data so as to present an overall picture. Jean observed that the EPA was not going to be in the Lower Valley as long as the GWMA existed, and perhaps the county should take over their monitoring work. Ginny and Vern both saw value in that suggestion, since the county had preserved the right to sample the EPA wells, with the caveat that the EPA had signed confidentiality agreements with the people they had sampled.

Gary added that if 15 to 30 percent of wells had nitrate concentrations of 10 mg/L or greater, that was a big problem that would require a lot of resources to fix. It would also be connected to any regulations or best management practices that end up getting recommended. With so many potential sources for those nitrates, it could also lead to a lot of creative testing, involving more than just nitrates.

3. **Increasing Trends:** "Of the 46 wells with at least 10 samples that have been collected over time, seven had a statistically significant increasing trend in nitrate concentrations, and nine had a statistically significant decreasing trend. The sample locations with increasing trends warrant monitoring because they are likely most sensitive to land use changes, and may also pose a health risk if the increase is rapid enough."

After reading PGG's item description, Ginny stated that ambient monitoring will do this work already, to some extent. Gary stated that all trend data comes from Department of Health public supply data. Jim asked whether, if contaminated water is coming from public supply wells, public entities were doing anything to address the situation. Ginny answered that it was not uncommon for a water supplier to stop using a contaminated well and move to another. If there's no other well available, they have to provide treatment or blend with another source.

Vern stated that Yakima County operates three to six water systems within the GWMA. They've never done seasonal testing on their wells, and Vern thought maybe that would be a good idea for a couple of years. Many of these are Group B wells. The county's water systems are all run under one umbrella by the Utilities Division. Vern stated that he had been talking with the Utilities manager about increasing the frequency of testing within the small systems.

Matt suggested striking the word “increasing” when talking about “trends”, noting that PGG had also observed decreasing nitrate levels in some wells. Discussing nitrate concentration trends in a neutral way would be less likely to anger people, in his view.

Vern stated that if you pulled nitrate test results on county wells over a ten-year period, you would see nitrate levels moving up and down. Ginny noted that utilities are not told when in the year they have to sample, so results from one year may have been taken in the spring, and the next year in the fall. Large variations in nitrate levels could be due to the differences in season and where agriculture is in the growing cycle. She agreed that testing public supply wells more frequently would be a good idea.

The next category on page 2 of PGG’s report is “Basin-Wide Average”. This was not included on the agenda, nor discussed as a separate item, since it tied into the fourth point.

4. **Common Water Supply Aquifers:** “The random sample set developed for the basin-wide average will likely include representative samples from common water supply aquifers. In addition, public water supply wells (sampled for WDOH) will be concentrated in these zones. Thus no separate set of wells was developed to address this objective. The ability of the basin-wide data set and WDOH water supply wells to monitor common water supply aquifers will be verified after the monitoring stations are selected.”

Jim expressed the view that any testing should not be conducted solely for the purpose of collecting data, but to correct the problem. Ginny commented that while she regulates public service wells, this is also about people in unincorporated areas who draw their water from private wells. Vern stated that it was important to have information on groundwater contamination at the deeper levels, since if the GWMA is going to give people a reason to drill a new well, they also need to know where it should go. Ginny stated that the long-term goal is to manage land in the Lower Valley so that Yakima County has a healthy water supply. Given the costs involved, drillers don’t have an incentive to keep digging deeper unless given information to support such a course.

5. **BMP Effectiveness:** In summary, PGG recommends close monitoring of shallow wells on agricultural fields for the purpose of gathering the most current information about the effectiveness of BMPs being employed.

Jim saw an implementation problem here, since most farmers don’t want to share their data or be monitored by the government. Matt offered that in Whatcom County, they offer to test fields with the intent of saying, “Does this help the farmer decide whether to pursue this idea they have?” The results of the monitoring are disclosed to the public, although the location is kept confidential. Four producers in Whatcom had accepted USGS on their offer.

Ginny agreed with Jim that it would be very difficult to get the Lower Valley agriculture community to play ball with a public monitoring program unless some of the fear and mistrust currently existing could be dissipated. In addition, while the technology to do this work currently exists, a good model for applying it isn’t as far along. Gary agreed that it takes a lot of preparation with stakeholders, based on big projects he had been involved with in the past, and that a program monitoring BMP effectiveness would have to be a five-to-ten-year program.

Vern noted that the goal of the GWAC is to have a nitrate mitigation plan put together and submitted to DOE by the end of 2017. He cautioned that some of these projects may be beyond the scope of what can realistically be accomplished. Matt and Pony both still saw some value in pursuing this objective to determine if BMPs need changing.

**6. Health Risks:** "Drinking water wells causing human health risks will be identified by Yakima County under a separate GWMA task. Based on that work, an unknown number of monitoring stations will be added to the monitoring network."

Vern stated that some of this work had already been done in the wellhead assessments, and wasn't sure how focusing on this point would help. He also referred to the July 19<sup>th</sup> IAWG meeting in which Paul Stoker, the former chair of the Columbia Basin GWMA, had stated that residents of shallow well rural areas were already aware there were problems in the water, and were drinking bottled water instead. Ginny agreed that most of the information the public would be getting is already known, and to the extent it isn't, this is a point better handled by the EPO working group than Data.

### Voting Results

Ginny asked each member of the group to rank their top three choices in terms of focusing GWMA resources. The vote was as follows:

	First Priority	Second Priority	Third Priority
<b>Gary Bahr*</b>	Spatial Data Gaps*	Hot Spots*	BMP Effectiveness*
<b>Jean Mendoza</b>	Water Supply Aquifer	Hot Spots	BMP Effectiveness**
<b>Jim Davenport</b>	Water Supply Aquifer	Hot Spots	No selection
<b>Matt Bachmann</b>	Water Supply Aquifer	Spatial Data Gaps	No selection
<b>Vern Redifer</b>	Water Supply Aquifer	Hot Spots	Spatial Data Gaps
<b>Pony Ellingson</b>	Water Supply Aquifer	Trends	BMP Effectiveness
<b>Ginny Stern</b>	Water Supply Aquifer	Trends	BMP Effectiveness

\*Gary did not formally rank his choices

\*\*Jean originally started out with Trends as her third choice, but requested to change to BMP Effectiveness after the voting had concluded. This led to some additional discussion on the issue, as Vern was skeptical that BMPs could be evaluated 20 years backwards since so many things had changed in the practice of agriculture over that time. Jim agreed. Pony stated that he was looking at it more from the standpoint of laying the groundwork for working with agriculture. Vern stated that he would be open to considering BMP effectiveness as a long-term goal, but not as a December 2017 goal.

Jim noted that attendance at this meeting was lower than he would like, and that it would be ill-advised to make a formal recommendation to the GWAC based on the views of only seven members, with no members from the ag community present. Ginny agreed that the PGG Report and a summary of this meeting should be made available to group members as soon as possible in order to solicit their feedback.

### **Other GWMAs – What Are They Doing?**

Steve Swope was not present at the meeting, although Ginny had been in contact with him, and received feedback that there was not much data available from other GWMAs. Pony said that he had sent Jim a list, but that it hadn't dug into the monitoring component.

### **USGS Particle Tracking Model**

Matt addressed the group as to how the tracking model covered in-depth at the last Data meeting could be applied to groundwater monitoring. The MODPATH software only tracks in saturated zones, and is less useful to apply to shallow wells. The most useful areas to sample would be the intermediate-depth wells. Matt went on to observe that the deeper the groundwater, the more everything that happens on the surface mixes together and sampling gives you an average picture of the contributions from different sources. When conducting surface sampling, you get the data for that particular point, but could be missing out on the worst areas of nitrate application.

Matt also discussed what he had heard back as far as how much it would cost for USGS to assist with groundwater monitoring. The samples themselves were very cheap, at \$10 per-sample. However, when labor and travel costs are taken into account, the cost per-sample could range from \$200 to \$300. If testing for particles beyond nitrates, the cost could go up to \$80.

Vern asked Matt for his definition of "shallow". In Matt's view, a "shallow" well was less than 50-100 feet below the water table. A "deep" well was more than 300-400 feet below the water table. Vern stated that there generally weren't a lot of great well depths in the GWMA, except along some of the northern ridges.

The meeting adjourned at 2:50pm.

### **Resources Request**

#### **Recommendations for GWAC**

---

The group had intended to settle on a recommendation to the GWAC as to what areas of the 2013 PGG report to focus their resources on, but given the small number in attendance, it was decided to put that off until a more members could weigh in with their rankings, comments, and questions.

#### **Deliverables/Products Status**

#### **Proposed Next Steps**

---

Solicit feedback from Data members, with their top three choices for prioritizing groundwater monitoring dollars.

---

## Regulatory Framework Working Group

### Charge from Groundwater Management Area Advisory Committee

[Insert Charge]

### Working Group Members

Jean Mendoza, Chair (Friends of Toppenish Creek), Andres Cervantes (Department of Health), David Bowen (Department of Ecology), Chelsea Durfey (Turner and Co.), Dan DeGroot (Yakima Dairy Federation), David Newhouse (interested party), Ginny Prest (WSDA), Jason Sheehan (Yakima Dairy Federation), Jim Dyjak (Concerned Citizen of Yakama Reservation), Larry Fendell (interested party), Laurie Crowe (South Yakima Conservation District), Nick Peak (EPA), Patricia Newhouse (Lower Valley Community Representative), Steve George (Yakima County Farm Bureau), Stuart Crane (Yakama Nation), Sue Wedam (Lower Valley Community Representative), Vern Redifer (Yakima County Public Services), Jim Davenport (Yakima County Public Services)

### Meetings/Calls Dates

Meeting: July 13, 2016, 5:00-7:30 PM

Call Number: 360 407-3780 PIN Code: 306589#

### Participants

Present: Jean Mendoza (Chair), Jim Davenport, David Bowen, Larry Fendell, Dan DeGroot, Stuart Crane, Steve George, Sue Wedam, David and Patricia Newhouse, Anthony Dorsett, Laurie Crowe, Jason Sheehan, Vern Redifer, Lynn Deitrick, Marlene Carpenter Bobbie Brady (Yakima County Public Services).  
\*via phone

### Key Discussion Points

Yakima County Voluntary Stewardship Program Overview: The meeting began with introductions. Chair Jean Mendoza introduced Lynn Deitrick, Yakima County Public Services Planning Division Manager and explained he had been invited to provide information about the Yakima County Voluntary Stewardship Program (VSP) – an optional, incentive-based approach to protecting critical areas while promoting agriculture. Lynn gave the group a brief overview of the purpose of the VSP program, the County's involvement, when the group began meeting, their goals and important deadlines. He explained that the group was in the organizational process now and developing a working plan. The State funding was for the development of a working plan only. Lynn passed out a copy of the group's July, 2016 bulletin which provided additional details. The brochure included a list of work group members and contact information. Lynn noted that he was very pleased by the number of groups involved. More information can be found at: <http://www.yakimacounty.us/1657Voluntary-Stewardship-Program-VSP>.

The working group asked questions of Lynn in order to discern the relevance between the VSP program and the work of the GWMA. They also discussed how this would impact applicable County codes. Lynn explained that the program was voluntary not regulatory in nature and does not supersede state and federal regulations on storm water, etc. He also noted that the VSP is a voluntary initiative on a state level. He believed there would be an outreach educational component, but they were just in planning stages. Lynn concluded by telling the group that the VSP work group would next meet on August 5, 10:00 AM-Noon at the North Conservation District office and invited anyone interested to attend.

Livestock/CAFO Regulatory Presentation: The group moved on to a discussion about their upcoming presentation to the Livestock/CAFO Working Group. Jean noted that the meeting was scheduled for Thursday, August 4, 5:00-7:00 PM, at the Department of Ecology. The Regulatory Working Group had been given an hour – 30 minutes for a presentation of the laws and 30 minutes to answer questions.

The group discussed how best to approach its presentation and finally decided to proceed with the summary chart initially prepared by Jim Davenport. The chart included federal and state laws pertinent to each area with a brief explanation. The group did, however, realize that many changes were coming, i.e., the CAFO permit, which would invalidate some of this information if the permit is approved. Vern suggested that the group focus on the existing regulatory framework, what's in it and what's not. The group agreed that any changes could be incorporated later. He also reminded everyone that the goal of the Regulatory group had been to research the laws and educate the other groups. It will be the goal of those groups (Livestock/CAFO, Irrigated Ag, and RCIM) to look at the laws and to develop solutions. Vern added that the Regulatory Working Group had also asked presenters to relate how a law is monitored, enforced, measured, its effectiveness and any potential changes they believed needed to be made. Jean volunteered to go back and compile a list of this information from each presentation. Vern suggested that the chart be re-sorted by laws as many were repetitive. Jean will provide her summary to the group for their review and comment prior to the Livestock/CAFO presentation on August 4. The group discussed other items that could be included (i.e., other State's regulations as they pertained to Livestock), but agreed to stick with the presentation as outlined in this paragraph.

A discussion about the specific laws ensued as follows:

### Dairy

1. Safe Drinking Water law. The group found the subsequent explanation suitable as is.
2. Dairy Nutrient Management Act. The group found the subsequent explanation suitable as is.
3. South Yakima Conservation District. Laurie Crowe believed that some of the record-keeping requirements may have changed because of the Department of Agriculture. She will research this and let the group know. Otherwise the subsequent explanation was suitable as is.
4. Yakima County, Washington State Growth Management Act, Zoning, Critical Areas, NEPA and SEPA. The group found the majority of the subsequent explanations suitable except it was noted that the "Right to Farm Law" does not address groundwater. They also believed that the VSP handout could be copied and given to the Livestock/CAFO working group.

### **Lagoons, Dairy**

5. Department of Health. The group desired that the first part of the sentence in the description be left out and sections (a) and (b) remain in place.
6. South Yakima Conservation District. Laurie Crowe noted that the FOTG was just one guide directing their actions. The subsequent explanation was suitable as is.
7. Natural Resources Conservation Service. This provides nutrient, irrigation and air quality management. The subsequent explanation was suitable as is.
8. Resource Conservation and Recovery Act. A member pointed out that there had been a presentation on RCRA to the GWAC and the GWAC had agreed to leave it out. He suggested that this could be talked about as a tool later. The group agreed.

### **Settling Ponds, Dairy**

The laws contained in this section are identical to Items 5, 7 and 8 above.

### **Pens and Corrals**

9. Washington Department of Health. The group found the subsequent explanation suitable as is.
10. Washington State Department of Ag. The group found the subsequent explanation suitable as is. Jean pointed out that WAC 246-203-130, a rule that guides the Department of Health, is an old rule and that she believed there was currently an effort to update that law this fall.
11. Yakima County Critical areas. The group found the subsequent explanation suitable as is.

### **Livestock/CAFO's**

12. Clean Water Act. The group found the subsequent explanation suitable as is.
13. Washington Department of Health. The group desired that the first part of the sentence in the description be left out and sections (a) and (b) remain in place.
14. NEPA/SEPA. The group found the subsequent explanation suitable as is.

### **Compost/Biosolids**

Jean asked the group to review the section on composting in the handout she had provided to the group prior to the meeting. The group had a chance to review the applicable laws and subsequent comments made by Jean on the handout and agreed that the explanation she had written was suitable as is.

Cost/Benefit Analysis: Jean had prepared a power point presentation on the topic. Part way through a member asked the point of the presentation and wondered if the group was supposed to include a Cost/Benefit Analysis in their presentation of the regulatory findings to the other groups. Jean suggested that the group hire an academic group with the \$25,000 currently in the group's budget. A discussion about Jean's proposal ensued. Most of the group eventually decided that this was not for the Regulatory Working Group to do, but as the other groups develop alternatives it would be their job to evaluate the alternatives and look at costs and benefits from a

variety of perspectives. Ultimately those groups will decide what they believe is feasible and effective and forward their recommendations on to the GWAC for their consideration.

### **Resources Requested**

---

### **Recommendations for GWAC**

---

### **Deliverables/Products Status**

---

### **Proposed Next Steps**

---

- Jean volunteered to go back and compile from the various presentations how each law is monitored, enforced, measured, its effectiveness and any potential changes the presenter believed needed to be made. She will forward the compilation to the group for review and comment prior to the Livestock/CAFO presentation on August 4.
- In addition, Jean will put together the remainder of the presentation (as outlined in the presentation section above) and provide it to the group ASAP for comments as well.
- Laurie Crowe believed that some of the record-keeping requirements for the South Yakima Conservation District may have changed because of the Department of Agriculture. She will research this and let the group know if there were changes and their nature.

## Regulatory Framework Working Group

### Charge from Groundwater Management Area Advisory Committee

[Insert Charge]

### Working Group Members

Jean Mendoza, Chair (Friends of Toppenish Creek), Andres Cervantes (Department of Health), David Bowen (Department of Ecology), Chelsea Durfey (Turner and Co.), Dan DeGroot (Yakima Dairy Federation), David Newhouse (interested party), Ginny Prest (WSDA), Jason Sheehan (Yakima Dairy Federation), Jim Dyjak (Concerned Citizen of Yakama Reservation), Larry Fendell (interested party), Laurie Crowe (South Yakima Conservation District), Nick Peak (EPA), Patricia Newhouse (Lower Valley Community Representative), Steve George (Yakima County Farm Bureau), Stuart Crane (Yakama Nation), Sue Wedam (Lower Valley Community Representative), Vern Redifer (Yakima County Public Services), Jim Davenport (Yakima County Public Services)

### Meetings/Calls Dates

Meeting: August 10, 5:00-7:30 PM

Call Number: 360 407-3780 PIN Code: 306589#

### Participants

Present: Jean Mendoza (Chair), Jim Davenport, David Bowen, Larry Fendell, Dan DeGroot, Stuart Crane, Steve George, Sandy Braden, Andres Cervantes, Ginny Prest\*, Vern Redifer, Marlene Carpenter, Bobbie Brady (Yakima County Public Services). \*via phone

### Key Discussion Points

Jean welcomed the group at 5:07 PM. Everyone introduced themselves. Jean passed around three handouts including an outline for the Regulatory Framework Discussion.

Presentation to the Livestock/CAFO Work Group: Six members of the group had been at the Livestock/CAFO presentation on August 4. Jean gave those members a survey to complete and asked each to share their thoughts. Several members felt the presentation went well although the group got side-tracked at times on hot topics. One member pointed out that because there was an overlap in membership many people were already aware of much of the information presented. Jim Davenport had reservations as the case law had been omitted, he believed that RCRA should have been a part of the briefing and observed that the discussion/conclusions/strategies didn't go far. Jean believed the meeting went fairly well – her concern is more the end product.

Jean referred to her handout - Work Plan for GWMA Regulatory Framework Group and noted that under Section 3.2 the group had covered items a-h although, in her opinion, inadequately. Further Jean didn't think item c: cost - had been covered at all. David said that he had not seen this work plan but believed some of the items would be dealt with in the Livestock/CAFO group.

Jim said the plan had come from the GWAC and characterized it as a “suggested fabric.” Another member agreed. David thought each of the three working groups would take the information from the Regulatory group and disseminate it in written format for the GWAC’s consideration. Other members agreed. David said he believed Livestock/CAFO had enough information from the Regulatory group. Vern pointed out that he thought Jim’s written synopsis met the goals of the work plan to provide a framework of the regulations that apply. He envisioned the Regulatory group would take this framework and write the first chapter stating “here’s what we know about the regulations.” Subsequent chapters would be written by the other three groups with their recommendations. When done all chapters would be blended together into a uniform, concise report. Steve asked if the CAFO portion would have a “stand alone” regulatory component or be incorporated with the remainder of the CAFO materials like a list of recommended best management practices (bmp’s). Vern advised that they would be done together.

A member wanted to know if Jean had included in her presentation the changes in the laws over the years and if she advised that Natural Resources Conservation Service (NRCS) had indicated desire to be a resource for the GWMA. Jean acknowledged she had not. Jim said he thought Jean’s presentation was objective. Ginny wanted to verify exactly what had been handed out (she will call Jean) and felt that the NRCS has management practices that should be considered. She also inquired as to whether it would be possible for her to attend the next Livestock/CAFO meeting to speak to the Dairy Management Nutrient Program (DMNP) and how they rely on the Conservation Districts. Vern felt it would be hard to relay all of the details the Regulatory group had gathered. He felt a quick summary was sufficient as long as additional reading materials were provided due to meeting time constraints. A member pointed out the Regulatory group could provide additional information if needed.

**Presentation to the Irrigated Ag Work Group (IAWG):** Jim Davenport said that the list of existing laws for IAWG would be short. Jean was concerned that the DNMP had been exclusively addressed by the Livestock/CAFO group. She believed the manure/fertilization portion should be addressed more appropriately by IAWG. A discussion ensued. Jim agreed with Jean’s judgment call but pointed out that it had not been his decision and that IAWG had entertained the topic minimally to date. Jim went on to say that when Perry Beale prepared the IAWG piece for the nitrogen loading assessment it included information on lands fertilized by manure and/or chemicals, however, no conversations had been held as to the common practices, recommended new practices or an analysis of old practices in that group. Perry Beale did look at several sources to determine the recommended application rates of nitrogen for all crops grown in the GWMA. In addition, Perry spoke with several crop consultants in the IAWG and they reviewed the draft of his report and made adjustments. Within this context the IAWG did discuss the application of manures and fertilizers.

**Presentation to the RCIM Work Group:** Dan DeGroot said the RCIM agenda was full for September. It was suggested that the group present to RCIM and IAWG in October which would give the group more time to put the presentations together and allow the members to review and make suggestions. Dan requested the proposed presentation with a list of sources be given to Regulatory members prior to the next meeting. Jean said source information could be found on her website.

Atmospheric Deposition and Other Miscellaneous Sources: The group discussed the limited laws applicable to atmospheric deposition and whether due to the low loading rate (4 lbs. per acre across the GWMA per the RCIM piece) the group should consider this item after looking at larger contributors. RCIM Chair, Dan DeGroot did not want to talk about atmospheric deposition in his group as he believed its sources were more appropriate to the Irrigated Ag working group.

The group also discussed non-point source pollution. A member pointed out it is difficult to measure and regulate as it is hard to determine culpability. Typically bmp's are the solution. A member thought non-point source pollution might be easier to deal with in the GWMA because irrigation moves much of the water and irrigation districts are already in place to deal with the issue. Others disagreed. The group also discussed point source pollution which is easier to measure and has good success when addressing the issue. Jim also brought up amending the use it or lose it law to prevent people from using it just so you don't lose it.

Potential Research Projects/Cost Benefit Analysis: Jean believes it is the GWMA's job to do a cost benefit analysis and even though the topic had been discussed at last month's meeting without a lot of agreement she wanted the group to consider it again as she believes the GWMA has an obligation to tell the public the costs. Jean stated that if the GWAC didn't do a cost benefit analysis her organization, Friends of Toppenish Creek, would. Further, she stated that if Friends of Toppenish Creek did the analysis it would be biased.

Several members asked Jean to clarify what she desired and expressed confusion because there were no specific ideas, proposals or options on the table as of yet to analyze. Vern explained that the cost of an action is more easily determined than the benefits because they can be difficult to quantify as they are subjective. Jim pointed out that he had been involved with about ten groups that had done cost benefit analyses and in every instance the numbers were skewed to justify a politically chosen action. After some discussion the group agreed that until there were some specific ideas, proposals or options ready for presentation to the GWAC they saw no need to revisit this topic for general discussion again. Next meeting Wednesday, September 14, 2016, 5:00-7:30 PM.

**Resources Requested:** None.

**Recommendations for GWAC:** None.

**Deliverables/Products Status:** None.

#### **Proposed Next Steps**

- Ginny Prest will contact Jean to get the Regulatory information that had been presented to the Livestock/CAFO Group.
- David Bowen will consider Ginny Prest' request to attend the next Livestock/CAFO meeting to speak to the dairy management nutrient program on how they rely on the Conservation Districts.
- Jean will prepare proposed presentations for the RCIM and Irrigated Ag working groups for the Regulatory group's consideration. She will get these to the members prior to the next meeting for review and suggestions. She will provide sources.
- Jean will contact the group's chairs to get on their agenda for October.

## Regulatory Framework Working Group

### Charge from Groundwater Management Area Advisory Committee

[Insert Charge]

### Working Group Members

Jean Mendoza, Chair (Friends of Toppenish Creek), Andres Cervantes (Department of Health), David Bowen (Department of Ecology), Chelsea Durfey (Turner and Co.), Dan DeGroot (Yakima Dairy Federation), David Newhouse (interested party), Ginny Prest (WSDA), Jason Sheehan (Yakima Dairy Federation), Jim Dyjak (Concerned Citizen of Yakama Reservation), Larry Fendell (interested party), Laurie Crowe (South Yakima Conservation District), Nick Peak (EPA), Patricia Newhouse (Lower Valley Community Representative), Steve George (Yakima County Farm Bureau), Stuart Crane (Yakama Nation), Sue Wedam (Lower Valley Community Representative), Vern Redifer (Yakima County Public Services), Jim Davenport (Yakima County Public Services)

### Meetings/Calls Dates

Meeting: September 14, 5:00-7:30 PM

Call Number: 360 407-3780 PIN Code: 306589#

### Participants

Present: Jean Mendoza (Chair), David Bowen, Larry Fendell, Steve George, Jim Dyjak, Sue Wedam, Jason Sheehan, Laurie Crowe, Patricia Newhouse, Vern Redifer, Bobbie Brady (Yakima County Public Services). No one was on the phone.

### Key Discussion Points

Welcome and Meeting Overview: Jean welcomed the group at 5:09 PM. Everyone introduced themselves. Jean asked the group to withhold any responses until others are through talking. Jean asked Vern if someone would be able to offer the group legal expertise in Jim Davenport's absence as she felt this was important in light of the group's charge to understand regulatory framework. Vern agreed that Jim's departure left a void on several levels as he not only provided legal expertise, but also acted as a facilitator, attended the various monthly working group meetings which kept the groups up to speed with each other and he accomplished a great deal of writing in advance of the end work product.

Vern and David both agreed that a limited number of structured written questions could be submitted to either Yakima County Corporate Counsel or the Department of Ecology Assistant AG's on behalf of the Regulatory Working Group if necessary. In both cases Vern and David would need to be the liaison to these attorneys and the volume would need to be minimal. In light of this it was agreed that if the group needed legal direction it would be considered on a case by case basis. Vern said that he had already spoken with David and another member about

people who might help facilitate and guide the group and he also had an idea about someone who could help draft the required end work product. Vern added that there was not much funding remaining for this since the work which began in June, 2012) took much longer than anyone thought. It was his intention to talk with the GWAC about the budget in October as there was still a great deal of writing and organizational work that needed to be done.

Jean also inquired of those in the room representing the dairy industry asking them to provide to the group all of the documentation they had to complete in order operate as a dairy. She felt this would give the group a better understanding of the regulatory requirements dairies were already required to meet. A number of members spoke up in opposition since the request had nothing to do with the charge of the GWMA to reduce nitrates in the groundwater in addition to a variety of other reasons. After a great deal of discussion failed to produce a consensus, a member requested the group return to the items on the agenda.

**Presentations to RCIM and Irrigated Ag Working Groups:** Jean read through the results of last month's survey on the presentation to the Livestock/CAFO Working Group. She believed that members who had attended the meeting felt the presentation went well. Jean said the group was scheduled to present at the September 27 meeting of the Irrigated Ag Working Group (IAWG). She noted that the presentation would include information on application of manures and fertilizers to land that is controlled by dairies and land that is not controlled by dairies. Dairy controlled land is monitored under RCW 90.64 but other lands are not addressed in the law. Jean felt this clearly indicated a gap in the law. Another member disagreed and said that there was a clear directive that no one can contaminate groundwater. Jean desired to see the law be more specific. David added that while the Department of Ecology was required to establish someone in fact polluted, they can only investigate when a report has been made. Vern noted that while perhaps 28,000 acres of agricultural fields in the lower valley were highly regulated under the Dairy Nutrient Management program, the remainder of the agriculture is only subject to this "you shall not pollute" regulation.

Jean directed the group's attention to Attachment A which was on the screen – (Nos. 1 and 2) "EPA under the Safe Drinking Water Act (groundwater)" and "EPA under the Clean Water Act (surface water)" specifically Effectiveness under No. 2. Jean said that the group had learned that a good job (80%) had been done addressing point source pollution but non-point source pollution had improved very little (20%). Several members disagreed with the utilization of this national report as it mixed apples and oranges and was not reflective of what was going on in the GWMA but pertained mostly to other parts of the country (i.e., the Midwest). Specifically they felt reference to the report "US General Accounting Office says 'Changes Needed if Key EPA Program is to Help Fulfill the Nation's Water Quality Goals'" should be removed from the presentation in each of the locations where it appeared (Nos. 2 and 4) since the Lower Yakima Valley GWMA did not have the non-point issues prevalent in other parts of the county. Another member argued that all reports from other States should then be thrown out, but a member pointed out that reports from areas where there are similar weather patterns, climates and soils could be useful and far more relevant. The group felt it would be better simply stated that it has been determined that there are nitrates in the groundwater which must be resolved. Jean believed from her reading of the law that the EPA could withhold funding if an area wasn't doing its part to mitigate the issues. David noted that at a recent meeting he attended in Bellevue the EPA looked to the State of Washington as a leader in clean water and referred to the State as the

head of the pack. Jean passed out an additional handout – “Clean Water Rule: Definition of “Waters of the United States” – 40 CFR 230.3. A member pointed out that this was not conclusive which Jean acknowledged – she will not hand this document out at the IAWG presentation.

There were no comments upon review of No. 3 – “Ecology under RCW 90.48 Water Pollution Control and WAC 173-200. WA Department of Health under RCW 43.20.”

A member voiced a concern again about the information under “Effectiveness” for No. 4 – Ecology discharge permitting under WAC 173-216” and desired the comments to be removed. David will look to see if he can find this statistic for the Lower Yakima Valley GWMA which could be added.

Under the second No. 4 (which should be renumbered to 5) - “Ecology Non-Point Source Pollution” it was requested that the words “(surface water)” be added directly after the title. Members also agreed that the word “difficult” should be removed after monitored and effectiveness and the words “very good in GWMA” inserted in both locations.

Jean asked Laurie to comment about No. 5 “Natural Resources Conservation Service (NRCS)” In the second sentence under Enforced, Laurie asked Jean to replace the word “investigate” with “monitor” so that the sentence reads: “Only monitor funded activities.” Also the next sentence should be changed to “NRCS guidelines are applied to dairies in 90.64.”

As for No. 6 “South Yakima Conservation District (SYCD)” the group asked that after monitoring it read “technical assistance provided (financial when able to farmers to provide BMP implementation to protect natural resources.” Also after Measured the sentence should be changed to “Review records, discuss and make changes to update DNMP’s.”

In Question No. 7 “Washington State Department of Agriculture Dairy Nutrient Management Program (WSDA DNMP)” the group asked Jean to speak with Ginny Prest prior to the presentation about the sentence under Enforced. Some members said the sentence reflected what Ginny said in her presentation and had been a part of a letter written several years ago, but others had heard Ginny recently say that enforcement options are not limited and address more than record keeping. They also desired the words “but not to abide by them” removed from the previous sentence.

No. 8 “Composting of Agricultural Wastes” – the group desired that the word “all” be added to this sentence and there be a category for non-dairy and dairy as they felt the section would be more clear. Under dairies it should be noted that they are regulated under 90.64 and are monitored as part of the dairy plan.

No. 9 “National Pollution Discharge Elimination System (NPDES) Permitting Under Ecology.” Under Potential Changes the word “policy” should be changed to “permit” and instead of “under review” it should read “pending.”

No. 10 “Biosolids under Ecology and Yakima Health District.” It was noted that these are well developed, enforced and measured.

No. 11 “Yakima County” under Effectiveness the sentence – “Yakima County is not aware of a mandate to protect the environment” should be deleted and the sentence after Potential Changes

should be changed to "Update to the County's Comprehensive Plan in compliance with the Growth Management Plan. Implementation of the Voluntary Stewardship Program."

No. 12 "Atmospheric Deposition" - Jean merely noted that the law is not well developed.

No. 13 "Irrigation Districts" – no changes.

No. 14 "Yakama Nation" It was noted that the document handed out to the group with the agenda was different than the one that appeared on the screen. The Yakama Nation is not accountable to the Department of Ecology as the document on the screen implied and was previously deleted.

No. 15 "WSDA – Chemigation and Fertigation" – no changes

Jean will update the presentation and send it out to the group soon.

BMP's and the Law: Jean skipped this agenda item.

Potential Regulatory Gaps: Jean indicated that she had several items in mind. Members reminded Jean that the other working groups would discuss gaps and how to address them. David indicated that it was his goal to finish the BMP's in the first 30 minutes at the next Livestock/CAFO meeting and he appreciated the information he had received from several members in the last few days. It was his plan to take the last half of the October meeting and all of the November meeting to focus on regulatory gaps. A member asked Steve George to talk more about a performance based standard in the next Livestock/CAFO discussion as he felt Steve's idea had merit. Steve also mentioned that he thought the NRCS BMP's should become the standard as they had already been accepted and were scientifically based. Another member stated that the Livestock/CAFO group had come up with good ideas at their last meeting with suggestions like nitrate samples and abandoned wells. A member wondered how a performance based standard might be measured and it was suggested that for a while the measurement might be "hey go out and look." With that Jean asked for concluding comments and there were none. The meeting closed shortly after 7:30 PM. The next meeting will be held Wednesday, October 12, 2016, 5:00-7:30 PM.

**Resources Requested:** None.

---

**Recommendations for GWAC:** None.

---

---

**Deliverables/Products Status:** None.

---

#### **Proposed Next Steps**

David will look to see if he can find the statistics for the Lower Yakima Valley GWMA regarding Ecology's effectiveness in managing TMDL's and non-point source pollution.

## Residential, Commercial, Industrial, Municipal (RCIM) Work Group

### Charge from Groundwater Management Area Advisory Committee

#### Working Group Members

Dan DeGroot, Chair (Yakima Dairy Federation), Dave Cole (Yakima Health District), Elizabeth Sanchez (Yakama Nation), Jan Whitefoot (Concerned Citizens of Yakama Reservation), John Van Wingerden (Port of Sunnyside), Stuart Turner (Turner & Co.), Tom Ring (Yakama Nation), Kathleen Rogers (Citizen Rep), Sanjay Barik (Ecology)

#### Meetings/Calls Dates

Meeting: July 18, 2016, 2:00-4:00 PM

Sunnyside School District Administration Building, 1110 S. 6<sup>th</sup> Street, Conference Room 20, Sunnyside, WA 98944

Call in: 509-574-2353 (pin 2353#)

#### Participants

Present: Dan DeGroot (Chair), Jim Davenport, Vern Redifer, Steve George, Kathleen Rogers, Jim Dyjak, Ryan Ibach, Dave Cole and Bobbie Brady (Yakima County Support Staff)

#### Key Discussion Points

The meeting was called to order by Chair Dan DeGroot at 2:04 PM. He asked Ryan Ibach to introduce his replacement (Dave Cole) at the Yakima Health District and everyone else present introduced themselves to Dave.

Discussion on onsite sewage systems – Vern Redifer report: Vern explained he had taken an interest in learning the basics of onsite sewage system design and operation from his work on the RCIM piece of the nitrogen loading assessment. Vern printed out the source information from his research and passed it out to the group. Each source is discussed as follows:

1. EPA publication No. 832-B-02-005, portions of Chapters 3, 4, and EPA Onsite Wastewater Treatment Systems Technology Fact Sheet 9. Vern explained that a basic onsite sewage system begins with a settling basin to capture the solids. The liquids (called a plume) then travel by gravity to a drain field where they leach into the ground going down through the soil depth to groundwater. The plume (cloud-like in look) when leached settles approximately 300-400 feet away from the drain field. Where land may not perc (or percs too slowly) a mound system can be installed. The mound acts as a filter prior to reaching the ground. The mound system may have a pump associated with it which will cause the fluids to be released in a staggered manner. The mound system is not a treatment system for nitrates

Vern added that there is no onsite sewage system treatment of nitrogen. Depending on soil conditions at the time (saturated/unsaturated) the process only removes 10 to 30 percent of the nitrates (the lower number of 10 percent is generally the accepted percentage). The nitrate number stays high until it mixes. If the ground is already saturated there is no denitrification – all of the nitrates go into the groundwater. Based on Vern's research he felt that the group's consideration should be focused on the following areas: a) Where there is an issue in the geography, i.e., soil filtration rate based on soil type (how the soil percs); b) where there is rural housing density; and, c) what is downstream of the plume, i.e., a well, as the nitrogen may not have been diluted.

2. EPA Homeowner's Guide to Septic Systems. Vern believed this guide (dated December, 2002) could come in handy when trying to educate people how an onsite sewage system operates under the best conditions which is crucial as improper use can increase the amount of released nitrates. Vern noted the following examples: spreading out when laundry is done to reduce the amount of water pushed through on a given date, using low water toilets and showerheads, use of garbage disposals which increase the frequency of pumping, exceeding design capacity (more people using the system than it was designed for) and not driving over the drain field which can damage it.
3. DOH Report to the Puget Sound Action Team – Nitrogen Reducing Technologies for Onsite Wastewater Treatment Systems. This report contains different methods to remove more nitrates – the research is on-going and hasn't proven itself out. The estimated installation costs of an improved system is \$20,000 and yearly operational costs per system were about \$1,500. Vern felt this may be cost prohibitive to look at for each onsite sewage systems in the Lower Valley but may be viable where clusters of onsite sewage systems exist. Vern also mentioned recirculating sand filters but noted these may be cost prohibitive as well. He also read about adding carbon to the system as it assists greatly with denitrification but noted they are currently striving to get a ten year life out of the system and it would require replacing the drain field at the end of that time. Vern noted that if the group felt it was worth looking into this he would do more research. He estimated that retrofitting old systems would cost \$5-7,000 per system.
4. WAC 246-272A-0230 Design Requirements and WAC 246-272A-0015 Local Management and Regulation. Vern also looked at the WAC's to ascertain design requirements, management and regulation. He drew the group's attention to WAC 246-272A-0230, first page section (D) at the bottom of the page. It states: *"Nitrogen contributions. Where nitrogen has been identified as a contaminant of concern by the local management plan required in WAC 246-272A-0015, it shall be addressed through lot size and/or treatment."* WAC 246-272A-0015 requires the twelve counties bordering Puget Sound to develop this plan. Vern pointed out that on page 2 of this WAC Section (5) states *"The local health officers for all other jurisdictions not required to develop a written plan under subsection (1) of this section shall develop a written plan that will provide guidance to local jurisdiction regarding development and management activities for all OSS within the jurisdiction."* Ryan Ibach noted that Yakima County does not current have such a plan. Vern added that this section gives the group the opportunity to promulgate a plan for Yakima County if it's believed to be a good idea.

A discussion ensued. Vern noted that he had learned there are 6,044 residential onsite sewage systems in the GWMA. He had been thinking that there could be language that said if your drain

field fails or if you need to build a new one, here are the standards. The group discussed the prohibitive costs of this endeavor and the possibility of a low cost loan program at great length. A member voiced that perhaps grants could be procured in denser areas, but did not believe this would be viable to help households on a case-by-case basis. A member wondered if pumping onsite sewage systems more frequently resulted in a reduction of the nitrogen output to groundwater. It was agreed that there would be some improvement but not a huge difference. Dan DeGroot mentioned that he heard King County proposed a property tax fee for homeowners with onsite sewage systems. Homeowners would be exempt from this fee if they sent in a certificate indicating that their onsite sewage system had been inspected and pumped. Jim Davenport noted that this was the aquifer protection area that he had previously suggested. It would require a vote of the people, but would raise funds to allow for individual case counseling and education. Dan also mentioned that he had read an article by the DOH coming up with a way to use the nitrogen dispensed from the drain field on the lawn rather than commercial fertilizers.

Dan asked Vern to look through his information from GIS to determine what areas in the GWMA would have enough onsite sewage system density to become a communized cluster. This should include residential systems and businesses with four to five bathrooms which could also be converted to a communized system.

The group discussed the need for more literature or hiring an expert to help determine possible solutions. Vern reminded the group that a groundwater symposium had been held in San Francisco in June. Rand Elliott, Ginny Prest and Ginny Stern all attended and said that 20 countries in addition to the United States were represented at the Symposium making it clear the Lower Valley GWMA was not alone in trying to figure out how to deal with the issue of nitrates in the groundwater. It was suggested that Jim Davenport put this on the agenda for the next GWAC meeting. Jim suggested instead that a report regarding the symposium be made by Ginny Stern of the DOH at the next RCIM meeting. The group agreed.

N loading from the Commercial, Industrial and Municipal portion from the Ecology filed reports – Jim Davenport report: Jim followed up with David Bowen at the Department of Ecology. Sanjay Barik, also from DOE, was out of the office at the time so Jim had nothing to report. He did clarify what information specifically the group was looking for. The group desired to confirm that the DOE was in fact monitoring the commercial, industrial and municipal part of the RCIM equation, i.e., port authorities, city waste systems, large onsite sewage systems, spray fields, and so forth. Jim indicated that he would follow up and report back to the group.

Discussion of potential solutions to high nitrates from RCIM sources: The list of possible solutions (for the residential component only) was: 1) Public education – the group agreed education should be a precursor to action for both onsite sewage systems and abandoned and poorly constructed wells. Jim Davenport noted that he had prepared a list of educational topics for the various working groups and passed it on to Lisa Freund chair of the EPO committee so that they could begin to conceptualize what could be done. 2) Investigate the possibility of an aquifer protection area. 3) Look at the possibility of community septic and community well systems. The group hoped to get more ideas after Ginny Stern shared on the groundwater

symposium at the next meeting. The group would also continue to consider hiring an expert after Ginny Stern reported.

Review work plan to monitor progress: Dan felt that the group was on schedule for the residential portion of the work plan and the group would wait to hear more from the Department of Ecology on the Commercial, Industrial and Municipal portion of the work plan.

Discuss having Natural Selection Farms make a presentation to the group at a future meeting: The group agreed to invite Natural Selection Farms to the next meeting and made the following list of things they desired to learn from the presentation: 1) The group asked that Natural Selection bring maps (in hand-out format) of all applications made by Natural Selection Farms to fields in the GWMA since the inception of Natural Selection Farms. 2) The group wanted to know what their permitting process entailed. 3) The group wanted a detailed description of the origin of the product, how long it takes before the product is applied to a field, the length of storage prior to application and the accuracy of the application. 4. The group wanted to know the soil testing requirements and obtain copies of those test results.

Other business: The group decided to cancel the August RCIM meeting due to scheduling conflicts. The group will meet again on Monday, September 12, 2:00-4:00 PM (it's regularly schedule September meeting). The meeting was adjourned at 3:52 PM.

#### **Resources Requested**

#### **Recommendations for GWAC**

#### **Deliverables/Products Status**

#### **Proposed Next Steps**

---

Dan asked Vern to look through his information from GIS to determine what areas in the GWMA would have enough onsite sewage system density to become a communitized cluster. This should include residential systems and businesses with four to five bathrooms which could also be converted to a communitized system.

The group agreed to invite the following people to the September RCIM meeting: 1) Ginny Stern (DOH) to report on the groundwater symposium as outlined above. 2) A representative of Natural Selection Farms to make a report also as outlined above.

Jim Davenport will follow-up with the Department of Ecology on the N loading from the Commercial, Industrial and Municipal portion from the Ecology filed reports and report back to the group.

## Residential, Commercial, Industrial, Municipal (RCIM) Work Group

### Charge from Groundwater Management Area Advisory Committee

#### Working Group Members

Dan DeGroot, Chair (Yakima Dairy Federation), Dave Cole (Yakima Health District), Elizabeth Sanchez (Yakama Nation), Jan Whitefoot (Concerned Citizens of Yakama Reservation), John Van Wingerden (Port of Sunnyside), Stuart Turner (Turner & Co.), Tom Ring (Yakama Nation), Kathleen Rogers (Citizen Rep), Sanjay Barik (Ecology)

#### Meetings/Calls Dates

Meeting: September 12, 2016, 2:00-4:00 PM  
Sunnyside School District Administration Building, 110 S. 6<sup>th</sup> Street, Conference Room 20,  
Sunnyside, WA 98944  
Call in: 509-574-2353 (pin 2353#)

#### Participants

Present: Dan DeGroot (Chair), Steve George, Dave Cole, Ginny Stern (Department of Health), Leslie Turner (Department of Health) and Bobbie Brady (Yakima County Support Staff)

#### Key Discussion Points

The meeting was called to order by Chair Dan DeGroot at 2:01 PM. Everyone introduced themselves. Dan had invited Ginny Stern from the Department of Health to discuss the conference she attended in California on groundwater where she had made a presentation. Ginny had invited Leslie Turner who is a Wastewater Management Specialist with the Department of Health Office of Environmental Health and Safety.

Report on "Sustainable Groundwater in Agriculture" (an international conference held in late June in San Francisco): Ginny began by telling the group that nearly one-third of the attendees were from out of country and that participants included representatives of research, regulatory, industry boards and the growers' industry. Ginny noted that the topics were addressed equally and that the solution sets discussed prioritized water quality and protected agricultural interests. Ginny found the session reporting on work done in Denmark and the Netherlands to be the most interesting as the goals to achieve came from the State level, but groups were allowed to determine and fine-tune options that worked locally as long as they achieved the required goals. In addition, Ginny was interested in a promising project in the inland coastal area of southern California (the Salinas areas). They had developed a regulatory monitoring program of requirements which allowed them to gather a significant amount of data. Each business owner was required to monitor one irrigation well and one domestic well on their property. The regulatory program only had monitoring requirements and lawsuits were explicitly ruled out as the group operated under the premise that the state of the groundwater under the property was

not a direct result of what was happening on the property. Ginny added that the group has been gathering sampling data under this regulatory requirement for five years and there had been no lawsuits. Several members wondered how this could happen and asked whether this was a State funded program or not. Ginny responded and said that the data collected was not paid for by the State, however the samples were turned into the State. Ginny added that an important component to this working was that industry agreed that nitrates in the groundwater were a broad scale condition and there was a regulatory requirement that every owner must collect data (which included depth and a schedule of testing) and turn it in in order to receive a permit.

A member asked if the group did inspections to confirm the integrity of the wells. Ginny said no, but added that when there is a data set of 4,000 to 5,000 samples in play it makes it easier to see where there could be issues that could be examined in-depth down the road. A member asked what consideration was given to the depths of the wells. Ginny said that these had to be estimated and the information was attached to the water quality data as another regulatory condition of the permit. Ginny noted that she is in contact with the person running the program in Salinas Valley in order to acquire additional information and added that most of the industry in this area was irrigated agriculture but there are some livestock operations.

Ginny found the most valuable lesson to be remember the goal. She believed that the Lower Yakima Valley GWMA actually had two goals: 1) to reduce the nitrate concentrations in groundwater below State drinking water standards (which was stated); and, 2) Do it in a way that protects the integrity of the agricultural economy and community (unstated). Ginny noted that the greatest innovation occurred when groups separated what needed to be done immediately (public health needs) from those that were long term projects (reducing nitrates in the groundwater) as they believed any solution to clean water had to embrace the agricultural community with both short-term and long-term solutions.

Ginny addressed the group at the symposium with a presentation on "A Tale of Two Communities – Whatcom and Yakima Counties." Ginny explained that the two counties are dissimilar because they draw their drinking water from different sources, because the drivers of their economies are different, and also because of their approach to working through to a solution. It was Ginny's observation that the reason the group in Yakima is seeing more progress in its six years is because they chose a mechanism that allowed the group to move ahead at the local level where everyone has "skin in the game" and are doing all they can to change.

A member asked whether the Department of Health tested dairy wells for nitrates. Ginny said yes certain systems were tested on an annual basis. She believed tests were done on Group A systems with more than 25 employees in a 90 day period of time with some exceptions for family farms. The requirement is that the annual nitrate test (done by certified labs) be five milligrams or repeat tests would be required every three months; however, most tests don't exceed this requirement because the wells are below groundwater level. The group also wondered if there were some dairy operations that weren't aware of this requirement as their ownership circumstances would have changed. Ginny believed Vern Redifer, Melanie Redding and PGG were all aware that this data is available and it would be a good independent data set to augment the ambient testing. Ginny said that with the help of Dave Cole they could put together the current data for the group and provide the following: 1) a list of operations that are actively

participating (Group A water Systems); 2) the data attributable to each of these operations; and, 3) a translation of the regulation so that the group would understand exactly who was required to be tested and why.

Ginny returned to the topic of the conference and indicated that there was a producer/grower association that took the lead on monitoring and assessment - she is working to get more information on this. A member was surprised that an industry group had been allowed to take on the role of data gatherer as industry in the GWMA had paid for studies and it had not been received well. Another member asked how the group finds solutions. Ginny said that the solutions have to be broad enough to bring about a consensus. Another member asked how the groups got there. Ginny said through redefining goals as noted above. A member responded that he thought this was what the Don Stuart presentation was about.

Ginny brought up a unique protection that had never been used - the Special Protection Area under Groundwater Quality Standards (which she had written) - WAC 173.200.090. It was designed for those areas in the State where groundwater is so pristine or so messed up, special rules are required. To determine if the designation is in the best interest of the public, a hearing will be held and a finding made. The Department of Ecology and Department of Health will then work together to determine the best tools to deal with nitrogen issues and to ensure that all of the players are contributing to a solution. This could be one path for regulatory enactment should the group choose. The group also discussed "sole source aquifer" which is a federal designation. Federal funding can be used as a "big stick" in this case. (Ginny noted two instances where that had happened). A member commented that the perception in the case of a sole source aquifer was that it takes local control away and therefore was not a preferred approach. Ginny also brought up designating the area as an aquifer protection area which allows a tax to be assessed which would raise funds to support aquifer protection. However, this process requires a vote. (RCW 36.36)

A member asked if Ginny heard any success stories of agriculture and industry working well with each other at the conference. Ginny said yes, she had spoken earlier about the work done in Denmark and the Netherlands. Once the state standard had been established there was a great deal of flexibility on the local level as to how to meet the standard because conditions are different from locale to locale. A member asked if the goals were performance based or if the group had determined specific practices that must be followed. Ginny said what wasn't negotiable was the standard performance number - specific practices could be chosen by each locale. Ginny reminded the group that she was compiling a list of contacts to share with Vern.

On-Site Sewage Systems: Ginny stated that not much had been presented about on-site sewage systems at the conference and that the contribution of this source is comparably low. Dan asked about the nitrate contribution from modern permitted, properly maintained systems. Ginny responded that waste nitrates are not dealt with effectively. Further, she believed that density is a huge issue as you lose the natural capacity of the aquifer to assimilate and disseminate. She suggested that local governments could determine that when density is at a certain number a community must shift over to a public system. Leslie said that when areas get larger they can require nitrogen abatement and that there is some current funding for septic improvements. Dan believed those with on-site sewage systems on the outskirts of cities could be required to be

added to the city system and that in the case of clusters outside of cities – where there are 10 to 40 houses together – a centralized drain system to manage the waste could be installed (similar to Buena which is pumped on a three year cycle). Ginny also mentioned Deer Park in Spokane which has a centralized sewer system with alternative treatment technology and that funding for this could come through a localized improvement district (LID).

When asked what other designs there might be Ginny mentioned infiltrating chambers (i.e., sawdust or peat moss) but noted these must be maintained and replaced periodically. In the Midwest and Canada there are some systems that built barriers the plumes must go through that have worked as well. In addition, recirculating filters, then the alder chips can be included but these are difficult to retrofit. Lastly, they mentioned that there are manmade devices that are registered for nitrogen abatement.

A member asked how we map out technology for these systems in this plan. Leslie responded that you need to monitor the area first to determine there is an issue. Or, a special protection area could be established where there is gathered data indicating the area is nitrogen sensitive. In that case it wouldn't matter what kind of entity you were; a target number would be established and everyone would be required to get their numbers down. All on-site sewage system owners would be told "here's what it takes to get your system to a health happy level." Another option would be to control the issue locally – "no more building or you have to do this to regulate nitrates." The cost would be approximately \$15,000 per household or you could do a group system and it would be financed into the cost of the house. The Department of Health or a local ordinance could set these standards. Dan wanted to know how this could be done without an excess of rules. Another idea was that it could be the condition of the sale of property.

Dan addressed improperly built systems. Ginny indicated that monitoring at the distribution box for nitrates would be ideal and that operational constraints would need to be put on systems to determine if you had a problem or not. Ginny had not seen a County-wide effort like this done in the State. Dan next asked how the group could require people to test their on-site sewage systems for nitrogen. Leslie said that nitrogen testing can be required by the local health department if deemed necessary, however nitrogen testing is not required by the WAC. Operations and maintenance (O & M) is required by the WAC but isn't being done consistently. She said that a nitrate test actually costs about \$32 for a lab to do. Any entity allowed to sample for nitrates must be approved by the local health authority. They have certified O & M providers. A member suggested that when a system is pumped the pumper could test for nitrates at the distribution box. However, another was concerned that a pumper might not have enough expertise to sample. A member wanted to know what could be done if the nitrate test results were high. Leslie said that high nitrates were not currently considered to be a system failure. Ginny suggested that this would need to be a local ordinance requiring the homeowner to treat the water or do a nitrogen abatement. Dan asked how long it takes before effluent reaches groundwater. Ginny said that in the mid-Columbia Basin's BMP's took a number of years for the ambient to change.

A member wondered how incentives might be funded to help people pump their systems more frequently. Another member suggested that the County could make arrangements with service providers in order to reduce costs. Another member suggested that the group ask Vern what they

did at Buena. Dan also mentioned overloading systems with too many people in a household, older homes with bad systems and rental systems with improper usage. Leslie said must first prove there is an issue with an existing system and that currently there is no way to approach this. Ginny said that an increased amount of water going through a system pushes the nitrogen through faster which overloads soils and causes a failure. In addition, perennially saturated areas don't allow for denitrification. Dan thought that the group could come up with rules for new construction which would make it easier to establish what old construction must do.

Dan asked Ginny and Leslie their top three septic improvement recommendations. Leslie directed the group to her handout: "Recommendations of the On-Site Wastewater Treatment Systems Nitrogen Reduction Technology Expert Review Panel Final Report" submitted to the Wastewater Treatment Workgroup - Chesapeake Bay Partnership (August, 2013) pages 10 and 11. She also noted that under Best Management Practices constructed wetlands or Anne Arundel County Integrated Fixed-Film Activated Sludge (IFAS) were not allowed in Washington State.

In summary, the following ideas were discussed: 1) new construction requirements; 2) old construction pumping on a routine basis; 3) identify failing systems over time - the group liked combined systems, sewer districts expanding, retrofitting; and, 4) time of sale requirement. Ginny said that Island County created a coordinated sewer system - she will provide a contact name to Dan. Dan asked Dave to provide a costs for a range of options. Dave indicated that he would talk with his designers to see if they could provide costs.

The meeting was adjourned at 4:10 PM.

### **Resources Requested**

### **Recommendations for GWAC**

### **Deliverables/Products Status**

### **Proposed Next Steps**

---

- Ginny and Dave will compile a list of operations actively participating in dairy well nitrate testing; the data attributable to each of these operations; and, a translation of the regulation explaining who is required to test and why.
- Ginny is obtaining more information on the producer/grower association that took the lead on monitoring and assessment and will provide it to Dan
- Ginny will compile a list of conference project contacts and provide it to Vern
- Dan will check with Vern to find out what pumping format they used at Buena.
- Ginny will provide Island County contact information to Dan
- Dave will provide costs for a range of on-site septic system options

## Livestock/CAFO Working Group

### **Charge from Groundwater Management Area Advisory Committee**

---

Discussion of data sources and remaining Work Plan Items

### **Working Group Members**

---

David Bowen, Chair (Department of Ecology), Gary Bahr (Department of Agriculture), Elizabeth Sanchez (Yakama Nation), Jason Sheehan (Dairy Federation), Jim Newhouse (South Yakima Conservation District), Laurie Crowe (South Yakima Conservation District), Sue Wedam (LV Community Rep.), Patricia Newhouse (Community Rep Position #2), Steve George (Yakima County Farm Bureau), Stuart Turner (Turner & Co., Inc.), Jean Mendoza (Friends of Toppenish Creek), Jim Dyjak (Concerned Citizens of the Yakama reservation)

### **Meetings/Calls Dates**

---

Meeting: Thursday, July 7, 2016 5:00 – 7:00 PM

### **Participants**

---

David Bowen, Dan McCarty, Anthony Dorsett, Jim Dyjak, Jean Mendoza, Laurie Crowe\*, Sue Wedam\*, Steve George, Jason Sheehan, Rebecca J. Wolfe, PhD\*, Vern Redifer, Bobbie Brady and Marlene Carpenter (Yakima County).

\*via phone

### **Key Discussion Points**

---

Chair David Bowen opened the meeting at 5:03 PM and asked everyone to introduce themselves. He then addressed the agenda and summarized items 1(a) thru (d) as follows: David felt that the group should focus on items 2.1.3 through 5 from the group's work group plan. He felt that .2 was the goal of the GWMA, .6 and .7 were details that the County would be putting together and that .8 through .10 were GWMA/GWAC oriented. Additionally, a literature review of manure and groundwater done by Melanie Redding could be found on the Ecology website, publication #16-03-026. David also reminded the group that the Ecology CAFO permit was out for comment until August 17. The permit can be found on the Ecology website, search "CAFO permit." Jon Jennings and Bill Moore are the lead people taking comments. In addition there are two public hearings (Bellingham July 26 and the Yakima Convention Center July 28). There is also a webinar on July 27. Lastly, the Nitrogen Loading Assessment is with the Department of Ag – four staff are working towards its completion. Vern noted that the RCIM piece was finished and to the Department of Ag.

2. EPA Consent Order Progress Report: David noted that he observed signs of progress when he read the report. It was his goal to allow the group to review the report and discuss it if they desired. A member felt that the report revealed that a certain amount of regulation was working and wanted to discern what aspects were working best and what could be improved. She voiced concern that while 20 of the fields had seen improvement nine fields still had problems.

Another member said it was his belief that the real issue at hand was the timing of applications of fertilizers to fields and how much water was then applied. He believed monitoring these two things could be enough to reduce nitrogen loading to groundwater. He also pointed out that the proposed CAFO permit did not require the lining of ponds. He felt that the group would find most people had already made a number of changes and that dairies represented just one component – there were many other sources that would need to be addressed. Another member pointed out that while the compliance threshold for dairies is 45 ppm three out of five years the goal of the WSDA is still 30 ppm. One member said it was important to also recognize that many changes had been made because of efficiencies and economics. A member voiced a concern that the requirement for dairies to line lagoons was omitted from the CAFO report for political reasons. David noted that the previous permit had expired and there was a need to get one back in place. He felt that the proposed permit was a compromise between wants and needs but felt it was a good start.

The group talked about the presentation made early on by the Umatilla GWMA recollecting that they had been told it took a significant amount of time before Umatilla saw an improvement in the nitrate levels – perhaps as much as 21 years before it peaked and it was their experience that the slope of the graph line continued to go up despite the group's best efforts. It then came down slowly and took a long time for the group to see a consistent decline. Vern stated that while it could take 21 years to see the nitrate levels go down the group could find ways to measure progress along the way. He believed the EPA report was evidence that you can measure progress with confidence.

Vern added that a representative of the dairies (in the Consent Order Update) had approached the County to gain access to County rights-of-way in order to install additional sample wells. The County has agreed with the caveat that the County could have access to all data so that the GWMA/PGG could make use of the data as well. Vern agreed to provide the group with information on the request. He pointed out that these wells were court settlement based and therefore the two monitoring plans would not be coordinated so that the groups wouldn't intermingle.

A member said that from an environmental point of view a variety of Livestock/CAFO BMP's would be required and that it would be important to have a form of measurement for the impact of their use. David agreed and noted that having a monitoring plan for the BMP's in place was part of the work the GWAC was required to do.

3. Livestock/CAFO BMP's – Review Current Info and Next Steps: Vern said the list had been compiled by HDR (PGG was its sub-consultant). The intent was to prepare a laundry list of BMP's from every source so that the group could sit down and evaluate each one. However, the group at that time desired to wait on this work as they wanted to gather more information on what's going on before it was evaluated. David noted that it was his goal to go through them and determine whether or not to keep the BMP, delete it and note what was missing ultimately determining whether the list should be winnowed down or if it was comprehensive enough. A member asked how the BMP's would be monitored. His example was 2.1.2.8 – identify and properly seal all abandoned and improperly constructed wells. David and Vern explained that it was also part of the group's goal to determine who implements the BMP and who monitors it. Each of the three groups Livestock, Irrigated Ag and RCIM will identify possible strategies, pick out the best and then determine who will implement and who will monitor each. The group will structure the strategies from there melding monitoring plans into one. The group discussed setting a definite check-in time and determined that it may be appropriate to shorten the time frame to two years to see

participation level. However, several members felt that it would take longer to see responses making the three to five year time frame more applicable. One member pointed out that there will be barriers of expertise and funding slowing down the implementation process, i.e., the complexity and costs to go from one irrigation type to another or engineering issues on lagoons. Another member stated that it takes approximately two years to implement a project from the time it is started and a six month wait on equipment is not unheard of.

A member brought up 2.3.1.2 – use mechanical methods. One member pointed out that if for instance a separation system doesn't work well the soil test and application of manure and commercial fertilizer will reveal this. Another member brought up 2.3.2.3 – use anaerobic digestion. He said that there was only one of these in the valley as their use was cost prohibitive. So many mechanical methods have evolved over the last five to seven years – needs are always being brought to the manufacturing community all the time and needs are constantly evolving. There is an inherent driving force to get solids out of the liquid as it reduces the amount of product to get out on the field. There are good separation systems in place now but balance remains an important factor as the value of manure in the tank is lower because of a declining amount of nitrates – you can go overboard. The ultimate goal is where does manure go – pens and lagoons are not a significant source. A great deal of this is being addressed through the permitting system.

There was a discussion about AKART (all known and reasonable technologies). Some pointed out that this was reasonable. Others stated that the industry can't keep up with the technology and stressed that there must be a need to do it. One member stated that if the soil tests are below 30-45 ppm why should a dairy be required to take further action. The solution in this case could also be foregoing application of manure to the field. If a dairy is following the rules shouldn't it be up to them to decide how to run their business. Vern noted that this illustrates importance of having both method based measurement and performance based measurements in place. Staying within thresholds is the priority.

Steve George stated that he had discussions with David and Ginny Prest. If the group was in agreement they (with the help of Laurie Crowe) would narrow down a list of relevant practices and present them to the group for consideration before the next meeting. This would allow those from the industry to start on the list first and the entire group would then have a chance to brainstorm. A member noted that they wanted composting on the list. Another member pointed out that it was listed on 2.4.3.1 already. Another member desired to see documentation substantiating the benefits of the relevant practices. The group agreed to go forward with Steve's suggestion and to put this on the agenda for the next meeting.

4. Regulatory Framework Report Out – How do we want to receive their work? David asked Jean (as chair of the Regulatory group) how she saw the presentation unfolding. Jean stated that preliminarily she envisioned bringing the written summary of applicable laws to the group (which has been completed) and a list of questions the Regulatory group had for Livestock/CAFO (this has not been completed). Jean's example of a question was "are there laws that should be written or rewritten?" Vern's thought from his remembrance of the initial plan was for the group to research existing laws, compile them, disseminate them to the applicable groups and then have interaction. Jean also expressed that she doesn't feel like the compost laws are adequate and wants to bring this to the Livestock/CAFO group. Another member asked if Regulatory was to bring their opinions or just information. Vern clarified and said that Regulatory shouldn't say this is what we found and

here's what we think you should do. David asked how much time Jean felt the group needed. Jean indicated she thought 90 minutes as they would need to present information on dairy production, pens and corrals and lagoons and ponds. David suggested (and the group agreed) 30 minutes to present and 30 minutes for discussion which would allow the Livestock/CAFO group to spend the second hour on the BMP discussion. He pointed out that if an hour wasn't sufficient Regulatory could come back to another meeting. It was also noted that the group would need to consider if the suggested items were cost effective to implement.

**5. Legislative Funding Requests – Capital Budget and/or Operating Budget:** David spoke with his supervisor who was already participating in their second budget discussion this week. He reminded the group that a one time "ask" would go to the legislators and that a multiple "ask" would go into a budget request from a State agency. A member noted that they felt it was important to get requests put together for oversight and follow-up monitoring specific to practices asap since the current funding will end December, 2017 and that any funding for January, 2018 would need to be in to the legislature by January, 2017.

A member asked if a placeholder could be put in the budget for \$100,000 to \$500,000 for the whole GWMA. David indicated that he was required to provide line items to his manager. A member noted that someone at the last Irrigated Ag working group had reported receiving 1.5 million for education. He was concerned that various groups not replicate efforts. Another member stated that they felt it wasn't the responsibility of the GWMA to make requests for other agencies (i.e., Yakima Health District or South Yakima Conservation District) as this was not in the GWMA's purview. The member also voiced that it was their desire to see funding for all groups especially those that are suffering the consequences of the nitrate issues.

It was suggested that Vern and David work on the line items as soon as possible in order to accommodate applicable deadlines and determine the best routes to take.

**6. Other Topics . . . Next Steps:** David passed out two documents associated with BMP's - Natural Resources Conservation Service: Practice Standard 590 (Nutrient Management). There were no other items for discussion.

### **Resources Requested**

---

#### **Recommendations for GWAC**

#### **Deliverables/Products Status**

#### **Proposed Next Steps**

---

- Vern to provide information to the group about the request from the representative of the dairies (in the Consent Order Update) to gain access to County rights-of-way in order to install additional sample wells.
- Steve, Ginny P., Laurie and David to compile a list of relevant BMP's and present them to the group prior to the next meeting for the group's consideration.
- Vern and David to work together on line items and best routes to take for budgetary and legislative "asks."

## Livestock/CAFO Working Group

### Charge from Groundwater Management Area Advisory Committee

Discussion of data sources and remaining Work Plan Items

### Working Group Members

David Bowen, Chair (Department of Ecology), Gary Bahr (Department of Agriculture), Elizabeth Sanchez (Yakama Nation), Jason Sheehan (Dairy Federation), Jim Newhouse (South Yakima Conservation District), Laurie Crowe (South Yakima Conservation District), Sue Wedam (LV Community Rep.), Patricia Newhouse (Community Rep Position #2), Steve George (Yakima County Farm Bureau), Stuart Turner (Turner & Co., Inc.), Jean Mendoza (Friends of Toppenish Creek), Jim Dyjak (Concerned Citizens of the Yakama reservation)

### Meetings/Calls Dates

Meeting: Thursday, August 4, 2016, 5:00 – 7:00 PM

### Participants

David Bowen, Dan McCarty, Jim Dyjak, Jean Mendoza, Laurie Crowe, Steve George, Jason Sheehan, Stuart Turner, Stuart Crane, Larry Fendell, Jim Davenport, Bobbie Brady and Marlene Carpenter (Yakima County).

### Key Discussion Points

Chair David Bowen opened the meeting at 5:05 PM.

Updates from Previous Agenda: David updated the group on the Department of Ecology's proposed CAFO General Permit. Two hearings had been held - there were about 140 people in attendance in Bellingham (about 60 percent represented dairies and the remainder other interests) and 120-140 in Yakima (about 50 percent represented dairies). Frequent comments from the dairy perspective were the cost analysis and setbacks and for other interests it was not lining the lagoons and no requirement to monitor the groundwater. The Department also held a webinar which was attended mostly by agency personnel. Jon Jennings will continue to receive comments until August 17. The Department expects the finalized permit to be in place by the end of the year.

Regulatory Framework Work Group Presentation: David apologized for the confusion surrounding the supporting documentation Jean had provided to the group via her website for the meeting. He pointed out that the majority of the documents were past Regulatory meeting summaries which were available on the County website and that most other documents can be provided to the group by the County as well if desired.

David then invited Jean to make her presentation. Jean passed out a document she had prepared entitled "An Analysis of Regulatory Statutes, Voluntary Incentives and Regulatory Assistance Programs" and stated that the analysis was her interpretation of the Regulatory meeting summaries.

After reading the purpose statement of the Regulatory Framework Working Group Jean proceeded to provide information on each applicable regulation including how they were monitored, enforced, measured, their effectiveness and the need for any potential changes. Specific comments made in addition to the handout are as follows:

1. *EPA under the Safe Drinking Water Act (groundwater)*. Jean noted that private citizens can go to the EPA if they have a concern. There were no additional comments.
2. *EPA under the Clean Water Act (surface water)*. There were no additional comments.
3. *Ecology under RCW 90.48 Water Pollution Control and WAC 173-200. WA Department of Health under RCW 43.20*. There were no additional comments.
4. *Ecology discharge permitting under WAC 173-216*. Jean commented that this permit was for businesses. There were no additional comments.
5. *Ecology Non-Point Source Pollution*. Jean advised that this plan was just recently written making it difficult to determine how effective it is and to provide additional monitoring information. There were no additional comments.
6. *Natural Resources Conservation Service (NRCS)*. Jean pointed out that this was a voluntary program through the USDA. A member stated that he believed efforts were underway to ensure additional compliance and to require the whole farm to come under the plan even if the contract was just for a portion of the farm. Jean asked what the impact of the program had been. Laurie indicated that the funding had dropped dramatically. Jim Davenport asked if farmers would change their practices if the funding went away. A member said that change would slow down because of reduced funding pointing out change is encouraged by a reduction in labor costs and/or an increase in cropping but can also be driven by an outside funding source.
7. *South Yakima Conservation District (SYCD)*. The group discussed the disparity in funding between the North Yakima and South Yakima Conservation Districts. Several members pointed out that they believed the disparity was due to the wildlife habitat related projects (which were funded by grants) necessary in the northern district and not applicable to the southern district. Another member spoke of the need to potentially hire an additional two to three people full-time to get the GWMA work done.
8. *Washington State Department of Agriculture Dairy Nutrient Management Program (WSDA DNMP)*. The group discussed at great length both Jean's characterization of this regulation and her portrayal of the enforceability and monitoring of this program as several members disagreed with Jean's interpretation of both the presentation and actual practices of the WSDA.
9. *Composting of Agricultural Wastes*. The group disagreed with Jean's characterization of this regulation as it pertained to dairies. David noted that from the dairy side there are already rules in place. Some members felt that many farmers were doing this already, others disagreed. Jim Davenport suggested that there could be a standardization of positive practices through some sort of County writing with no additional impositions on those who

are doing well in order to take care of the 2-5 percent who are not handling composting appropriately. A member suggested that the County adopt the NRCS as a guidepost.

10. *National Pollution Discharge Elimination System (NPDES) Permitting Under Ecology.* There were no additional comments.
11. *Biosolids Under Ecology and Yakima Health District.* There were no additional comments.
12. *Yakima County.* Jean offered that she would like to see more County regulations regarding the CAFO permit and setbacks for dairies. She provided the group with a handout (Examples of Water Protection Requirements from County CAFO Ordinances across the United States) which outlined how other counties made and enforced ordinances pertaining to water protection. Although debate on this issue ensued, David interjected that it was his intention to postpone this discussion until the group's next meeting.
13. *Atmospheric Deposition.* There were no additional comments.
14. *Irrigation Districts.* There were no additional comments.
15. *Yakama Nation.* Stuart Crane pointed out that contrary to what Jean had written the Yakama Nation is not accountable to the Department of Ecology. There were no additional comments.
16. *WSDA – Chemigation & Fertigation.* Jean heard these regulations are written well and were imitated by others when writing regulations. There were no additional comments.

This concluded Jean's report. David advised that the group would continue their discussions at the next meeting. David then drew the group's attention to the handout (CAFO's Water Quality Protection Requirements) provided by Steve George which had been a compilation of work done by Ginny Prest, Laurie Crowe and Steve. Jean wanted to know where the group had obtained the information on the Compost Areas (No. 7). The response was that they had surveyed each operator. David will get the survey information from Ginny Prest.

BMP Discussion: David explained that after last month's meeting he had filtered the list of BMP's assembled by HDR removing duplicated items and reassembling the list in a more logical manner. David asked if the group wanted to present the list as is to the GWAC or if they felt further efforts were necessary. After some discussion it was agreed that further refinement was necessary - Laurie Crowe and Stu Turner volunteered to spearhead this effort which would include the addition of the applicable NRCS code to each BMP. David encouraged all of the members to make note if they felt something was missing that needed to be added or, if a BMP didn't make sense, to note it and write down why.

Next Meeting and Next Steps: David encourage everyone to get any changes to the BMP list to him quickly so that he could disseminate the information and get it to the group prior to the next meeting which would be held Thursday, September 1, 5:00-7:00 PM.

**Resources Requested**

---

**Recommendations for GWAC**

**Deliverables/Products Status**

**Proposed Next Steps**

- David will get the survey information on compost areas from Ginny Prest from the group's handout (CAFO's Water Quality Protection Requirements).
- Laurie Crowe and Stu Turner volunteered to spearhead the effort to refine the list of BMP's including adding the applicable NRCS code to each. Each member will note if they felt something was missing from the BMP list that needed to be added or if a BMP didn't make sense – note it and write down why. All will forward their comments to David in the next few weeks so that he can disseminate the information and provide it to the group before the next meeting.

## Livestock/CAFO Working Group

### Charge from Groundwater Management Area Advisory Committee

Discussion of data sources and remaining Work Plan Items

### Working Group Members

David Bowen, Chair (Department of Ecology), Gary Bahr (Department of Agriculture), Elizabeth Sanchez (Yakama Nation), Jason Sheehan (Dairy Federation), Jim Newhouse (South Yakima Conservation District), Laurie Crowe (South Yakima Conservation District), Sue Wedam (LV Community Rep.), Patricia Newhouse (Community Rep Position #2), Steve George (Yakima County Farm Bureau), Stuart Turner (Turner & Co., Inc.), Jean Mendoza (Friends of Toppenish Creek), Jim Dyjak (Concerned Citizens of the Yakama reservation)

### Meetings/Calls Dates

Meeting: Thursday, September 1, 2016, 5:00 – 7:00 PM

### Participants

David Bowen, Dan McCarty, Jim Dyjak, Jean Mendoza, Steve George, Jason Sheehan, Stuart Turner, Stuart Crane, Larry Fendell, Sandy Braden, Merivet Lombera, Bobbie Brady (Yakima County Support Services).

### Key Discussion Points

Chair David Bowen opened the meeting at 5:10 PM. He welcomed everyone and had them introduce themselves.

Updates from Previous Agenda Items: The Department of Ecology CAFO General Permit comment period had been extended to August 31 due to an online glitch and is now closed. Ecology received approximately 3,600 comments which they are now processing.

BMP Discussion/Regulatory Framework: These two agenda items were meshed together in the discussion. David made sure that the participants all received the three handouts produced at the meeting: 1) Stu Turner's list of NRCS (Natural Resources Conservation Service) Citations on BMP's; Jim Dyjak's copy of the Conservation Programs Manual, Section 515.141 Conservation Practices and Practice Service Life; and, 3) Jean Mendoza's contributions to the BMP discussion. A member asked if Laurie Crowe had provided information on the level of NRCS implementation in Yakima County; David said he had not received this information.

David asked Jean to talk first about her BMP concerns. Jean's list included the following:

- Silage is not addressed;
- There are no BMP's that give credit for monitoring well water;
- There is a need to identify BMP's that contribute to air pollution; and,
- The BMP's for composting are not well enough developed.

A discussion ensued on the topics as follows: Jean didn't believe silage leachate had been addressed. A member explained that all of the dairy plans he is monitoring give consideration to silage leachate as it is a liquid and is pumped. Jean wondered if Laurie Crowe could provide an estimate of how many dairies in the GWMA make use of a pump. The member responded that most dairies (2,000+) have pumps. Further, another member added that since 1998 the RCW's requirement for Dairy Nutrient Management Plans (DNMP's) is zero discharge. A discussion ensued about both the DNMP and 590 Plan. The 590 Plan (if a dairy is following it) requires every dairy to readjust its nutrient plan every year and applications and yields are reported yearly to the Department of Agriculture. DNMP's are updated less frequently unless there is an animal increase by ten percent or a land decrease by 10 percent. Further, members went on to say that the DNMP requires zero discharge which takes care of the leakage on the surface and that while it may not be addressed in the NRCS, it is a State law. David pointed out that there is some leakage and that this is not 100 percent foolproof. Jean desired to see a BMP regarding silage to show that the group is addressing all of the issues. It was requested that David get a copy of the current State DNMP from the Conservation District as Jean's handout indicated that she was utilizing the one from 2012 and the DNMP had been updated since then.

The concern regarding air pollution primarily centered around two areas – when manure was left in stacks in weather conditions that caused an increased percentage of volitization and also when it is applied to frozen fields during an inversion. David pointed out that the group can't stop anomalies but that there could be a BMP that sprinkler systems are not to be used in the winter months during inversions. Others were concerned that there was no need for this as cooler temperatures come with low vapor pressure which means less is lost to the air. Jean added that she desired to flag those BMP's that cause more air emissions. A member went on to say that he felt it was important for the group to focus on the low hanging fruit rather than those making less contribution. It was his belief that aerosol deposition contributed less and that land contribution was a far greater issue. He also believed that when there were infringements on a large body of people there was a greater need on the part of the working group to find solutions.

Jean brought up a concern that Dan DeGroot (Chair of the RCIM Working Group) had initially voiced about abandoned wells. She noted that the chart on page 7 of her handout "Attachment 2 – Table 10-4 from the Agricultural Waste Management Field Handbook" recommends that when lagoons are lined with clay or synthetic liners a search be done for abandoned wells and no lagoon should be built within a 1,000 foot radius of an abandoned well. The group agreed that this should be put on the checklist. It was further noted that the Department of Ecology has setbacks for domestic wells from lagoons as well.

David asked the group where they wanted to go with the list of BMP's as it was his goal to deliver the group's work product to the GWAC at its scheduled December meeting. Another member spoke up and said that he preferred a cafeteria style approach to BMP's so that each dairy could choose the BMP's it desired to use. He also thought that a minimum score could be established but wondered how the group would rank the BMP's. Several members voiced concerns that BMP's were not being followed already and more stringent efforts would be required. The discussion became volatile and Chair, David Bowen asked the group to take a break.

David Bowen redirected the group from its philosophical discussion to focus on the following questions: Why are things the way they are and what can be done to stop it – specifically what

physical, operational, and/or emotional changes need to be made. A member said that the group needed to stop the blame game as there were too many tangent conversations and focus on what the working group was really about.

A member suggested the group narrow down a handful of less than five NRCS standards that would do 90 percent of the job. He encouraged the group to come back to dealing with the low hanging fruit – focus on those BMP's that affect the practices that are most prevalent. Another member agreed that the central issue was the amount of nutrients applied, what kind of nutrients were being applied and what was pushing the nutrients through – the hammer and the nail.

A member noted that it can be hard to pick just one BMP and he liked the idea of a cafeteria style approach that would allow him to focus on the endpoint. Another member said that a California study called this cafeteria style a “cluster of practices” and wondered how the group could get a description of a cluster of practices down on paper.

David asked those at the table who work in the livestock/CAFO industry for input and the discussion about lagoons at dairies leaking resumed. A member felt that the group should establish a performance standard such as “nothing from the lagoon can get into the groundwater” rather than come up with a long list of BMP's as BMP's are continuously evolving. There was discussion about a zero standard or a de minimis standard. A member asked how the standard would be measured. Another member responded and said that the current law is that the Department of Ecology must prove there is leakage and he felt there would be a requirement in the new Ecology permit for an engineering process that would help as well.

Jean asked the group to look at the type of liners recommended on her handout, page 7, 10-4. A member commented that he was not opposed to this but also voiced concern about the cost estimates on retrofits and felt the group should know first the costs attributable to any requirement they were contemplating which is why he preferred a performance standard of no nitrates to groundwater. Further, he did not agree that synthetic liners were better than clay and pointed out that synthetic liners have more of a potential to get damaged in the dairy industry because of the use of pumps. It would be his preference to see synthetic and clay liners used simultaneously. He also pointed out most owners will also install a fence around their lagoon(s) which is another large cost. A member wanted to know if liners deteriorate and what the shelf life was. Another member said that inspections reveal any deterioration.

A member asked why NRCS standards couldn't be enforced on the lagoons, corrals, composting areas and silage. Another member suggested that the group get a list of BMP's from Laurie Crowe with the percentage of people using them. Then the group could look at the low numbers and if they're not doing those cut those out and concentrate on the ones with the bigger percentage of users. Scoring will reveal the low hanging fruit. Another member disagreed as he felt it would be as if they were saying one practice is better than another. Jean said she would agree to setting a performance standard if there was a way to monitor to determine that the nitrates weren't going to groundwater.

Next Steps:

- One member felt that the CAFO permit would include engineering requirements; another member didn't feel like the group could wait for that.

- HDR's list of BMP's - should they be rated or not?
- David hadn't heard anyone comment about what was missing from the list of BMP's except the ideas Jean brought forward on air pollution and silage leachate and encouraged people to make written comment.
- Jean wanted to find a way to credit those who were practicing the BMP of monitoring their well water with something more significant than a "checkmark." Several rewards were suggested. Some agreed with this concept and the rewards while others disagreed.
- A member recommended to the group that dairies be required to do a nitrate test on their domestic wells which are used for potable water. Testing could be done simultaneously with the other samples/testing they are already required to do through the Department of Health. Several members agreed.
- A member thought voluntary recommendations weren't working and mandatory requirements should be considered.
- A member again suggested that the group look at a performance standard rather than create arbitrary BMP's as he felt BMP's would evolve over time. David noted that the group was required to produce BMP's by the GWAC in order to meet the requirements of the RCW's/WAC. In addition, the concern was voiced about how to monitor this performance standard.
- A member reminded the group of the need for education.
- A member noted he had more faith in the NRCS standards than BMP's because the NRCS standards were reviewed, vetted and backed up by science. He wondered if they could be adopted. It made sense to David to use these as well.

The group was given two weeks to respond further.

### **Resources Requested**

#### **Recommendations for GWAC**

#### **Deliverables/Products Status**

#### **Proposed Next Steps**

- David get a copy of the current State DNMP from the Conservation District as Jean's handout indicated that she was utilizing the one from 2012 and it had been updated.
- The group was given two weeks to respond further to the items listed in "Next Steps."

## **Attachment B**

GWMA Expenditures through July 31, 2016.

### GWMA Expenditures Thru July 31, 2016

Task Description	Subtask Description	OBJECT DESC	VENDOR SUMMARY		2013	2014	2015	2016	Grand Total
Administration	Accounting	Labor	Labor		4,829.16	3,504.50	2,509.80	792.73	11,636.19
	Data Collection	Equipment Rental	Equipment Rental		42.00				42.00
		Labor	Labor		5,688.10	644.10			6,332.20
	Document Preparation	Copies-Co.Rd	Equipment Rental					259.00	259.00
		Labor	Labor				42.08		42.08
		Office Supplies	Office Max				476.26		476.26
		Supplies	Printing		1,955.67		43.50		1,999.17
	General Admin	Advertising	Daily Sun News		35.00	205.00	37.50		277.50
			Yakima Herald-Republic		67.70	412.97	71.09		551.76
		Equipment Rental	Equipment Rental		32.48	554.97	202.14		789.59
			Labor				83.69		83.69
		Labor	Labor		3,101.17	21,423.39	32,468.40	12,744.35	69,737.31
		Operating Sup.	Sub Shop of Yakima					137.67	137.67
		Professional Services	Davenport, James H				27,759.36	51,427.87	32,112.36
		Supplies	Compucom			870.57			870.57
			Freund, Lisa			10.95			10.95
			Office Max		229.65				229.65
			Printing			19.48			19.48
			Sub Shop of Yakima		113.04	565.34	127.24		805.62
			U S Bank		42.98	54.28	143.81		241.07
		Travel	Wurtz, Mary						
			Oliver-Murdock, Lee Ann			30.24			30.24
	GWAC Meetings	Advertising	Daily Sun News		518.00	67.50	191.25	56.25	833.00
			Yakima Herald-Republic		1,305.30	135.40	381.80	316.80	2,139.30
		Equipment Rental	Equipment Rental		31.08			32.49	63.57
		Labor	Labor		14,932.82	1,622.75	2,056.88	3,164.73	21,777.18
		Office Supplies	Office Max				42.88		42.88
			OfficeMax Contract Inc					6.27	6.27
			U S Bank				2.95		2.95
		Operating Sup.	Printing					55.17	55.17
			Sub Shop of Yakima					202.98	202.98
		Postage	United Parcel Service		83.97				83.97
		Space Rental	Northwest Community		640.00				640.00
			School District #201		117.00		15.00	63.00	195.00
		Supplies	Cherry Hill Golf Course			145.42			145.42
			Rae, Kelly		14.98				14.98
			Sub Shop of Yakima		1,955.97	113.05			2,069.02
			Supplies Dec				16.23		16.23
			U S Bank		3,428.01				3,428.01
			Wurtz, Mary		136.41	99.66	26.99		263.06
		Travel	Freund, Lisa				31.05		31.05
			Wurtz, Mary			92.40	31.05		123.45
	Travel	Equipment Rental	Equipment Rental		1,135.37		314.88	226.44	1,676.69
		Labor	Labor		1,068.93		919.33	752.48	2,740.74
Administration Total					41,504.79	58,331.33	91,663.67	50,922.72	242,422.51

Task Description	Subtask Description	OBJECT DESC	VENDOR SUMMARY	2013	2014	2015	2016	Grand Total
Best Management Practices	Database QA/QC Plan	Professional Services	HDR Engineering Inc	42,819.20	6,740.57			49,559.77
	Effectiveness Evaluation	Professional Services	HDR Engineering Inc	7,341.64	19,598.40			26,940.04
				50,160.84	26,338.97			76,499.81
Best Management Practices Total								
Deep Soil Sampling	Data Collection	Intergovernmental Services	Roza Irrigation District South Yakima Conservation Sunnyside Valley	1,497.04 47,169.13 2,821.99	140,487.80			1,497.04 187,656.93 2,821.99
	Plan Development	Professional Services	HDR Engineering Inc	49,883.68				49,883.68
	Program Support	Supplies	Printing	126.60				126.60
Deep Soil Sampling Total				101,498.44	140,487.80			241,986.24
Education and Outreach	Data Dissemination	Operating Sup.	OfficeMax Contract Inc U S Bank	25.48 78.17				25.48 78.17
		Professional Services	ALBA Enterprises HDR Engineering Inc	40.00 9,435.84				40.00 9,435.84
	Document Preparation	Labor	Labor	2,187.61	584.35	157.35		2,929.31
		Professional Services	ALBA Enterprises	690.00	120.00			810.00
		Supplies	Printing	1,013.45	1,242.44			2,255.89
			Wurtz, Mary	192.26				192.26
	Health Provider Education	Intergovernmental Services	Yakima Health District	1,000.00				1,000.00
		Operating Sup.	Printing			162.30		162.30
	Program Support	Equipment Rental	Equipment Rental			228.44		228.44
		Labor	Labor	310.59	1,666.43	3,346.88	1,388.45	6,712.35
		Office Supplies	U S Bank			37.77		37.77
		Operating Sup.	Black Star			288.89		288.89
			Freund, Lisa H			18.99		18.99
		Supplies	Office Max	90.90				90.90
	Public Survey	Labor	Labor	855.01				855.01
		Operating Sup.	Brady, Bobbie U S Bank			8.64 349.12		8.64 349.12
		Postage	Nitrate Program - Postag	139.38				139.38
		Professional Services	Heritage University	5,300.00				5,300.00
		Subscriptions	U S Bank			158.13		158.13
	Travel	Travel	Freund, Lisa Wurtz, Mary	25.99 30.80				25.99 30.80
Education and Outreach Total				11,665.81	13,259.24	3,346.88	2,901.73	31,173.66
Facilitation	GWAC Meetings	Professional Services	EnviroIssues Inc	67,256.26	41,805.15			109,061.41
		Supplies	U S Bank		117.91			117.91
	Program Support	Equipment Rental	Equipment Rental	44.08				44.08
		Labor	Labor	2,978.96				2,978.96
Facilitation Total				70,279.30	41,923.06			112,202.36

Task Description	Subtask Description	OBJECT DESC	VENDOR SUMMARY	2013	2014	2015	2016	Grand Total
Monitoring and Assessment	Data Analysis	Labor	Labor			3,123.46		3,123.46
	Data Collection	Labor	Labor	68,113.79				68,113.79
		Office Supplies	U S Bank			43.26		43.26
	Plan Development	Professional Services	HDR Engineering Inc	43,080.07	20,001.02			63,081.09
			Pacific Groundwater Group Inc				28,005.00	28,005.00
	Program Support	Equipment Rental	Equipment Rental	44.08				44.08
		Professional Services	HDR Engineering Inc	33,626.01	20,450.81			54,076.82
		Supplies	U S Bank	1,406.60				1,406.60
	Report Writing	Professional Services	HDR Engineering Inc	10,422.87				10,422.87
	Source Mapping	Professional Services	HDR Engineering Inc		10,047.42			10,047.42
	Well Assessment	Advertising	Adelante Media Group		900.00			900.00
			Bustos Media			925.00		925.00
			Radio Yakima			255.00		255.00
			Townsquare Media	1,884.00	2,748.60	(1,185.00)		3,447.60
	Intergovernmental Services	Yakima Health District		3,215.30	41,184.70	30,500.00	42,000.00	116,900.00
Nutrient Loading/Nitrogen	Labor	Labor			1,597.57	4,638.40	8,102.97	14,338.94
	Office Supplies	OfficeMax Contract Inc					48.74	48.74
		U S Bank					63.81	63.81
	Operating Sup.	Printing					758.76	758.76
		U S Bank					134.97	134.97
	Postage	GWMA					404.86	404.86
	Professional Services	ALBA Enterprises			120.00	280.00		400.00
		Radio Yakima					245.00	245.00
	Supplies	1000 Flyer - Nitrate			259.68			259.68
		Printing		81.15	2,058.62			2,139.77
Monitoring and Assessment Total				159,908.72	96,526.35	45,222.20	77,929.25	379,586.52
Nutrient Loading/Nitrogen	Plan Development	Intergovernmental Services	Wash St Dept of Agriculture			13,020.35		13,020.35
			Wash St Dept of Agriculture				31,979.65	31,979.65
Nutrient Loading/Nitrogen Total						13,020.35	31,979.65	45,000.00
Regulatory Review	Data Collection	Professional Services	HDR Engineering Inc	8,783.89	2,091.65			10,875.54
Regulatory Review Total				8,783.89	2,091.65			10,875.54
Grand Total				342,303.35	339,969.04	293,740.90	163,733.35	1,139,746.64

## **Attachment C**

EPO's Test your Well Billboard Campaign Proposal to GWAC August 18, 2016

Lower Valley Billboard Location Map

Mock Ad 1

Mock Ad 2

Mock Ad 3

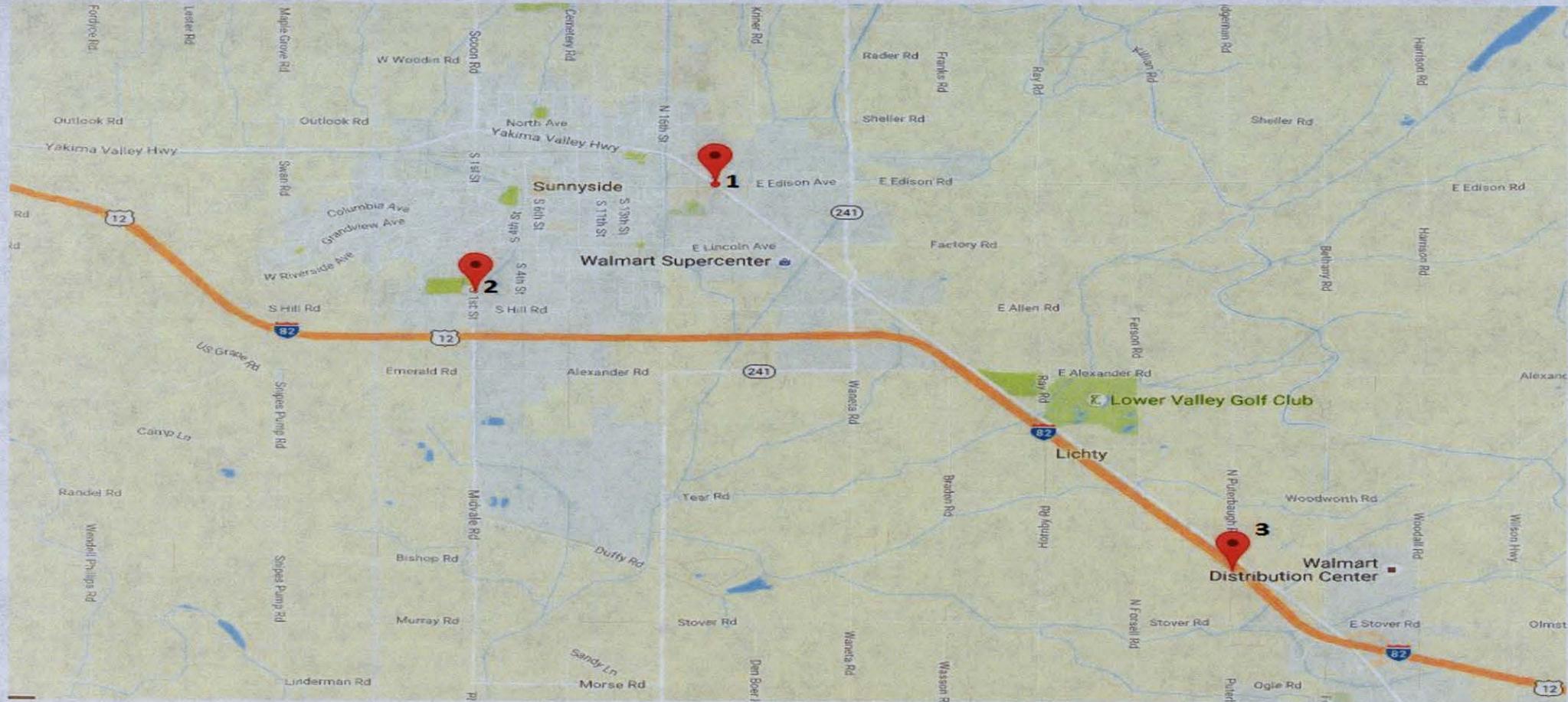
**EPO's "Test Your Well" Billboard Campaign  
Proposal to GWAC Aug. 18, 2016**

Modified\_v2 (last updated 8/15/2016)

Proposed Billboards	Location	Contract Term	Start Date	End Date	Cost	includes
1. Billboard (2 sides) Company: Lamar	Edison & YV Hwy Edison & YV Hwy	6 months 6 months	October-16 October-16	March-17 March-17	\$5,000.00 setup \$5,000.00	
					<b>\$10,000.00</b>	
	<b>SubTotal</b>					
2. Billboard (2 sides) Company: Tom Paul	S. 1st St_Midvale_ near Exit 67 (South) S. 1st St_Midvale_ near Exit 67 (North)	6 months 6 months	* 1/1/2017 October-16	June-17 March-17	\$2,000.00 setup \$2,000.00	
					<b>\$4,000.00</b>	
	<b>SubTotal</b>					
3. Billboard (1 side) Company: Lamar	I-82 Exit 73, Grandview	6 months	* 4/1/2017	September-17	\$5,000.00 setup	
					<b>\$5,000.00</b>	
	<b>SubTotal</b>					
<b>Total Budget Request</b>						<b>\$19,000.00</b>

<b>BILLBOARD KEY</b>	#1-Lamar Edison & YV Hwy	Sunnyside
	#2 Tom Paul-S. 1st St. near Exit 67	Sunnyside
	#3 Lamar-I-82 Exit 73	Grandview

\* First available date



## Lower Valley Billboard Locations

**1. Lamar**

**Edison & Yakima Valley Highway**

**2. Tom Paul**

**S. 1st Street, near Exit 67**

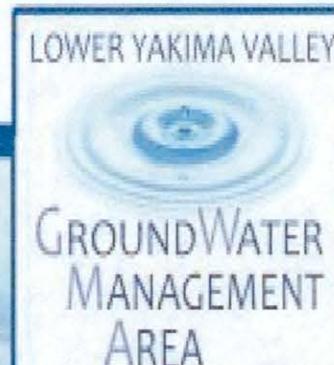
**3. Lamar**

**I-82 Exit 73**



# Private Well Users Test Your Water Thank You

For More Information please call 509-574-2300

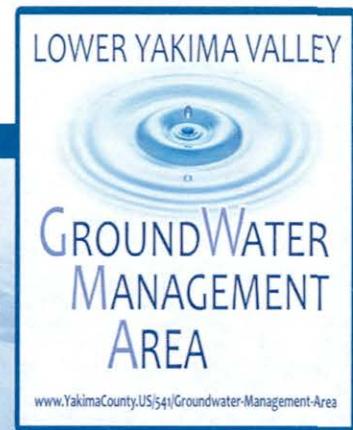


[www.PugetSoundWaterManagementArea.org](http://www.PugetSoundWaterManagementArea.org)



For More Information please call 509-574-2300

Make Sure Your  
Drinking Water  
Is Safe  
TEST YOUR WELL





For More Information please call 509-574-2300

Make Sure Your  
Drinking Water  
Is Safe  
TEST YOUR WELL

