



25 COTTON RECYCLE

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
VERN M. REDIFER, P.E., Director

October 9, 2014

Charles McKinney
Department of Ecology, Central Region Office
15 W. Yakima Ave. Suite 200
Yakima, WA 98902-3452

Re: Lower Yakima Valley GWMA - 2014 Third Quarter Report (IAA No. C 1200235)

Dear Charlie:

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 2014 Report
Lower Yakima Valley GWMA
September 30, 2014

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 19, 2014 and the draft meeting summaries August 21 and September 18, 2014; the Education and Public Outreach (EPO) Working Group summaries of July 2, August 1, and September 3, 2014; the Livestock/CAFO Working Group summary of August 7, 2014; the Irrigated Ag Working Group (IAWG) summary of August 21, 2014; the Residential, Commercial, Industrial, and Municipal (RCIM) Working Group summaries of July 9, August 28 and September 25, 2014; the Data Collection, Characterization and Monitoring Working Group summaries of September 4 and 24, 2014; and the Regulatory Framework Working Group teleconference summary of August 11, 2014.

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.

Work Plans and Products

The GWAC preliminary budget and the Deep Soil Sampling project dominated the GWAC's third quarter work.

Budget

At the June GWAC meeting, the County requested that the working groups submit budget proposals to initiate a GWAC budget discussion. Accordingly, the working groups submitted 17 budget proposals that were compiled for the August GWAC meeting in a spreadsheet called "Estimated Cost for Budget Discussion on August 21, 2014." The spreadsheet also contained a budget placeholder for the Groundwater Monitoring Plan. The total budget requests, including funds already spent and/or obligated, was \$3.12 million—\$1.52 million over the \$1.6 million available.

On August 21, the GWAC reviewed the budget proposals and preliminarily ranked each one. Because the proposals exceeded the available funds, the working groups were advised to review their priority projects, and to consider reducing or withdrawing budget requests before the next meeting. The GWAC agreed to a special meeting on September 18 to review the revised budget and continue the budget discussion.

The Estimated Costs spreadsheet was updated (with GWAC rankings and working group proposal revisions) for the September 18 meeting. However, as the meeting lacked a quorum, no budget discussion took place. Budget work will be carried over into the fourth quarter.

The original "Lower Yakima Valley GWMA Program Development - Estimated Costs for Budget Discussion," presented on August 21, 2014, the September 18, 2014 Budget update with GWAC rankings, and working group proposals are included as Attachment (B)

Deep Soil Sampling Program – Status

Outreach continued in the third quarter with door-to-door canvassing, a booth at the Grandview Fair and additional media coverage by the *Sunnyside Daily Sun News* and *Yakima Herald Republic*. Fair booth volunteers reported that 15 questionnaires were distributed at the fair; feedback from that event indicated that people are reluctant to participate in [the present] lawsuit environment. As of September 30, 40 growers had signed up to participate. 20 were solicited through the door-to-door canvassing and 20 responded to the May newsletter invitation. Sampling is scheduled to begin in October.

Bid and Contract Award. The bid packet for the DSS work was completed in June, advertised in June and July, and bids opened on July 18. On July 25 the bid was awarded to Landau Associates, which submitted the only complete bid. On July 15 an interlocal agreement (ILA) between Yakima County and South Yakima Conservation District in the amount of \$245,025 was approved, primarily for the DSS work. Due to Landau's higher than estimated bid amount (\$394,563), the ILA was amended on August 5.

The ads of July 6, 9 and August 25, and the news articles of July 16 and August 13 are included as Attachment (C). The ILA and amendment are included in Attachment (F)

High Risk Well Assessment Report Out

The EPO's High Risk Well Assessment results were released in the third quarter. 172 households with private or shared wells participated in the survey. 83.7% (144) of participating wells had less than 10 mg/L nitrate; 16.3% (28) had greater than 10 mg/L. A summary of the results are included as Attachment (D)

Working Group Activities:

Education and Public Outreach (Lisa Freund, Chair)

The EPO met on July 2, August 1 and September 3 to discuss the New Mom flyer distribution and to develop EPO priority budget proposals for the GWAC's consideration.

New Mom Flyers. At the July meeting the group discussed the distribution of the New Mom flyers. The members agreed to print and distribute up to 2000 double-sided New Mom flyers at health fairs in Prosser, Yakima and other outlets. Gretchen Stewart of EPA reported that the Pediatric Environmental Health Specialty Unit (PEHSU) would request endorsement of the companion Nitrate Clinician Training program from Yakima Regional Hospital in July. Training was anticipated to begin in Yakima and Prosser hospitals on September 10 and 25.

Budget. The EPO discussed and developed its two-year budget proposals at the July and August meetings. Three of its budget proposals supported or carried out RCIM concepts: a pilot and a fully-staffed resource hotline and a \$5000 placeholder for Abandoned Well outreach.

In addition to the RCIM requests, the group submitted four budget proposals (seven total) in the amount of \$398,500 for the GWAC's consideration. Following the GWAC's ranking of its proposals, and input from RCIM, the EPO revised its proposed budget, reducing the number of requests from the seven to five. The budget was also reduced to \$267,000 (a \$131,500 reduction from the August proposal). The revised budget proposals were submitted for GWAC consideration at its September meeting.

The EPO's two-year proposed budget (original and revised proposals) are included as Attachment (B).

Livestock/CAFO (Charlie McKinney, Chair)

Budget. The working group met on August 7 to develop its budget proposals to the GWAC. The group agreed to two proposals, the first to investigate dairy pens and manure storage areas as potential source areas for nitrate contamination (\$60,000); the second to analyze and interpret data from the dairy lagoon assessments from the dairy cluster/EPA project (\$10,000). The combined budget request was \$70,000.

Following the GWAC's ranking of its proposals on August 21, the group held a brief conference call on September 11 to revisit the two projects submitted for consideration and affirm the budget amounts. The group agreed that the budgeted amounts were correct. They further agreed that if fewer than 10 dairies volunteered to do soil testing in pens and manure storage areas the cost will be less than the \$60,000 budget.

The combined budget request remained at \$70,000 for the GWAC's September meeting.

The proposals for the Dairy Pens and Manure Storage Sampling proposal and Lagoon Assessment based on EPA data are included as Attachment (B)

Irrigated Ag (Jim Trull, Chair)

Deep Soil Sampling Program. There were two respondents to the Deep Soil Sampling Bid Proposal and only one, Landau Associates, was complete. It also came in over bid at \$394,563. Laurie Crowe, Bob Stevens, Ginny Prest, Ralph Fisher, and Bill Eller of the State Conservation Commission participated in the July bid opening. Following discussion, the group decided that subject to a satisfactory completeness review, Landau would be awarded the Deep Soil Sampling contract. It was deemed complete and Landau awarded the bid on July 25 in the amount of \$394,563. Northwest Associates of Kennewick will conduct the lab work.

At the IAWG meeting on August 21, Group Chair Jim Trull reviewed the bid approval decision, and explained that both time and money were considered in awarding the bid. If the project had been rebid (time) the GWAC would have lost another year before conducting the deep soil sampling. County consultant Jim Davenport agreed, noting that time lost was more expensive than a higher contract amount.

Budget. The working group submitted four proposals in the amount of \$950,000: 1) Deep Soil Sampling - \$394,563; 2) 100 additional deep soil samples - \$150,000; grower workshops - \$7000; and 4) mobile lab - \$395,195. The IAWG proposals are included as Attachment (B)

Residential, Commercial, Industrial, and Municipal (RCIM) (Robert Farrell, Chair)

Budget. The group met on July 9, August 28 and September 25 to develop budget proposals and to consider modifications to the Deep Soil Sampling project for RCIM sites. At the July meeting the group explored a two-phase Abandoned/Improperly Decommissioned Wells Identification proposal. The first phase (year one) would address identification and characterization and the second phase (year 2+) would address decommissioning abandoned wells. The group agreed to a year-one proposal of \$50,000 and year-two proposal of \$100,000 (\$150,000 total). Separately, they recommended that EPO create a line item specifically for abandoned well outreach. The group also discussed a nitrate source pollution referral line proposal. They agreed that the EPO should create a \$10,000 budget line item to launch the referral line.

Accordingly, the RCIM submitted its \$150,000 abandoned well proposal at the August GWAC meeting. The EPO submitted three proposals—two resource hotline scopes of work and one abandoned well outreach proposal—on behalf of RCIM. The GWAC ranked the abandoned well concept high; the RCIM hotline concepts were ranked low.

On August 28 the RCIM considered revising its proposals based on GWAC feedback. They agreed to remove the RCIM hotline from the current proposal list. They further agreed to allocate the \$50,000 for the first year of the abandoned wells project to EPO, and reduce the second year budget to \$50,000. The revised abandoned well proposal was submitted for GWAC review in September.

At the September meeting the group discussed modifications to the Deep Soil Sampling Plan for RCIM sites. The group agreed to a residential property sampling concept that would include two different types of sampling on residential properties: 1) septic/drain fields and 2) a composite sampling that would include garden, lawn, and pasture. The group agreed to recommend to the GWAC that it consider directing future resources to conduct RCIM sampling. They further agreed that current resources should be reallocated for this purpose if the current DSS falls short of its sampling goals.

The original \$150,000 RCIM Abandoned Well proposal is included as Attachment (B). The September \$50,000 revised proposal is included in the September budget spreadsheet, also found in Attachment (B)

Data Collection, Characterization and Monitoring (Kirk Cook, Chair)

The group met on September 4 and September 24 to discuss the draft scope of work for the nitrate loading assessment and to review EPA's Summary Yakima AOC Dairies Draft Data. Discussion followed regarding the credibility of EPA's data. The group affirmed EPA's QA/QC and agreed to schedule EPA's presentation on the next available GWAC agenda. Stuart Turner is also developing a data presentation, which will be reviewed and affirmed by the working group before placing it on the GWAC agenda.

Budget. The group submitted one proposal—Nutrient Loading All Sources - Database, Analysis, Reporting in the amount of \$57,000—for GWAC consideration.

The complete proposal, entitled Comprehensive Nitrogen Loading Assessment for the Lower Yakima Valley Groundwater Management Area-Scope of Work and Budget, August 2014, and EPA's Summary Yakima AOC Dairies Draft Data are included as Attachment (E)

Regulatory Framework (Tom Eaton Chair)

Budget. The group held one conference call on August 11 to discuss two budget proposals for regulatory review for the GWMA (comprehensive and Livestock/CAFO). After discussion, the group agreed that the more focused proposal (Livestock/CAFO) would not be well received. There was also concern about the cost of the proposals and discussion followed on how to reduce the overall cost. The group agreed to reframe the two proposals to incorporate group comments by cataloguing what other areas have done and have seen what the costs were. The revised proposal, Regulatory Review for the Lower Yakima Valley Groundwater Management Area (Comprehensive) in the amount of \$250,000 was submitted for GWAC consideration in August.

Following the GWAC ranking exercise on August 21, the \$250,000 regulatory review proposal was reduced to a \$25,000 placeholder for the September meeting.

The August 2014 Regulatory Review proposal for the Lower Yakima Valley GWMA is included as Attachment (B)

GWMA Website

The website and calendar continued to be updated in real time.

Contracts and Interlocal Agreements:

- Interlocal Agreement between South Yakima Conservation District (SYCD) and Yakima County (YC) (July 15, 2014)
- Interlocal Agreement between SYCD and YC - Amendment Number 1 (August 5, 2014)

The agreement and amendment are included as Attachment (F)

Attachment A

- GWAC Attendance Records for August 21 and September 18, 2014
- Final GWAC Meeting Summary of June 19, 2014; Public Meeting Notices, Agendas and Draft GWAC Meeting Summaries of August 21 and September 18, 2014
- Education and Public Outreach (EPO) Working Group Summaries of July 2, August 1 and September 3, 2014
- Livestock/CAFO Working Group Summary of August 7, 2014
- Irrigated Ag (Irr/Ag) Working Group Summary of August 21, 2014
- Residential, Commercial, Industrial and Municipal (RCIM) Working Group Summaries of July 9, August 28 and September 25, 2014
- Data Collection, Characterization and Monitoring (Data) Working Group Summaries of September 4 and September 24, 2014
- Regulatory Framework (Reg) Working Group Teleconference Summary of August 11, 2014

Lower Yakima Valley GWAC Meetings

Attendance

Member	21-Aug-2014	18-Sep-2014	16-Oct-2014	18-Dec-2014			
Stuart Turner	Present	Absent					
Chelsea Durfey	Present	Present					
Helen Reddout	Absent						
Wendell Hannigan	Absent						
Kathleen Rogers	Present	Present					
Bud Rogers	Absent	Absent					
Patricia Newhouse	Present	Present					
Sue Wedam	Absent	Present					
Doug Simpson	Present	Absent					
Jean Mendoza	Present	Present					
Eric Anderson	Absent	Absent					
Jan Whitefoot	Absent	Absent					
Jim Djak	Present	Present					
Steve George	Present	Absent					
Justin Waddington	Absent	Absent					
Jason Sheehan	Present	Present					
Dan DeGroot	Present	Absent					
Jim Trull	Present	Present					
Ron Cowin	Absent	Absent					
Laurie Crowe	Present	Absent					
Jim Newhouse	Absent	Absent					
Robert Farrell	Present	Present					
John Van Wingerden	Absent	Present					
Rand Elliott	Present	Present					
Vern Redifer	Present	Present					
Gordon Kelly	Present	Present					
Dr. Kefy Desta	Absent						
Dr. Troy Peters	Present	Absent					
Tom Eaton	Present	Absent					
Marie Jennings	Absent	Absent					
Elizabeth Sanchez	Absent	Absent					
Tom Ring	Present	Absent					
Lonna Frans-	Absent						
Matt Bachmann-	Absent						
Kirk Cook	Present	Absent					
Virginia "Ginny" Prest	Present	Absent					
Andy Cervantes	Present	Present					
Ginny Stern	Present	Present					
Charlie McKinney	Present	Present					
Tom Tebb	Absent	Absent					
Lino Guerra	Present	Absent					
Rick Perez	Absent	Absent					

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

3 **MEETING SUMMARY**

4 **Thursday, June 19, 2014**

5 Radio KDNE
 6 121 Sunnyside Ave, Granger, WA 98932

7 **I. Call to Order**

8 **Roll Call:** The meeting was called to order at 5:01pm by Penny Mabie,
 9 Facilitator.

Member	Seat	Present	Absent
Stuart Turner	Agronomist, Turner and Co.	✓	
Chelsey Durfey	Agronomist, Turner and Co. (alternate)	✓	
Helen Reddout	Community Association for Restoration of the Environment		✓
Wendell Hannigan	Community Association for Restoration of the Environment (alternate)		✓
Kathleen Rogers	Lower Valley Community Representative Position 1	✓	
Bud 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	✓	
Justin Waddington	Yakima County Farm Bureau (alternate)		✓
Jason Sheehan	Yakima Dairy Federation		✓
Dan DeGroot	Yakima Dairy Federation (alternate)		✓
Jim Trull	Roza-Sunnyside Joint Board of Control	✓	
Ron Cowin	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)	✓	
Gordon Kelly	Yakima County Health District	✓	
Dr. Kefy Desta	WSU Irrigated Agriculture Research and Extension Center		✓
Dr. Troy Peters	WSU Irrigated Agriculture Research and Extension Center (alternate)		✓
Tom Eaton	U.S. EPA	✓	
Marie Jennings	U.S. EPA (alternate)		✓
Elizabeth Sanchey	Yakama Nation		✓
Tom Ring	Yakama Nation (alternate)		✓
Lonna Frans	U.S. Geological Survey		✓
Matt Bachmann	U.S. Geologic Survey (alternate)	✓	
Kirk Cook	WA Department of Agriculture	✓	
Virginia "Ginny" Prest	WA Department of Agriculture (alternate)	✓	
Andy Cervantes	WA Department of Health	✓	
Ginny Stern	WA Department of Health (alternate)	*	
Charlie McKinney	WA Department of Ecology	✓	
Tom Tebb	WA Department of Ecology (alternate)	✓	
Lino Guerra	Hispanic Community Representative		✓
Rick Perez	Hispanic Community Representative (alternate)		✓

*by phone

16

17

18 **II. Welcome & Meeting Overview**

19

20

Moment of silence.

21

22

Introductions.

23

24

III. Committee Business: Penny Mabie

25

26

The April 17, 2014 Meeting Summary was approved by the committee.

27

28

Penny reminded the group that there is a section on the Agenda which is titled "Meeting Materials." This is a list of all the documents that have been emailed as well as the dates that they were sent.

29

30

Penny stated that the primary topic for discussion would be the GWAC work and development of the GWMA Program and how it all comes together.

31

32

33

34

35 Penny went over the ground rules and reminded the committee that they should
36 speak to interests and not positions so that they can get to a deeper dialogue.
37

38 Vern introduced Jim Davenport of Buena. He's an attorney with expertise in
39 writing documents and coordinating activities and has worked on water issues
40 across the west. Jim has been contracted by the County to help coordinate the
41 working groups but not direct them.
42

43 **IV. Development of a Groundwater Management Area Plan for the Lower Yakima
44 Valley: Kirk Cook, WA Department of Agriculture**
45

46 Kirk stated that the GWAC has been together for about two years now. He felt
47 that from the questions at the last couple of meetings, it appeared that things
48 were getting lost so he put together a presentation explaining the GWMA
49 development process: what the GWAC is doing, what the timelines are, and
50 how each step builds towards the next in the process. The presentation should
51 give the group a better understanding of how the GWAC want to proceed and
52 hence lead to a better discussion.
53

54 Kirk noted that the major goal the GWAC has been focused on is land use
55 management activities and not remediation. The committee wants to get a
56 handle on the amount of nitrate that is supplied, how much is utilized and how
57 much is left over. Matt Bachman asked if the committee will be measuring
58 loading to groundwater and accounting for consumption. Kirk answered yes.
59

60 Vern added that he believes the deep soil sampling serves multiple purposes: It
61 can identify how/what is being applied and identify what is happening in the
62 groundwater. The hope is that it will provide a quantitative way to evaluate the
63 BMPs.
64

65 Lisa explained the Education and Outreach working group's role in program
66 development. She said it spans the whole process and that there is a fluid give
67 and take between each GWAC step, the EPO and the public. The public needs
68 to be informed about what the committee is doing, why it's important and why
69 the committee needs the community's participation. Then, when the public
70 participates (in the deep soil sampling (DSS), for example), their data will come
71 back to inform and educate the GWAC. In this way each step builds on the
72 previous step and is influenced by previous outreach and data results. Until now
73 the public has been the committee's silent partner. That will change when the
74 public begin to participate in the DSS and other outreach and become active
75 participants.
76

77 Kirk said that the first step is area characterization and there are several elements
78 included. That helps identify what the potential sources are. One of the goals is
79 to provide a basic framework to satisfy the area characterization. Kirk noted the
80 committee knew from the beginning that the existing information was not
81 enough to make any decisions. He noted the committee is currently about 70

82 percent of the way to completing the characterization. Vern added that the
83 committee has to develop the entire program; noting that it is like writing a book
84 and as the committee begins to understand, they need to start writing. He
85 explained the GWAC are the first drafters of the book.
86

87 Kirk explained that defining the extent of the problem from each source will be
88 informed by the Deep Soil Sampling survey, the agricultural nitrogen loading
89 assessment, the Residential, Commercial, Industrial and Municipal loading
90 assessment, and the Health District well assessments. This will set the stage for the
91 alternatives. Then the committee is allowed a more surgical evaluation of the
92 groundwater management area.
93

94 Discussion followed regarding whether there would be enough DSS participation
95 to get a good statistical sample. A member stated that she felt that 50 survey site
96 samples would not be big enough; Laurie explained that it would be 50 per
97 season for a total of 200 samples. Kirk added that the survey will be offered to
98 farmers within the groundwater management area who do not participate in
99 deep soil sampling, in the hope that two or three times the initial 50 will also take
100 the survey so that the committee can acquire a typical use pattern regarding
101 crops, rotation and irrigation. The member repeated it does not include enough
102 samples for useful analysis. When asked, "How many samples are enough?" the
103 member cited WSDA crop data, noting that "50 samples might be enough for
104 the County's 600 cornfields," later adding that the survey should be sent to all of
105 the producers.
106

107 Kirk responded that the concern about an adequate population is a shared
108 concern. The member replied that by expecting people to volunteer and not
109 targeting areas where the problems are, the program may not get the parties
110 that are actually contributing to the problem. Kirk pointed out that the
111 committee doesn't know how many will participate and the committee may
112 arrive at a number that will reach a statistically valid level. If that doesn't
113 happen, however, the committee will have to go to Plan B, using book values,
114 which would be less useful.
115

116 Kirk explained that the committee is gauging improvement of the entire
117 groundwater management area. He urged members to get away from focusing
118 on specific hotspots and make an assessment of how the aquifer is doing.
119

120 Kirk reviewed alternative evaluations. He stated that HDR created a good
121 database of BMPs and that provides the skeleton to accomplish some of the
122 requirements. He pointed out that the Department of Agriculture is considering
123 looking at the economics for digesters so they can remove some of the animal
124 manure or move the manure to other parts of the state that need it. Kirk said
125 there could be alternatives out there for beyond just BMPs; the results from the
126 problem identification and goals sections will help guide the alternatives.

127 Alternatives need to address feasibility, effectiveness, cost, difficulty to
128 implement and consistency with local comprehensive plans.

129
130 A member stated that he didn't think the group with its diversity would ever
131 reach consensus on regulatory recommendations, as the analysis is subjective
132 and there are a lot of strong opinions in the group. A member countered that
133 the group can reach consensus. Industry understands the scope, scale and
134 seriousness of the problem, adding that it's important to keep the program
135 voluntary.

136
137 A member noted that if a regulatory gap is identified it would be a state or
138 federal-level responsibility, not the responsibility of the GWAC to attempt to close
139 the gap through legislation or regulation. Kirk agreed. Vern added that if the
140 County believed there was a necessary change, the County would go to the
141 legislature to discuss and support it.

142
143 A member stated that the group was jumping to conclusions. Data hasn't even
144 been gathered yet so this is a premature discussion. Vern added that he hopes
145 the committee gets statistically relevant data and starts education but as Kirk
146 said, the committee can't start effectiveness evaluation until data is available.

147
148 Kirk described adaptive management. It offers the option to "tweak" the plan, if,
149 for example, an adopted BMP is not effective. Finally, Kirk defined prescriptive
150 versus adaptive approach noting the adaptive is voluntary where prescriptive is
151 mandatory.

152 **V. Working Groups Actions**

153
154
155 **Funding:** A member asked if more people sign up for Deep Soil Sampling than
156 what is currently funded, could additional sampling be funded. Vern said yes,
157 the GWAC's budget is \$2.3m, of which \$880k is encumbered. There have been
158 no discussions on where to spend the rest of the \$1.6m. He pointed out that he'd
159 asked the working group chairs to identify projects the GWAC should take on so
160 that the need can be assessed. Vern said only EPO responded. A member
161 stated that the GWAC can't start talking about how to spend the money until
162 there is a budget provided. Vern agreed, stating that the budget discussion will
163 be on the August agenda. A member asked if the GWMA expenditures could be
164 posted quarterly on the website. Vern said yes. Matt Bachmann added that
165 USGS had offered the GWAC \$300k six months ago and that funding is no longer
166 available. While that money is gone, there might be future opportunities for the
167 GWAC to pursue funding from USGS.

168
169 **Education & Public Outreach:** The Nitrate Education Slides were approved;
170 pending two edits to slide #3 (change "Livestock Waste" to "Animal Manure"
171 and delete "Pesticides"). The New Mom flier was approved as presented. Tom
172 Eaton discussed the University of Washington's Northwest Pediatric Environmental

173 Health Specialty Unit (PEHSU) initiative in the GWMA. PEHSU will be providing
174 nitrate education to clinicians in the Lower Yakima Valley beginning this summer.
175 Training will be supported by EPO's New Mom flier and outreach.
176

177 **Data Collection, Characterization, and Monitoring:** Kirk stated that his group has
178 submitted a preliminary scope of work and hopefully the consultant will bring it
179 back by August.
180

181 **Irrigated Agriculture:** Jim advised that there is a questionnaire for the producers'
182 practices included in the newsletter. The questionnaire responses will tell GWAC
183 what crops are grown, irrigation practices, etc. The soil sampling down to 6 feet
184 will provide information about root zone and uptake in nitrates. Then the group
185 will learn about the nitrates and concentration. GWAC will get a lot of
186 information and he believes that they will get a lot of participation. The working
187 group plans to work with EPO for publicity. They've put a notice in the Daily
188 Sunnyside News and plan to get one in the Yakima-Herald Republic, Farm
189 Bureau and out as far as possible. They've also sent a letter to all the landowners
190 in the Roza/Sunnyside Irrigation Districts inviting landowner participation. Jim said
191 that the bid documents for the lab and sample collector are just about done
192 and should be completed in a couple of days. They will advertise for Deep Soil
193 Sampling on June 29th and July 6th. Bids will open on July 18th and be awarded on
194 July 25th. Jim noted they plan to start the DSS program in September.
195

196 **Committee Comments/Questions:**
197

198 A member reported that in a phone conference of an advisory committee she
199 is participating in, she learned that nitrates were eliminated as a potential source
200 of anencephaly. The majority of women affected by anencephaly were
201 Hispanic, obese and ate a lot of corn tortillas (could be a mold in the corn).
202 None of the babies born with this were from the nitrate hotspot areas in the
203 County.
204

205 Vern noted that funding from a Yakima County program, Supporting Investments
206 In Economic Development (SIED.) has been awarded for a digester transmission
207 pipe on Dekker Road. The County will own the pipeline and lease it to the gas
208 carriers. He added that the digesters don't eliminate the nitrate but remove and
209 concentrate it which makes it a marketable, exportable product. The company
210 is looking to add four more.
211

212 **VI. Public Comments:**
213

214 A member of the public suggested that it might be a self-selected group that
215 would be undergoing the DSS survey but that was all right. He recommended
216 that the GWAC move forward with their work.
217

218 A member of the public noted that research from the Pew Foundations shows
219 that trust in government is at an all-time low.
219

220 **VII. Next Steps**

221 Action items (August meeting):

- 222 • Working Groups will develop their budget requests and submit them to
223 Vern at least one week before the August meeting. Working groups
224 should be prepared to identify how their proposed projects move the
225 GWMA process forward.
- 226 • Vern will compile the numbers into a report for the August meeting.
- 227 • The GWAC will review its attendance policy and determine what
228 action should be taken regarding inactive members.
- 229 • Penny will check with Ecology regarding letters that were to be sent to
230 inactive members.
- 231 • Jean will bring a hand out to the next meeting re: What will happen to
232 the aquifer if we do nothing.

234 **VIII. 2014 Meeting Calendar:**

- 235 • August 21, 2014
- 236 • October 16, 2014
- 237 • December 18, 2014 (as needed)

239 The meeting was adjourned at 7:04pm.

240 Meeting summary was approved by the GWAC on August 21, 2014.

241

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 21, 2014 at 5:00 PM at Radio KDNA Conference Rooms 1 & 2, 121 Sunnyside Ave. in Granger WA 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.

Dated this **Wednesday, August 13, 2014**

Publish: **Thursday, August 14, 2014**

Bill: **FC3463-100-120**

Affidavit of Publication

STATE OF WASHINGTON

COUNTY OF YAKIMA SS

Timothy J. Graff, being first duly sworn on oath deposes and says that he is the Publisher of the DAILY SUN NEWS, a daily newspaper.

That said newspaper is a legal newspaper and it is now and has been for more than six months prior to the date of publications hereinafter referred to, published in the English language continually as a daily newspaper in the city of Sunnyside, YAKIMA County, Washington, and it is now and during all of said time printed in an office maintained at the aforesaid place of publication of said newspaper, and that the said Daily Sun News was on the 4th Day of April, 1969 approved as a legal newspaper by the Superior Court of said Yakima County.

That the annexed is a true copy of a LEGAL PUBLICATION -

Yakima County Public Services

Groundwater Mtg 8-21-14

published in regular issues (and not in supplemental forms) of said newspaper once each week for a period of 1 consecutive issue(s) commencing 08/14/14 and ending on 08/14/14, both dates inclusive, and that such newspaper was regularly distributed to its subscribers during all of said period. That the full amount of the fee charged for the foregoing publication is the sum of \$ 33.75, amount has been paid in full, at the rate of \$7.50 per column inch per insertion.

Subscribed and sworn to before me 08/14/14

Notary Public in and for
the State of Washington
030110-00000



Notice of Public Meeting
Lower Yakima Valley Groundwater
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Dated this Wednesday, August 13, 2014

PUBLISH: DAILY SUN NEWS
August 14, 2014

YAKIMA HERALD REPUBLIC

A daily part of your life  yakima-herald.com

-Ad Proof-

This is the proof of your ad scheduled to run on the dates indicated below.

Please confirm placement prior to deadline,
by contacting your
account rep at (509) 577-7740.

Date: 08/13/14
Account #: 110536
Company Name: YAKIMA COUNTY SURFACE
WATER MANAGEMENT
408
Contact: LISA FREUND
Address: 128 NORTH 2ND STREET ROOM
YAKIMA, WA 98901
Telephone: (509) 574-2343

Run Dates:
Yakima Herald-Republic 08/14/14
YakimaHerald.com 08/14/14

Ad ID: 463085
Start: 08/14/14
Stop: 08/14/14
Total Cost: \$67.70
Agate Lines: 39
of Inserts: 2
Ad Class: 6021
Account Rep: Simon Sizer
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Email: ssizer@yakimaherald.com

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Yakima County

Notice of Public Meeting
Lower Yakima Valley
Groundwater Advisory
Committee

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Conference Rooms 1 & 2, 121
Sunnyside Ave. in Granger
WA pursuant to Chapter
173-100-080 WAC Ground
Water Management Areas and
Programs.

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water Management Area,
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For more information about the
meeting, please contact Lisa
Freund, Yakima County Public
Services Administrative Manager
at 574-2300.
Dated this Wednesday,
August 13, 2014

(463085) August 14, 2014

Meeting Time and Location

Thursday, August 21, 2014, 5:00 – 7:00 p.m.

Radio KDNA in Granger
 121 Sunnyside Ave
 Conference rooms 1 & 2
 Granger, Washington

Purpose of the Meeting:

- Learn about and discuss proposed GWMA budget allocations
- Review and approve Ground Water Monitoring Plan

Agenda

Time	Topic	Purpose	Lead
5:00 – 5:10 p.m.	Welcome & Meeting Overview	Introduction, meeting overview, confirm agenda	Penny Mabie, facilitator
5:10 – 5:30 p.m.	Committee Business	<ul style="list-style-type: none"> • Approve June 19 meeting summary • Consider member absences and path forward 	Penny Mabie Charlie McKinney, Ecology
5:30 – 6:30 p.m.	GWMA Budget	<ul style="list-style-type: none"> • Review program proposals from working groups • Consider budget requests • Discuss budget priorities • Begin development of budget recommendations 	Vern Redifer, Yakima County Working Group Chairs
6:30 - 6:45 p.m.	Groundwater Monitoring Plan	Discuss and consider approving Interim Final Groundwater Monitoring Plan	Kirk Cook
6:45 – 6:55 p.m.	Public Comment	Opportunity for members of the public to make comments to the committee	
6:55 – 7:00 p.m.	Next Steps	Review action items, next steps, and next meeting topics (GWAC budget, Impact to the aquifer)	Penny Mabie
7:00 p.m.	Adjourn		

Next Meeting: October 16, 2014

Committee Members

Stuart Turner, agronomist, Chelsea Durfey (alternate)	Turner and Co.
Helen Reddout, Wendell Hannigan (alternate)	Community Association for Restoration of the Environment
Kathleen Rogers, Bud Rogers (alternate)	Lower Valley Community Representative Position 1
Patricia Newhouse, Sue Wedam (alternate)	Lower Valley Community Representative Position 2
Doug Simpson	Irrigated Crop Producer
Jean Mendoza, Eric Anderson (alternate)	Friends of Toppenish Creek
Jan Whitefoot, Jim Dyjak (alternate)	Concerned Citizens of the Yakama Reservation
Steve George, Justin Waddington (alternate)	Yakima County Farm Bureau
Jason Sheehan, Dan DeGroot (alternate)	Yakima Dairy Federation
Jim Trull, Ron Cowin (alternate)	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
Gordon Kelly	Yakima County Health District
Kefyalew Desta, Dr. Troy Peters (alternate)	WSU Irrigated Agriculture Research and Extension Center
Tom Eaton, Marie Jennings (alternate)	U.S. Environmental Protection Agency
Elizabeth Sanchez, Tom Ring (alternate)	Yakama Nation
Lonna Frans, Matt Bachmann (alternate)	U.S. Geological Survey
Kirk Cook, Virginia "Ginny" Prest (alternate)	Washington Department of Agriculture
Andy Cervantes, Ginny Stern (alternate)	Washington Department of Health
Charlie McKinney, Tom Tebb (alternate)	Washington Department of Ecology
Lino Guerra, Rick Perez (alternate)	Hispanic Community Representative

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.

2014 Meeting Dates:

January 16	May 15	September 18
February 20	June 19	October 16
March 20	July 17	November 20
April 17	August 21	December 18 (TBD based on need)

Meeting Materials

Name	Date Provided	From
IAWG Meeting Notes_2013_06-19_final	July 21, 2014	Email from Pmabie@enviroissues.com
2014_0711_Complaint	July 21, 2014	Email from Pmabie@enviroissues.com
RCIM_Workgroup_June_26_2014_Final_Meeting_Notes	July 21, 2014	Email from Pmabie@enviroissues.com
6.6.2014 Helen Reddout CM	July 21, 2014	Email from Pmabie@enviroissues.com
2014_0717_ProceduralCommentsComplaintsTemplate	July 21, 2014	Email from Pmabie@enviroissues.com
6.26.2014 Lino Guerra CM	July 21, 2014	Email from Pmabie@enviroissues.com

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5 **LOWER YAKIMA VALLEY GROUNDWATER MANAGEMENT AREA ADVISORY**
6 **COMMITTEE (GWAC)**
7
8

9 **MEETING SUMMARY**

10 **Thursday, August 21, 2014**

11
12 Radio KDNE
13 121 Sunnyside Ave, Granger, WA 98932
14

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

19
20 **I. Call to Order**

21
22 **Roll Call:** The meeting was called to order at 5:03 pm by Angie Thomson,
23 Facilitator.
24

Member	Seat	Present	Absent
Stuart Turner	Agronomist, Turner and Co.	✓	
Chelsey Durfey	Agronomist, Turner and Co. (alternate)	✓	
Helen Reddout	Community Association for Restoration of the Environment		✓
Wendell Hannigan	Community Association for Restoration of the Environment (alternate)		✓
Kathleen Rogers	Lower Valley Community Representative Position 1	✓	
Bud 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	✓	
Justin Waddington	Yakima County Farm Bureau (alternate)		✓
Jason Sheehan	Yakima Dairy Federation	✓	
Dan DeGroot	Yakima Dairy Federation (alternate)	✓	
Jim Trull	Roza-Sunnyside Joint Board of Control	✓	
Ron Cowin	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)	✓	
Gordon Kelly	Yakima County Health District	✓	
Dr. Kefy Desta	WSU Irrigated Agriculture Research and Extension Center		✓
Dr. Troy Peters	WSU Irrigated Agriculture Research and Extension Center (alternate)	✓	
Tom Eaton	U.S. EPA	✓	
Marie Jennings	U.S. EPA (alternate)		✓
Elizabeth Sanchez	Yakama Nation		✓
Tom Ring	Yakama Nation (alternate)	✓	
Lonna Frans	U.S. Geological Survey		✓
Matt Bachmann	U.S. Geologic Survey (alternate)		✓
Kirk Cook	WA Department of Agriculture	✓	
Virginia "Ginny" Prest	WA Department of Agriculture (alternate)	✓	
Andy Cervantes	WA Department of Health	✓	
Ginny Stern	WA Department of Health (alternate)	✓	
Charlie McKinney	WA Department of Ecology	✓	
Tom Tebb	WA Department of Ecology (alternate)		✓
Lino Guerra	Hispanic Community Representative	✓	
Rick Perez	Hispanic Community Representative (alternate)		✓

*by phone

26

27

28

29 II. Welcome & Meeting Overview

30

31 Moment of silence.

32

33 Introductions.

34

35 Due to the amount of budget information to be reviewed it was decided to adjourn the meeting at
36 7:30 pm instead of 7:00 pm.

37

38 **III. Committee Business: Angie Thomson**

39

40 The June 19 meeting summary was approved, pending changes that were submitted to Penny by a GWAC
41 member prior to this meeting **and discussed at this meeting. A request was made for a mechanism to**
42 **address factual inaccuracies in summaries.** The member further requested timely distribution of draft
43 meeting summaries, noting it is difficult to remember meeting discussions that took place almost two
44 months before the minutes are distributed.

45

46

47 **Member Absences and Path Forward**

48

49 A statement was read aloud by a committee member announcing the resignation of Helen
50 Reddout of Community Association for Restoration of the Environment (CARE). Helen
51 indicated that neither she nor any member of CARE will attend future GWAC meetings.

52

53 A member asked if it is possible to recruit another environmental group to sit at the table. It was
54 noted that this is an Ecology decision, but one that can be discussed with the GWAC at the
55 September or October meeting.

56

57 Charlie McKinney announced that USGS no longer plans to participate as a member of the
58 GWAC but will be available as needed by the group.

59

60 **Recommendation:** In the future a formal letter should be sent asking the inactive member what
61 his/her intentions are regarding meeting attendance. The member will be given a deadline to
62 respond; if no response is received then the seat would be vacated or offered to another
63 representative of that interest group.

64

65 **IV. GWMA Budget: Vern Redifer**

66

67 Vern stated that 17 budget proposals have been submitted for the committee's consideration. He
68 compiled all the proposals, plus a placeholder for the Groundwater Monitoring Plan, and
69 organized them in a one-page spreadsheet for ease of reference. Each working group will have
70 three minutes to present each proposal. This will allow time for all proposals to be broadly
71 presented. Following the presentations, he advised that he will go back through the list and ask
72 the committee members to rank each proposal as high, medium or low priority. This is a first cut
73 to get an idea of the GWAC's priorities; ideally he would like to get two or three projects started.

74

75

76 **V. Budget Requests**

77

78 **CAFO/Livestock - 1: Dairy Pens and Manure Storage Sampling**

79

78 Determine the extent of nitrate movement in the subsurface soil profile by investigating dairy
79 pens and manure storage areas for nitrate contamination. **Cost: \$60,000.** Ranking by

80 committee members: High 9, Medium 6, Low 2. Scalable? Yes, data from fewer than 10
81 dairies would still be valuable.

82

83 **CAFO/Livestock – 2: Lagoon Assessment Based on EPA Data**

84 Analyze and interpret data from dairy lagoon assessment that will be obtained from dairy
85 cluster/EPA project. **Cost: \$10,000.** Ranking by committee members: High 6, Medium 5,
86 Low 6. Scalable? No, unless data comes to us already largely analyzed and interpreted.

87

88 **DATA - 1: Nutrient Loading all Sources – Database, Analysis, Reporting**

89 Develop a GWMA nitrogen loading assessment. **Cost: \$57,000.** Ranking by committee
90 members: High 13, Medium 2, Low 1. Scalable? Depends on the amount of grower surveys
91 but the estimate is pretty accurate.

92

93 **EPO – 1: Educational Outreach Campaigns**

94 Promotional ad campaigns that will include outreach to at-risk populations, promotion of
95 community surveys, the RCIM resource hotline, the abandoned well outreach, the GWMA
96 website and other GWAC-approved initiatives. **Cost: \$54,000.** Ranking by committee
97 members: High 6, Medium 12, Low 1. Scalable? Yes. Projects can be eliminated or
98 downscaled as determined by the GWAC.

99

100 **EPO – 2: Community Outreach Surveys**

101 Community outreach survey effort focused on getting information out to the general public and
102 at-risk populations about their shared or private wells, water quality, general information or
103 concerns with nitrate levels in the groundwater, resources available, and the GWMA. **Cost:**
104 **\$40,000.** Ranking by committee members: High 0, Medium 9, Low 10. Scalable? Yes. The
105 total number of surveys or attempts to complete the surveys can be reduced based on feedback
106 from the original work completed by Heritage University in 2013.

107

108 **EPO – RCIM – 3: RCIM Resource Hotline (Pilot Project) and RCIM Resource Hotline**
109 **(Full Resource Project) Addition to Pilot Project**

110 This is a pilot project to provide a bilingual, RCIM telephone referral hotline to serve the public
111 within the LYV GWMA. This could be scaled up for other working groups. Pilot Project: **Cost:**
112 **\$10,000.** Ranking by committee members: High 0, Medium 2, Low 17. Full Resource
113 Project: **Cost: \$40,000.** High 0, Medium 3, Low 16. Scalable? Yes, we can gauge the
114 success of the first year pilot project to determine if a second attempt is warranted.

115

116 **EPO-RCIM – 4: Abandoned Wells and Septic System Maintenance Outreach**

117 This project is a community outreach and education program targeting Lower Yakima Valley
118 GWMA property owners to obtain information on abandoned wells and provide information on
119 proper septic system maintenance. **Cost: \$5,000.** Ranking by committee members: High 11,
120 Medium 6, Low 3. Scalable? Unknown. Still under discussion.

121

122 **EPO – 5: Redesign and Maintain GWMA Website**

123 This website is a central clearing house for information exchange. This proposal would contract
124 with a third party to create a user-friendly, bilingual site. **Cost: \$10,500.** Ranking by committee
125 members: High 5, Medium 10, Low 3. Scalable? No. It is the lowest cost option. Assumes
126 Yakima County will be responsible for administrative web postings (GWAC and working group
127 meeting calendars, meeting records; presentations and reports).

128

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EPO – 6: Wellhead Risk Assessment Surveys – Phase 2

This is a community outreach and data collection effort focused on getting information out to and from the public about their shared or private well. Water quality samples are being included to get information on nitrate levels in the groundwater. **Cost: \$150,000.** Ranking by committee members: High 6, Medium 10, Low 2. Scalable? Yes. The total number of surveys or attempts to complete the surveys can be reduced based on feedback from the original work completed by the Yakima Health District. *Note: a summary of the 2014 High Risk Well Assessment results was distributed to the group.*

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EPO – 7: Bilingual Outreach Coordinator Position (Pilot)

The first year is a pilot program, partnering with Heritage University (or similar) to identify the demand for—and information garnered from—a pilot coordinator position. Based on evaluation outcomes, position could be expanded to full-time in the second year. **Cost \$89,151 (FY 2014-15 - \$10,000 one year pilot program; FY 2015-16 – up to \$79,151 for an FTE)** Ranking by committee members: High 3, Medium 7, Low 10. Scalable? Yes. The pilot program allows the GWAC to evaluate the effectiveness of the position for one year on a test basis. The professional level position includes salary and benefits. Twenty percent of cost is startup and recruiting.

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IRRIG – 1: Deep Soil Sampling (Proposed Additional 100 Samples)

This proposal adds 100 samples to the DSS program, and takes sampling to growers instead of expecting growers to come to agencies. **Cost: \$150,000.** Ranking by committee members: High 9, Medium 8, Low 1.

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IRRIG – 2: Irrigation Water Management Workshops

Presentations on nutrient and irrigation water management. **Cost: \$14,000.** Ranking by committee members: High 10, Medium 9, Low 0.

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IRRIG – 3: Mobile Lab – On Farm Evaluation of Irrigation Water Management

GWMA will send an employee to evaluate for efficiency and/or uniformity and give the grower a report of their system operation and suggestions for improvement. This would be conducted in conjunction with deep soil sampling. **Cost: \$396,000.** Ranking by committee members: High 4, Medium 10, Low 6. Scalable? Yes. The Irrigated Ag Committee has scaled the original price back to **\$350,000.**

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RCIM – 1: Abandoned and/or Improperly Constructed Wells

This is a two-phase effort. The first phase will involve public outreach and education to identify and locate abandoned and improperly constructed wells. The second phase will require properly decommissioning the identified wells. **Cost: \$150,000.** Ranking by committee members: High 8, Medium 8, Low 2. Scalable? It may be possible to begin development of this program with a slightly reduced budget. The second phase may be reduced if additional, non-GWAC sources of funding can be developed.

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REG – 1: Comprehensive Regulatory Review for the Lower Yakima Valley Groundwater Management Area

Phase one is to review current regulations under federal, state, county and local jurisdictions with respect to groundwater protection. Phase two is to evaluate information in the “catalog of regulatory and non-regulatory strategies” from other areas of the six western states concerning agriculture and contamination of groundwater. **Cost: \$264,000.** Ranking by committee

178 members: High 2, Medium 2, Low 15. **Scalable?** The group suggested phase one could be
179 completed without moving into phase two.
180

181 **Yakima County – 1: Database Maintenance, Analysis, and GIS (Monitoring, Wellhead, etc.)**

182 Maintain, update and analyze GWAC databases including GIS analysis and reporting. Link
183 GWAC databases to other pertinent data sources and overlay GWAC data. This effort will keep
184 the database up to date. **Cost: \$60,000.** Ranking by committee members: High 12, Medium 6,
185 Low 0.
186

187 **Placeholder: Groundwater Monitoring Plan – Planning, Analysis, and Implementation**

188 No money was originally set aside for the plan. This placeholder will allow the County to write
189 the actual implementation of the plan as well as establish the methodology. **Cost: \$604,000.**
190 Ranking by committee members: High 16, Medium 2, Low 0.
191

192 Vern suggested the GWAC should begin the nutrient loading database, analysis and reporting
193 because most committee members ranked this a high or medium. **Committee members generally
194 agreed although no decision was reached about funding the nutrient loading database before the
195 full budget has been developed.** The group asked for a straw budget to be developed and brought
196 back to the next meeting. It was further suggested that the committee continue the budget
197 discussion at a September meeting instead of waiting until the scheduled October meeting. A
198 member added that he would like to see the working groups develop and bring back more detailed
199 scopes of work and budget justifications for each proposal.
200

201 **VI. Groundwater Monitoring Plan: Kirk Cook**

202 In the interest of time, the plan was not discussed.
203

204 **VII. Public Comment:**

205 There was no public comment.
206

207 **VIII. Next Steps:**

208 Action items:
209

- 210 • Based on tonight's discussion, Vern will develop and present a straw budget at the
211 September 18, 2014 meeting.
- 212 • Working groups will develop more detailed scopes of work and budget justifications
213 for the September meeting.
 - 214 ○ EnviroIssues will develop a scope of work template and distribute it to the
215 working groups.
- 216 • The Groundwater Monitoring Plan will be presented at a future meeting.
217

218 **IX. 2014 Meeting Calendar:**

- 219 • January 16, 2014
- 220 • February 20, 2014
- 221 • April 17, 2014
- 222 • June 19, 2014
- 223 • August 21, 2014
- 224 • September 18, 2014

226 • October 16, 2014
227 • December 18, 2014 (as needed)

228
229 The meeting was adjourned at 8:00 pm.

230
231 Meeting summary approved by the GWAC on _____

DRAY

Yakima County

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Bill: FC3463-100-120

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COUNTY OF YAKIMA SS

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Yakima County Public Services
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Subscribed and sworn to before me 09/11/14

Notary Public in and for
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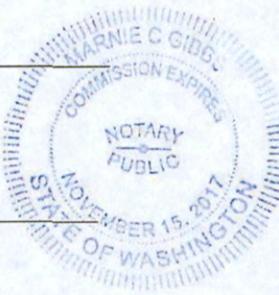
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PUBLISH: DAILY SUN NEWS
September 11, 2014





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Telephone:	(509) 574-2343

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Yakima Herald-Republic	09/11/14
YakimaHerald.com	09/11/14

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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, September 18, 2014**,
at 5:00 PM at Radio KDNA,
Conference Rooms 1 & 2, 121
Sunnyside Ave. in Granger,
WA 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.
Dated this **Wednesday, September 10, 2014**

(471642) September 11, 2014

Groundwater Management Area (GWMA):*The purpose of the GWMA is to reduce nitrate contamination concentrations in groundwater below state drinking water standards***Meeting Time and Location****Thursday, September 18, 2014, 5:00 - 7:00 p.m.**

Radio KDNA in Granger
 121 Sunnyside Ave
 Conference rooms 1 & 2
 Granger, Washington

Purpose of the Meeting:

- Consider and finalize revised GWMA budget proposal
- Review and approve Ground Water Monitoring Plan

Agenda

Time	Topic	Purpose	Lead
5:00 – 5:10 p.m.	Welcome & Meeting Overview	Introduction, meeting overview, confirm agenda	Penny Mabie, facilitator
5:10 – 5:30 p.m.	Committee Business	<ul style="list-style-type: none"> • Approve August 21 meeting summary • Meeting summary reminders 	Penny Mabie
5:30 – 6:30 p.m.	GWMA Budget	<ul style="list-style-type: none"> • Consider and approve priority budget requests • Hear additional detail / refinements to lower priority budget requests • Identify additional budget items to include in budget as appropriate 	Vern Redifer, Yakima County Working Group Chairs
6:30 - 6:45 p.m.	Groundwater Monitoring Plan	Discuss and consider approving Interim Final Groundwater Monitoring Plan	Kirk Cook
6:45 – 6:55 p.m.	Public Comment	Opportunity for members of the public to make comments to the committee	
6:55 – 7:00 p.m.	Next Steps	Review action items, next steps, and next meeting topics	Penny Mabie
7:00 p.m.	Adjourn		

Next Meeting: October 16, 2014

Groundwater Management Area (GWMA):*The purpose of the GWMA is to reduce nitrate contamination concentrations in groundwater below state drinking water standards***Committee Members**

Stuart Turner, agronomist, Chelsea Durfey (alternate)	Turner and Co.
Kathleen Rogers, Bud Rogers (alternate)	Lower Valley Community Representative Position 1
Patricia Newhouse, Sue Wedam (alternate)	Lower Valley Community Representative Position 2
Doug Simpson	Irrigated Crop Producer
Jean Mendoza, Eric Anderson (alternate)	Friends of Toppenish Creek
Jan Whitefoot, Jim Dyjak (alternate)	Concerned Citizens of the Yakama Reservation
Steve George, Justin Waddington (alternate)	Yakima County Farm Bureau
Jason Sheehan, Dan DeGroot (alternate)	Yakima Dairy Federation
Jim Trull, Ron Cowin (alternate)	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	Yakima County Commission
Gordon Kelly	Yakima County Health District
Dr. Kefyalew Desta, Dr. Troy Peters (alternate)	WSU Irrigated Agriculture Research and Extension Center
Tom Eaton, Marie Jennings (alternate)	U.S. Environmental Protection Agency
Tom Ring (alternate)	Yakama Nation
Lonna Frans	U.S. Geological Survey
Kirk Cook, Virginia "Ginny" Prest (alternate)	Washington Department of Agriculture
Andy Cervantes, Ginny Stern (alternate)	Washington Department of Health
Charlie McKinney, Tom Tebb (alternate)	Washington Department of Ecology
Lino Guerra, Rick Perez (alternate)	Hispanic Community Representative
Vern Redifer	Yakima County Public Services

Groundwater Management Area (GWMA):

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

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.

2014 Meeting Dates:

January 16	May 15	September 18
February 20	June 19	October 16
March 20	July 17	November 20
April 17	August 21	December 18 (TBD based on need)

Meeting Materials

Name	Date Provided	From
GWMA GWAC August Meeting Summary	September 4, 4:31 p.m.	pmabie@enviroissues.com

1
2
3 **LOWER YAKIMA VALLEY GROUNDWATER MANAGEMENT AREA ADVISORY**
4 **COMMITTEE (GWAC)**
5

6 **MEETING SUMMARY**
7

8 **Thursday, September 18, 2014**
9

10 Radio KDNE
11 121 Sunnyside Ave, Granger, WA 98932
12

13 **I. Call to Order**
14

15 **Roll Call:** The meeting was called to order at 5:05 pm by Penny Mabie,
16 Facilitator.
17

Member	Seat	Present	Absent
Stuart Turner	Agronomist, Turner and Co.		✓
Chelsea Durfey	Agronomist, Turner and Co. (alternate)	✓	
Kathleen Rogers	Lower Valley Community Representative Position 1	✓	
Bud 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		✓
Justin Waddington	Yakima County Farm Bureau (alternate)		✓
Jason Sheehan	Yakima Dairy Federation	✓	
Dan DeGroot	Yakima Dairy Federation (alternate)		✓
Jim Trull	Roza-Sunnyside Joint Board of Control	✓	
Ron Cowin	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)	✓	
Gordon Kelly	Yakima County Health District	✓	
Dr. Kefy Desta	WSU Irrigated Agriculture Research and Extension Center		✓
Dr. Troy Peters	WSU Irrigated Agriculture Research and Extension Center (alternate)		✓
Tom Eaton	U.S. EPA		✓
Marie Jennings	U.S. EPA (alternate)		✓
Elizabeth Sanchez	Yakama Nation		✓
Tom Ring	Yakama Nation (alternate)		✓
Kirk Cook	WA Department of Agriculture		✓
Virginia "Ginny" Prest	WA Department of Agriculture (alternate)		✓
Andy Cervantes	WA Department of Health	✓	
Ginny Stern	WA Department of Health (alternate)	✓	
Charlie McKinney	WA Department of Ecology	✓	
Tom Tebb	WA Department of Ecology (alternate)		✓
Lino Guerra	Hispanic Community Representative		✓
Rick Perez	Hispanic Community Representative (alternate)		✓

18

19 **II. Welcome & Meeting Overview**

20

21 Moment of silence.

22

23 Introductions.

24

25 **III. Committee Business: Penny Mabie**

26

27 **Discussion on the Draft Meeting Minutes**

28

29 A member believes there are inconsistencies and a lack of detail in the meeting
30 summaries. A discussion followed regarding meeting summaries – the intent,
31 consistency, and format. Penny clarified that meeting summaries should not include the
32 names of those making comments; however, presenters will be identified by name. She
33 reminded the group that the meeting minutes are *not* a transcript but a summary of
34 agreement.

35

36 The written summary is the only official documentation of the group's meetings. Penny
37 observed meetings were being recorded by members of the audience. She noted that in

38 accordance with the committee's operating guidelines, the electronic recording of this
39 meeting should not be construed or represented as an official record of the meeting by
40 any member. Penny proposed that the following statement be added at the beginning of
41 future meeting summaries: *"Note: This document is only a summary of issues and actions in
42 this meeting. It is not intended to be a transcription of the meeting, but an overview of points
43 raised and responses from Yakima County and Groundwater Advisory Committee members. It
44 may not fully represent the ideas discussed or opinions given. Examination of this document
45 cannot equal or replace attendance."* She will provide the language to the committee and ask for
46 concurrence via email.
47

48 **Membership List**

49

50 Matt Bachmann with USGS will no longer be a member of the committee but will serve
51 as a resource for the group. A member asked for Matt's statement in writing. Charlie
52 McKinney stated that he would contact him, that there is a letter going to USGS
53 affirming that they were no longer participants, but he also reminded everyone that USGS
54 might be called back.
55

56 Elizabeth Sanchez is still on the committee.
57

58 A question was raised regarding Vern Redifer's position on the committee. It was
59 clarified that Vern provides the technical support for the County and serves as Rand's
60 alternate.
61

62 **Speakers at Meetings**

63

64 The group discussed who—member or alternate—should be allowed to speak at the
65 meetings. It was decided that the member would sit at the table and speak. If the alternate
66 had something to contribute, it was suggested that they inform the member prior to the
67 meeting. The alternates should sit with the public unless the member is absent or yields
68 their seat to the alternate.
69

70 **Member Handouts**

71

72 A member asked that meeting summaries should reflect when documents are provided to
73 the committee by a committee member. The committee discussed it. It was agreed that
74 when a member asked to distribute a document, the committee would make a
75 determination whether the action should be part of the public record via the summary.
76 The committee agreed the document itself would not be attached to the summary, but that
77 it would be noted as having been distributed.
78

79
80
81
82

83 **IV. GWMA Budget: Penny Mabie**

84
85 Penny observed that a quorum of members was not present. Per the operating guidelines,
86 the group needs 16 members to constitute a quorum, but only 12 members were present.
87 Therefore, no decisions can be made at this meeting.

88
89 Penny suggested to the group that the lack of attendance was not due to lack of interest
90 but might be an artifact of the meeting not appearing on the regular schedule, but being
91 requested at the August meeting. She suggested that it should be made more obvious
92 when a special meeting is scheduled.

93
94 Penny suggested that the group could discuss the budget proposals tonight and she could
95 send out the proposals after the meeting asking for feedback from members who are not
96 present. The committee discussed and concluded that it was necessary for members to
97 hear the context of the budget presentation and be part of discussions before decisions
98 could be reached.

99
100 Penny reminded the group that they had discussed and approved the Deep Soil Sampling
101 plan over the past year. An incorrect assumption was made that approval of the plan
102 included approval of the budget for the plan. Therefore, the DSS budget needs to be
103 approved. The group decided that this would be discussed at October's meeting. Vern
104 thanked Jean Mendoza for noting the inconsistency.

105
106 Vern introduced Lee Murdock. She is a new senior data analyst with the county and will
107 support the working group chairs and analyze the data that the group is gathering.

108 **V. Public Comment:**

109
110 A member of the public stated that he felt the committee was not in compliance with the
111 Open Public Meetings Act. The agenda is not published, there is no meeting roll call or
112 motions as required under Roberts Rules of Order, nor are committee rules posted on the
113 website. He opined that the group's budget would not pass State or Federal standards and
114 that the committee should consult with its legal and finance departments to ensure
115 compliance. He added that the signature line on the meeting's Public Sign In Sheet is
116 illegal.

117 **VI. Committee Discussion:**

118
119 Jean Mendoza distributed to the group a list of steps she compiled that she felt reflected
120 the Washington Administrative Code regarding the GWMA and what the committee
121 should be doing.

122
123 Penny suggested that Charlie McKinney, Ecology, provide a refresher on the committee
124 rules at a future meeting. Charlie concurred.

128 A group member stated that the committee was to look at the laws and adjust them to fit
129 with GWMA's needs – not make new laws. Penny added that the Regulatory working
130 group is charged with that work and to look at gaps then make recommendations. Vern
131 agreed and added that the committee needs to figure out what works and what doesn't.
132 He will speak with Tom Eaton, chair of the Regulatory working group, so that a plan can
133 be made to focus on that. A member suggested that the Agency/County people with
134 jurisdiction talk to the committee so that they can help the public to understand what the
135 GWMA is about.
136

137 **VII. Next Steps:**

138 Next Meeting:

139 • Based on tonight's discussion, Charlie will develop a refresher course on the
140 GWAC meeting rules for a future meeting.
141 • Discuss the GWMA Proposed Budget and Groundwater Monitoring Plan
142 • Discuss the Deep Soil Sampling Budget
143 • Finalize the August meeting summary
144
145

146 **VIII. 2014 Meeting Calendar:**

147 • January 16, 2014
148 • February 20, 2014
149 • April 17, 2014
150 • June 19, 2014
151 • August 21, 2014
152 • September 18, 2014
153 • October 16, 2014
154 • December 18, 2014 (as needed)
155

156 The meeting was adjourned at 5:45 pm.
157
158 Meeting summary approved by the GWAC on _____

Education and Public Outreach Working Group

Charge from Groundwater Management Area Advisory Committee

- Develop an EPO proposed project list and budget for the August GWAC meeting.
- Be prepared to justify how the proposal(s) support the development of the GWMA program.

Working Group Members

Andres Cervantes (GWAC-DOH), Jean Mendoza (GWAC-Friends of Toppenish Creek), Tom Tebb (GWAC-Ecology), Elizabeth Torres (Citizen), Gretchen Stewart (EPA), Nieves Negrete (Citizen), Patricia Newhouse (GWAC-Citizen Rep Position #2), Tom Eaton (GWAC-EPA), Dean Effler (Citizen), Joye Redfield-Wilder (Ecology), Wendell Hannigan (GWAC-Alternate), Stuart Turner (GWAC-Turner & Co), Ignacio Marquez (AGR)

Meetings/Calls Dates

Meeting: Wednesday, July 2, 2014 1:30 PM – 3:30 PM

Participants

Lisa Freund (EPO Chair -Yakima County), Jean Mendoza (GWAC-FOTC), Patricia Newhouse (GWAC-Citizen Rep Position #2), Andres Cervantes (GWAC-DOH), Ignacio Marquez (AGR), Nieves Negrete (Citizen), Karri Espinoza (Yakima County staff)

Key Discussion Points

Welcome & Meeting Overview: Lisa Freund welcomed the group and reviewed the meeting agenda.

GWAC Feedback: Andy reported that the GWAC approved both the New Mom flyer and the Nitrate Education PowerPoint presentation on June 19. They asked for a small change on education slide #3 (delete the word “pesticide,” and change “livestock waste” to “animal manure”). The information can now be posted on the website and used by GWAC members for their own presentations.

ACTION: Andy, Ignacio and Patricia will review and edit the Spanish-language translation of the New Mom flyer and forward the final version to Lisa.

Lisa will have 2000 double-sided (English/Spanish) copies made. Nieves will receive 1000 copies to distribute at the Health Fairs in Prosser on July 18th and Yakima on July 26th. Ignacio will receive 500 which he will distribute to the community.

NEXT STEPS: on July 12 PEHSU will request endorsement from the Yakima Regional Hospital Board for the Nitrate Clinician Training program. They anticipate beginning training in Yakima and Prosser hospitals Sept 10 and 25. (Wednesdays at noon). Participants will be able to get continuing education credit for the training. EPO has asked PEHSU to provide feedback from the presentations and training to inform our own outreach.

RCIM Outreach Requests: The RCIM has requested that the EPO assist them with outreach to locate and identify abandoned wells. They are also considering a GWMA resource hotline. Lisa asked the RCIM to develop an outline of the proposals (who they want to reach, and why) and the EPO will develop the outreach strategies. The RCIM has agreed to provide project details following their next meeting.

Andy defined abandoned and decommissioned wells. Abandoned wells are no longer in use. The worst ones are basically holes in the ground. Abandoned wells need to be located and decommissioned (properly sealed off) to prevent groundwater contamination. They are also a surface safety hazard. No agency has an accurate database of wells prior to 1970 because well drillers were not required to obtain a well permit before 1970. Ecology has required permits since 1970. Andy added that a lot of information on abandoned wells and how to decommission them is available on Ecology's and other agency websites. He will send a link to Lisa for distribution.

The group discussed the EPO budget and how outreach costs would be allocated between the working groups. Questions were raised regarding who would pay for working group-specific requests. How will requests be prioritized? First-come first-served basis? Or should each working group contribute a defined amount to support outreach for all the groups? EPO also needs to set parameters (expectations) for the working groups.

ACTION: Andy will send Lisa the links to existing information on abandoned wells.

ACTION: Lisa will print Ecology's information on abandoned wells for the Health Fairs. Estimated number to be printed is 250.

ACTION: Patricia will provide copies of the deep soil sample invitation.

ACTION: Nieves will provide the names and addresses of the households she is contacting down-gradient of the Haak Dairy on behalf of the CARE (Community Association for Restoration of the Environmental) settlement. She is going door-to-door offering free well sampling and reverse osmosis systems for households that whose wells are contaminated by nitrate. She will also be doing radio shows to get the word out about CARE's project. The deadline to participate in the free sampling and treatment system offer is July 31, 2014.

2014 EPO Project List

The group brainstormed EPO priorities and developed the following list:

<u>EPO Proposals</u>	<u>GWAC Justification</u>
New Mom Flyer	To provide education to at-risk populations; provide information on GWAC and the GWMA
High Risk Well Assessment (ongoing)	Problem identification. Data collection. Health Education. Monitoring the implementation plan.
Ongoing Quarterly Well Monitoring	Problem identification. Data collection. Monitoring the implementation plan.
Deep Soil Sampling Outreach [placeholder]	Problem identification. Data collection
RCIM Abandoned Wells and Septic System Maintenance Outreach	Problem identification.
RCIM Resource Hotline	To provide education and technical assistance. Provide information on the GWAC, GWMA and refer customers to appropriate technical assistance.
Outreach Coordinator Position	Education/General Outreach. Monitoring the implementation plan.
Duties – Keep Track of data how many home contacted? how many times have they been targeted? who has been missed? Information Sharing GWAC Nitrate - Who's at Risk Well Testing Health Impacts Of Nitrates Measureable Outcomes Contacts made – meetings/town hall One-on-ones	

The group discussed how they would measure the success of an outreach position. The group identified quantifiable outcomes (number of wells tested, number of treatment systems purchased). They noted that households with high nitrate levels should be tested seasonally (quarterly). They discussed who would define the coordinator's tasks. The majority agreed the task list should come from the EPO; one member noted that Vern Redifer should provide the direction.

They questioned if this position would coordinate work with Jim Davenport and get guidance from the EPO only. If other groups requested outreach they would need to go through the EPO. The person filling this position needs to have the ability to communicate at all levels and a variety of subjects. Technical outreach regarding best management practices and rule making would likely require a separate position.

Questions remained meet regarding Jim Davenport's role and how/if he would be involved with outreach.

ACTION: Lisa will put together a draft budget for all the proposals **except** the ongoing well monitoring (Andy Cervantes). She will refer back to the group's original low-medium-high budget as a starting point. She will distribute the low-medium-high budget to the EPO before the next meeting.

ACTION: Andy will develop a budget for the ongoing well monitoring proposal and submit it to Lisa before the August 1 EPO meeting.

Resources Requested

None.

Recommendations for GWAC

Approve the EPO's final project list and budget

Proposed Next Steps – August Meeting Topics

- Discuss, finalize and approve the project list and budget
- [placeholder] New Mom Outreach

Next meeting Friday, August 1, 2014 at 1:30 PM, Yakima County Courthouse Room 419 (phone: 509-574-2353 [PIN# 2353#])

Education and Public Outreach Working Group

Charge from Groundwater Management Area Advisory Committee

- Develop an EPO proposed project list and budget for the August GWAC meeting.
- Be prepared to justify how the proposal(s) support the development of the GWMA program.

Working Group Members

Andres Cervantes (GWAC-DOH), Jean Mendoza (GWAC-Friends of Toppenish Creek), Tom Tebb (GWAC-Ecology), Elizabeth Torres (Citizen), Gretchen Stewart (EPA), Nieves Negrete (Citizen), Patricia Newhouse (GWAC-Citizen Rep Position #2), Tom Eaton (GWAC-EPA), Dean Effler (Citizen), Joye Redfield-Wilder (Ecology), Wendell Hannigan (GWAC-Alternate), Stuart Turner (GWAC-Turner & Co), Ignacio Marquez (AGR)

Meetings/Calls Dates

Meeting: Friday, August 1, 2014 9:30 AM – 11:50 AM

Participants

Lisa Freund (EPO Chair -Yakima County), Jean Mendoza (GWAC-FOTC), Andres Cervantes (GWAC-DOH), Ignacio Marquez (AGR), Dean Effler (Citizen-FOTC), *Gretchen Stewart (EPA), Karri Espinoza (Yakima County staff)

*via phone

Key Discussion Points

Welcome & Meeting Overview: Lisa Freund welcomed the group and reviewed the meeting agenda, noting that the EPO is tasked with completing its project and budget list for the August GWAC meeting.

The group reviewed the seven-item project list and budget spreadsheet and made the following recommendations.

EPO Projects & Budget -

1. New Mom Educational Campaign:

The group agreed to change the title from New Mom Educational Campaign to Educational Outreach Campaign for At Risk Populations. The revised title reflects that the campaign targets all risk groups, not just new moms. Further, the consistent message to all groups is "test your well." The group also agreed that the

advertising and outreach costs for all projects should be placed under this campaign, as they all support the same goals.

2. Community Surveys:

The group discussed how many community surveys can realistically be conducted over the next two years. They noted that data analysis is a key factor in the survey process. The group observed that the components of the survey design and implementation (the survey instrument, identifying sampling set(s), and analyzing the results) require technical input that the EPO cannot do itself. Jean added that she would like to be involved in the creation of future surveys. Lisa proposed putting additional money in the budget to cover the cost of survey design and analysis above and beyond EPO's volunteer input.

Andy stated that it would be helpful to find out how successful Nieves has been with her recent door-to-door well testing related to the Haak Dairy settlement. Her results would help EPO determine how to proceed with its own surveys.

Jean agreed to speak to Nieves about the process/outcome of her well testing. The group agreed that the advertising costs associated with outreach surveys would be housed under #1, outreach campaign.

3. RCIM Resource Hotline:

Lisa recommended that the EPO contract with Heritage University to staff a voicemail hotline as a pilot project. A discussion of how the hotline will be advertised took place. It was suggested that it be incorporated into the radio/TV advertisement that is already taking place for the well assessment and possibly having utility companies print something on their invoices. The group agreed with the concept and budget, with the understanding that the advertising costs will be shifted to #1, Outreach Campaign.

4. RCIM Abandoned Well and Septic System Maintenance Outreach:

Lisa explained that this project and budget is a placeholder for the RCIM. It is unknown at this time what it might entail in terms of time, effort and budget.

5. GWMA Website:

The website needs to be upgraded to a customer-friendly, English/Spanish design. Lisa noted that this budget item was developed by an outside ad agency and does not include social media sites. The group agreed on the budget item with the understanding that the associated advertising costs be shifted to #1, Outreach Campaign.

6. Ongoing High Risk Well Assessment:

Andy explained the value of the High Risk Well Assessment surveys. The majority of the group supported the value of the surveys but did not feel that the data collection is an EPO responsibility. It was suggested that the Data Group take on this project. The group also asked if this project could be scaled; Andy said it could.

Andy agreed to complete the "GWAC Budget Discussion" sheet for the well assessment surveys, with the understanding that the proposal may be shifted to the Data Group.

Bilingual Outreach Coordinator Position:

The group discussed the duties and work schedule of this position. The following table outlines the ideas.

**Bilingual Coordinator
Daily/Weekly Schedule**

Presentations	2-3 a week at the least Lower Valley - Health Fairs, Daycares/Headstarts, PTSA, Farm Bureau, Chambers, RCIM
Flexible hours, keep log	Nitrate, Abandoned Wells, Data Gathering
Positions Focus	EPO or more technical?
Quarterly updates to legislators	Written reports, seek funding
Survey Coordinator	Follow up
Radio/TV	Interviews
Pilot Program	PT position

After lengthy discussion, Lisa suggested that the group consider recommending this concept to the GWAC as a pilot project. This would allow the EPO to evaluate the actual need for the position, the skill level necessary and the time and effort involved before hiring a permanent staff member.

The group agreed with this suggestion.

ACTION: Lisa will send out an updated budget sheet with today's changes to the group for review. The deadline to return comments to the updated budget is Monday, August 11.

ACTION: Jean will complete the GWAC Budget Discussion form for the Outreach Coordinator and return it to Lisa by Friday, August 8.

Andy will fill out the GWAC Budget Discussion forms for the Community Surveys and Ongoing High Risk Well Assessment proposals and return them to Lisa by Friday, August 8.

Lisa will fill out the GWAC Budget Discussion forms for the remaining proposals (Educational Campaign, Resource Hotline, Abandoned Well Outreach and Website).

ACTION: Andy, Lisa and Jean need to decide who will present the Bilingual Outreach Coordinator position to the GWAC.

ACTION: Jean will meet with Nieves to follow up on her well testing results. She will ask the following questions and give Lisa a report by Thursday August 7th.

Did she feel it was a success? How many homes tested above nitrate levels of 5 and 10? How was she received? What were her costs for gas and samples? What time of the day did she survey? How many people were surveyed? How many surveys were done in English/Spanish? How many reverse osmosis systems were installed? Did households decline the system? If so, why did they decline? Did she reach her goal?

Recommendations for GWAC

- Approve the EPO's final project list and budget
- Approve the Education & Outreach Coordinator Pilot Position

Proposed Next Steps - September Meeting Topics

- EPO budget adjustments after GWAC presentation

Next meeting Wednesday, Sept 3, at 1:30 PM, Yakima County Courthouse Room 419 (phone: 509-574-2353 [PIN# 2353#])

EPO Working Group

Charge from Groundwater Management Area Advisory Committee

Review EPO budget proposals. Submit budget revisions for GWAC review and consideration.

Working Group Members

Andres Cervantes (GWAC-DOH), Jean Mendoza (GWAC-Friends of Toppenish Creek), Tom Tebb (GWAC-Ecology), Elizabeth Torres (Citizen), Gretchen Stewart (EPA), Nieves Negrete (Citizen), Patricia Newhouse (GWAC-Citizen Rep Position #2), Tom Eaton (GWAC-EPA), Dean Effler (Citizen), Joye Redfield-Wilder (Ecology), Stuart Turner (GWAC-Turner & Co), Ignacio Marquez (AGR)

Meetings/Calls Dates

Meeting: Wednesday, September 03, 2014 1:30 p.m. to 3:30 p.m.

Participants

Lisa Freund (EPO Chair -Yakima County), Jim Davenport (Yakima County), Jean Mendoza (GWAC-FOTC), Andres Cervantes (GWAC-DOH), Elizabeth Torres (Citizen), Nieves Negrete (Citizen), *Gretchen Stewart (EPA), Patricia Newhouse, (GWAC-Citizen Rep Position #2), Lee Murdock (Yakima County), Mary Wurtz (Yakima County support staff)

*via phone

Key Discussion Points

Welcome & Meeting Overview: Lisa Freund welcomed the group and reviewed the meeting agenda, noting that the GWAC had ranked all working group budget proposals at its August 21 meeting, including EPO's seven proposals. Collectively, the proposals exceeded the available funding. As a result, the working groups have been tasked with reviewing their respective proposals and determining whether to retain, revise or eliminate proposals, and resubmit their proposals to the GWAC.

It was brought up that we do not know what EPO will look like in the future. Do we have long range plans? Will we integrate or coordinate with other groups? Will the money still be there if all is not implemented? It was stated that this is a two year budget and the county has all the money available now. It was suggested that we draft a program, publish it, and discuss long term implementation later.

EPO Budget Proposals and Next Steps -**1. Educational Outreach Campaign. GWAC ranking: high 6, medium 5, low 6.**

Original budget: \$54,000

Decision: Retain the proposal

2. Community Outreach Surveys. GWAC ranking: High 0, Medium 9, Low 10

Original budget: \$40,000 (five surveys to be conducted over two years)

Decision: reduce the number of surveys to two, and reduce the budget amount to \$16,000.

3. RCIM Resource Hotline (Pilot Program) and RCIM Resource Hotline (Full Resource Project. GWAC ranking: High 0, Medium 2, Low 17.

Original budget: \$50,000

Decision: based on RCIM's recommendation, remove the proposal from the current list. Defer project until funding is available. Eliminate the budget line item.

4. Abandoned Wells and Septic System Maintenance Outreach. GWAC ranking: High 11, Medium 6, Low 3

Lisa noted that the RCIM working group will recommend transferring its first year budget allocation (\$50,000) to the EPO. The EPO will be tasked with conducting outreach and surveys to identify the location of abandoned wells, and to provide septic system education on behalf of RCIM. It was suggested that the most effective means of locating the wells and septic systems would be to hire a bilingual person to conduct research and to go door-to-door to gather information. This proposal could be combined with the Wellhead Risk Assessment Surveys – Phase 2.

Decision: Accept RCIM's request to conduct the outreach and surveying. Transfer the \$50,000 line item from RCIM to this proposal.

5. Redesign and Maintain GWMA Website. GWAC Ranking: High 5, Medium 10, Low 3

Original budget: \$10,500.

Decision: Retain the proposal.

6. Wellhead Risk Assessment Surveys – Phase 2. GWAC Ranking: High 6, Medium 10, Low 2

Original budget: \$150,000

Decision: Reduce the budget to \$100,000. Combine this task with the Abandoned Wells and Septic System Maintenance Outreach.

7. **Bilingual Outreach Worker (working title) Position (Pilot) GWAC Ranking: High 3, Medium 7, Low 10**

Although the proposal received a low GWAC ranking, the group discussed the importance of the position in carrying out proposals 1-6.

Decision: Retain the proposal. Group EPO proposals 2, 4, and 6 under this item. Revise total budget accordingly. [9/11/14 Editorial Note-based on subsequent responses to emails between those present at this meeting, it was decided to drop this proposal and adopt a third-party contractor fallback position that the GWAC would more likely to support. LF]

		Original Budget	Revision #1	Recommendation to GWAC
EPO 1	Educational Outreach Program	\$54,000	*\$54,000 (subject to revision)	Retain the proposal
EPO 3	RCIM Hotline (Pilot Program)	\$10,000	\$0	Delete the proposal
EPO 5	Redesign and Maintain GWMA Website	\$10,500	\$10,500	Retain the proposal
EPO 7 Bilingual Outreach Position (budget to be determined)				
Essential Duties:				
EPO 2	Community Outreach Surveys	\$40,000	*\$16,000	
EPO 4	Abandoned Wells and Septic system Maintenance Outreach	\$5,000	*\$50,000 from RCIM	
EPO 6	Wellhead Risk Assessment Surveys (Part 2)	\$150,000	*\$100,000	
EPO 7	Bilingual Outreach Worker Position	\$89,151	*\$89,151	

- *Placeholders only. To be revised as needed.*

Due to lack of time, the New Mom Flyer distribution status and identifying additional distribution locations were not discussed.

Recommendations for GWAC**Adopt revised proposals and budget****Proposed Next Steps**

- Lisa will revise the budget based on today's discussion. An *ad hoc* meeting will be scheduled the week of September 8 to review and finalize the revised EPO budget.
- Submit revised EPO budget to Vern no later than Thursday, September 11.

Next meeting Wednesday, October 1, 2014 at 1:30 p.m. Yakima County Courthouse, Room 419
(phone: 506-574-2353 [PIN# 2353#])

Livestock/CAFO Working Group

Charge from Groundwater Management Area Advisory Committee

Remaining Budget Items

Working Group Members

Charlie McKinney, Chair (Department of Ecology), Kirk Cook (Department of Agriculture), Dr. Kefy Desta(WSU), Elizabeth Sanchez (Yakama Nation), Helen Reddout (CARE), Jason Sheehan (Dairy Federation), Jim Newhouse (South Yakima Conservation District), Laurie Crowe (South Yakima Conservation District), Patricia Newhouse (Citizen), Steve George (Yakima County Farm Bureau), Stuart Turner (Turner & Co., Inc.)

Meetings/Calls Dates

Meeting: Thursday, Aug. 7, 2014 5:00-6:15 pm

Conference Call: 360.407.3780, PIN-766639#

Participants

Charlie McKinney (Ecology), Steve George (Farm Bureau), Sue Wedam (LV Community Rep.), Jean Mendoza (FOTC), Jim Dyjak (CCYR), Jim Davenport (for Yakima Co.), Larry Fendell, Frank ___, (Public)

Key Discussion Points

Welcome & Meeting Overview: Charlie McKinney welcomed the group and summarized the primary task for the meeting: developing remaining Work Group items to submit for the GWMA budget.

Action follow-up from last committee meeting:

Charlie followed up with Eric Winiecki (EPA) about obtaining data on manure lagoons associated with the dairy cluster in the Lower Yakima Valley. The dairies were required to submit Lagoon Assessment Plans; the due date for that was very recent. When those assessments are completed the Work Group should be able to obtain the data.

Budget Discussion:

Charlie pointed out that the main remaining potential nitrate sources that need to be addressed per the 2014 Task List was corrals, pens, and manure storage areas, as well as manure lagoons. Plans have been made to obtain lagoon information from the Dairy Cluster/EPA work. There was some discussion about the uncertainty of getting volunteer cooperators for addressing the first source. Charlie suggested that the group try for 10 cooperating dairies; if we get fewer than that, it could still provide useful information. If the group ultimately needs to resort to researching literature on this subject and applying it to the LYV GWMA, some local data would be valuable.

After more discussion, the group agreed that some contacts should be made to get additional ideas on methodologies and costs. Charlie will contact Steve Swope, PGG and Steve George will contact Kevin Lindsey, consultant associated with the Dairy Cluster work. There was agreement that an initial estimate of \$30,000 was probably not going to be adequate. An amended cost estimate will be developed after these consultations.

Charlie brought up the possible need for some data analysis and interpretation work when we get the manure lagoon information. After some discussion, he agreed to develop a project and associated budget to submit to Yakima County.

Resources Requested

None at this time. Budget requests will be submitted.

Recommendations for GWAC

None at this time.

Deliverables/Products Status

Working on developing methodologies for pen and manure storage area investigation. Budget items for this work and lagoon data interpretation will be submitted.

Proposed Next Steps

Work with County/contractors to develop study plans for pens/storage areas investigation and lagoon interpretation

Follow up with EPA to find out when lagoon data should be available

Irrigated Ag Working Group (IAWG)

Charge from Groundwater Management Area Advisory Committee

Working Group Members

Dr. Troy Peters (WSU), Jean Mendoza (Friends of Toppenish Creek), Jim Trull (Roza-Sunnyside Joint Board of Control), Ralph Fisher (EPA), Ron Cowin (SVID), Stuart Turner (Turner & Co.), Tom Tebb (Department of Ecology), Ginny Prest (Dept of Ag), Laurie Crowe (South Yakima Conservation District), Dave Fraser (Simplot Agronomist), Scott Stephen (Citizen), Donald Jameson (Citizen), Mike Shuttleworth (Citizen), Chelsea Durfey (Citizen), Doug Simpson (Farmer), Rosario Brambila (Farm Manager)

Meeting/Call Date

Where: KDNA Granger – 121 Sunnyside Avenue, Granger, Washington

When: 3:00 PM – 5:00 PM Thursday, August 21, 2014

Call: (509) 574-2353 - PIN# 2353

Participants

Jim Trull (Chair), Laurie Crowe, Scott Stephen, Troy Peters, Doug Simpson, Frank Lyall, Ginny Prest, Jean Mendoza, Ralph Fisher (by phone), Jim Davenport, Lisa Freund, Mary Wurtz (Yakima County staff support)

Key Discussion Points

Agenda:

1. Review Deep Soil Sampling Plan Schedule and Status
2. Discuss Status of the Interlocal Agreement between Yakima County and South Yakima Conservation District
3. Report on Contract for Deep Soil Sampling
4. Review budget submitted to Yakima County
5. Other business

Discussion:

Deep Soil Sampling Plan Schedule

Laurie Crowe reviewed the Deep Soil Sampling Bid Proposal outcomes, noting that there were only two bidders. Only one proposal was complete. The proposal came in higher

than estimated. The contract was awarded to Landau Associates; Northwest Associates of Kennewick will conduct the lab work.

Report on Contract for Deep Soil Sampling (DSS)

30 growers have signed up to participate so far, with a variety of crops (row crops, alfalfa, wine grapes, fruit trees) represented. The newspaper ran another article reminding growers to sign up. 15 questionnaires were distributed at the Grandview Fair; feedback at that event indicated that people don't want to participate in [the present] lawsuit environment.

Jean Mendoza inquired who – and how – the higher bid amount for the DSS was approved. Jim Trull explained that both time and money were considered; if the project had been re-bid (time) the GWAC would have lost yet another year before conducting the deep soil sampling. Jim Davenport agreed, noting that time lost was more expensive than a higher contract amount. He added that the County was the ultimate decision-maker regarding the contract amount.

Jean asked who was on the bid proposal technical advisory committee. Participants included Laurie Crowe, Ralph Fisher, Bob Stevens and Ginny Prest. Others were invited but were not available.

Jim Trull stated that sampling will start within the next few weeks and continue through October. Sampling is conducted after harvest, and before nutrients are applied.

Budget Proposal

The budget was discussed and agreement reached as follows:

1. ILA - South Yakima Conservation District and Yakima County \$394,563 (Done)
note: Deep Soil Sampling is a major component of the ILA.
2. 100 Additional Deep Soil Sampling (DSS): \$150,000
note: The additional samples were added to the original proposal (of 200 samples), based on concerns that the sample size was too small.
3. Grower Workshops: \$7000
note: based on Columbia Basin GWMA experience, workshops are good value for the money. The more workshops you hold, the more participants you will get.
4. Mobile Lab: \$350,000
 - a. Pickup with canopy or trailer: \$11,320
 - b. Technician: \$100,000 (8 Months for 2 Seasons)
note: staff time extended from 6 months to 8 months to cover tasks associated with the full season.
 - c. Summer Intern: \$40,000 (6-8 Months for 2 Seasons)
note: time extended from 3 months to 6-8 months to cover tasks associated with the full season.

- d. Nutrient Analysis: \$50,000 (100 Fields@\$250 per Field)
Note: revised down from 125 fields, and from \$400 per field. Lower cost reflects composite sampling at less depth.
- e. Soil Moisture Probes: \$187,500 (250 fields@\$1500 per field)
note: assumes grower cost-sharing of up to 70% for the moisture probes.

*TOTAL BUDGET: \$950,000

*At Jim Davenport's recommendation, budget was rounded to \$950,000.

ACTION: Jim Trull will present the budget at tonight's GWAC meeting for its consideration and approval.

Resources Requested

N/A

Recommendations for GWAC

Approve IAWG's proposals and budget

Deliverables/Products Status

Proposals and budget have been approved by the working group.

Next Meeting

3:00 PM – 5:00 PM, Thursday, September 18, 2014, KDNA Granger

Residential, Commercial, Industrial, Municipal (RCIM) Working Group

Charge from Groundwater Management Area Advisory Committee

Budget for upcoming or proposed RCIM tasks or activities as well as a justification on how proposed tasks or activities promote progress of the GWMA process.

Working Group Members

Robert Farrell – Chair (Port of Sunnyside), Dr. Kefy Desta (WSU), Elizabeth Sanchey (Yakama Nation), Gordon Kelly (Yakima Health District), Jan Whitefoot (Concerned Citizens of Yakama Reservation), John Van Wingerden (Port of Sunnyside), Stuart Turner (Turner & Co), Tom Ring (Yakama Nation), Kathleen Rogers (Citizen), Sanjay Barik (Ecology), Dan DeGroot (Yakima Dairy Federation), Donald Gatchalian (Yakima County)

Meetings/Calls Dates

Where: KDNA Granger Conference Room – 121 Sunnyside Avenue, Granger, Washington

When: 2:00pm – 4:00pm Wednesday July 9, 2014

Call: (509) 574-2353 - PIN# 2353

Participants

Robert Farrell (Chair), Gordon Kelly, Dan DeGroot, Sanjay Barik, Jim Davenport, Kathleen Rogers, Lisa Freund (by telephone), and Troy Ross-Havens (Yakima County staff support)

Key Discussion Points

Welcome and Meeting Overview

The Chair of the working group welcomed the members and provided a brief overview of the agenda, which was focused on following up with last month's meeting to provide budget and justification for proposed RCIM tasks or programs.

Agenda:

1. Abandoned/Improperly Decommissioned Wells Identification Program: Justification and Budget

Gordon began by reporting findings regarding well decommissioning costs. He reported a loose quote for a groundwater well with a six-inch casing and 100-ft deep, with little complication would cost roughly \$1,000.00. This would essentially cover the mobilization fee as well as time to extract casing and pressure grout. Complications or difficult site conditions

would require more time which would add to the cost. Bob reported his findings on decommissioning an abandoned well, which was about \$5,000.00 for a 200-ft deep well. The group identified the need for two phases of an abandoned well decommissioning program; phase 1 would include identification and characterization of reported abandoned wells, while Phase 2 would require physically decommissioning abandoned/improperly constructed wells. Funding was discussed on various levels from a tax on business commodities such as fertilizers, to going to the legislature for clean-up funds. It was suggested that Ecology could make a case for funding out of the centennial clean water fund, or perhaps begin the program with grant funding and then move towards a combination of a grant and low rate loan options. The group reached consensus that hot spots or areas with elevated nitrates should be focused on in a way that would gain trust amongst public and private parties.

The group discussed the importance of including both funding and liability-free elements to the program to encourage abandoned/improperly decommissioned well reports. Jim challenged the working group members to begin thinking about how liability associated with reporting could be minimized or eliminated, as this would require some thought. One suggestion was to research other GWMAs and if they encountered the same problem and how it was averted. It was also noted that abandon wells should be looked at as pollution pathways and not pollution sources.

Regarding the budget, the group determined that the Phase 1 or Identification and Characterization step would require approximately \$50,000 in startup costs for the first year and \$100,000 for the second year or thereafter.

2. Nitrate Source Pollution Referral Line: Justification and Budget

The group agreed that the EPO would be the best work group to implement the referral line because of the wide range of target audiences the resource line would serve. They agreed EPO's budget proposal should include one FTE to staff the referral line; this position would support the GWAC and all working groups.

Jim noted that the RCIM should identify and submit a list of RCIM-specific questions and answers ("the fields") to the EPO to include in the resource directory. The RCIM will supply its technical information and resources; the EPO will incorporate this information into the directory, along with information submitted from the other working groups.

The RCIM recommended that EPO create a budget line item to launch the referral line for the RCIM. \$10,000 would be allocated from RCIM for the referral line; the other working groups would allocate a similar amount to fully fund the position.

Resources Requested

None at this time

Recommendations for GWAC

- Consider pursuing abandoned wells program
- Consider pursuing referral line program

Deliverables/Products Status

- Budget and Justification on schedule for August deadline.

Proposed Next Steps

- Compile typical abandoned well and nitrate pollution questions and answers for the resource directory and submit the list to the EPO.
- Compile abandoned well and nitrate pollution information fact sheets, best management practices, agencies/departments suitable for the referral line and submit the information to the EPO.

Residential, Commercial, Industrial, Municipal (RCIM) Working Group

Charge from Groundwater Management Area Advisory Committee

Review and adjust proposal budgets.

Working Group Members

Robert Farrell – Chair (Port of Sunnyside), Dr. Kefy Desta (WSU), Elizabeth Sanchez (Yakama Nation), Gordon Kelly (Yakima Health District), Jan Whitefoot (Concerned Citizens of Yakama Reservation), John Van Wingerden (Port of Sunnyside), Stuart Turner (Turner & Co), Tom Ring (Yakama Nation), Kathleen Rogers (Citizen), Sanjay Barik (Ecology), Dan DeGroot (Yakima Dairy Federation)

Meetings/Calls Dates

Where: KDNA Granger Conference Room – 121 Sunnyside Avenue, Granger, Washington

When: 10:00am – 12:00pm Thursday, August 28, 2014

Call: (509) 574-2353 - PIN# 2353

Participants

Robert Farrell (Chair), Gordon Kelly, Dan DeGroot, Jim Davenport, Kathleen Rogers, Lisa Freund (by telephone), and Kelly Rae (Yakima County staff support)

Key Discussion Points

Welcome and Meeting Overview

The Chair of the working group welcomed the members and provided a brief overview of the agenda: review RCIM's budget proposal to the GWAC and make modifications as requested by the GWAC.

Agenda

1. Abandoned Wells and Septic Systems

The group reviewed well data repositories (EPA, Ecology). Discussed request that was originally made to Ecology in February 2014 about known nitrogen plumes in the boundaries of GWMA. It was pointed out that the work group has not received any information regarding the locations of known plumes.

Gordon Kelly reminded the group that the Yakima Health District has records on permitted septic systems dating back to 1975. Gordon has access to data showing if any permitted systems failed and can ask Ecology for wells that they have taken action on already and what they did to mitigate them. This would show due diligence.

The group discussed the boundaries of the GWMA noting that the Nation and the west side of the Yakima River weren't participating in the program. There is proportionate contribution from those areas and the potential that it bled across into GWMA's boundaries. The group could probably get that information from the EPA. Most other commercial / municipalities are regulated, for instance Harrah is tasked with reducing ammonia per the EPA.

Action Item: Gordon volunteered to make contact with Tom Eaton at EPA and Charlie McKinney at Ecology to collect information.

2. RCIM Budget Proposals – Abandoned or Improperly Installed Wells

Bob noted that the RCIM proposal called for \$50k in the first year to identify abandoned wells. The second year is proposed at \$100k for decommissioning identified wells. A member suggested that the first phase could involve the EPO and perhaps find a grant program to assist in paying for the surveying.

Bob proposed using the first year of \$50k to locate and identify the wells, coordinating with the EPO to conduct the field work and with the Data Working Group to create a statistical database.

The group discussed the possibility of contacting well drillers in the effort to find abandoned wells and encourage the drillers to discuss the importance of properly decommissioning abandoned wells with customers. Public works directors were also identified as possible sources of information since they would know where water lines have been extended. Abandoned wells may be located in these areas. The group discussed what to do with poorly constructed or abandoned wells.

Agreement: After extensive discussion, the group agreed to transfer the \$50k to EPO the first year. The EPO will take direction from the RCIM Working Group. RCIM and EPO to identify exactly what the outcomes will be. EPO and RCIM will work jointly while the RCIM oversees the project.

It was agreed that the EPO would be the point of contact for the public. RCIM will meet with the EPO for specifics. Lisa asked clarification of "first year" and Jim stated that first year is now through June 2015 and the \$50k needs to be spent in this timeframe.

Agreement: The group further agreed that for the second year the proposed \$100k will be cut to \$50k for decommissioning abandoned wells. Jim pointed out that it's all in implementation

and suggested RCIM should zero it or take two thirds or one half and push it out as it is hard to spend all of that money in the timeframe allotted.

3. Deep Soil Sampling Proposal

Bob stated that Laurie Crowe had contacted him regarding the deep soil sampling and wanted to know if it could be done on residential property as she's had a lot of inquiries. Fertilizing hobby farms, golf courses, schools and parks concentrated the nitrates and it gets pushed down by watering/irrigating. It was decided that it would be beneficial to include these types of properties in the Deep Soil Sampling.

Action Item: Bob will talk to Jim Trull about conducting Deep Soil Sampling on non-AG parcels.

Resources Requested

None at this time

Recommendations for GWAC

- Remove RCIM Hotline from current budget with the understanding that it is still on the list
- RCIM to allocate first year \$50k to EPO to identify abandoned wells and the second year the proposed \$100k will be cut to \$50k for decommissioning abandoned wells.
- Encourage GWAC to include residential properties (ie hobby farms, golf courses, parks, etc) in the Deep Soil Sampling Program
- Recommend to GWAC to revisit working groups guidelines regarding attendance

Deliverables/Products Status

- Budget will be revised prior to next GWAC meeting

Proposed Next Steps

- Review Ecology's website as it has a well log with the exception of any wells installed in the pre-70s.
- Coordinate a meeting between RCIM and EPO to identify project proposed outcomes and next steps.
- Continue sending out meeting notices to all members. Send draft minutes to meeting participants.

Next Meeting: Thursday, September 25, 2014, 10:00am – 12:00pm at KDNA Granger Conference Room – 121 Sunnyside Avenue, Granger WA – (509) 574-2353 - PIN# 2353

Residential, Commercial, Industrial, Municipal (RCIM) Working Group

Charge from Groundwater Management Area Advisory Committee

Review and Adjust Budget Proposals

Working Group Members

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

Meetings/Calls Dates

When: Thursday, September 25, 2014 10:00 a.m.-12:00 p.m.

Where: Radio KDNE Granger conference room - 121 Sunnyside Ave., Granger, WA

Call: (509) 574-2353 – PIN 2353#

Participants

Robert Farrell (Chair), Gordon Kelly, Dan DeGroot, *Lisa Freund, *Mary Wurtz and *Lee Murdock (Yakima County staff)
*via phone

Key Discussion Points

Prior to the meeting: Bob answered questions from the group regarding Ecology data that had been distributed in April regarding permitted facilities. The group agreed that they should refine their request to Ecology to include loading information. A member proposed making a separate request to Tom Eaton for information on federal facilities that might be permitted under EPA: facilities on the reservation, BLM lands, the Yakima Training Center, Kittitas County. The purpose would be to obtain accurate information on total loading originating both outside and inside the GWMA.

Chairman Bob Farrell then welcomed the group and announced the agenda: To consider modifications to the “Deep Soil Sampling Plan” for RCIM sites.

Background: Bob reminded the group that Laurie Crowe had approached him after the August GWAC meeting regarding residential homeowners who had expressed interest in participating in the Deep Soil Sampling (DSS). As there was no provision in the DSS to include non-agricultural sites, she suggested RCIM consider including them. The RCIM discussed it at their August meeting.

He noted they had also discussed schools, playgrounds, parks and golf courses as other possible RCIM (Municipal) sampling sites.

Bob stated that the group needs to consider 1) what modifications are appropriate to the DSS for RCIM sampling and 2) develop addenda. The proposal can then go to Laurie to identify if there's money in the current year budget for these alternate sites, or if it should be considered in the next budget year.

The group discussed the number of sampling sites that would be appropriate for each residential location—five sampling sites, as proposed for agricultural sites, or something different.

A discussion followed regarding how to sample drain fields. The group noted sampling would not take place directly in a drain field; rather, samples could be taken in the proximity. A member explained pre-work that would need to be done and noted that the Health District can help by identifying where permitted drain fields are. He observed that older drain fields would not have been permitted; however, homeowners may know where the drainfield is if they've had their septic system pumped.

Residential samples: A member inquired if they should collect a composite sample plus a sample from the drainfield. Another member agreed, noting that the working group is charged with identifying contributions of nitrate to groundwater. Accordingly, septic systems should be considered as a possible source.

The group discussed IAWG's DSS budget proposal to the GWAC: the \$395,000 currently under contract (200 samples), and \$150,000 for an additional 100 samples. The group considered how many samples for RCIM would be enough: could they ask for funding for up to 30, with a minimum of 10 samples? A member observed that it is statistically difficult to draw conclusions from that number. He suggested going back to the High Risk (HR) Well Assessment participants (EPO program) to solicit more residential DSS participation. He asked Lisa if the health district had already collected wellhead and septic data from the HR survey. She responded yes.

A discussion followed regarding the acceptable margin of error (usually 5%) for sampling. Lee calculated that if there are 16,000 permitted septic systems in the GWMA, RCIM would need to sample 375 for a 95% confidence level. She added that if the group is sampling to assist in the identification of hotspots or for areas for additional testing, then there is no need to worry about the sampling size. The sampling size only matters if the testing is to draw a conclusion.

The group discussed how to characterize hobby farms. The group agreed that they are non-commercial operations (not a primary source of income), and generally of smaller acreage. They would fall under the residential category, which is generally defined to include a residence, have smaller acreage that grows/produces for noncommercial purposes.

The group discussed its commercial, industrial and municipal (CIM) categories, noting that those facilities and jurisdictions are already regulated and hence would be an unlikely source of unknown contamination. They further discussed sampling of golf courses, schools, playgrounds. (categorized under municipal); however, no agreement or decision was reached regarding sampling these potential sources.

Summary of Agreements and Next Steps

Residential Property Sampling Bob summarized the group's discussion, noting they were talking about conducting two different types of sampling on residential properties: 1) septic/drain fields and 2) everything else. Within the residential "everything else" category they would look for a composite of garden, lawn, pasture. The group agreed. They further agreed that with a composite sampling they were not seeking to draw conclusions but only to determine the need for further sampling.

GWAC Proposal The group agreed to a GWAC proposal to redirect future resources to conduct RCIM sampling. Current resources should be reallocated for this purpose if the current DSS falls short of its sampling goals.

DSS Plan Modification The group will also produce addenda to the DSS Plan that will address sampling sites and methods (e.g., sampling in the proximity of drain fields and composite sampling from other residential uses).

Resources Requested

- None

Recommendations for GWAC

- Redirect future resources (funding) for RCIM sampling.
- If the current DSS program falls short of volunteer participants, reallocate a portion of DSS funds for residential sampling.

Deliverables/Products Status

-

Proposed Next Steps

- Submit the proposal at a future GWAC meeting.

Next meeting: Thursday, October 23, 2014, 10:00 AM Radio KDNA

Data Collection, Characterization, Monitoring Working Group

Charge from Groundwater Management Area Advisory Committee

Working Group Members

Kirk Cook - Chair (Dept of Ag), Andres Cervantes (Dept of Health), Dr. Kefy Desta (WSU), Jan Whitefoot (CCYR), Jim Trull (SVID), Kevin Lindsey (GSI - Consultant), Laurie Crowe (South Yakima Conservation District), Lonna Frans (USGS), Matt Bachmann (USGS), Lorraine Edmond (Citizen), Mark Nielson (Benton County Conservation District), Steve Swope (PGG - Consultant), Stuart Turner (Turner & Co.), Thomas Tebb (Dept of Ecology)

Meetings/Calls Dates

Conference Call: 1:00 PM – 3:00PM, Thursday, September 4, 2014

Call Number: 509.574.2353 PIN# 2353

Participants

Kirk Cook, Bob Farrell, Tom Eaton, Jacqueline Hancock & Ginny Stern via Phone, Charlie McKinney, Jim Davenport, Yakima County staff support - Don Gatchalian, Lee Murdock, Mary Wurtz and Kelly Rae

Key Discussion Points

Welcome & Meeting Overview:

Kirk welcomed the group and reviewed the agenda: (a) Outstanding items or questions, (b) Budget submitted at the last GWAC meeting, and (c) Draft scope of work for nitrate loading assessment.

Outstanding Items or Questions:

The following are questions received by either Jim or Kirk prior to the meeting:

- a. Is the data collected from the dairy cluster relevant and what role does the Data Working Group have in reviewing the data? Consensus from the group is the information is relevant and can be used in building the nitrate database.
- b. There was a question on how the quality of the data collection is assured. The response was EPA and Ecology have certain protocol on how data is obtained based on established standards. It is called Quality Assurance Project Plan (QAPP) Guidance. Tom mentioned the consultants, hired by the dairies to collect data, are following QAPP.

- c. Would the question on the data quality need to go before GWAC? The response was the technical discussion should be conducted within the working group. Quality of data is already required using QAPP Guidance.
- d. Jim received an email from Laurie Crowe of South Yakima Conservation District concerning the Deep Soil Sampling Plan implementation. She wanted to know (i) where the database is for the deep soil sampling plan, and (ii) where the location of the information will be kept for volunteers to view their sample results.

ACTION: Jim will get clarification from Laurie and contact appropriate people for response.

Budget from Last GWAC Meeting

The group discussed whether they want to change or modify the budget submitted based on the discussion at the last GWAC meeting. Kirk added that he has until Friday, September 12th to submit any budget request changes to Vern.

ACTION: Budget alterations should be submitted to Vern before Friday, September 12th.

Draft Scope of Work for Nitrate Loading Assessment

Kirk presented an in-depth briefing of the Scope of Work submittal that was alluded to at the August GWAC Meeting. He drafted the scope of work incorporating responses from the consultant's draft scope of work. The overall concept is instead of having a consultant do the work, the Nitrogen Loading Assessment will be a cooperative project between Yakima County and the WA Department of Agriculture staff. The working group went through the different sections of the draft scope of work. Kirk will incorporate the comments and encouraged other members to send comments by email to him by Friday, September 12. Kirk is planning to present this to GWAC at the October meeting since the meeting in September is focused on GWAC Budget items.

ACTION: Kirk will update the draft Scope of Work and send to the working group for review. Kirk's goal is to have this document ready for presentation to GWAC during the October meeting.

There was discussion that this scope is high-level using information already available and new information from budgeted work such as deep soil sampling information. If GWAC wants a more detailed nitrate loading study then the budget needs to be revised. However, information obtained from the nitrate loading study will be used by GWAC in future direction and/or decision.

ACTION: Kirk and Lee will arrange a time to meet within the next two weeks to work on the scope of work.

ACTION: Data Working Group members to provide comments to Kirk by Friday, September 12. An edited version of the SOW will be presented incorporating comments from members before the October GWMA meeting.

Resources Requested

None at this time

Recommendations for GWAC

None at this time

Deliverables/Products Status

- Kirk will revise the scope of work based on comments received to date and until Friday, September 12
- An edited version of the SOW will be presented before the October GWMA meeting.
- Budget alterations should be submitted to Vern before Friday, September 12th.

Proposed Next Steps

- Data committee to review the QAPP to make sure it is consistent before presentation to GWAC.

Data Collection, Characterization, Monitoring Work Group

Charge from Groundwater Management Area Advisory Committee

Compile and Manage Data

Working Group Members

Kirk Cook (Chair); Andres Cervantes; Jan Whitefoot; Jim Trull; Kevin Lindsey; Laurie Crowe; Lorraine Edmond; Mark Nielson; Steve Swope; Stuart Turner; Thomas Tebb; Melanie Redding

Meetings/Calls Dates

Meeting: Wednesday, September 24, 2014 from 1:30 p.m. to 3:20 p.m.

Conference Call: 509-574-2353 PIN# 2353

Participants

Present: Robert Farrell; Steve George; Stuart Turner; Charlie McKinney; Yakima County staff support – Vern Redifer, Don Gatchalian, Jim Davenport, Mary Wurtz, and Lee Murdock

Present via Conference call: Kirk Cook (Chair); Jaclyn Hancock; Melanie Redding; Ginny Stern; Ginny Prest; Eric Winiecki; Tom Eaton; Bill Dunbar

Key Discussion Points

- Presentations of dairy related data
- Discussion of the data presented
- Identification of additional data the committee would like to see

Prior to the meeting: There was a request that the EPA present the data collected pursuant to the Dairy Cluster Consent Order at the next available GWAC meeting to discuss the residential well, groundwater and soil data that has been collected to date pursuant to the Consent Order. Chairman Kirk Cook requested that the Data Work Group review this data prior to the meeting. There was also an invitation made to Stu Turner to present data collected which pertains to the Dairy Cluster or Dairy related data. Presenters were asked to address: What is the data? How was the data collected? What quality assurance protocols were used in the data collection? What conclusions can be derived from the data? How can the data be used by GWAC in the development of the GWMA Program?

Jim Davenport facilitated the meeting and reviewed the key discussion points to be accomplished.

Presentations: Tom Eaton from the Environmental Protection Agency (EPA) presented a draft summary of data collected pursuant to the Dairy Cluster Consent Order – this summary was sent out prior to the meeting for committee members to review.

Mr. Eaton provided some initial background to the report stating that the dairies are the entities responsible for collecting the data – a task they have done via a consultant. This presentation is a summary of the soil, groundwater and residential well data that has been collected pursuant to the Quality Assurance Project Plans (QAPPs) that were distributed to the workgroup earlier. Mr. Eaton pointed out that these QAPP are intended to ensure that all information, sample collection, analytical data and resulting decisions are technically sound, scientifically valid, and properly administered. He pointed out that each data set is accompanied by a “Data Validation Memo” that discusses any issues encountered in the field or in the lab with the specific data. Documented decisions are made to accept or reject specific data points where deviations from the QAPP are noted.

In addition to the information on the slides, Mr. Eaton reported that annual reports for the next eight years will assess the downward trends of soil nitrate levels at depth as well as the nitrate levels in the monitoring wells. The first of those annual reports will be released in March of 2015.

Discussion: There was a discussion regarding the concerns of the first EPA report and whether or not the EPA addressed those concerns in this most recent assessment – specifically if the construction methods of the wells, identification of the specific aquifer being tested, and other controls were documented. Mr. Eaton responded that data relating to these issues had been documented.

Another question was raised regarding if there was a mitigation plan if the eight years of monitoring indicated nitrate levels were rising or if it was only analyzed at the end of the eight years. Mr. Eaton responded that both the EPA and the Dairies will have a year three review – regardless of the monitoring results. The purpose of this review will be to discuss if the AOC should be amended based on new developments – one of which could be the testing results. He also pointed out the quarterly Groundwater Monitoring Data reports will be released and clarified that there was nothing in the AOC to preclude immediate action should it be merited.

There was a question regarding the location of the 26 wells and whether or not the EPA tracked the different components of the dairies to parse out specific contributing components such as runoff, animal pens, etc. Mr. Eaton responded that the only components that are being tracked right now include application, lagoons, and infiltration. This was followed up by a question if the EPA was also looking at ammonium to which Mr. Eaton responded yes.

A question was asked to Mr. Turner regarding what components his study was testing – his response was that the first study focused on lagoons and was a water only study and the second study focused on soil data from pens and 1 storage basin which had been emptied and scraped.

It was noted that the EPA presentation will be moved to the December GWAC meeting. Stu Turner's presentation will be scheduled following the Data group's review.

There was a question regarding the diversity of the site conditions in the EPA study describing the condition of where the wellheads were so there would be qualitative data available. Mr. Eaton responded that for each shallow well, a 20-foot section of well screen was installed across the water table. The bottom of the screen was installed 15 feet below the water table; the top of the screen was positioned 5 feet above the water table at the time of monitoring well installation.

There was a question regarding how the EPA plans on segregating out the current loading potential from past accumulation of nitrates thereby assigning age to various nitrate levels. Mr. Eaton responded that all of the dairies in the cluster were historical and that no segregation of age was planned. There was a suggestion that the presence of specific veterinary pharmaceuticals could be used to answer these questions.

There was a question to the EPA regarding the depth of the samples taken and discussion regarding what the needed depth should be. Mr. Eaton responded that spring pre-planting and fall post-harvest soil samples were done at one foot and two foot depths with an additional post-harvest representative soil samples at a three foot depth from each sampling unit. This was followed by discussion around various crops and their root depth with and without active watering.

There was a question regarding when the Lagoon Evaluation Plan would be available – Mr. Eaton responded that it would be by the end of this calendar year.

Additional Data Requested: There was a question regarding what percentage of total data was reflected in the summary report. Mr. Eaton responded that while they have collected 4 quarters of data, the sampling reports in the presentation only represented 1 quarter. Additional components such as soil data, residential well data, and the DC-3 investigation would be included in the annual report published in March of 2015. The group requested that all 4 quarters of data be included in the GWAC report. The group also requested to see the raw data and not just summarized data. Mr. Eaton responded that as data is approved it is made available on the EPA web site. Currently analysis only included showing the data in charts and graphs. Clarification was made that Yakima County is currently collecting data and would like to include the raw data into their database. Mr. Eaton responded that he will check into that and get back to the group.

There was an additional clarification made that we should not compare the two reports done by EPA and Stuart Turner, but rather information from two different sources looking at different variables. Mr. Turner clarified that the two sites he is reporting on are within the Dairy Cluster that EPA is testing.

There was a final question regarding the up gradient wells and whether or not they were located in long-term agricultural areas and the issue of identifying the age of the nitrates was again discussed. Mr. Eaton responded that efforts were made to have no agricultural areas above the up gradient wells and made reference to DC-01 had some fields above it but tested within the maximum contaminant level as shown on slide 10 of the presentation.

Resources Requested

- None at this time

Recommendations for GWAC

- None at this time

Deliverables/Products Status

- *Summary Yakima AOC Dairies – Draft Data – filename Presentation_Sept_22_2014.pdf*

Proposed Next Steps

- The Data Committee will continue looking at these two data sets – once evaluated they will assist the GWAC in reviewing and assessing the data.
- Due to the lack of time available on the October GWAC agenda, it is recommended that the EPA present the draft summary at the December meeting to ensure there is time for discussion. This will also give the EPA time to finalize the draft with data for all 4 quarters. It was also recommended that the EPA report be sent out prior to the meeting to give committee members time to review the report prior to meeting so members can arrive prepared to ask specific questions.
- Stu Turner's presentation will be presented to the GWAC following working group review.

Next meeting: to be determined by Kirk Cook and Jim Davenport.

Regulatory Framework Working Group

Charge from Groundwater Management Area Advisory Committee

Develop proposal and budget for working group task items and submit by Wednesday, August 13, 2014

Working Group Members

Tom Eaton – Chair (Environmental Protection Agency), Andres Cervantes (Department of Health), Charlie McKinney (Department of Ecology), Chelsea Durfey (Turner and Co.), Dan Degroot (Yakima Dairy Federation), Jason Sheehan (Yakima Dairy Federation), Jean Mendoza (Friends of Toppenish Creek), Laurie Crowe (South Yakima Conservation District) Nick Peak (Environmental Protection Agency), Vern Redifer (Yakima County Public Services)

Meetings/Calls Dates

Conference Call: 3:00p.m. to 4:40p.m., Monday, August 11, 2014

Call Number: 866.299.3188 CODE #3607539437

Participants

Present: Tom Eaton (Chair), Andy Cervantes, Charlie McKinney, Jason Sheehan, Jean Mendoza, Ginny Prest, Jim Davenport, Larry Fendell, Vern Redifer

Absent: Chelsea Durfey, Dan DeGroot, Laurie Crowe and Nick Peak

Other Attendees: Troy Ross-Havens, Kelly Rae (Yakima County support staff)

Key Discussion Points

Welcome & Meeting Overview

Tom Eaton welcomed the working group. **He invited the group to comment on the two proposals presented by Jean Mendoza.**

Jean contacted Tom regarding the budget proposals. She volunteered to prepare and submit two proposals.

- **Proposals for Regulatory Review for the Lower Yakima Valley Groundwater Management (Comprehensive and CAFO/Livestock)** Jean briefly summarized the two proposals and their differences to be considered for budget by August 13, 2014 and then be presented to the County (copies of proposals are attached):

Jean believes that the regulatory analysis presents too much workload for the County and suggested that the group look at what California and the other five western states have done as they've accomplished a lot and that the GWAC should contract this proposed task out. There are a lot of regulations that impact nitrates (e.g. required groundwater monitoring wells) and this should apply to the AG as well so she included that in the proposal. Jean also suggested that the group look at pesticide program as it's highly regulated and perhaps GWAC could use it as a model.

Vern stated the important task of the proposal was the evaluation of effectiveness of alternative approaches in reducing nitrates. He also felt the proposed budget amount was way too high. Vern also has some concern that the group may be jumping ahead and we don't want to spend a lot of time and money where we don't need to. We need to educate ourselves (timing of application, overwatering, etc) about current programs first. We need more data to see what regulations are effective. Jim agreed and also suggested that we need some straightforward legal research to see if regulations are having the effect desired of nitrate reduction.

The group agreed that the more focused proposal (CAFO/LIVESTOCK) would cause a lot of angst.

Vern said it would not be a huge conflict as we can balance it whether we do it now or later. He suggests that we 1) do legal research as Jim said (same effort we did for State Regulations); 2) set money aside for future after we get the data, match it up to the problem and find out what we'd need to flesh out. He added that with the proposals he's received from the working groups so far, we are \$1m over budget.

Vern has scoped out a budget in talking with consultants, put it together for RCIM at \$75k. He suggested that the County could do the GIS work and we should be able to get the budget down for the nutrient budget work that could be used to set priorities for our workgroup. The framework would be built as other data are received and then we can update with local data. For instance, implement the nitrate loading assessment by using published crop values and then look at specific hot spots.

July 2015 is the current target for having the Groundwater Management program completed but this target can be modified between both Ecology and the County, if necessary and must take the time not to rush. The group feels that a quality program is important.

Jean stated that increased funding can address minor sources of nitrate contamination and the budget could be on the low side however she suggested \$500k would be more acceptable as the analysis needs to be precise. The analysis should be a step-wise process so that whoever accomplishes this would need to compile a list of the major sources: Irrigation practices, fertilization practices and CAFO management and look at the current regulations to see how it impacts government regulations.

Vern pointed out that no contract has been executed for the \$1.6m yet. Charlie explained that "it is not Ecology money. It is legislator proviso passing through Ecology however the initial \$300k was from Ecology."

Tom suggested pacing it out. Charlie estimated that the proposed legal review would cost roughly \$64k (two solid months) for cataloging ideas from other states for groundwater and questions around the source categories. Jim stated that it's not a big budget question. He estimates \$10-20k for the evaluation for effectiveness and \$50-80k for the analysis. He recommended \$40k for 2015 and 40k for 2016. Ginny suggested that the group puts a placeholder for \$30-40k.

Vern added that in just adding this up, if we put this at \$250k, it's still over budget. We paid \$81k to contractor. He's thinking \$25k for compilation and another \$75k later. He believes that Jean overestimated the cost of work but not the scope. Jean argued that the County Zoning Ordinances have a big impact on groundwater. Vern told her that the Planning Division is rewriting the Land Use Code and that someone from the County could come and explain. This rewrite will go before the Commissioners tomorrow (August 12) to include comments about how the BMPs and regulation compiled by the consultant haven't been fully explored and the suggestion that exploring these Washington regulations can be done by RFWG while consultant explores other states. We need to know what's wrong with ours before looking at other states.

ACTION: Ginny Prest volunteered to assist reframing Jean's proposals to incorporate group comments by cataloging what other areas have done and seeing what the costs were. She also suggested that we hire someone to catalog the regulations and regulations in other states. Jean and Ginny would then send it to Tom and who will share with the group and send it to the county for consideration at the next GWAC Meeting. Jean agreed.

Resources Requested

None at this time

Recommendations for GWAC

Consider regulatory framework tasks and budget

Deliverables/Products Status

Budget and scope for 2014/2015 tasks near completion

Proposed Next Steps

Complete proposals and submit to County by August 13

Attachment B

- Original Proposal List – Distributed to GWAC August 21, 2014
- Revised Proposal List – Distributed to GWAC September 18, 2014
- CAFO – 1 Dairy Pens and Manure Storage Sampling dated August 13, 2014
- CAFO – 2 Lagoon Assessment Based on EPA Data (proposal 2) dated August 13, 2014
- DATA – 1 Nutrient Loading All Sources – Database, Analysis, Reporting dated August 13, 2014
- EPO – 1 Educational Outreach Campaigns dated August 13, 2014 and Revised EPO-1 Educational Outreach Campaigns dated September 12, 2014
- EPO – 2 Community Outreach Surveys dated August 13, 2014 and Revised EPO-3 Community Outreach Surveys dated September 12, 2014
- EPO-RCIM – 3 RCIM Resource Hotline (Pilot Project) and EPO-RCIM – 3 RCIM Resource Hotline (Full Resource Project) Addition to Pilot Project dated August 13, 2014
- EPO-RCIM – 4 Abandoned Wells and Septic System Maintenance Outreach dated August 13, 2014 and Revised EPO-RCIM 2 Abandoned Wells and Septic System Maintenance Outreach dated September 12, 2014
- EPO – 5 Redesign and Maintain GWMA Website dated August 13, 2014 and Revised EPO-5 Redesign and Ongoing Maintenance of the GWMA Website dated September 12, 2014
- EPO – 6 Wellhead Risk Assessment Surveys – Phase 2 dated August 13, 2014 and Revised EPO-4 Wellhead Assessment Surveys dated September 12, 2014
- EPO – 7 Bilingual Outreach Coordinator Position dated August 13, 2014
- IRRIG – 1 Deep Soil Sampling (Proposed Additional 100 Samples) and IRRIG – 3 Mobile Lab – On Farm Evaluation of Irrigation Water Management dated July 25, 2014
- IRRIG – 2 Irrigation Water Management Workshops
- RCIM – 1 Abandoned and/or Improperly Constructed Wells dated August 13, 2014
- REG – 1 Regulatory Review dated August 2014
- YC – 1 Database Maintenance, Analysis and GIS (Monitoring, Wellhead, etc.) dated August 13, 2014

Lower Yakima Valley GWMA Program Development - Estimated Costs for Budget Discussion on August 21, 2014

Budget Request Reference	Work Description	Spent and/or obligated To Date	Budget Request - 1st Year	Budget Request - 2nd Year	Total Budget Request	Total
Existing	Yakima County: Administration, Plan Writing, Plan Coordination, etc.	\$ 221,000	\$ -	\$ -	\$ -	\$ 221,000
Existing	Facilitation	\$ 135,000	\$ -	\$ -	\$ -	\$ 135,000
Existing	Deep Soil Sampling (Under Existing SYCD Contract - 200 Samples)	\$ 443,000	\$ -	\$ -	\$ -	\$ 443,000
Existing	Education, Outreach, and Survey	\$ 26,000	\$ -	\$ -	\$ -	\$ 26,000
Existing	Wellhead Risk Assessment Surveys - Phase 1	\$ 54,000	\$ -	\$ -	\$ -	\$ 54,000
Existing	Best Management Practices	\$ 79,000	\$ -	\$ -	\$ -	\$ 79,000
CAFO - 1	Dairy Pens and Manure Storage Sampling	\$ -	\$ 60,000	\$ -	\$ 60,000	\$ 60,000
CAFO - 2	Lagoon Assessment Based on EPA Data	\$ -	\$ 10,000	\$ -	\$ 10,000	\$ 10,000
DATA - 1	Nutrient Loading All Sources - Database, Analysis, Reporting	\$ -	\$ 40,000	\$ 17,000	\$ 57,000	\$ 57,000
EPO - 1	Educational Outreach Campaigns	\$ -	\$ 34,000	\$ 20,000	\$ 54,000	\$ 54,000
EPO - 2	Community Outreach Surveys	\$ -	\$ 20,000	\$ 20,000	\$ 40,000	\$ 40,000
EPO-RCIM - 3	RCIM Resource Hotline (Pilot Project)	\$ -	\$ 10,000		\$ 10,000	\$ 10,000
EPO-RCIM - 3	RCIM Resource Hotline (Full Resource Project) Addition to Pilot Project	\$ -	\$ 40,000		\$ 40,000	\$ 40,000
EPO-RCIM - 4	Abandoned Wells and Septic System Maintenance Outreach	\$ -	\$ 3,000	\$ 2,000	\$ 5,000	\$ 5,000
EPO - 5	Redesign and Maintain GWMA Website	\$ -	\$ 7,000	\$ 3,500	\$ 10,500	\$ 10,500
EPO - 6	Wellhead Risk Assessment Surveys - Phase 2	\$ -	\$ 75,000	\$ 75,000	\$ 150,000	\$ 150,000
EPO - 7	Bilingual Outreach Coordinator Position	\$ -	\$ 10,000	\$ 79,000	\$ 89,000	\$ 89,000
IRRIG - 1	Deep Soil Sampling (Proposed Additional 100 Samples)	\$ -	\$ -	\$ 150,000	\$ 150,000	\$ 150,000
IRRIG - 2	Irrigation Water Management Workshops	\$ -	\$ 7,000	\$ 7,000	\$ 14,000	\$ 14,000
IRRIG - 3	Mobile Lab-On Farm Evaluation of Irrigation Water Management	\$ -	\$ 198,000	\$ 198,000	\$ 396,000	\$ 396,000
RCIM - 1	Abandoned and /or Improperly Constructed Wells	\$ -	\$ 50,000	\$ 100,000	\$ 150,000	\$ 150,000
REG - 1	Regulatory Review	\$ 14,000	\$ 250,000	\$ -	\$ 250,000	\$ 264,000
YC - 1	Database Maintenance, Analysis, and GIS (Monitoring, Wellhead, etc.)	\$ -	\$ 30,000	\$ 30,000	\$ 60,000	\$ 60,000
Placeholder	Groundwater Monitoring Plan - Planning, Analysis, and Implementation	\$ 224,000	\$ 190,000	\$ 190,000	\$ 380,000	\$ 604,000
	Column Totals	\$ 1,196,000	\$ 1,034,000	\$ 891,500	\$ 1,925,500	\$ 3,121,500

Lower Yakima Valley GWMA Program Development - Estimated Costs for Budget Discussion on August 21, 2014

Status	Work Description	Spent and/or obligated To Date	Budget Request - 1st Year	Budget Request - 2nd Year	Total Budget Request	Total	"Rank"	Yakima County Proposed	Yakima County "Reserved"
NC	Deep Soil Sampling (Under Existing SYCD Contract - 200 Samples)	\$ -	\$ 395,000	\$ -	\$ 395,000	\$ 395,000		\$ 395,000	
NC	Groundwater Monitoring Plan - Planning, Analysis, and Implementation		\$ 190,000	\$ 190,000	\$ 380,000	\$ 380,000	2.89	\$ 380,000	
NC	Nutrient Loading All Sources - Database, Analysis, Reporting	\$ -	\$ 40,000	\$ 17,000	\$ 57,000	\$ 57,000	2.75	\$ 57,000	
NC	Database Maintenance, Analysis, and GIS (Monitoring, Wellhead, etc.)	\$ -	\$ 15,000	\$ 15,000	\$ 30,000	\$ 30,000	2.67	\$ 30,000	
NC	Irrigation Water Management Workshops	\$ -	\$ 4,000	\$ 3,000	\$ 7,000	\$ 7,000	2.53	\$ 7,000	
NC	Deep Soil Sampling (Proposed Additional 100 Samples)	\$ -	\$ -	\$ 150,000	\$ 150,000	\$ 150,000	2.44	\$ -	\$ 150,000
NC	Dairy Pens and Manure Storage Sampling	\$ -	\$ 60,000	\$ -	\$ 60,000	\$ 60,000	2.41	\$ 60,000	
R	Abandoned Wells and Septic System Maintenance Education and Outreach	\$ -	\$ 56,000	\$ 20,000	\$ 76,000	\$ 76,000	2.40	\$ 76,000	
R	Abandoned and /or Improperly Constructed Wells (Decommission Wells)	\$ -		\$ 50,000	\$ 50,000	\$ 50,000	2.33	\$ -	\$ 50,000
NC	Educational Outreach Campaigns	\$ -	\$ 34,000	\$ 20,000	\$ 54,000	\$ 54,000	2.26	\$ 54,000	
R	Wellhead Risk Assessment Surveys - Phase 2	\$ -	\$ 50,000	\$ 50,000	\$ 100,000	\$ 100,000	2.22	\$ 100,000	
NC	Redesign and Maintain GWMA Website	\$ -	\$ 8,000	\$ 4,000	\$ 12,000	\$ 12,000	2.11	\$ 12,000	
NC	Lagoon Assessment Based on EPA Data	\$ -	\$ 10,000	\$ -	\$ 10,000	\$ 10,000	2.00	\$ 10,000	
NC	Mobile Lab--On Farm Evaluation of Irrigation Water Management	\$ -	\$ 175,000	\$ 175,000	\$ 350,000	\$ 350,000	1.90		
R	Community Outreach Surveys	\$ -	\$ 13,000	\$ 12,000	\$ 25,000	\$ 25,000	1.47	\$ 25,000	
NC	Regulatory Review--(consider \$25,000 placeholder)	\$ -	\$ 250,000	\$ -	\$ 250,000	\$ 250,000	1.32	\$ 25,000	
W	Bilingual Outreach Coordinator Position (WITHDRAWN)	\$ -	\$ -	\$ -	\$ -	\$ -	1.65		
W	RCIM Resource Hotline (Full Resource Project) - (WITHDRAWN)	\$ -	\$ -	\$ -	\$ -	\$ -	1.16		
W	RCIM Resource Hotline (Pilot Project) - (WITHDRAWN)	\$ -	\$ -	\$ -	\$ -	\$ -	1.11		
NC	Groundwater Monitoring Plan - Planning, Analysis, and Implementation	\$ 224,000			\$ -	\$ 224,000		\$ 224,000	
NC	Yakima County: Administration, Plan Writing, Plan Coordination, etc.	\$ 221,000	\$ -	\$ -	\$ -	\$ 221,000		\$ 221,000	
NC	Regulatory Review--consider \$25,000 placeholder	\$ 14,000	\$ -	\$ -	\$ -	\$ 14,000		\$ 14,000	
NC	Facilitation	\$ 135,000	\$ -	\$ -	\$ -	\$ 135,000		\$ 135,000	
NC	Deep Soil Sampling (Plan Preparation)	\$ 48,000	\$ -	\$ -	\$ -	\$ 48,000		\$ 48,000	
NC	Education, Outreach, and Survey (Past Activities)	\$ 26,000	\$ -	\$ -	\$ -	\$ 26,000		\$ 26,000	
NC	Wellhead Risk Assessment Surveys - Phase 1	\$ 54,000	\$ -	\$ -	\$ -	\$ 54,000		\$ 54,000	
NC	Best Management Practices	\$ 79,000	\$ -	\$ -	\$ -	\$ 79,000		\$ 79,000	
Column Totals		\$ 801,000	\$ 1,300,000	\$ 706,000	\$ 2,006,000	\$ 2,807,000		\$ 2,032,000	\$ 200,000
Current Funding Limit						\$ 2,364,000		\$ 2,364,000	\$ 332,000
(Over Budget) or Under Budget						\$ (443,000)		\$ 332,000	\$ 132,000

NC = No change

R = Revised

W = Withdrawn

GWAC Budget Discussions

Budget request information to provide to the full GWAC

Submit to Envirolssues by August 13, 2014

Working Group requesting the funding: CAFO/Livestock (proposal #1)

1. Describe the work element

- What is the work?

An investigation of dairy pens and manure storage areas as potential source areas for nitrate contamination: to determine the extent of nitrate movement in the subsurface soil profile.

- Who will do the work?

Private contractor

- How will the work be done?

The underlying soil profile will be sampled using a backhoe or other equipment. The work will be done on up to ten cooperating dairies; develop project design and description, QAPP and perform data analysis.

2. Clearly say how it will inform the development of the GWMA Program

- How does this work contribute to identifying the major sources of nitrate contamination?

This will provide field information about whether pens and manure storage areas are a significant source of nitrate leaching and potential for groundwater contamination.

- What additional information about the source(s) will this provide?

Will provide actual data on the extent of nitrate leaching and movement in these areas

- How will this inform what actions should be in the program?

It will indicate whether different practices are needed for pens and/or storage areas to reduce nitrate contamination.

3. How much will this cost?

Estimate: \$60,000 for ten dairies

- Is it scalable? Can some but not all be done and still provide value to the program development?
Yes, data from fewer dairies would still be valuable. If studies from other areas must be used, some local data would be useful for purposes of comparison.
- Is there a possibility of leveraging other funding (besides GWMA funding) to help fund this work? If yes, what would the source of additional funding be?

None known

GWAC Budget Discussions

Budget request information to provide to the full GWAC

Submit to Envirolssues by August 13, 2014

Working Group requesting the funding: CAFO/Livestock (proposal #2)

1. Describe the work element

- What is the work?

Analysis and interpretation of data from dairy lagoon assessments that we will be obtaining from dairy cluster/EPA project.

- Who will do the work?

Private contractor

- How will the work be done?

Obtain data, analyze and interpret, communicate with project contractor as needed, write up results.

2. Clearly say how it will inform the development of the GWMA Program

- How does this work contribute to identifying the major sources of nitrate contamination?

Will help determine if and what characteristics of manure lagoons may be contributing to nitrate contamination

- What additional information about the source(s) will this provide?

Site-based calculations of leaching losses from lagoons with various characteristics

- How will this inform what actions should be in the program?

Will help inform whether changes in lagoon siting, construction and/or management practices are called for to reduce nitrate contamination

3. How much will this cost?

Estimate: \$10,000

- Is it scalable? Can some but not all be done and still provide value to the program development?

No – unless data comes to us already largely analyzed and interpreted

- Is there a possibility of leveraging other funding (besides GWMA funding) to help fund this work? If yes, what would the source of additional funding be?

None identified

GWAC Budget Discussions

Budget request information to provide to the full GWAC

Submit to EnviroIssues by August 13, 2014

Working Group requesting the funding: _____ Data and Monitoring Work Group _____

1. Describe the work element

- What is the work? Development of a GWMA nitrogen loading assessment
- Who will do the work? The work is proposed to be done jointly by Yakima County and the WA Department of Agriculture
- How will the work be done? The work will be done by dividing potential sources into two groups; RCIM activities and Agricultural Activities (to include irrigated agriculture and livestock activities), Yakima County will take charge of the RCIM aspects while WSDA will handle the agricultural aspects. There will be six elements to the project:
 - 1) Database development
 - 2) RCIM N Loading Quantification
 - 3) Irrigated Agriculture N Loading Quantification
 - 4) Livestock Agriculture N Loading Quantification
 - 5) N Loading Comparison
 - 6) Development of Final Report

At various time throughout the assessment WSDA/Yakima County will confer with EPA/Ecology/Health/CD's as necessary to reduce uncertainty in the final product.

2. Clearly say how it will inform the development of the GWMA Program

- How does this work contribute to identifying the major sources of nitrate contamination?

This project will form the basis in the determination of which BMP's or other actions should be implemented to address the issue of N overloading in the basin. This information is necessary regardless of whether the GWAC wishes to pursue additional modeling per the USGS or not. Sub-sector analysis of N loading will provide the basis of tailored educational efforts, and will help to inform the GWAC regarding the utility of voluntary vs regulatory considerations in the development of the GWMA implementation plan. The assessment will also provide insight into the effectiveness of current practices as opposed to past practices (actions).

- What additional information about the source(s) will this provide? (See above)
- How will this inform what actions should be in the program? (See above)

3. How much will this cost? Estimated Cost \$ 56,660.00

- Is it scalable? Can some but not all be done and still provide value to the program development? **To some extent the project is scalable based on sector analysis. The utility begins to get lost once the area or sector(s) are reduced.**
- Is there a possibility of leveraging other funding (besides GWMA funding) to help fund this work? If yes, what would the source of additional funding be? **To some extent the budget does not reflect the true cost of conducting this assessment by either Yakima County or WSDA, but rather supports the two agencies effort to get this project underway.**

GWAC Budget Discussions

Budget request information to provide to the full GWAC

Submit to EnviroIssues by August 13, 2014

Working Group requesting the funding: Education and Outreach

1. Describe the work element

1. Educational Outreach Campaigns

- **What is the work?** This is the budget for all promotional (ad) campaigns that will be conducted on behalf of the GWAC during program development. Campaigns include outreach to at-risk populations (e.g., New Mom campaign), outreach for community surveys, for the RCIM resource hotline, the abandoned well outreach, the GWMA website, and other GWAC-approved initiatives.
- **Who will do the work?** Under the direction of the County, the work will be completed by a third party contractor or partner. Smaller projects and printing may be completed using County staff and resources.
- **How will the work be done?** Similar to the work conducted by the EPO during the High Risk Well Assessment surveys. Based on the project, contracts may be executed with radio and/or television stations, billboard purveyors, print advertisers and similar. Direct mail pieces (or flyers, brochures, or similar) may be designed, translated, printed, and mailed (or made available) to target audiences.

2. Clearly say how it will inform the development of the GWMA Program

- **How does this work contribute to identifying the major sources of nitrate contamination?** This work focuses on the residents and at-risk populations within the GWMA, and is the GWAC's primary means for raising awareness of the issues. The information or feedback from the public will be collected and can be used to direct future targeted areas or outreach needs for the GWMA.
- **What additional information about the source(s) will this provide?** Directly supports data collection.
- **How will this inform what actions should be in the program?** Public response and feedback will inform various phases of program development (e.g., evaluation of alternatives to meet targets and chosen alternatives). It also meets the GWAC's outreach plan goals of providing education to at-risk populations, raising awareness of the GWAC and inviting participation in the GWMA program development.

3. How much will this cost? \$53,500 total (FY 2014-15 - \$33,500; FY 2014-15 \$20,000)

- Is it scalable? Can some but not all be done and still provide value to the program development?
Yes. Projects (initiatives) can be eliminated or downscaled as determined by the GWAC.
- Is there a possibility of leveraging other funding (besides GWMA funding) to help fund this work?
If yes, what would the source of additional funding be? No. However, similar to the GWAC's New Mom campaign partnership with PEHSU/EPA, other partnerships may be an option.

GWAC Budget Discussions

Budget request information to provide to the full GWAC

Submit Revised Proposals to Vern Redifer by September 12, 2014

Working Group requesting the funding: Education and Outreach

1. Describe the work element 1. Educational Outreach Campaigns (Revision: Increases

budget from \$54,000 to \$80,000 to reflect additional promotion for the RCIM abandoned wells campaign)

- **What is the work?** This is the budget for all promotional (ad) campaigns that will be conducted on behalf of the GWAC during program development. Campaigns include outreach to at-risk populations (e.g., New Mom campaign), outreach for the RCIM abandoned well outreach, high risk well monitoring, the GWMA website, and other GWAC-approved initiatives.
- **Who will do the work?** Under contract with the County, the work will be completed by a third party contractor or partner. Smaller projects and printing may be completed using County staff and resources.
- **How will the work be done?** Similar to the work conducted by the EPO during the High Risk Well Assessment surveys. Based on the project, contracts may be executed with radio and/or television stations, billboard purveyors, print advertisers and similar. Direct mail pieces (or flyers, brochures, or similar) may be designed, translated, printed, and mailed (or made available) to target audiences.

2. Clearly say how it will inform the development of the GWMA Program

- **How does this work contribute to identifying the major sources of nitrate contamination?** This work focuses on the residents and at-risk populations within the GWMA, and is the GWAC's primary means for raising awareness of the issues. The information or feedback from the public will be collected and can be used to direct future targeted areas or outreach needs for the GWMA.
- **What additional information about the source(s) will this provide?** Directly supports data collection.
- **How will this inform what actions should be in the program?** Public response and feedback will inform various phases of program development (e.g., evaluation of alternatives to meet targets and chosen alternatives). It also meets the GWAC's outreach plan goals of providing education to at-risk populations, raising awareness of the GWAC and inviting participation in the GWMA program development.

3. How much will this cost? **\$80,000 total (FY 2014-15 - \$40,000; FY 2015-16 \$40,000)**

- **Is it scalable? Can some but not all be done and still provide value to the program development?**
Yes. Projects (initiatives) can be eliminated or downscaled as determined by the GWAC.
- **Is there a possibility of leveraging other funding (besides GWMA funding) to help fund this work?**
If yes, what would the source of additional funding be? No. However, similar to the GWAC's New Mom campaign partnership with PEHSU/EPA, other partnerships may be an option.

GWAC Budget Discussions

Budget request information to provide to the full GWAC

Submit to Envirolissues by August 13, 2014

Working Group requesting the funding: Education and Outreach

1. Describe the work element

2. Community Outreach Surveys

- **What is the work?** This is a community outreach survey effort focused on getting information out to the general public and at-risk populations about their shared or private wells, water quality, general information or concerns with nitrate levels in the groundwater, resources available, and the GWMA. The outreach will also evaluate the public's understanding of nitrate risk, its understanding of the GWAC and program initiatives (e.g., DSS program).
- **Who will do the work?** The questionnaire and design of the surveys is set up to be completed by a third party contractor or partner, similar to the door-to-door surveys completed by the 2013 Heritage University outreach.
- **How will the work be done?** Door-to-door surveys, phone surveys or similar. Contractor will be given an area or addresses of interest. Their proposal for each survey should include relevant costs for expenditures (i.e., gas, time, mapping, and so on)

2. Clearly say how it will inform the development of the GWMA Program

- **How does this work contribute to identifying the major sources of nitrate contamination?** This work focuses on the individuals within the GWMA, and is a tool for raising awareness of the issue. The information or feedback from the public can be used to direct future targeted areas or outreach needs for the GWMA.
- **What additional information about the source(s) will this provide?** These surveys will help the public recognize or identify potential contamination sources that increase the Nitrate Level in the groundwater.
- **How will this inform what actions should be in the program?** This information should help direct resources or the focus of the GWMA into areas where new or undocumented sources exist. It also provides data for gaps or holes where information is missing, and can evaluate the public's understanding of GWAC program initiatives (e.g. DSS program). It will help measure the public's acceptance of and/or willingness to participate in proposed GWMA program alternatives.

3. How much will this cost? Up to \$40,000 total (FY 2014-15 - \$20,00; FY 2015-16 - \$20,000 second year). Assumes contracting with Heritage University or similar to conduct five door-to-door community surveys over two years. Minimum of 130 one-on-one contacts per survey (minimum 650 one-on-one contacts).

- **Is it scalable? Can some but not all be done and still provide value to the program development?** Yes, it is scalable. The total number of surveys or attempts to complete the surveys can be reduced based on feedback from the original work completed by Heritage University in 2013. Thoughts on online or telephone surveys could be discussed to reduce the associated costs with traveling to the home. The questionnaire is for providing general information for education purposes, and selecting future or potential sample points for additional well inspection surveys or data collection. The more informed the public becomes with the issue at hand, the better or more informed decision(s) they can make about their personal and family's well being, how they can become more involved, or reduce their footprint with respect to the contamination of the aquifer.
- **Is there a possibility of leveraging other funding (besides GWMA funding) to help fund this work? If yes, what would the source of additional funding be?** Even though it seems this should be possible, it would

be a tax or fee for service to get the surveys done. Without expanding this simple survey to include sampling, the public may not see a benefit for having the surveyor coming out to their home.

GWAC Budget Discussions

Budget request information to provide to the full GWAC

Submit revisions to Vern Redifer by September 12, 2014

Working Group requesting the funding: Education and Outreach

1. **Describe the work element** 3. **Community Outreach Surveys** (Revision: assigns all work related to project development, implementation and analysis to a third-party contractor; reduces total number of surveys from 5 to 2; reduces budget from \$40,000 to \$25,000)

- **What is the work?** This is a community outreach survey effort focused on getting information out to the general public and at-risk populations about their shared or private wells, water quality, general information or concerns with nitrate levels in the groundwater, resources available, and the GWMA. The outreach will also evaluate the public's understanding of nitrate risk, its understanding of the GWAC and program initiatives (e.g., DSS program).
- **Who will do the work?** Contract with a third-party vendor to conduct one bilingual, door-to-door survey annually (two total) with a minimum of 130 direct contacts per survey. Contractor will research, design, implement, monitor and evaluate campaign effectiveness; analyze findings, report and prepare recommendations to EPO and GWAC. The questionnaire and design of the surveys will be similar to the door-to-door surveys completed by the 2013 Heritage University outreach; however, vendor will be responsible for entire campaign and support services previously provided by Yakima County.
- **How will the work be done?** Door-to-door surveys, phone surveys or similar. Contractor will be given an area or addresses of interest. Their proposal for each survey should include relevant costs for project design, implementation, evaluation and analysis and all expenditures (i.e., gas, time, mapping, and so on)

2. **Clearly say how it will inform the development of the GWMA Program**

- **How does this work contribute to identifying the major sources of nitrate contamination?** This work focuses on the individuals within the GWMA, and is a tool for raising awareness of the issue. The information or feedback from the public can be used to direct future targeted areas or outreach needs for the GWMA.
- **What additional information about the source(s) will this provide?** These surveys will help the public recognize or identify potential contamination sources that increase the Nitrate Level in the groundwater.
- **How will this inform what actions should be in the program?** This information should help direct resources or the focus of the GWMA into areas where new or undocumented sources exist. It also provides data for gaps or holes where information is missing, and can evaluate the public's understanding of GWAC program initiatives (e.g. DSS program). It will help measure the public's acceptance of and/or willingness to participate in proposed GWMA program alternatives.

3. **How much will this cost? \$25,000 total (FY 2014-15 - \$12,500; FY 2015-16 - \$12,500). Assumes contracting with third-party vendor to conduct two door-to-door community surveys over two years. Minimum of 130 one-on-one contacts per survey (260 total one-on-one contacts).**

- **Is it scalable? Can some but not all be done and still provide value to the program development?** No. This is the scaled-back version. Costs associated with a third-party contractor will also preclude further scaling, regardless of how the surveying is conducted (via phone, direct mail, at community events, door-to-door). The questionnaire is for providing general information for education purposes, and selecting future or

potential sample points for additional well inspection surveys or data collection. The more informed the public becomes with the issue at hand, the better or more informed decision(s) they can make about their personal and family's well being, how they can become more involved, or reduce their footprint with respect to the contamination of the aquifer.

- Is there a possibility of leveraging other funding (besides GWMA funding) to help fund this work? If yes, what would the source of additional funding be? Even though it seems this should be possible, it would be a tax or fee for service to get the surveys done. Without expanding this simple survey to include sampling, the public may not see a benefit for having the surveyor coming out to their home.

GWAC Budget Discussions

Budget request information to provide to the full GWAC

Submit to EnviroIssues by August 13, 2014

Working Group requesting the funding: Education and Outreach

1. Describe the work element

3. RCIM Resource Hotline – Pilot Project

- **What is the work?** This is a Pilot Project to provide a bilingual, RCIM telephone referral hotline to serve the public within the LYV GWMA. The hotline would provide a directory of educational and technical assistance resources related to nitrate in groundwater (e.g., wellhead protection, septic system maintenance, nitrate health education). Data would be collected from the calls and provided to the working groups as requested. *Note: this project may be expanded to include a referral line for all working groups. The budget would increase accordingly.*
- **Who will do the work?** The RCIM will provide a list of typical questions to the EPO that the hotline might receive, and a list of applicable agencies and resources appropriate to answer each question. The County will contract with Heritage University (or equivalent) to staff the hotline for the 2014-15 school year (first year). *Note: if the referral line is expanded, all working groups will be expected to provide typical questions, answers and resources to build the full directory of contacts.*
- **How will the work be done?** Under faculty and County supervision, students will be trained to respond to voicemail calls using the resource materials provided by the RCIM [and other working groups as applicable]. Students may provide materials and direct questions to technical assistance providers or partners to resolve issues or investigate further requests for information, data, review, etc. Data may also be collected from each call as directed by the RCIM.

2. Clearly say how it will inform the development of the GWMA Program

- **How does this work contribute to identifying the major sources of nitrate contamination?** Focus is on residents of the Lower Yakima Valley or stakeholders within the GWMA, and can be used as a tool for raising awareness about the GWMA program development. The information and feedback from the hotline calls can be collected and used to direct future targeted areas or identify outreach needs for the GWMA.
- **What additional information about the source(s) will this provide?** Provides an avenue for the public to comment on the GWAC, on GWMA program development, or to provide information, request information on how to identify, report, or determine whether a source is a new potential contamination source that could increase the Nitrate Level in the groundwater.
- **How will this inform what actions should be in the program?** Data from the hotline calls will be collected and, depending upon data requested by the working groups, may inform various aspects of the GWMA program. Feedback can also be used determine where additional resources or materials are needed, and help evaluate effectiveness of outreach materials.
- **How much will this cost? \$10,000 for a one-year RCIM pilot; \$50,000 for a one-year Full Resource Hotline**
- **Is it scalable? Can some but not all be done and still provide value to the program development?** Yes, it is scalable. We can gauge the success of the first year pilot project to determine if a second attempt is warranted. *For a fully funded referral line, part of the labor costs should be shifted from project #7, to the referral line costs.*
- **Is there a possibility of leveraging other funding (besides GWMA funding) to help fund this work? If yes, what would the source of additional funding be?** No.

GWAC Budget Discussions

Budget request information to provide to the full GWAC

Submit to EnvirolIssues by August 13, 2014

Working Group requesting the funding: Education and Outreach

1. Describe the work element **4. RCIM Abandoned Wells and Septic System Maintenance Outreach**
[Placeholder]

- **What is the work?** This project is a community outreach and technical assistance effort targeting Lower Yakima Valley GWMA property owners who may have information about local abandoned wells and/or use septic systems. The purpose is to obtain information on abandoned wells and provide information on proper septic system maintenance.
- **Who will do the work?** Unknown. Project is still under discussion.
- **How will the work be done?** Unknown. Project is still under discussion.

2. Clearly say how it will inform the development of the GWMA Program

- **How does this work contribute to identifying the major sources of nitrate contamination?** Focus is on residents of the Lower Yakima who may have information about local abandoned wells. The purpose is to raise awareness of the issue and identify improperly decommissioned wells in the GWMA. The information or feedback from the public can be used to direct future targeted areas or outreach needs for the GWMA.
- **What additional information about the source(s) will this provide?** Provides an avenue for the public to comment, provide information, or request information on how to identify, report, or determine whether a source is an existing or new potential contamination source that could increase the Nitrate Level in the groundwater.
- **How will this inform what actions should be in the program?** Data can be used determine where additional resources or materials are needed. In addition, could help gauge effectiveness of outreach materials.

3. How much will this cost? [Placeholder] \$5000 total (FY 2014-15 - \$3000; FY2015-16 \$2000)

- **Is it scalable? Can some but not all be done and still provide value to the program development?** Unknown. Still under discussion.
- **Is there a possibility of leveraging other funding (besides GWMA funding) to help fund this work? If yes, what would the source of additional funding be?** Unknown. Still under discussion.

GWAC Budget Discussions

Budget request information to provide to the full GWAC

Submit revisions to Vern Redifer by September 12, 2014

Working Group requesting the funding: _____ Education and Outreach

1. Describe the work element 2. RCIM Abandoned Wells and Septic System Maintenance Outreach

(Revisions: Shifts duties and related costs previously proposed under the Bilingual Coordinator to a third party contractor (project development, implementation, analysis, reporting); shifts RCIM first year budget request (\$50,000) to this project, adds \$26,000 for media outreach for a total cost of \$76,000)

- **What is the work?** This project is a community outreach and data collection effort targeting Lower Yakima Valley GWMA property owners/residents who may have information about local abandoned wells and/or use septic systems. The purpose is to identify and collect data on abandoned wells and provide information on proper septic system maintenance.
- **Who will do the work?** Work will be completed under contract with a third-party vendor.
- **How will the work be done?** Under contract with Yakima County and with EPO guidance, the contractor will be responsible for all phases of the campaign, including but not limited to developing messaging, designing surveys, implementing the outreach (including door-to-door canvassing), monitoring the project for quality assurance and reporting back results to the EPO and GWAC. Depending on proposal, may require extensive community mobilization and oversight of volunteers. Proposal should include all relevant costs related to project (i.e. meeting attendance, travel, gas, time, mapping, copies of materials, and so forth).

2. Clearly say how it will inform the development of the GWMA Program

- **How does this work contribute to identifying the major sources of nitrate contamination?** Focus is on residents of the Lower Yakima who may have information about local abandoned wells. The purpose is to raise awareness of the issue and identify improperly decommissioned wells in the GWMA. The information or feedback from the public can be used to direct future targeted areas or outreach needs for the GWMA.
- **What additional information about the source(s) will this provide?** Provides an avenue for the public to comment, provide information, or request information on how to identify, report, or determine whether a source is an existing or new potential contamination source that could increase the Nitrate Level in the groundwater.
- **How will this inform what actions should be in the program?** Data can be used determine where additional resources or materials are needed. In addition, could help gauge effectiveness of outreach materials.

3. How much will this cost? \$76,000 total (FY 2014-15 - \$56,000; FY2015-16 \$20,000)

- **Is it scalable? Can some but not all be done and still provide value to the program development?** Yes, it is scalable. However, economies of scale will be lost if the budget is reduced (e.g., Project startup costs would remain unchanged regardless of the project scale)
- **Is there a possibility of leveraging other funding (besides GWMA funding) to help fund this work? If yes, what would the source of additional funding be?** Unknown.

GWAC Budget Discussions

Budget request information to provide to the full GWAC

Submit to EnvirolIssues by August 13, 2014

Working Group requesting the funding: Education and Outreach

1. Describe the work element

5. Redesign and Ongoing Maintenance of the GWMA Website

- **What is the work?** The GWMA website serves as the central clearinghouse and primary communications vehicle for the GWAC. This update will provide a user-friendly English/Spanish forum for target audiences (stakeholders, at-risk populations and the public) to access the information they need, and to communicate with the GWAC. Visitors will have better access to historical information about the GWAC's efforts, learn about its current projects and future programs. It will also serve to educate private or shared well owners, stakeholders, residents, and the public on water quality testing methods, frequencies, interpretation of results, and possible funding sources or technical assistance.
- **Who will do the work?** Yakima County will contract with a local ad agency or group for design, ongoing hosting, content management and web updates.
- **How will the work be done?** Contractor will complete work under the direction and oversight of Yakima County. Work will be guided by GWAC's goals and identified needs. EPO will assist working groups to complete proof and edit documents, etc. when requested or necessary to help achieve the GWAC's goals for providing public information and education.

2. Clearly say how it will inform the development of the GWMA Program

- **How does this work contribute to identifying the major sources of nitrate contamination?** The GWMA website serves as the central clearinghouse and communications vehicle for the GWAC. Findings, trends, helpful resources can be uploaded to provide assistance and information; feedback can also be solicited from the residents and stakeholders in the Lower Yakima Valley to identify potential sources of contamination.
- **What additional information about the source(s) will this provide?** The intent is to have an open or transparent and safe mechanism to relay information in both directions between the GWMA / GWAC, stakeholders, and public. It can be used to help document and track the location and progress of new potential sources of contamination (nitrate) and reduction/increases in Nitrate Level in the groundwater.
- **How will this inform what actions should be in the program?** The website provides an open, transparent, safe mechanism to relay information between the GWMA / GWAC, stakeholders, and public. The web communication between the GWAC and the public can be used to inform each phase of program development (to inform evaluation of alternatives or chosen alternatives). It may also help direct resources or focus of the GWMA into areas where new or undocumented sources exist, and provide data for gaps or holes where information is missing.

3. How much will this cost? \$10,500 (FY 2014-15 - \$7,000; FY 2015-16 \$3500)

- **Is it scalable? Can some but not all be done and still provide value to the program development?** No, it is the lowest cost option. Assumes Yakima County will be responsible for administrative web postings (GWAC and working group meeting calendars, meeting records; presentations and reports).
- **Is there a possibility of leveraging other funding (besides GWMA funding) to help fund this work? If yes, what would the source of additional funding be?** No

GWAC Budget Discussions

Budget request information to provide to the full GWAC

Submit Revisions to Vern Redifer by September 12 2014

Working Group requesting the funding: Education and Outreach

- **Describe the work element** **5. Redesign and Ongoing Maintenance of the GWMA Website**
(Revision: increases budget to \$12,000 (previously \$10,500), reflecting a cost shift for translation services that were previously accounted for under the Bilingual Coordinator proposal)
- **What is the work?** The GWMA website serves as the central clearinghouse and primary communications vehicle for the GWAC. This update will provide a user-friendly English/Spanish forum for target audiences (stakeholders, at-risk populations and the public) to access the information they need, and to communicate with the GWAC. Visitors will have better access to historical information about the GWAC's efforts; learn about its current projects and future programs. It will also serve to educate private or shared well owners, stakeholders, residents, and the public on water quality testing methods, frequencies, interpretation of results, and possible funding sources or technical assistance.
- **Who will do the work?** Yakima County will contract with a local ad agency or group for design, ongoing hosting, content management and web updates.
- **How will the work be done?** Contractor will complete work under contract with Yakima County. EPO will assist working groups to complete proof and edit documents, etc. when requested or necessary to help achieve the GWAC's goals for providing public information and education.

1. Clearly say how it will inform the development of the GWMA Program

- **How does this work contribute to identifying the major sources of nitrate contamination?** The GWMA website serves as the central clearinghouse and communications vehicle for the GWAC. Findings, trends, helpful resources can be uploaded to provide assistance and information; feedback can also be solicited from the residents and stakeholders in the Lower Yakima Valley to identify potential sources of contamination.
- **What additional information about the source(s) will this provide?** The intent is to have an open or transparent and safe mechanism to relay information in both directions between the GWMA / GWAC, stakeholders, and public. It can be used to help document and track the location and progress of new potential sources of contamination (nitrate) and reduction/increases in Nitrate Level in the groundwater.
- **How will this inform what actions should be in the program?** The website provides an open, transparent, safe mechanism to relay information between the GWMA / GWAC, stakeholders, and public. The web communication between the GWAC and the public can be used to inform each phase of program development (to inform evaluation of alternatives or chosen alternatives). It may also help direct resources or focus of the GWMA into areas where new or undocumented sources exist, and provide data for gaps or holes where information is missing.

2. How much will this cost? **\$12,000 (FY 2014-15 - \$8,000; FY 2015-16 \$4000)**

- Is it scalable? Can some but not all be done and still provide value to the program development? No, it is the lowest cost option. Assumes Yakima County will be responsible for administrative web postings (GWAC and working group meeting calendars, meeting records; presentations and reports).
- Is there a possibility of leveraging other funding (besides GWMA funding) to help fund this work? If yes, what would the source of additional funding be? No

GWAC Budget Discussions

Budget request information to provide to the full GWAC

Submit to EnviroIssues by August 13, 2014

Working Group requesting the funding: Education and Outreach

1. Describe the work element Wellhead Risk Assessment Surveys

- **What is the work?** This is a community outreach and data collection effort focused on getting information out to and from the public about their shared or private well. Water quality samples are being included to get information on nitrate levels in the groundwater. The information received during or from the survey will be used to direct the resident to resources available. Information on the GWAC's work and GWMA program development will be provided during the survey.
- **Who will do the work?** The administration or objectives of this site visit may be better handled by the Data Collection workgroup. The questionnaire and design of the survey is set-up to be completed by a third party contractor or partner. Similar to the work completed by the Yakima Health District (YHD).
- **How will the work be done?** Similar to the work completed by the Yakima County Health District. Contractor will be given an area or addresses of interest. Their proposal should include relevant costs for travel expenditures and for providing technical assistance (i.e., gas, time, mapping, copies of materials, and so on).

2. Clearly say how it will inform the development of the GWMA Program

- **How does this work contribute to identifying the major sources of nitrate contamination?** The Data Collection workgroup can assess the benefit for selecting a site for additional or ongoing monitoring and determine the potential source contaminants within close proximity of the well, to correlate data with the identified aquifer served by the well. This work focuses on the individuals within the GWMA, and is a tool for raising awareness of the Nitrate issue. In addition, the information is tailored to the site specific conditions, source construction characteristics, and / or water quality results taken from the resident's well. The information or feedback from the public can be used to direct future targeted areas for data collection needs for the GWMA.
- **What additional information about the source(s) will this provide?** These surveys will help the public recognize or identify potential contamination sources that increase the Nitrate Level in the groundwater. Will also provide site specific information to residents about their water quality and potential risks.
- **How will this inform what actions should be in the program?** This information should help direct resources or the focus of the GWMA into areas where new or undocumented sources exist, and provide data for gaps or holes where information is missing.
- **How much will this cost?** \$149,000 total (FY 2014-15 -\$74,500; FY 2015-16 -\$74,500) based on 2014 High Risk Well Assessment Survey costs.
- **Is it scalable? Can some but not all be done and still provide value to the program development?** Yes, it is scalable. The total number of surveys or attempts to complete the surveys can be reduced based on feedback from the original work completed by the YHD. The survey provides site-specific information for education purposes, and selecting future sample points for data collection.
- **Is there a possibility of leveraging other funding (besides GWMA funding) to help fund this work? If yes, what would the source of additional funding be?** Even though it seems this should be possible, it would be a tax or fee for service to get the surveys done. Without expanding this simple survey to include sampling, the public may not see a benefit for having the surveyor coming out to their home.

GWAC Budget Discussions

Budget request information to provide to the full GWAC

Submit Revisions to Vern Redifer by September 12, 2014

Working Group requesting the funding: Education and Outreach

1. Describe the work element 4. Wellhead Risk Assessment Surveys Revision: reduces budget from \$149,000-\$100,000 by reducing number of surveys.

- **What is the work?** This is a community outreach and data collection effort focused on getting information out to and from the public about their shared or private well. Water quality samples are being included to get information on nitrate levels in the groundwater. The information received during or from the survey will be used to direct the resident to resources available. Information on the GWAC's work and GWMA program development will be provided during the survey.
- **Who will do the work?** The administration or objectives of this site visit may be better handled by the Data Collection workgroup. The questionnaire and design of the survey is set-up to be completed by a third party contractor or partner. Similar to the work completed by the Yakima Health District (YHD).
- **How will the work be done?** Similar to the work completed by the Yakima County Health District. Contractor will be given an area or addresses of interest. Their proposal should include relevant costs for travel expenditures and for providing technical assistance (i.e., gas, time, mapping, copies of materials, and so on).

2. Clearly say how it will inform the development of the GWMA Program

- **How does this work contribute to identifying the major sources of nitrate contamination?** The Data Collection workgroup can assess the benefit for selecting a site for additional or ongoing monitoring and determine the potential source contaminants within close proximity of the well, to correlate data with the identified aquifer served by the well. This work focuses on the individuals within the GWMA, and is a tool for raising awareness of the Nitrate issue. In addition, the information is tailored to the site specific conditions, source construction characteristics, and / or water quality results taken from the resident's well. The information or feedback from the public can be used to direct future targeted areas for data collection needs for the GWMA.
- **What additional information about the source(s) will this provide?** These surveys will help the public recognize or identify potential contamination sources that increase the Nitrate Level in the groundwater. Will also provide site specific information to residents about their water quality and potential risks.
- **How will this inform what actions should be in the program?** This information should help direct resources or the focus of the GWMA into areas where new or undocumented sources exist, and provide data for gaps or holes where information is missing.
- **How much will this cost?** **\$100,000 total (FY 2014-15 -\$50,000; FY 2015-16 - \$50,000) based on 2014 High Risk Well Assessment Survey costs.**
- **Is it scalable? Can some but not all be done and still provide value to the program development?** Yes, it is scalable. The total number of surveys or attempts to complete the surveys can be reduced based on feedback from the original work completed by the YHD. The survey provides site-specific information for education purposes, and selecting future sample points for data collection.

- Is there a possibility of leveraging other funding (besides GWMA funding) to help fund this work? If yes, what would the source of additional funding be? Even though it seems this should be possible, it would be a tax or fee for service to get the surveys done. Without expanding this simple survey to include sampling, the public may not see a benefit for having the surveyor coming out to their home.

GWAC Budget Discussions

Budget request information to provide to the full GWAC

Submit to EnvirolIssues by August 13, 2014

Working Group requesting the funding: Education and Outreach

1. Describe the work element

What is the work?

7. Bilingual Outreach Coordinator Position (Pilot)

Under County supervision, the part-time pilot position will support EPO and GWAC initiatives, including coordinating and staffing the RCIM Hotline, conducting and evaluating the community outreach surveys and monitoring website activity and content. Position may also provide nitrate education on behalf of the GWAC. Position would operate as a pilot project in the first year to allow the GWAC to evaluate the need for and value of an FTE position. Based on evaluation outcomes, position could be expanded to full-time in the second year. Other duties would include gathering data to evaluate public understanding of nitrate risk, the GWAC's work and GWMA program development, maintaining a data base of current educational material regarding nitrate-related topics, preparing and presenting educational materials for a variety of audiences. The position would also maintain data required for EPO program evaluation

- **Who will do the work?** Yakima County will contract with a potential candidate to complete the outlined tasks. A potential avenue is using or contracting with a university or organization to engage students or volunteers to fulfill the primary duties during the first year. The coordinator would conduct the work under County supervision. The need for the position would be evaluated at the end of the first year.
- **How will the work be done?** Coordinator will complete work under the direction and oversight of Yakima County. Work will be guided by GWAC's goals, identified needs and its outreach plan.

2. Clearly say how it will inform the development of the GWMA Program

- **How does this work contribute to identifying the major sources of nitrate contamination?** The coordinator position provides a focal point for the transfer of information between the public, the stakeholders and the GWAC. Findings, trends, and helpful resources can be shared between the GWAC and the public to build a more community-engaged GWMA program. In addition, the position will encourage participation from the residents and stakeholders in the Lower Yakima Valley to identify potential sources of contamination.
- **What additional information about the source(s) will this provide?** The position will support public participation in water testing, deep soil sampling, illicit well identification and other GWAC initiatives that support program development.
- **How will this inform what actions should be in the program?** Communication with—and participation by—the public are critical components of GWMA program development. This position would provide a mechanism for ensuring communication between the GWAC and the public.

3. How much will this cost? \$89,151 total (FY 2014-15 - \$10,000 one-year pilot program; FY 2015-16 - up to \$79,151 for an FTE)

- **Is it scalable? Can some but not all be done and still provide value to the program development?** Yes, it is scalable. The pilot program allows the GWAC to evaluate the effectiveness of the position for one year on a test basis. The second year could also be operated as a pilot program, thereby reducing costs significantly.

- Is there a possibility of leveraging other funding (besides GWMA funding) to help fund this work? If yes, what would the source of additional funding be? No. However, it is possible that this position could explore potential funding sources to continue the position.

BUGET PROPOSALS - IRRIGATED AG WORKGROUP
07/25/14

<u>PROPOSAL</u>	<u>DESCRIPTION</u>	<u>START</u>	<u>END</u>	<u>COST</u>
Deep Soil Sampling	Based on 200 samples	9/1/2014	3/1/2016	\$394,563
Additional Deep Soil Sampling	100 Samples	2/1/2015	3/1/2016	\$150,000
Grower Workshops	Presentations on Nutrient and Irrigation Water Management (2)	Winter 2014-2015	Winter 2015-2016	\$7,000
Mobile Lab (See Below)	On Farm Evaluation of Irrigation Water Management	4/1/2015	10/1/2016	<u>\$395,195</u>
Total				<u>\$946,758</u>

Mobile Lab

Pickup w/ canopy or trailer	50 mi /day x 0.56/ mi x 200 days / season x 2 seasons	\$11,320
Technician	6 months x 2	\$75,000
Summer Intern	3 months x 2	\$20,000
Nutrient Analysis	125 fields @ 400 / field	\$50,000
Soil Moisture Probes	125 fields @ \$1,500 per field	<u>\$187,500</u>
Subtotal		\$343,820
Administration		<u>\$51,375</u>
Total		<u>\$395,195</u>

Reduced Nitrates in Groundwater through Improved Irrigation Systems and Management

Background

Why Focus on Irrigation?

Regardless of how much nitrate is in the soil, it won't move into the groundwater unless it moves with water. If you control the water so that it stays in the crop's root zone, or otherwise doesn't move down, then you can limit the movement of nitrates into the groundwater and they will stay where they are beneficial to crop growth. If the water inputs (irrigation and rainfall) match, or are less than the water use rates of the crops, then the soil will be able to hold this water and no water will be lost below the root zone (deep percolation, or leaching). Most of the inefficiencies, or water lost from irrigation systems is lost to deep percolation. Although quite significant, this water loss is not visible and therefore receives little attention.

Under irrigated agriculture, and with the relatively clean irrigation water used in the Yakima River Basin, it is best for everybody if irrigation water is not lost to deep percolation. Because of the relatively low costs of water, and the comparatively high returns from agricultural crops, it is not uncommon for growers to water more than is required as "cheap insurance." However, if irrigation water is managed properly the grower can get better yields, he saves money on pumping energy, he saves money on lost nitrogen fertilizers, and he pays less money for irrigation labor costs. Better irrigation management makes farmers more profitable. This also leaves more water in stream for alternate uses in the basin including fish habitat. It also will help eliminate runoff from fields and will virtually eliminate the movement of additional nitrates into the ground water.

Achieving these benefits requires knowing when to turn the water on, and how long to leave it on. These are not simple questions to answer and because of this many growers estimate when to irrigate and how much based on how dry the soil surface is, and on the condition of the crop. These methods of estimating are not very accurate and lead to less economical solutions.

Irrigation Systems Design and Efficiency

Irrigation systems vary in their efficiency as well as in their ability to uniformly apply water to the soil surface. Irrigation efficiency is defined as the water that is stored in the root zone for later use by the crop divided by the total water that runs onto the field. The only way to change this is by changing some aspects of the irrigation system to increase the efficiency.

Irrigation System Uniformity

Irrigation uniformity is important because if an irrigation system applies different amounts of water in different areas of the field, then many areas of the field must be OVER-irrigated in order to adequately irrigation the low areas. Because of this poor irrigation uniformity also results in poor grower profitability since the variable irrigation amounts, and required over-irrigation results in variable crop yields, quality, and water and fertilizer losses to deep percolation.

Objective

By helping to improve irrigation scheduling (decisions on when to irrigate and how much) as well as helping growers know what and how to improve their irrigation systems through irrigation evaluation and training using a mobile irrigation lab we can address these issues.

Irrigation Scheduling

Cost Share for Irrigation Scheduling

Cost Share with Farmers for Irrigation Scheduling. This is a large money consumer. What level of cost share we should offer is going to be hotly debated. However as a starting point, most consultants charge from \$12-\$15/acre for doing irrigation scheduling (I think). This runs from \$1,000-\$2,000 per field or site. The cost share would probably be something less than this. We should also come up with a protocol for what is required for pay-out. Ideally this would be some sort of evidence that the grower viewed, and responded to the information throughout the season.

Training

One other thing that I think could be done that would provide a large benefit in return for low costs is for the GWAC to sponsor training events for irrigators. An estimated costs of these would be \$3,000/event (??) mostly just to buy lunch for the attendees. They could be put on in conjunction with other grower meetings and the training could be done by the Benton County CD and/or WSU Agricultural Extension.

Provide Soil Moisture Sensors

Alternatively soil moisture sensors could be provided to growers to use. However, my experience with this is if they are provided for free, then they don't value them or use them. It is also not intuitive as to what to do with the numbers that they get from these sensors and some training is probably important for them to get value from them. These sensors are highly variable. Simple sensors can be purchased for about \$250 for three depths and a reader, up to \$2,000 for more sophisticated systems with telemetry and automatic reporting online.

ET-Based Irrigation Scheduling on Your Phone

There is a free irrigation scheduling app that runs on mobile phones. The benefits of this is that it is relatively efficient at reaching lots of growers at a low cost to the farmers as well as to Washington State. Most research shows that ET-based irrigation scheduling can provide the same. Although this works as a web app, this needs to be made into an iPhone app to make it more user-friendly and self-discoverable (about \$30,000 for that development). It also needs to be maintained and updated to keep it up with changing cell-phone technology and to make needed improvements and enhancements. (Relatively inexpensive at an estimated \$13,000/year).

Mobile Irrigation Lab

This consists of an employee that runs around and does irrigation system audits or evaluations. They will evaluate for efficiency and/or uniformity and give the grower a report of their system

operation and suggestions for improvement. This might be done on a cost-share basis, or for free. It would be staffed by one trained individual who knows how to do the evaluations, and one temporary helper that would serve as an extra set of hands. They would need a pickup truck that contains the necessary hardware to do the evaluations. It would be great if as a part of these evaluations, they sat down with the grower and did a little hands-on training of irrigation management options. It would cost an estimated \$35,000/year for the trained person, and \$18,000/year for the helper. This assumes they work 8 months/year. The vehicle and fuel costs would be an estimated \$6,500/year, and goods and services would be about \$3,000/year. This comes to a total of and estimated \$62,500/year.

GWAC Budget Discussions

Budget request information to provide to the full GWAC

Submit to EnviroIssues by August 13, 2014

Working Group requesting the funding:

RCIM

1. Describe the work element

- What is the work? Finding abandoned wells and improperly constructed wells.
- Who will do the work? The first phase of this effort will be coordinated through the EPO.
- How will the work be done? This will be a two phase effort. The first phase will involve public outreach and education to identify and locate abandoned and improperly constructed wells. The second phase will require properly decommissioning the identified wells. Ideally, some method will be developed to allow this second phase to be accomplished without risk of financial liability to the owners of the abandoned/improperly constructed wells.

2. Clearly say how it will inform the development of the GWMA Program

- How does this work contribute to identifying the major sources of nitrate contamination? Improperly constructed or abandoned wells are not, in themselves, sources of nitrate contamination. They may, however, provide direct conduits to ground water for nearby contaminants.
- What additional information about the source(s) will this provide? Abandoned and improperly constructed wells located in proximity to regions of the aquifer exhibiting

elevated nitrate concentrations may provide information regarding one of the mechanisms responsible for transferring nitrogen compounds to ground water. If the route to aquifer is sealed and contamination levels begin to drop then it would appear that the primary route to the aquifer has been removed and the N is being contained and utilized properly

- How will this inform what actions should be in the program? If abandoned/improperly constructed wells can be demonstrated to be partially responsible for elevated nitrate concentrations in some regions of the aquifer, this may result in a modification of the BMPs recommended for agricultural activities in the vicinity, as well as guide the development of a program for locating and decommissioning these wells with limited financial liability to the owners of the wells. If the N source no longer has a route to the aquifer, then it should be not be considered a contaminant but rather can be used as a beneficial product

3. How much will this cost?

- Is it scalable? Can some but not all be done and still provide value to the program development? This effort is proposed to be accomplished in two phases. The proposed budget for the first year is \$50,000. It may be possible to begin development of this program with a slightly reduced budget. The second phase of the program is budgeted at \$100,000 per year. This may be reduced if additional, non-GWAC, sources of funding can be developed. We will not find all abandoned or improperly constructed wells. However, every one we find represents one less route to the aquifer for N and any other contaminant. This will help us identify where BMPs are and are not needed.
- Is there a possibility of leveraging other funding (besides GWMA funding) to help fund this work? If yes, what would the source of additional funding be? It has been suggested that

money may be available through existing Department of Ecology programs for the second phase of this effort.

Form for GWAC Budget Discussions – August, 2014

**PROPOSAL I – REGULATORY REVIEW FOR THE LOWER YAKIMA VALLEY GROUNDWATER MANAGEMENT AREA
(COMPREHENSIVE)**

1. Describe the work element

- What is the work?

Phase I FY 2014/15 - By studying what has been done elsewhere, we do not have to reinvent the wheel and may learn about approaches we have not considered. This review will help us see gaps in the Washington State regulations and look for possible pitfalls as we select regulations that best fit the Yakima Valley.

1. *Regulatory Framework Committee complete* a review of

- current regulations under federal, state, county and local jurisdictions used in Yakima County with respect to groundwater protection;
- identification of gaps in authorities;
- identify areas for improvement

2. *Request proposals from ??? legal experts and institutions of higher learning to catalog regulatory and non-regulatory strategies existing in other areas of the United States (from six western states) regarding agriculture and contamination of groundwater.*

- Relevant laws, rules and regulations
- Incentive based programs
- Other non-regulatory programs

Phase II FY 2015/16 – When additional information regarding nutrient loading/balance and the activities under Phase 1 have been completed, the following will be completed: (I am a bit concerned about the wording because I don't expect that the nutrient loading/balance study will be completed any time soon. Can we restate this as "Based on the best available information regarding nutrient loading/balance, ongoing groundwater testing and activities under Phase 1, the following will be completed."

1. *Regulatory Framework Committee complete*

- Evaluate information in the "catalog of regulatory and non-regulatory strategies" from other areas of the United States (six western states) regarding agriculture and contamination of groundwater received.
- Identify potential additions or improvement identified in the catalogued information that might/will help regulatory framework in Yakima County.

2. *Request proposals from ??? legal experts and institutions of higher learning to evaluate selected regulatory and non-regulatory strategies currently employed in other areas of the United States.*

- What entity managed the implementation?

- b. How were stakeholders engaged?
- c. How is/was effectiveness demonstrated? What did success look like?
- d. What challenges still exist?
- e. Analysis of cost benefit for stakeholders and for tax payers using three different combinations of regulation and voluntary actions
- f. A literature review of research from the last five years regarding the interface between regulatory frameworks, agriculture and groundwater

Here are some examples of studies that I consider important for this discussion. I would expect that they require interpretation by the various agencies:

National Association of Local Boards of Health (2010) Understanding Concentrated Animal Feeding Operations. Available at
http://www.cdc.gov/nceh/ehs/docs/understanding_cafos_nalboh.pdf

PEW Trusts (2006) Putting Meat on the Table. Available at
http://www.ncifap.org/_images/PCIFAPFin.pdf

Government Accountability Office (2008) Concentrated Animal Feeding Operations: EPA Needs More Information and a Clearly Defined Strategy to Protect Air and Water Quality from Pollutants of Concern. Available at <http://www.gao.gov/products/GAO-08-944>

Government Accountability Office (2014) Environmental Regulation: EPA Should Improve Adherence to Guidance for Selected Elements of Regulatory Impact Analysis. Available at
<http://www.gao.gov/products/GAO-14-519>

General Accountability Office (2014) Freshwater: Supply Concerns Continue and Uncertainties Complicate Planning. Available at <http://www.gao.gov/assets/670/663343.pdf>

Copeland, C. (2006) Animal Waste and Water Quality: EPA Regulation of Concentrated Animal Feeding Operations (CAFOs) CRS Report for Congress
http://www.ncifap.org/_images/CRS_Animal_Waste_and_Water_Quality_EPA_CAFOS_Sept_2006.pdf

Copeland, C. (2013) Animal Waste and Water Quality: EPS's Response to the Waterkeeper Alliance Court Decision on Regulation of CAFOs. CRS Report for Congress. Available at
<http://nationalaglawcenter.org/wp-content/uploads/assets/crs/RL33656.pdf>

Noble, M. (2010) Paying the Polluters from CAFO: The Tragedy of Industrial Animal Factories. Available at http://www.cafothebook.org/download/CAFO_Paying_the_Polluters.pdf

Ikerd, J. (208) An Agricultural Economists Concerns about CAFOs. Available at <http://landandtable.com/2014/05/an-agricultural-economists-public-concerns-about-cafos/>

Centner, T.J. (2007) Clarifying NPDES Requirements for Concentrated Animal Feeding Operations. Available at http://nationalaglawcenter.org/wp-content/uploads/assets/articles/centner_npdes.pdf

Jackson, D.R. (2010) Water Quality Credit Trading: A Primer of Background material. Available at http://nationalaglawcenter.org/wp-content/uploads/assets/articles/jackson_waterqualitycredit.pdf

- Who will do the work?
RFPs will be publicized to solicit applicants with legal expertise in environmental, water quality or natural resources protection. This may include university and legal experts in the Pacific Northwest, western United States, or others.
- How will the work be done?
The request for proposals will include a requirement to explain how this work will be done. The initial work may be conducted using search software to compile the relevant regulations and research. The successful applicant will work closely with the Regulatory Framework Group of the Lower Yakima Valley Groundwater Management ARea

2. Clearly say how it will inform the development of the GWMA Program

- How does this work contribute to identifying the major sources of nitrate contamination?
We have a general understanding of which sources contribute to nitrate contamination of the groundwater in Yakima County. We lack a clear understanding of how current rules and regulations impact those sources. For example, we know that application of fertilizers and manure to the land is a major source of nitrate contamination. We do not know which regulations result in lack of oversight of over applications of nutrients and which regulations discourage these practices. There is discussion about both the amount of nitrogen and movement of nitrogen into the water. We need to know the relationships between rules/regulations and the physical systems involved.
- What additional information about the source(s) will this provide?
This work will inform a discussion of possible market place or regulatory approaches for reducing the input of nitrates onto the soil and ultimately the groundwater in the Lower Yakima Valley

- How will this inform what actions should be in the program? This work will meet the requirements of WAC 173 – 100 – 100 (4) that states, *"An alternatives section outlining various land and water use management strategies for reaching the program's goals and objectives that address each of the groundwater problems discussed in the problem definition section. If necessary, alternative data collection and analysis programs shall be defined to enable better characterization of the groundwater and potential quality and quantity problems. Each of the alternative strategies shall be evaluated in terms of feasibility, effectiveness, cost, time and difficulty to implement, and degree of consistency with local comprehensive plans and water management programs such as the coordinated water system plan, the water supply reservation program, and others. The alternative management strategies shall address water conservation, conflicts with existing water rights and minimum instream flow requirements, programs to resolve such conflicts, and long-term policies and construction practices necessary to protect existing water rights and subsequent facilities installed in accordance with the groundwater management area program and/or other water right procedures."*

3. How much will this cost? **\$250,000**

- Is it scalable? Can some but not all be done and still provide value to the program development? This work will be completed in two parts.
Phase 1 will gather information from
 1. regulatory and non-regulatory work currently in place in the Yakima Valley from EPA, ECY, DOH, WSDA, Yakima County departments and South Yakima Conservation District.
 2. regulatory and non-regulatory work currently in place in other parts of the United States, with focus from similar regions in western states.
 3. It is likely, that funding can address only the major sources of nitrogen contamination identified through the nutrient loading/budget analysis. . .
- Is there a possibility of leveraging other funding (besides GWMA funding) to help fund this work? If yes, what would the source of additional funding be?
It is possible that institutions of higher learning may be interested in collaborating on a study of this nature since it has value beyond Washington State. Other possible contributions are in-kind from interested applicants. Funding from environmental groups or agricultural groups would have to be screened for conflict of interest.

GWAC Budget Discussions

Budget request information to provide to the full GWAC

Submit to Envirolssues by August 13, 2014

Working Group requesting the funding: Yakima County

1. Describe the work element

- What is the work? **Maintain, Update, and Analyze GWAC Databases including GIS analysis and reporting. Link GWAC databases to other pertinent data sources.**
- Who will do the work? **The work will be performed by Yakima County personnel. The work will predominantly be performed by a cadastral technician from the County's Geographic Information Department and a Senior Data Analyst from the Public Services Department. Oversight will be provided by the Public Services Director and GIS Director. Data analysis methodologies, strategies, etc will be vetted with the Data Work Group.**
- How will the work be done?
 - Starting with the Water Quality Database and QA/QC criteria created by the consultant, continually incorporate new data into the database as it becomes available (for instance - EPA's water quality data obtained from the Dairy Cluster Area, Health District water quality data obtained from the Well Assessment Survey, future water quality monitoring, etc.). Periodically analyze the data for gaps, overlaps, trends, etc. and report findings to the GWAC.
 - Analyze the Well Assessment database for trends, anomalies, commonalities, etc. using the water quality data as the baseline and the 60+ data fields collected as the variables. Report findings first to the Data Work Group then the GWAC.
 - Link GWAC databases to other pertinent data sources maintained by Yakima County and other agencies – for example: population demographics, US Census data, income data, Health data, well site data, land use data, topography data, nitrate loading data (to be developed), and literally thousands more indicators, all having a geographic link or overlay to GWAC data.

2. Clearly say how it will inform the development of the GWMA Program

- How does this work contribute to identifying the major sources of nitrate contamination?
 - This project does not identify major sources of contamination per se. It does however, in the short term, provide the GWAC with information related to historical and ongoing nitrate testing values at specific locations within the GWMA coupled with an abundance of other attributes. This information should be valuable in assisting the GWAC to focus on and prioritize issues.
 - In the long term, the database will be the on-going groundwater monitoring database. Simply stated, someone has to do this or we will lose this resource.

- An additional benefit for developing an integrated database for the Ground Water Management area is the ability to connect this data to the Yakima County Community Development Database. Yakima County is one of the few counties in the nation to have a centralized, integrated database that serves as a repository for data. The Community Development database tracks over 2,000 indicators for 4,692 geographical units, over 4-10 years with more added each month. Multiple types of community indicators are tracked including those specific to Race and Ethnicity, Age and Gender, Housing, Basic Needs, Crime, Education, Family Dynamics, Healthcare, Income and Employment, and Substance Abuse. Data Sources include multiple products from the US Census – primarily the American Community Survey Five-Year Estimates, the Washington Center for Real Estate Research, Washington State Department of Social and Health Services - Research and Data Analysis Division, The Washington State Healthy Youth Survey, the Office of Superintendent of Public Instruction, and the Washington Association of Sheriffs and Police Chiefs.

Information is collected for 4,692 unique geographic units which include the Nation as a whole, all 50 states plus the District of Columbia, all 3,143 Counties in the Nation, all 25 school districts within the local Education Service District, all 14 cities and towns within the county, and all 1,458 Census Tracts within Washington State. The availability of these various geographical units allows for the contextual review of data that reports on these specific units. Currently 4 years of data have been added to the database for each of the geographic units and is available for allowing trending to be displayed and analyzed. This database also allows for the integration of data from multiple databases.

By ensuring a linkage to the Community Development database, while maintaining the proprietary nature of the GWMA database, information from GWMA data sources could be analyzed side-by-side with community indicators from similar geographical units resulting in key findings, determining correlations or influences outside the standard system which could locally validate the demonstrable impact on groundwater in Yakima County. Because groundwater is such a far reaching issue, it is vital to have the ability to connect the work of this committee to all aspects of those who are impacted – especially when discussing outreach and education efforts. Additionally, this could assist partners in aligning current efforts with national and statewide efforts as well as provide information necessary to write grants and look for other development funds to implement solutions.

- What additional information about the source(s) will this provide? [See Above](#)
- How will this inform what actions should be in the program? [See above](#)

3. How much will this cost? \$60,000 spread over two years.

- Is it scalable? Can some but not all be done and still provide value to the program development? **No**
- Is there a possibility of leveraging other funding (besides GWMA funding) to help fund this work? If yes, what would the source of additional funding be? **Not really for this initial project. However, the cost proposed is for labor costs only and does not include typical overhead costs, nor does it include the cost of utilizing existing data maintained by the County.**

Additionally, in the long term this project could assist Yakima County and its partners in seeking and obtaining state, federal, and private grant funds to implement solutions ultimately identified by the GWMA Program and/or public health initiatives to provide clean drinking water to residents within the GWMA until such time as the GWMA Program is successful in reducing nitrate concentrations to below drinking water standards.

Attachment C

- Yakima Herald-Republic Legal Notice – Call for Bids, South Yakima Conservation District (SYCD) for Soil Sample Collection and Laboratory Analysis for Deep Soil Sampling Program dated July 6, 2014
- Daily Sun News Ad – Soil Sampling Sign-Ups Sought dated August 25, 2014
- Daily Sun News Article – Soil Sampling Agreement Approved dated July 16, 2014
- Daily Sun News Article – More Money to be Spent on Soils Samples dated August 6, 2014
- Daily Sun News Article – Budgeting Set for Soil Tests dated August 13, 2014

Legal Notices

Call for Bids

South Yakima Conservation District
200 Cheyne Road PO Box 1766
Zillah, WA 98953
509-829-9025

South Yakima Conservation District (SYCD) is seeking bid proposals (proposals must be submitted as one entity) for soil sample collection and laboratory analysis for the Deep Soil Sampling Program within the boundaries of the Lower Yakima Valley Ground Water Management Area. SYCD will receive sealed bids at the SYCD Field office, 200 Cheyne Road, Mailing Address - PO Box 1766, Zillah, WA 98953, until 1:30 p.m. on July 18, 2014. Bids will then be opened and publicly read aloud. Proposals received after this time will not be considered.

Project Description: The Deep Soil Sampling Plan will consist of four seasonal samplings and analysis. It is estimated that 50 fields will be sampled per season (fall of 2014, spring and fall of 2015 and in the spring of 2016). Composite soil samples will be collected at each site from four bore holes at 1-foot increments from 0 to

a depth not to exceed 6 feet, or to the depth of refusal. The 0-1 foot sample will be analyzed for nitrate, ammonium, and organic matter content. Deeper soil samples will be analyzed for nitrate only.

Expected Time Period: September 1, 2014 - June 30, 2016. Contract documents, including information about deep soil sampling program requirements, request for proposal, etc can be obtained by contacting the SYCD Field Office at 200 Cheyne Road, Zillah, WA, Office (509) 829-7911 or email lc@sycd.us. Addenda will be e-mailed or by postal mail to bidders who have signed for or requested contract documents through this office.

Laurie Crowe
District Coordinator
South Yakima Conservation District

(448650) June 29 and July 6, 2014

Daily Sun News

Soil sampling sign-ups sought

As of Monday, August 25, 2014

The South Yakima Conservation District in cooperation with the Lower Yakima Valley Groundwater Advisory Committee is starting its deep soil sampling program for this fall.

To sign up for the program, interested farmers should contact Laurie Crowe or Landon Schilperoort at (509) 829-9025 for details on the program.

Soil sampling agreement approved

0

As of Wednesday, July 16, 2014

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YAKIMA – An interlocal agreement between Yakima County and the South Yakima Conservation District was Tuesday approved by the county commissioners.

The agreement between the entities provides funds to the South Yakima Conservation District for a deep soil sampling plan to support the Yakima Valley Groundwater Management Area.

The funds are distributed by the county via a Washington State Department of Ecology grant.

The cost of the deep soil sampling plan is not to exceed about \$245,000, unless the county and district agree in writing to a higher amount.

The soil sampling will be completed with outreach and education, as well as the volunteer cooperation of growers in Yakima County.

Each grower will be issued a unique identification number and labels with bar codes for soil samples.

The South Yakima Conservation District will maintain records of sampling and analysis, as well as work directly with the lab providing the analysis.

The work is expected to be completed in two years, unless terminated sooner.

More like this story

[More money to be spent on soil samples](#)[Commissioners approve jail agreement with Grandview](#)[Road project agreement OK'd](#)[Lower Valley growers encouraged to have soil tested for free](#)[Soil sampling sign-ups sought](#)

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More money to be spent on soil samples

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As of Wednesday, August 6, 2014

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Email, Facebook, Twitter

YAKIMA – An interlocal agreement between Yakima County and the South Yakima Conservation District was amended by county commissioners yesterday (Tuesday).

The amendment revises the amount awarded to the conservation district for soil sampling from just more than \$245,000 to more than \$394,500.

The soil sampling will be conducted at farms throughout Yakima County in accordance with the Yakima Valley Groundwater Management Area's efforts to mitigate nitrate levels in groundwater.

The interlocal agreement expires July 15, 2015 and was amended after bid proposals for the work to be completed were received.

The Yakima County commissioners approved the amendment by a 2-0 vote. Mike Leita was absent from the commissioners meeting.

More like this story

[Soil sampling agreement approved](#)[Yakima County commissioners extend agreement](#)[Groundwater budget increased](#)[Agreement with consultant from Pasco amended](#)[Soil sampling sign-ups sought](#)

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Budgeting set for soil tests

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As of Wednesday, August 13, 2014

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SVID Manager Jim Trull yesterday told the district's board that budget preparations are underway for deep soil sampling to be done for the Lower Valley groundwater advisory group.

Trull represents SVID and Roza Irrigation District on the groundwater group and its irrigated agriculture work group. He said \$250,000 will be budgeted for deep soil sampling as part of research on the possible location of nitrates in groundwater.

Trull said the work group is also considering development of a mobile lab with a technician to work one-on-one with growers.

More like this story

[Help sought for soil sampling](#)[Groundwater advisory working out differences](#)[Groundwater group tackling privacy issue](#)[Update provided](#)[Groundwater efforts inching forward](#)

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Attachment D

- High Risk Well Assessment Report Out dated August 21, 2014

Wellhead Assessment Survey - Nitrate and Bacteria Test Results as of August 21, 2014

Nitrate Ranges	Count	Percent
0 to 2.5	51	29.7%
2.5 to 5	49	28.5%
5 to 10	44	25.6%
10 to 15	14	8.1%
15 to 20	12	7.0%
20 to 25	2	1.2%
Total	172	100.0%

Less Than 10	144	83.7%
Greater Than 10	28	16.3%
Total	172	100.0%

Bacteria Test Results	Ecoli Test Results	Count	Percent
Satisfactory	NA	143	83.1%
Unsatisfactory	Absent	28	16.3%
Unsatisfactory	Present	1	0.6%
Grand Total		172	100.0%

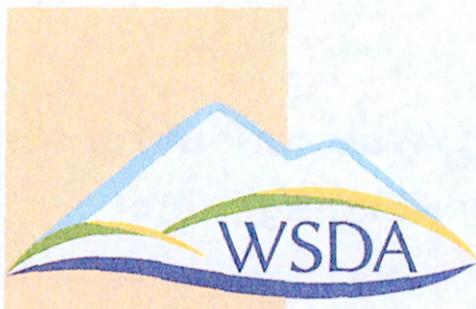
Bacteria Test Results	Ecoli Test Results	Nitrate Ranges	Count
Satisfactory	NA	0 to 2.5	40
		2.5 to 5	43
		5 to 10	36
		10 to 15	11
		15 to 20	11
		20 to 25	2
Satisfactory Total			143

Unsatisfactory	Absent	0 to 2.5	11
		2.5 to 5	5
		5 to 10	8
		10 to 15	3
		15 to 20	1
Unsatisfactory	Absent Total		28

Unsatisfactory	Present	2.5 to 5	1
Unsatisfactory	Present Total		1

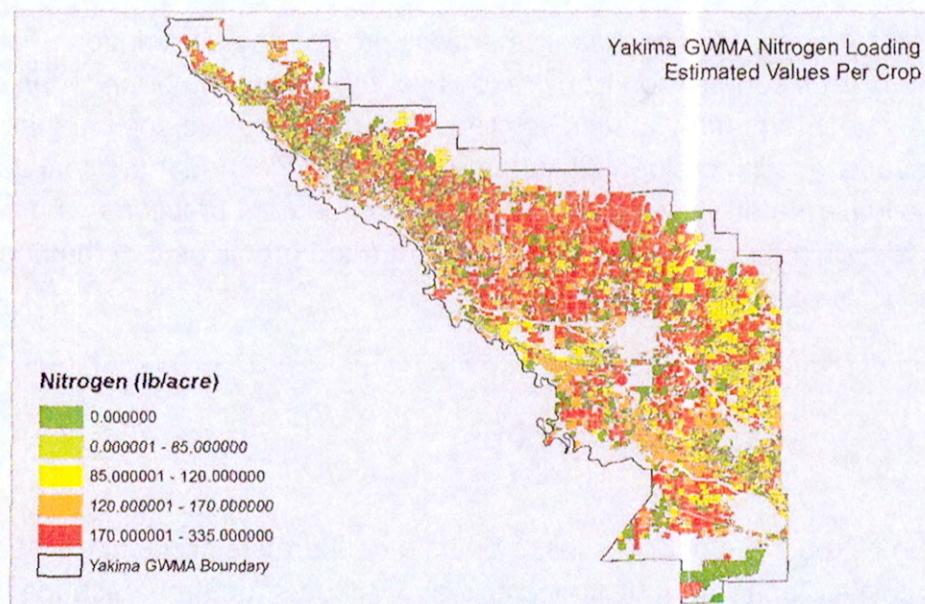
Attachment E

- Draft WSDA Comprehensive Nitrogen Loading Assessment for the Lower Yakima Valley Groundwater Management Area ~ Scope of Work and Budget dated August 2014
- EPA's Summary Yakima AOC Dairies Draft Data dated September 2014



Washington
State Department of
Agriculture

**Comprehensive Nitrogen Loading
Assessment for the Lower Yakima
Valley Groundwater Management Area –
Scope of Work and Budget**



August, 2014

Comprehensive Nitrogen Loading Assessment for the Lower Yakima Valley Groundwater Management Area – Scope of Work

1.0 Purpose

Within the boundaries of the Lower Yakima Groundwater Management Area exist areas where the state drinking water standard for nitrate (10mg/L) has been exceeded. This area has supported a variety of agricultural practices for over 100 years. Many of these practices have required the use of nitrogen fertilizers (both organic and inorganic). These applications are suspected to have contributed to the elevated levels of nitrate in groundwater currently used as drinking water supplies. In order to determine to what extent the application of nitrogen has contributed to the elevated nitrate levels in groundwater, it is necessary to evaluate current land use management practices surrounding the use of both organic and inorganic nitrogen. This is necessary to determine the activities contributing and to what degree that contribution may be impacting groundwater quality.

The Nitrogen Loading Assessment will provide the information necessary to evaluate the overall contribution from various sectors within the boundaries of the GWMA and will provide information specific to crop management / livestock management, and activities associated with residential, commercial, industrial and municipal activities necessary to evaluate the effectiveness of current management practices, and if necessary, provide a basis for implementation of new or expanded practices that may be required to achieve the goals of the GWMA.

2.0 Overall Concept

The Nitrogen Loading Assessment is a cooperative project between Yakima County and The WA Department of Agriculture and will be structured such that a mass balance for nitrogen usage within the GWMA will be developed. In achieving this goal, assessments of specific activities utilizing nitrogen application will be developed and will likely provide valuable information on which to base educational materials for use by residents within the GWMA. The assessment of nitrogen loading and loss will be divided into two sub-activities. One for irrigated and livestock agriculture, the other for residential, commercial, industrial municipal activities. WSDA will have primary

responsibility for the assessment of irrigated and livestock activities, Yakima County will focus on assessment of residential, commercial, industrial, and municipal activities. These two areas of interest will be addressed in the application of the following overriding equation:

$$NLGW = RL + BL + IACF + IAOF + CAFOPP + AL$$

Where

- $NLGW$ = nitrogen load to groundwater, which assumes that all nitrogen present below the root zone will become nitrate and either be denitrified or leach to groundwater.
- RL = nitrogen loading to groundwater from residential sources including septic tanks, lawn fertilization, and onsite septic systems
- BL = nitrogen loading to groundwater from sites with municipal biosolids, and municipal and industrial wastewater (under State Waste Discharge Permits, or NPDES permits)
- $IACF$ = nitrogen loading to groundwater from irrigated agriculture land use where chemical fertilizers are applied and further discussed below
- $IAOF$ = nitrogen loading to groundwater from irrigated agriculture land use where organic fertilizers (e.g., manure) are applied
- $CAFOPP$ = nitrogen loading to groundwater from livestock pond and pen sources
- AL = nitrogen loading to groundwater from atmospheric deposition. Local values from national atmospheric monitoring data sets will be used and applied evenly across the GWMA.

Note: Where appropriate denitrification will be factored into the sector contribution for the equation above.

3.0 Development of Comprehensive Nitrogen Source Database

In order to adequately evaluate the effects of nitrogen application for the majority of lands uses within the GWMA boundaries, it will be necessary to develop a comprehensive database. This database must be able to store information from a wide variety of sources, collected using differing methodologies. Some database fields will be similar for all sources, whereas other fields will be source-specific, and it will be designed so that it will be expandable and able to include additional fields. Most fields will be identified during the initial creation of the database, though some will likely be

added by others as management practices change. WSDA and Yakima County will develop a database structure and submit it for review by the County, and the Data, RCIM, IA, and Livestock/CAFO working groups prior to entering source data (excluding trial runs). The database will include numeric fields to support calculations, as well as mapping fields for display within GIS. Three main tasks are associated with this activity; data evaluation prior to database development in order to develop necessary fields, development of database structure, and database population.

Task 3.1	Evaluate current and planned data sources to determine necessary database fields.	<i>Estimated Budget</i> 80 hours @ 26.00/hr	\$ 2080.00
Task 3.2	Develop comprehensive database for all nitrogen sources covered by RCIM, Irrigated Agriculture, and Livestock Agriculture. Database will be developed using Access from which a geodatabase will be created for use within the ESRI environment.	<i>Estimated Budget</i> 100 hours @ 35.00/hr	\$ 3500.00
Task 3.3	Population of database with data collected as a result of grower surveys, estimates for various land uses associated with residential, commercial, industrial, and municipal sources, and data collected from on-site livestock operations.	<i>Estimated Budget</i> 80 hours @ 26.00/hr	\$ 2080.00
<i>Total Budget for Task 3.0</i>			\$ 7660.00

4.0 Residential, Commercial, Industrial, and Municipal Assessment

Yakima County will be the lead for assessing the overall nitrogen loading that occurs as a result of activities associated with RCIM activities. This will include assessment of septic systems, state waste discharge permits (Ecology), underground injection well contribution, and hobby farm activities.

Residential and Municipal Septic Systems and other Residential Sources

Parcel data from Yakima County will be used by the County to identify parcels where residential septic systems are present. Septic loads from each parcel will be calculated assuming an average sized household in Yakima County (based on census data), consultation with Yakima County, WA Department of Ecology and state health departments, and literature values (or local values if available) for daily septage volume and nitrogen loads per person. The parcel soil types will be identified through GIS analysis and linked to the existing parcel in the database.

Expected nitrate load at the water table will be estimated from the estimated total nitrogen discharge to the septic systems and drainfield based on literature values for nitrification and denitrification. Such transformations will be varied by soil type to the extent that correlation is supported by literature data. If a large on-site septic system (LOSS) is designed to enhance denitrification and that design is identifiable in WDOH or Ecology records, the enhanced denitrification rate will be considered.

In addition to septic loads, other residential nitrogen sources such as fertilization of lawns and gardens will be examined. Information on fertilization practices and the percent of homeowners who actively fertilize will be pursued and the data most representative of LYV (given geography, environment, and socio-economic factors) will be used for this project. If local data are unavailable, regionally recommended fertilization practices and data will be reviewed to estimate nitrogen loading due to lawn fertilization. Existing data sources (GIS coverage's, aerial photographs, and previous reports) will be reviewed to assess the most feasible way to quantify local lawn areas. City parks and golf courses with their associated fertilization rates will be included in this analysis.

Currently Regulated RCIM Activities

Sites for which there exists a State Waste Discharge Permit (discharging to the ground) will be identified based on Department of Ecology online records. Additionally the locations of municipal Underground Injection Control (UIC) devices will be obtained from the online Ecology UIC database and local municipalities to identify features that may act as conduits allowing surface water (and potentially contaminants within it) to more easily enter groundwater. All sites will be entered into the database but sites used for groundwater calculations will be limited to those with potential to impact groundwater based on consultation with the Department of Ecology. Location and source data will be entered into the nitrogen source database so that nitrogen loading rates can be estimated. Facilities that are potential nitrogen sources and are not regulated under NPDES/State Waste Discharge Permits (such as large onsite septic systems, biosolid application areas, or com-posting facilities) will also be reviewed, with relevant data obtained from Ecology, Department of Health, and Yakima County for inclusion in the nitrogen source database.

Other potential sources of nitrogen from residential land use include pet waste and hobby farms/livestock waste. Regional or literature values will be used to estimate nitrogen loads associated with pet and hobby-farm livestock waste.

Assessment of RCIM nitrogen loads will require a minimum of field work and data collection, therefore the budget does not reflect an allocation for field data collection.

Task 4.1	Analysis of septic system N loading using existing parcel data and database.	
	<i>Estimated Budget</i> 90 hours @ 30.00/hr	\$ 2700.00
Task 4.2	Identify and analyze N loading from permitted land application sites. This task will be coordinated with the Washington State Department of Ecology.	
	<i>Estimated Budget</i> 30 hours @ 30.00/hr	\$ 900.00
Task 4.3	Develop N loading estimates from municipal Underground Injection Control devices. This will include analysis of stormwater management structures, but will not include an assessment of potentially existing UIC's nor will there be an attempt to identify UIC not currently noted in Ecology's UIC database.	
	<i>Estimated Budget</i> 60 hours @ 30.00/hr	\$ 1800.00
Task 4.4	Develop N loading estimates from hobby farm operations. This task will require coordination with WSDA and CD's within the GWMA. Typical N loading for pasture parcels will be developed by WSDA and CD's and applied to existing parcel database.	
	<i>Estimated Budget</i> 60 hours @ 30.00/hr	\$ 1800.00
Task 4.5	Assemble data analysis for RCIM elements and produce estimated N loading in both database and GIS formats.	
	<i>Estimated Budget</i> 60 hours @ 30.00/hr	\$ 1800.00
Total Budget for Task 4.0		\$ 9000.00

5.0 Irrigated Agriculture Source Quantification

Data for the irrigated agriculture nitrogen loading assessment will be collected using two different methods: 1) county specific crop use, irrigation method, and fertilizer databases and 2) information gathered from a voluntary grower questionnaire that will report site-specific information regarding nitrogen application and removal over several growing cycles. Because collection of the complete grower survey data set may take two years as part of the GWMA's Deep Soil Sampling program, WSDA has developed a GIS layer based on recommended fertilizer application from published crop-specific growing manuals. This will be used as a baseline and modified as additional information collected from grower surveys (from DSS project) becomes available. After a representative set of grower surveys are compiled through the Deep Soil Sampling Program (DSSP), the database and calculations will be updated using that site specific data.

Nitrogen application and removal rates will be evaluated to estimate nitrogen excess or deficiency for groups of crop, soil, fertilization, irrigation, and removal combinations. This evaluation will be conducted by a panel (3?) of qualified agronomists. Fields fertilized with manure and chemical fertilizer will be identified however, manure fertilized fields will not be evaluated separately. These fields will be evaluated using the same process as outlined below for irrigated agriculture fields using chemical fertilizer. Excess nitrogen will be assumed to be available for leaching to groundwater or lost to denitrification. The 2013 WSDA field-specific crop distribution map will then be used to allocate nitrogen loading across the GWMA based on crop acreage and growing areas. This process will identify a long-term nitrogen balance consistent with current (and recent historical) practices which is not dependent on irrigation or weather (these factors mostly affect timing of nitrate percolation which is not addressed in this analysis).

Use of Grower Survey Data

WSDA will use data collected from voluntary grower surveys that will provide detailed information regarding nitrogen application and loss over several growing cycles. WSDA will conduct an assessment as to the statistical validity of the surveys as compared to the total number of crop specific parcels. This will be completed prior to assessment of the N loading for irrigated crop lands.

Survey data from a representative sample of the major crops grown in the GWMA boundaries will be analyzed and a typical application/loss determination made for each major crop or livestock activity. Using the 2013 WSDA crop distribution map those typical results would be allocated across the GWMA based on acreage for each crop and/or activity and determination made as to excess or deficient of nitrogen available for leaching to groundwater across the GWMA or in smaller sub-areas as deemed

necessary. Based on these results targeted Best Management Practices can be selected or developed to address those areas, crops, or activities that are determined to contribute to nitrate loading to shallow groundwater.

General

The following equation will be used to estimate nitrate loading to groundwater from irrigated agricultural fields:

$$\text{Nitrogen load to ground water} = (\text{Nitrogen input} - \text{Nitrogen removed by cropping}) * (1 - \text{denitrification fraction})$$

For crops that fix nitrogen (legumes such as alfalfa and peas), either a fixation term will be included in the nitrogen input term or a calculation using a leached concentration and recharge volume will be used to calculate loading (as performed in other studies), depending on data availability.

Use of the above equation requires the following assumptions and limitations:

- All nitrogen not consumed by the crop and removed will become nitrate
- Excess nitrate is denitrified in the vadose zone or leaches to groundwater
- Input and results are not variable over time and can be approximated with average annual values
- Removal of nitrogen from a field via runoff or tile drainage is negligible

Task 5.1 Develop spreadsheet of grower survey results including estimates of N application, irrigation amounts and timing, biomass removal, crop type, etc.

Estimated Budget 50 hours @ 55.00/hr \$ 2750.00

Task 5.2 Conduct statistical analyses of survey populations, and analyze spreadsheet data as to major influences.

Estimated Budget 30 hours @ 55.00/hr \$ 1655.00

Task 5.3 Develop crop specific and basin wide NO₃ loss estimation, this includes analysis of all survey and published data, working with agronomists to determine crop uptake and N removal from “non-fertilizer” activities. An estimation of total nitrogen budget for each major crop will be developed and rolled into a basin wide estimation following the equation contained in Section 2.0 of this scope.

<i>Estimated Budget</i>	280 hours @ 55.00/hr	\$ 15400.00
<i>Total Budget for Task 5.0</i>		\$ 19805.00

6.0 LIVESTOCK SOURCES QUANTIFICATION

Evaluation of N loading from livestock sources will be confined to those areas under the jurisdiction of WSDA (Dairy) or under permit by Ecology as a Confined Animal Feeding Operation. Movement of manure off these designated facilities on to cropland will be captured under the assessment for irrigated agriculture. Nitrogen sources from livestock are divided into two categories, and will focus on dairy and CAFO operational lands:

- Fields upon which manure is applied, and
- Other possible sources (including but not limited to lagoons, pens on unpaved surfaces, manure and solids storage areas, ditches and pipelines between lagoons and solids separators, solids storage areas, dry wells, and silage leachate)

Existing data from WSDA and Ecology will be evaluated and may include number of animals per facility, waste lagoon size, manure storage system, and animal yard size. Required data for this analysis is the current number of head per facility.

Additional data that will be obtained through a literature review include:

- Manure produced per dairy cow and per beef cow and manure nitrogen content
- A range of lagoon seepage and nitrogen leaching rates
- Ammonia volatilization rates from stored and applied manure
- Typical nitrogen loads generated in unpaved animal yards
- Typical manure management practices for animal yards
- Amount of solids/compost or other nitrogen-containing material that is exported from the GWMA

One meeting is planned with the Livestock/CAFO working group to review and receive feedback regarding “typical” management practices and implemented BMPs within the LYV. Potential nitrogen sources and sinks on local CAFOs will also be discussed as an exercise to identify potentially overlooked nitrogen sources or sinks.

Published data and work group feedback will be compiled and analyzed to define typical management practices for livestock facilities. Nitrogen mass balances will be calculated based on the number of cows per facility and type of facility (dairy vs beef), typical ma-

nure management and storage practices, calculated lagoon/pond leaching rates, expected loading rates from pens, manure removed from the facility for land application or other uses, denitrification, and other quantifiable nitrogen sources/sinks. Nitrogen mass balance results will be allocated across the GWMA at dairy and CAFO facilities. The following equation will be used as a basis for calculating a livestock N loading mass balance:

(Number of cows x Manure generated per cow x Nitrogen content of manure) = Nitrogen leached from storage ponds + Nitrogen leached from unpaved animal yards + Nitrogen removed for local land application + Nitrogen exported from the GWMA as compost or in other forms + Nitrogen lost to volatilization + Nitrogen lost to denitrification

The use of this equation assumes that:

- Input and results are not variable over time and can be approximated with average annual values
- On an average annual basis, all manure waste generated on a livestock operation will be removed, leached, or volatilized (i.e. long-term storage of waste does not occur)
- All major nitrogen sources/sinks for a given livestock are identified in the equation

Task 6.1	Conduct literature review to assemble peer reviewed data on lagoon leakage rates, regional nitrogen content of manure from dairy and beef cattle, required manure handling activities on facility sites.	
	<i>Estimated Budget</i> 30 hours @ 26.00/hr	\$ 780.00
Task 6.2	Conduct evaluation of manure generation using latest livestock population data, evaluate 3 rd party application, develop lagoon leakage rates, evaluate soil testing results and evaluate manure export activities.	
	<i>Estimated Budget</i> 90 hours @ 45.00/hr	\$ 4050.00
Task 6.3	Develop N loading estimate for designated dairy and CAFO properties	
	<i>Estimated Budget</i> 35 hours @ 45.00/hr	\$ 1575.00
<i>Total Estimated Budget Task 6.0</i>		\$ 6405.00

7.0

COMPARE NITROGEN LOADING ASSESSMENT TO OTHER RELATED ESTIMATES

Quality Assurance/Quality Control evaluations are proposed to check assumptions and parameters used in the Nitrogen Loading Assessment.

- Compare livestock mass balance results with grower survey results to verify assumptions used related to manure application. If the total nitrogen applied across the GWMA as organic fertilizer based on grower survey data differs significantly from the mass expected based on the number of livestock in the GWMA and other identified organic nitrogen sinks, input parameters for the nitrogen loading assessment will be reevaluated.
- Complete an assessment on synthetic fertilizer use (if possible), using the mass applied to fields (based on grower surveys and WSU rates) compared to nitrogen fertilizer mass sold by fertilizer distributors (assuming data are available). This will provide a check on amounts claimed on grower surveys.
- Upon completion of the Deep Soil Sampling analysis, compare and contrast Nitrogen Loading Assessment with DSS findings. Existing shallow groundwater nitrate data may also be used for this purpose. *The installation of shallow groundwater wells for N loading verification is not considered part of this project. If deemed necessary, this activity should be included in any future groundwater monitoring projects.*

Task 7.1 Conduct evaluation of synthetic fertilizer use (grower survey vs. synthetic fertilizer sold). This task is dependent upon willingness of fertilizer outlets and crop consultants to supply WSDA with data.

Estimated Budget 40 hours @ 45.00/hr \$ 1800.00

Task 7.2 Evaluate DSS results with N Assessment results and determine relative gaps in assessment.

Estimated Budget 80 hours @ 55.00/hr \$ 4400.00

Total Estimated Budget Task 7.0 \$ 6200.00

8.0 COMMUNICATION AND REPORTING

A GWMA-wide nitrogen balance will be calculated using the database(s) at the parcel/field scale. The total load from a parcel/field will be the sum of loads from all sources considered. The data will then be mapped at any scale down to the parcel/field using GIS. A draft report will then be submitted to the Data, IA, RCIM, and Livestock/CAFO work groups for review. It is assumed that up to four conference calls will occur for comments, feedback, and clarification for working group members. The chairs of the working groups will compile, summarize, and resolve conflicting written comments and generate a set of comments for Yakima County/WSDA to complete a GWAC-review draft. Yakima County/WSDA will address working group comments, then produce a GWAC-draft report. A final report will be generated after addressing GWAC comments.

Task 8.1 Develop draft report on nitrogen loading and loss for the Lower Yakima Valley Groundwater Management Area. This will include sub-assessments of the three major areas of concern: RCIM, Irrigated Agriculture, and Livestock/CAFO operations. This report will be submitted to the GWAC for comment. This will be a cooperative effort between WSDA and Yakima County

Estimated Budget 120 hours @ 45.00/hr \$ 5400.00

Task 8.2 Review comments from GWAC, and workgroups. This item includes up to four single or joint meetings with workgroups to consider comments, and will conclude with the presentation of a final report on N loading in the Lower Yakima Valley. This will be a cooperative effort between WSDA and Yakima County

Estimated Budget 50 hours @ 45.00/hr \$ 2250.00

Total Estimated Budget Task 8.0 \$ 7650.00

Total Project Budget \$ 56660.00

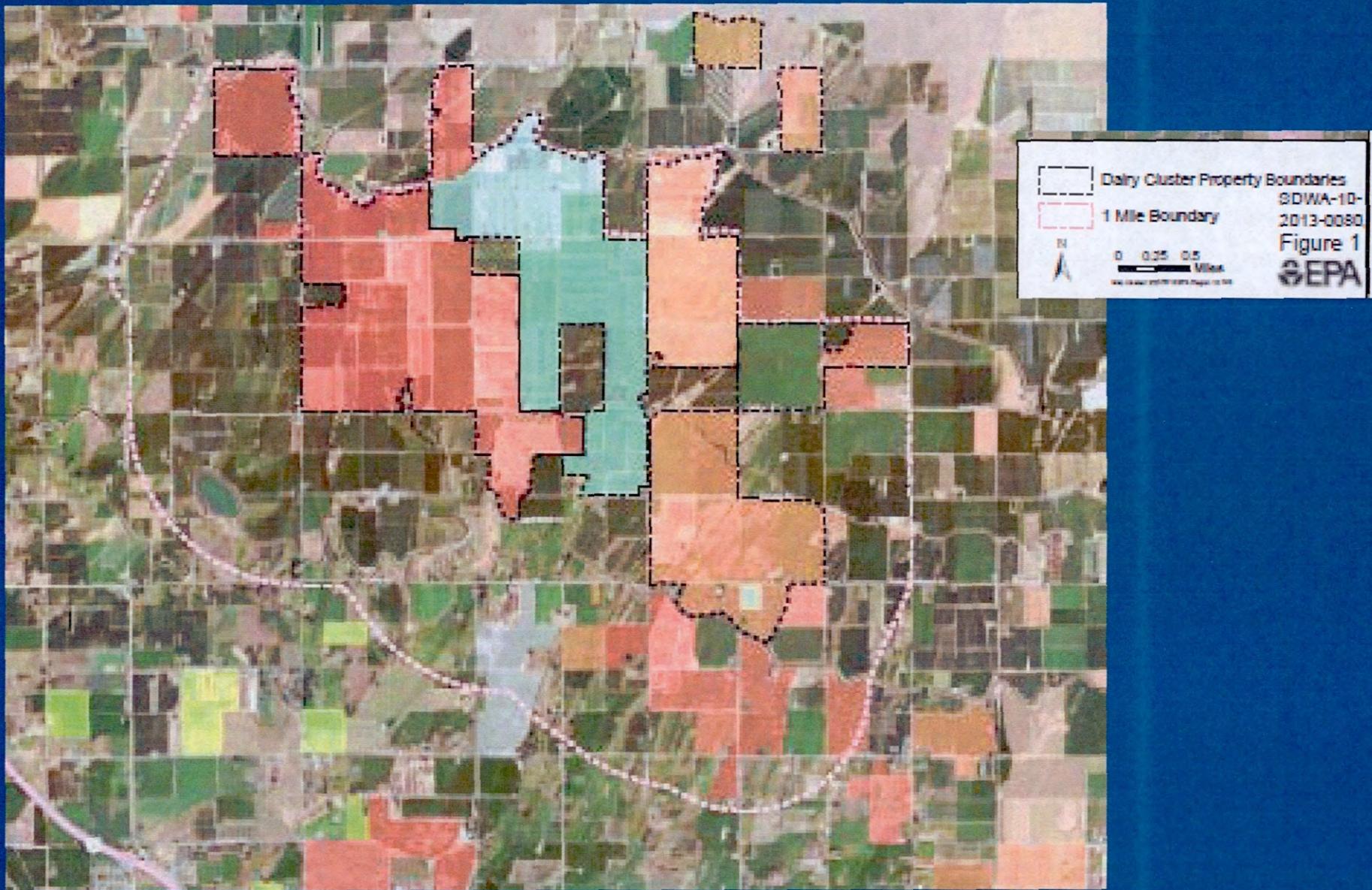
This budget is for the combined work from Yakima County and WSDA and represents and estimated split of \$ 13,000.00 for Yakima County specific activities and \$ 43,000.00 due WSDA.

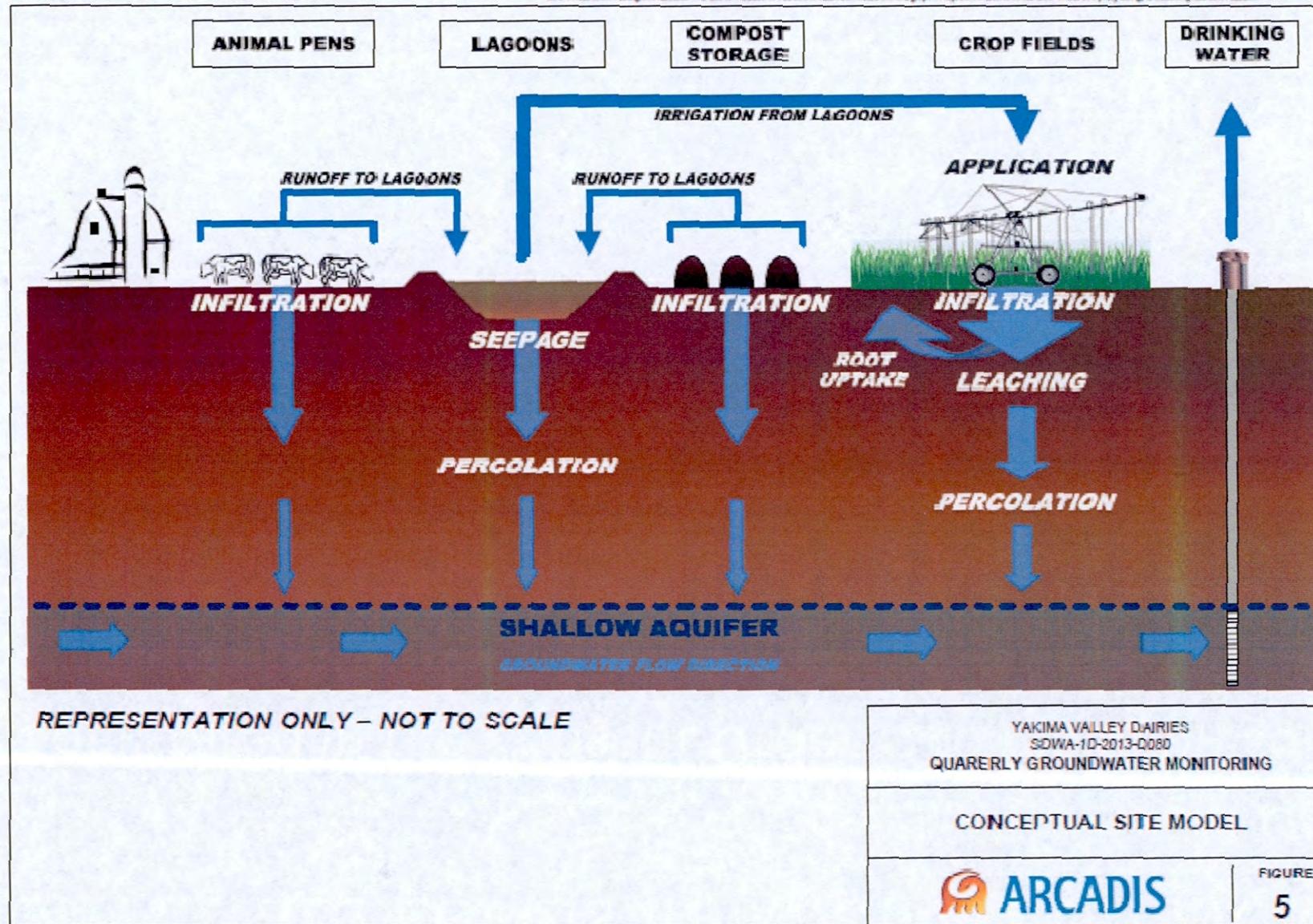
Summary Yakima AOC Dairies Draft Data

Yakima Valley, Washington



The Dairies

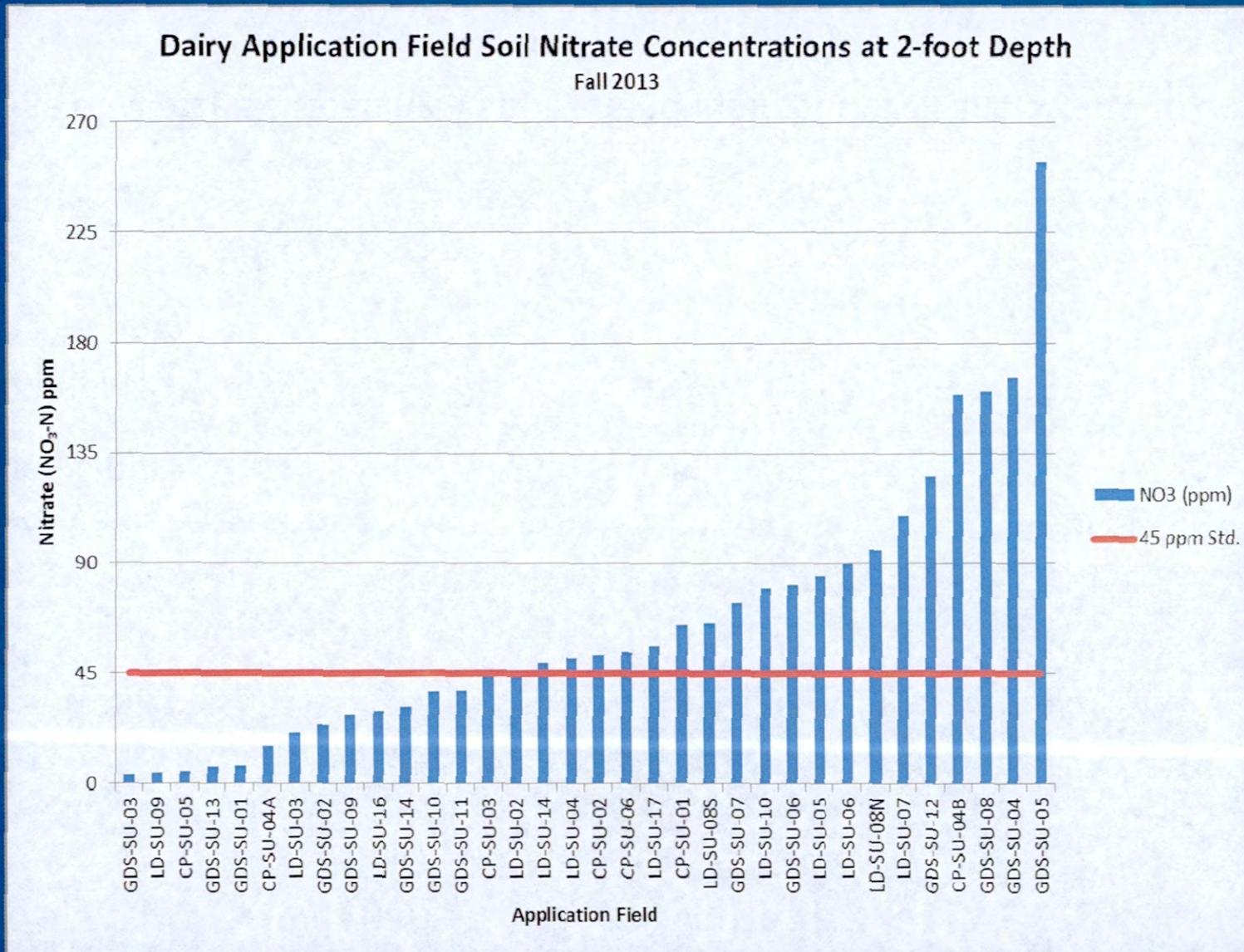




Soil Nitrate Levels in Application Fields

- Goal stated in the Consent Order is to maintain soils below **45 ppm** soil nitrate at the 2-foot depth
- Consistency with state

Soil Nitrate Levels in Application Fields



Soil Data Summary

Soil data from 2-foot depth

	Fall	Spring	Both
Number of fields exceeding 45 ppm	21 of 34	15 of 34	13 of 34
Percent of fields exceeding 45 ppm	62%	44%	38%

Percentage of acreage exceeding 45 ppm standard in both Fall and Spring 2014: 55%

Lagoons to be Assessed

1 lagoon shown to comply with current NRCS standards

40 lagoons must be evaluated

Provision of Water Treatment

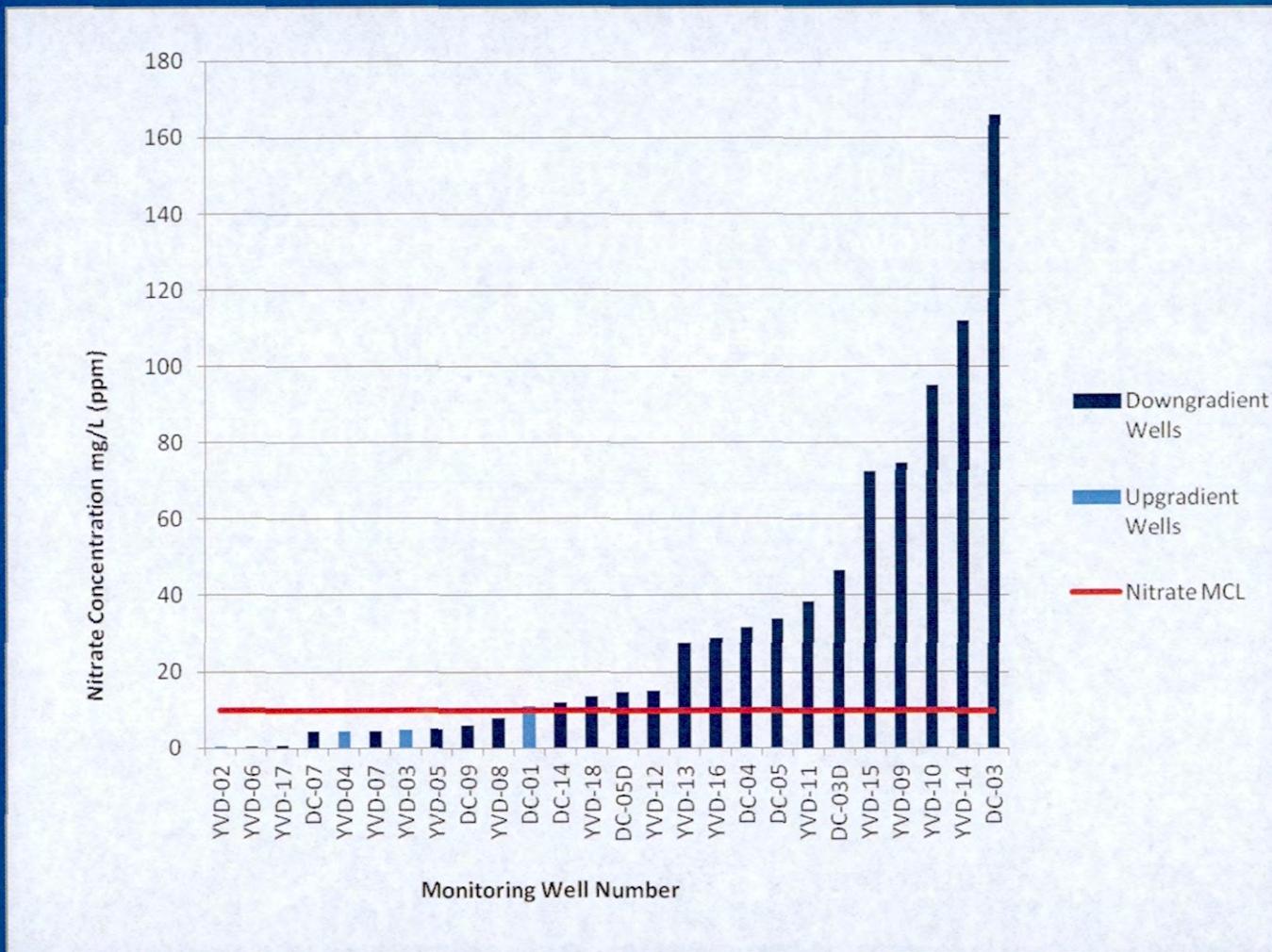
- 224 residences within 1 mile
- 181 residences tested
 - 63 residences exceeded the MCL
 - Additional 48 already had RO units
- 61% of assessed residences exceeded the MCL
 - Compared to 12 percent across Yakima County
- Water treatment was offered by the Dairies at no charge to all residents whose well exceeded the nitrate MCL

Monitoring Wells

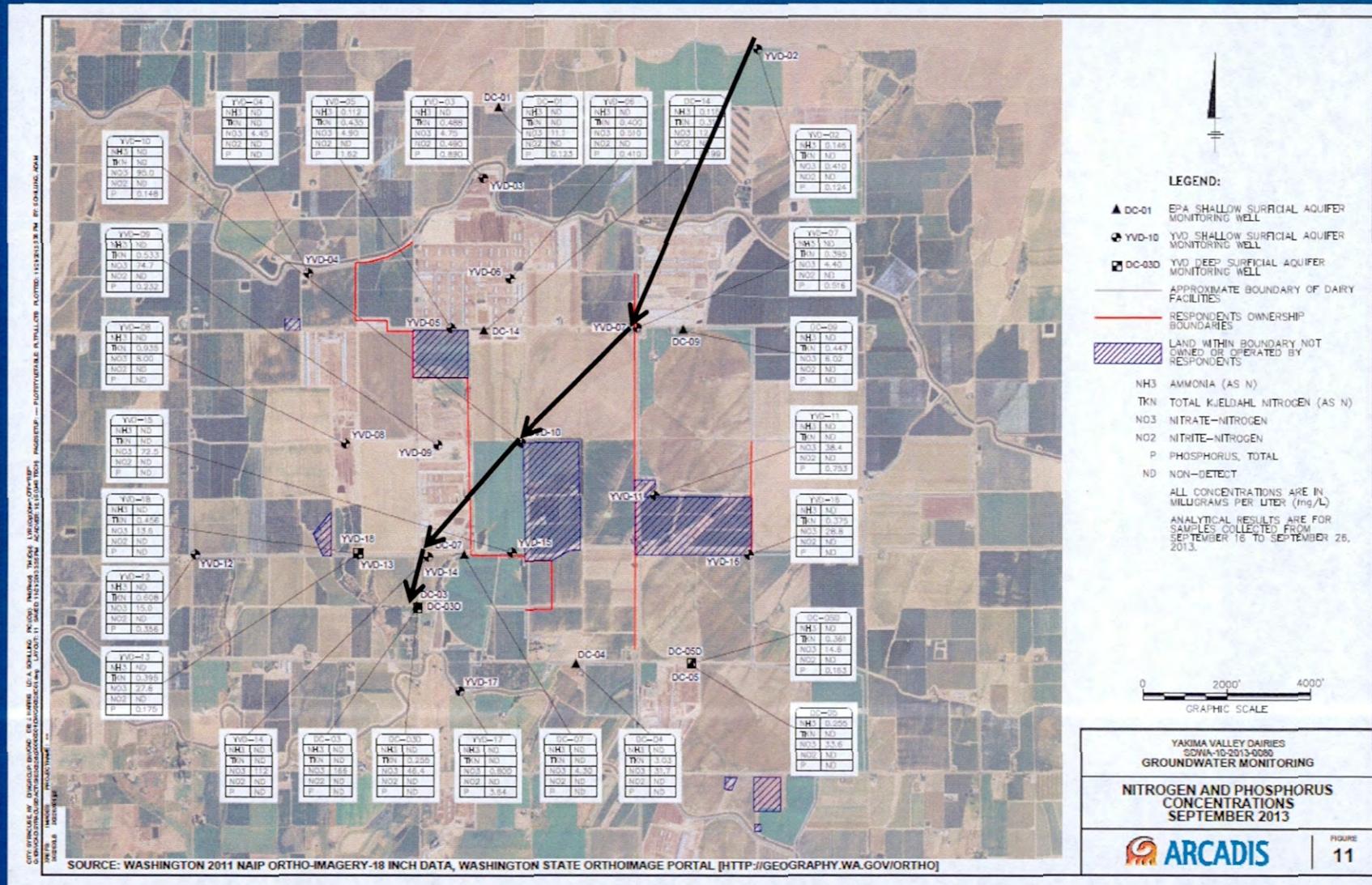
- **Monitoring well network** to assess effectiveness of source control actions
 - 16 wells in addition to EPA's 7 wells
 - Implement source control actions
 - 8 years of quarterly monitoring
 - Additional source assessment and control actions required if nitrate levels in wells do not decline
- STATUS: WELLS INSTALLED, FIRST THREE ROUNDS OF QUARTERLY SAMPLING COMPLETED

Monitoring Well Sample Results

Third Quarter 2013

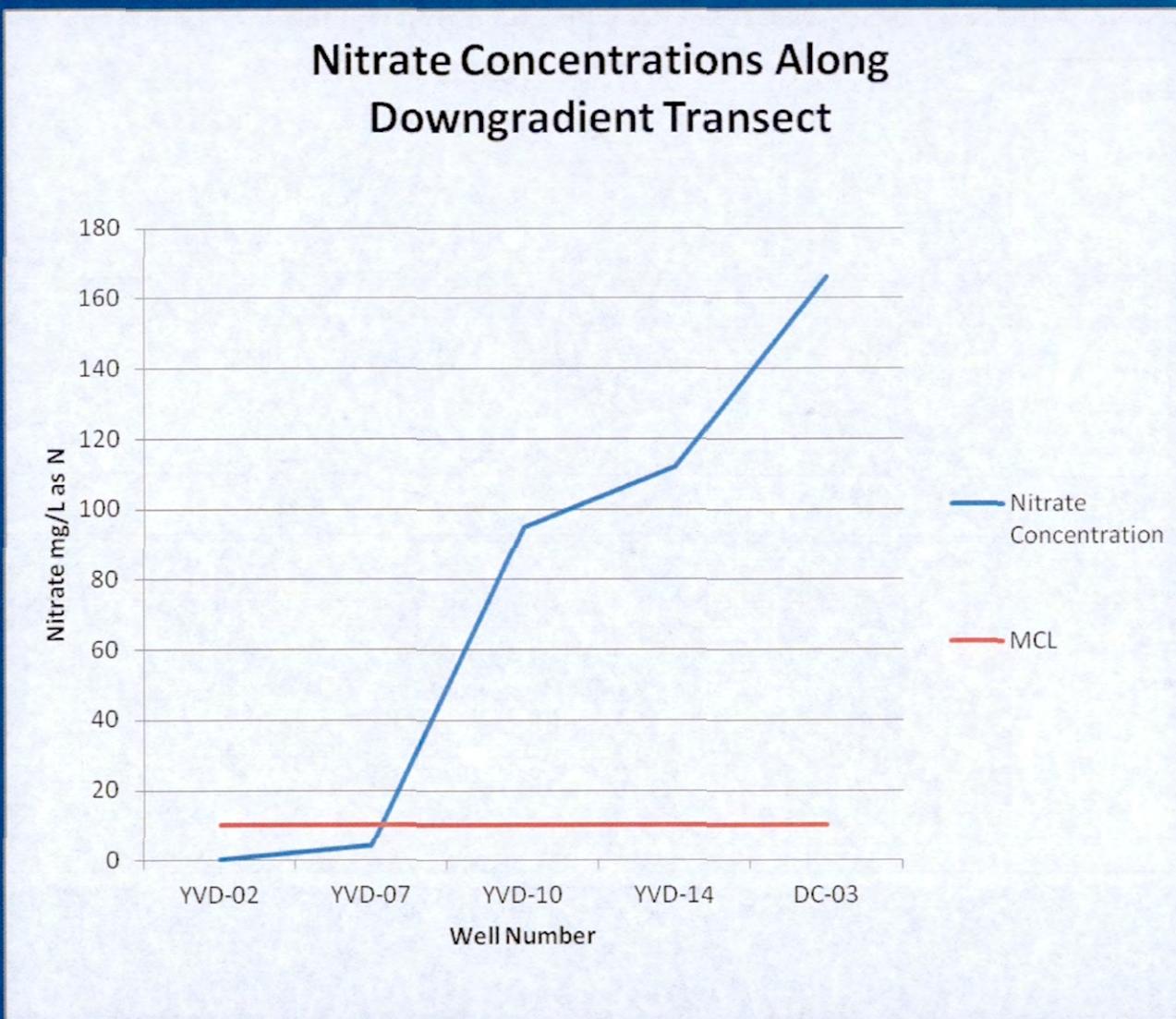


Groundwater Monitoring Well Sample Results



Draft

Monitoring Well Sample Results



Status of Source Control Actions

Early **source control** actions to reduce nitrate loading to the aquifer

- Soil sampling - not to exceed 45ppm nitrate-N below the root zone

FALL/SPRING SAMPLING COMPLETE

- Test lagoons to ensure they meet current state permeability standard – upgrade

PLAN UNDER EPA REVIEW

- Automated irrigation water management – water metering and root-zone sensors

**PLAN APPROVED, WATER SENSORS TO BE
INSTALLED PRIOR TO 2015 IRRIGATION
SEASON**

Source Control (cont.)

- Phase out furrow irrigated fields **COMPLETE**
- Minimize ponding of manure in pens **COMPLETE**
- Backflow prevention **COMPLETE**
- Actions to reduce infiltration from solid separator, silage storage **COMPLETE**
- Assessment of area upgradient of monitoring well with 190 ppm nitrate **UNDER DEVELOPMENT**

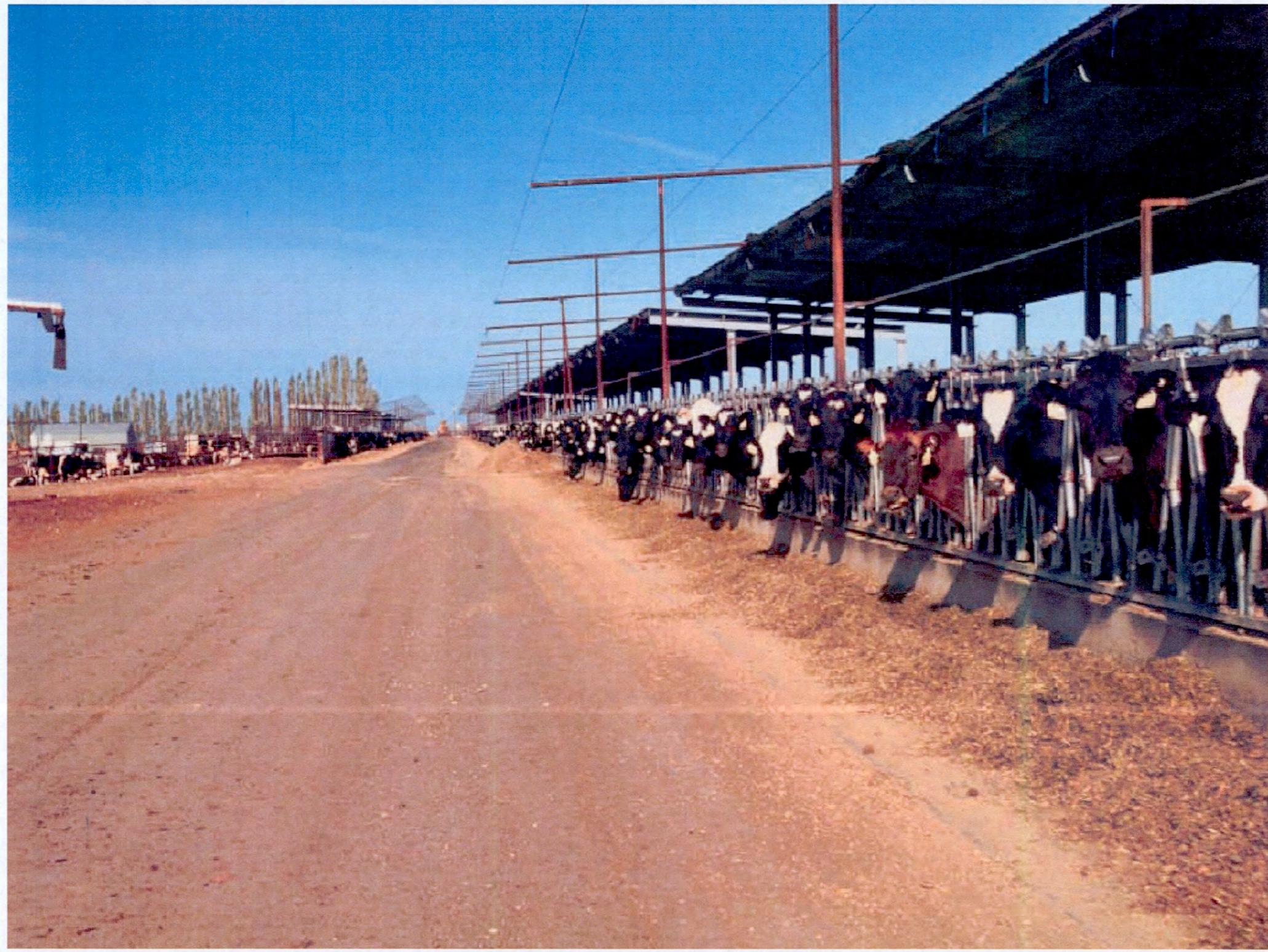
Looking Forward: Monitoring

- 8 years monitoring to assess downward trend
 - Soil nitrate levels at depth
 - Monitoring wells nitrate

Looking Forward: Additional Source Control

Provision for **additional source control** measures if groundwater monitoring shows no improvement over time

- Source investigation
- Source control plan(s)



Attachment F

- BOCC307-2014 Interlocal Agreement with South Yakima Conservation District for Deep Soil Sampling dated July 15, 2014
- BOCC Amendment No. 1 to Interlocal Agreement with South Yakima Conservation District for Deep Soil Sampling dated August 5, 2014

**INTERLOCAL AGREEMENT
BETWEEN
SOUTH YAKIMA CONSERVATION DISTRICT
AND
YAKIMA COUNTY**

THIS AGREEMENT is made and entered into between Yakima County, hereinafter referred to as the "COUNTY", and the South Yakima Conservation District, hereinafter referred to as the "DISTRICT", pursuant to RCW Chapter 39.34 – The Interlocal Cooperation Act, and is entered into by the County and District for the following purpose and on the following terms:

1. PURPOSE. The purpose of this Agreement is to provide funds to the DISTRICT from Ecology's grant to implement the Deep Soil Sampling Plan to support the Groundwater Management Area (GWMA) for the lower Yakima Valley as set forth in WAC 173-100.
2. PROJECT. The DISTRICT agrees to do all work and furnish materials necessary for performing the work in accordance with this Agreement. The DISTRICT will provide the necessary resources for performing such work as set forth in the Scope of Services (Attachment "A").
3. PERIOD OF PERFORMANCE. Subject to its other provisions, the period of performance of this Agreement shall commence on June 15, 2014, and be completed on June 30, 2016, unless terminated sooner as provided herein.
4. PAYMENT. Compensation for the work will be based on successful completion of tasks and deliverables identified in Attachment "A" and Budget (Attachment "B"). The parties have determined that the cost of accomplishing the work herein is estimated at not to exceed amount of \$245,025.00. Payment for satisfactory performance of the work shall not exceed this amount unless the parties mutually agree in writing to a higher amount.
5. BILLING PROCEDURE. The DISTRICT shall submit properly completed invoices using the necessary forms to the COUNTY monthly, or as agreed upon by County and District.
6. AMENDMENTS. This Agreement contains all terms and conditions agreed upon by all parties. No change or addition to this Agreement shall be valid or binding upon either party unless such change or addition is in writing and executed by both parties. All terms of the attached Attachment "A" are incorporated herein by this reference.
7. INDEPENDENT CONTRACTOR. The parties agree that, for purposes of this Agreement, the DISTRICT or any employees of the DISTRICT act as independent contractors, are not considered employees of the COUNTY, and are not entitled to any benefits that the COUNTY provides its employees.
8. PROFESSIONAL STANDARDS. The DISTRICT shall perform the Services according to the standard of care ordinarily exercised under similar conditions by similarly qualified professionals who are currently practicing in the area where DISTRICT is located.

9. INDEPENDENT CAPACITY. The employees or agents of each party who are engaged in the performance of this Agreement shall continue to be employees or agents of that party and shall not be considered for any purpose to be employees or agents of the other party.
10. TERMINATION. The parties may terminate this Agreement, with or without cause, by written notice from either party to the other party thirty (30) days in advance of the termination. In the event of termination, the amount of compensation shall be for services rendered through the termination date.
11. DISPUTE RESOLUTION. In the event of a dispute between the Parties regarding their respective rights and obligations pursuant to this Agreement, the disputing Parties shall first attempt to resolve the dispute by negotiation. If a dispute is not resolved by negotiation, the alternative dispute resolution process shall be utilized either by mediation or arbitration.
12. GOVERNING LAW AND VENUE. This Agreement shall be governed by the laws of the state of Washington. Venue for any action or proceeding shall be in the Superior Court of Yakima County.
13. ASSIGNMENT. The work to be provided under this Agreement, and any claim arising thereunder, is not assignable or delegable by either party in whole or in part, without the express prior written consent of the other party, which consent shall not be unreasonable withheld.
14. INSURANCE. Each Party shall obtain and maintain in full force and effect for the term of this Agreement, at its own expense, comprehensive general liability and automobile insurance policies for bodily injury, to include death and property damage, including coverage for owned, hired or non-owned vehicles, as applicable, for the protection of the Party, its elected and appointed officials, officers, agents, employees and volunteers. The policies shall be primary policies, issued by a company authorized to do business in the State of Washington, or in City or County Risk Pool and providing single limit general liability coverage of \$2,000,000 and separate automobile coverage of \$1,000,000 or the limit of liability contained in State law, whichever is greater. If either party is unable to obtain insurance as required by this paragraph, the Parties shall cooperate on amending this Section to require types and levels of insurance that are available. The certificates shall provide that the other Parties will receive thirty (30) days written notice of cancellation or material modification of the insurance contract at the address listed below. Each Party shall provide certificates of insurance to the other Parties prior to the performance of any obligation under this agreement. If requested, complete copies of insurance policies shall be provided to the other Parties. Each Party shall be financially responsible for their own deductibles, self-insurance retentions, self-insurance, or uninsured risks.
15. INDEMNIFICATION/HOLD HARMLESS. The District shall defend, indemnify and hold the COUNTY, its officers, officials, employees and volunteers harmless from any and all claims, injuries, damages, losses or suits including attorney fees, arising out of or resulting from the acts, errors or omissions of the DISTRICT in performance of this Agreement, except for injuries and damages caused by the sole negligence of the COUNTY. Should a court of competent jurisdiction determine that this Agreement is subject to RCW 4.24.115, then, in the event of liability for damages arising out of bodily injury to persons or damages to property caused by or resulting from the concurrent negligence of the DISTRICT and the COUNTY, its officers, officials, employees, and volunteers, the DISTRICT liability,

including the duty and cost to defend, hereunder shall be only to the extent of the DISTRICT negligence. It is further specifically and expressly understood that the indemnification provided herein constitutes the DISTRICT's waiver of immunity under Industrial Insurance, Title 51 RCW, solely for the purposes of this indemnification. This waiver has been mutually negotiated by the parties. The provisions of this section shall survive the expiration or termination of this Agreement.

16. **LIMITATION OF LIABILITY.** All actions or proceedings are barred three years after the COUNTY knew or should have known of any claim or damage, or five years after substantial completion of the Services, whichever occurs first.
17. **ATTORNEY'S FEES.** If any legal action or proceeding is commenced relating to this Agreement, the prevailing party is entitled to recover its reasonable attorneys' fees and costs.
18. **INTEGRATION.** This Agreement contains all of the terms and conditions agreed on by the parties. No other understandings, oral or otherwise, regarding the subject matter of this Agreement, are deemed to exist or to bind either of the parties.
19. **SEVERABILITY.** If a court of competent jurisdiction holds any part, term or provision of this Agreement illegal, or invalid in whole or in part, the validity of the remaining provisions shall not be affected, and the parties' rights and obligations shall be construed and enforced as if the Agreement did not contain the particular provision held invalid.
If any provision of this Agreement is in direct conflict with any statutory provision of the State of Washington, that provision which may conflict shall be deemed inoperative and null and void insofar as it may conflict, and shall be deemed modified to conform to such statutory provision.
20. **WAIVER.** The waiver by either party of any term or condition of this Agreement shall not operate in any way as a waiver of any other condition, obligation or term or prevent either party from enforcing such provision.
21. **COMPLETE AGREEMENT.** This Agreement constitutes the complete and final understanding between the parties and may be amended by the prior written consent of both parties.
22. **SURVIVAL.** The provisions of this Agreement shall survive its termination and completion of Services.
23. **NONDISCRIMINATION.** The DISTRICT agrees that it shall not discriminate against any person on the grounds of race, creed, color, religion, national origin, sex, sexual orientation, age, marital status, political affiliation or belief, or the presence of any sensory, mental or physical handicap in violation of the Washington State Law Against Discrimination (RCW chapter 49.60) or the Americans with Disabilities Act (42 U.S.C. 12101 et seq.) or any other applicable state, federal or local law, rule or regulation.
24. **ASSIGNMENT.** The DISTRICT shall not assign or subcontract any portion of the contracted activities without obtaining prior written approval from the COUNTY.

25. CONTRACT ADMINISTRATION. Unless otherwise stated herein, all notices and demands are required in written form and sent to the parties at their addresses as follows:

TO **SOUTH YAKIMA CONSERVATION DISTRICT:**

Laurie Crowe
Manager
200 Cheyne Road
Zillah, WA 98953
(509) 829-9025

TO **YAKIMA COUNTY:**

Vern M. Redifer, PE
Public Services Director
128 North Second Street
Yakima, WA 98901
(509) 574-2300

Interlocal Agreement South Yakima Conservation District and Yakima County

Agreement No.: 307-2014

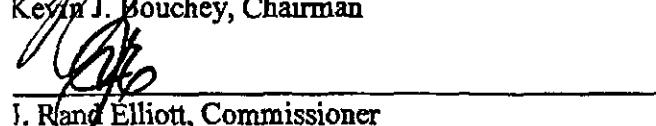
DONE this 15th day of July 2014

SOUTH YAKIMA CONSERVATION
DISTRICT



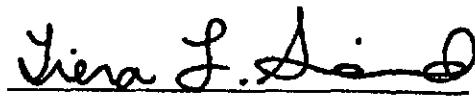
Dirk Van Slageren, Chairman

BOARD OF YAKIMA COUNTY COMMISSIONERS


Kevin J. Bouchey, Chairman
J. Rand Elliott, Commissioner
Michael D. Leita, Commissioner

Constituting the Board of County Commissioners for Yakima
County, Washington

Attest:



Tiera L. Girard, Clerk of the Board



Approved as to Form:


Deputy Prosecuting Attorney

BOCC307-2014
July 15, 2014

Attachment "A"
South Yakima Conservation District
Deep Soil Sampling Program (DSSP)
Statement of Work (2014-2016)

Task 1 – Project Administration

1. Develop Request For Bid with the assistance of the Irrigated Ag Working Group (IAWG).
2. Publish legal notice for "Bid for Deep Soil Sampling Analysis."
3. Review bid proposals for "Deep Soil Sampling Analysis" and award/notify selected company.
4. Develop and execute contract with selected company to collect and analyze soil samples.
5. Submit completed invoices to the County per the Interlocal Agreement.
6. Disburse payments to contractors.
7. Maintain all records and documents that sufficiently reflect all direct and indirect costs expended.

Task 2 – Program

1. Implement and maintain an outreach and education program to recruit growers for voluntarily participation in the DSSP.
2. Distribute Unique Identification Number (UIN) and labels with bar codes for soil samples and distribute via the DSSP grower questionnaires.
3. Collect survey data as described in Task 3.

Task 3 – Technical

1. Screen fields/allocation targets each season.
2. Work directly with lab/sampling Company to collect and analyze 300 samples from 50 sites per season. This Scope of Work is for Fall 2014, Spring 2015, Fall 2015 and Spring 2016.
3. Work with consultant to provide performance evaluation samples to submit to prospective labs prior to contracting.
4. Maintain records of sampling and analysis results.
5. Record/enter sampling data, analytical results, and QA/QC results in GWMA database.

Deliverables:

- a. Completed survey forms
- b. Partially completed forms, if incomplete
- c. Information described in Tasks 1 to 3
- d. Any mutually agreed upon reports

Attachment "B"

**South Yakima Conservation District
Deep Soil Sampling Program (DSSP)
Estimated Budget (2014-2016)**

TASK #	1	2	3		
Task Category	Administration	Program	Technical	Totals	Note
Wages	\$ 14,000.00	\$ 35,000.00	21,000.00	\$ 70,000.00	
Supplies	\$ 500.00	\$ 500.00		\$ 1,000.00	
Advertising	\$ 500.00	\$ 500.00		\$ 1,000.00	
Travel		\$ 750.00		\$ 750.00	
Sampling/Lab Analysis			\$ 125,000.00	\$ 125,000.00	See Note (1)
Consultant			\$ 25,000.00	\$ 25,000.00	See Note (2)
Sub-Total	\$ 15,000.00	\$ 36,750.00	171,000.00	\$ 222,750.00	
Contingency (10%)				\$ 22,275.00	
Total				\$ 245,025.00	

Note:

(1) ESTIMATED: \$23,000 for 50 sites per season (Fall 2014, Spring & Fall 2015, Spring 2016) plus Analyze 12 Performance Evaluation samples@ \$70 each (rounded up)

(2) Assistance from PgG with PE samples, QA/QC as needed.

AMENDMENT NO. 1

INTERLOCAL AGREEMENT BETWEEN SOUTH YAKIMA CONSERVATION
DISTRICT AND YAKIMA COUNTY

Purpose: To amend the budget amount of the Interlocal Agreement, BOCC Agreement No. 307-2014 of July 15, 2014; after bids were received from the Request for Proposals.

It is mutually agreed that the above referenced Interlocal Agreement shall be revised to amend the amount shown on Paragraph 4 from \$245,025.00 to \$ 394,563.40. Attachment "B", Deep Soil Sampling Program Estimated Budget is also revised with this Amendment. All other provisions in the ILA remain unchanged.

IN WITNESS THEREOF, the County and the have executed this amendment as of the date and year last written below.

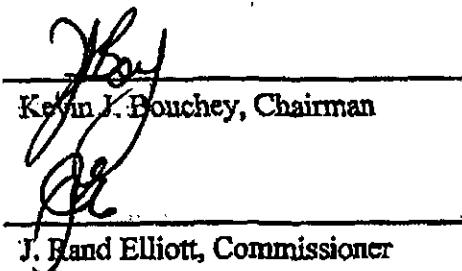
DONE this 5th day of August 2014

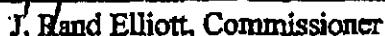
SOUTH YAKIMA CONSERVATION
DISTRICT



Dirk Van Slageren, Chairman

BOARD OF YAKIMA COUNTY
COMMISSIONERS



Kevin J. Bouchey, Chairman

J. Rand Elliott, Commissioner

Excused

Michael D. Leita, Commissioner

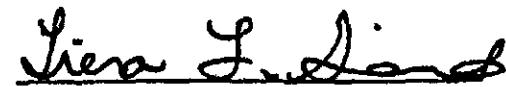
*Constituting the Board of County Commissioners
for Yakima County, Washington*

Approved as to Form:



Deputy Prosecuting Attorney

Attest:



Tiera Gerard
Clerk of the Board



BOCC329-2014
August 5, 2014

Attachment "B" (Revised – Amendment No. 1)
South Yakima Conservation District
Deep Soil Sampling Program (DSSP)
Estimated Budget (2014-2016)

TASK #	1	2	3		
Task Category	Administration	Program	Technical	Totals	Note
Wages	\$ 14,000.00	\$ 35,000.00	\$ 21,000.00	\$ 70,000.00	
Supplies	\$ 500.00	\$ 500.00		\$ 1,000.00	
Advertising	\$ 500.00	\$ 500.00		\$ 1,000.00	
Travel		\$ 750.00		\$ 750.00	
Sampling/Lab Analysis			\$ 260,944.00	\$ 260,944.00	See Note (1)
Consultant			\$ 25,000.00	\$ 25,000.00	See Note (2)
Sub-Total	\$ 15,000.00	\$ 36,750.00	\$ 306,944.00	\$ 358,694.00	
Contingency (10%)				\$ 35,869.40	
Total				\$ 394,563.40	

Note:

(1) Actual bid amount received on July 18, 2014 from Landau and Associates
(2) Consultant assistance with PE samples, QA/QC as needed