



Looking Back and Moving Forward: Three Years of Working Well

Pilot Program Report 2008-2011



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The Vision

Safe and secure groundwater supplies for water well users in Alberta.

The Program

A multi-agency led initiative, the Working Well pilot program delivers community-based workshops and provides well owners the information they need to care for their water wells.

The Message

We are pleased to share the successes and lessons learned on the Working Well pilot program over the past three years.

Education and outreach plays a fundamental role in finding sustainable solutions to maintain a healthy environment. With the help of programs like Working Well, Albertans can be empowered on their journey to be life-long environmental stewards.

The strength of the pilot program has been the multi-agency effort to deliver credible information and tangible results. Applying a coordinated and collaborative approach, staff from federal, provincial and municipal organizations as well as other key stakeholders have contributed to a culture of heightened awareness of water well management and groundwater stewardship across the province.



-Working Well Program Steering Committee-

Looking Back and Moving Forward

History can be a powerful learning tool. By looking back we gain the understanding, knowledge and insight needed to wisely move forward.

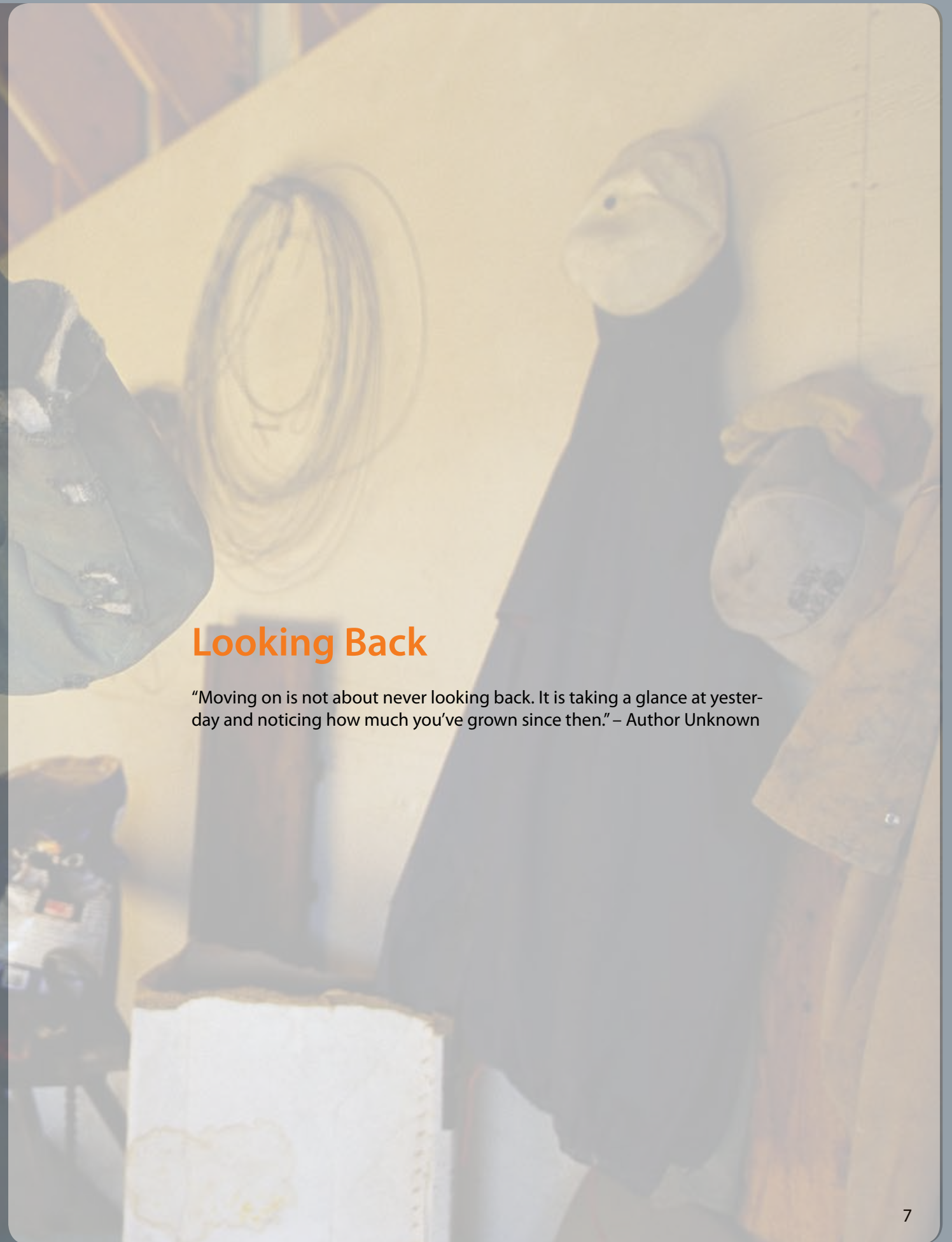
In assessing the success and lessons from the Working Well pilot, the following questions were considered:

- Did we meet our outcomes?
- What was the impact on the ground?
- Which program elements worked well to support the outcomes?
- What would we do different next time?

This report offers a look back at the Working Well pilot program; highlighting the successes, limitations and learnings from three years of delivery. As part of a continuous improvement process, this information will help shape the program for the next three years.

“Life must be understood backwards; but it must be lived forward.”

Soren Kierkegaard



Looking Back

"Moving on is not about never looking back. It is taking a glance at yesterday and noticing how much you've grown since then." – Author Unknown

Goals and Objectives

The Working Well pilot program was developed by the Program partners¹ with the following goals in mind:

Awareness – To help water well owners recognize that management of private wells is their responsibility, and the potential impacts of human activities on groundwater.

Knowledge – To help well owners gain a basic understanding of groundwater science, how a well works, and how a well should be managed.

Practice Change – To help well owners acquire the skills and motivation to adopt recommended water well management practices.

In addition, the pilot was intended to advance the following outcomes:

Time Frame	Outcomes Clients (Well Owners)	Outcomes Program Partners
Short term (2008-2010)	Well owners attend workshops and use education resources.	Established relationships, coordinated efforts and consistent key messages are used to deliver workshops and address water well issues and concerns.
Medium term (2010-2011)	Well owners have greater awareness and understanding of well management.	Partners' capacity to deliver water well education is improved.
Long term (Beyond 2011)	Well owners adopt recommended stewardship practices (e.g. water testing, record keeping).	A province-wide coordinated approach to water well education results in a demonstrable increase in stewardship practices by water well owners.

¹ Working Well pilot program delivery partners include Alberta Environment, Alberta Agriculture and Rural Development, Agriculture and Agri-Food Canada, Alberta Health Services, and the Alberta Water Well Drilling Association.

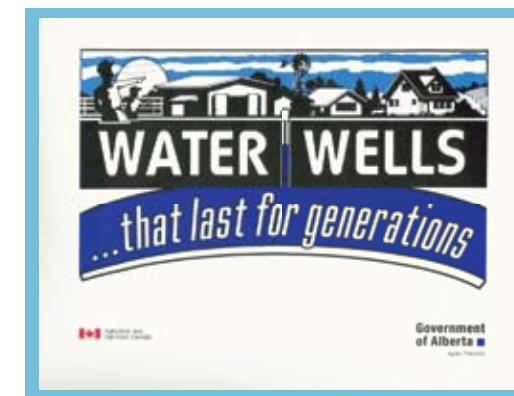
History

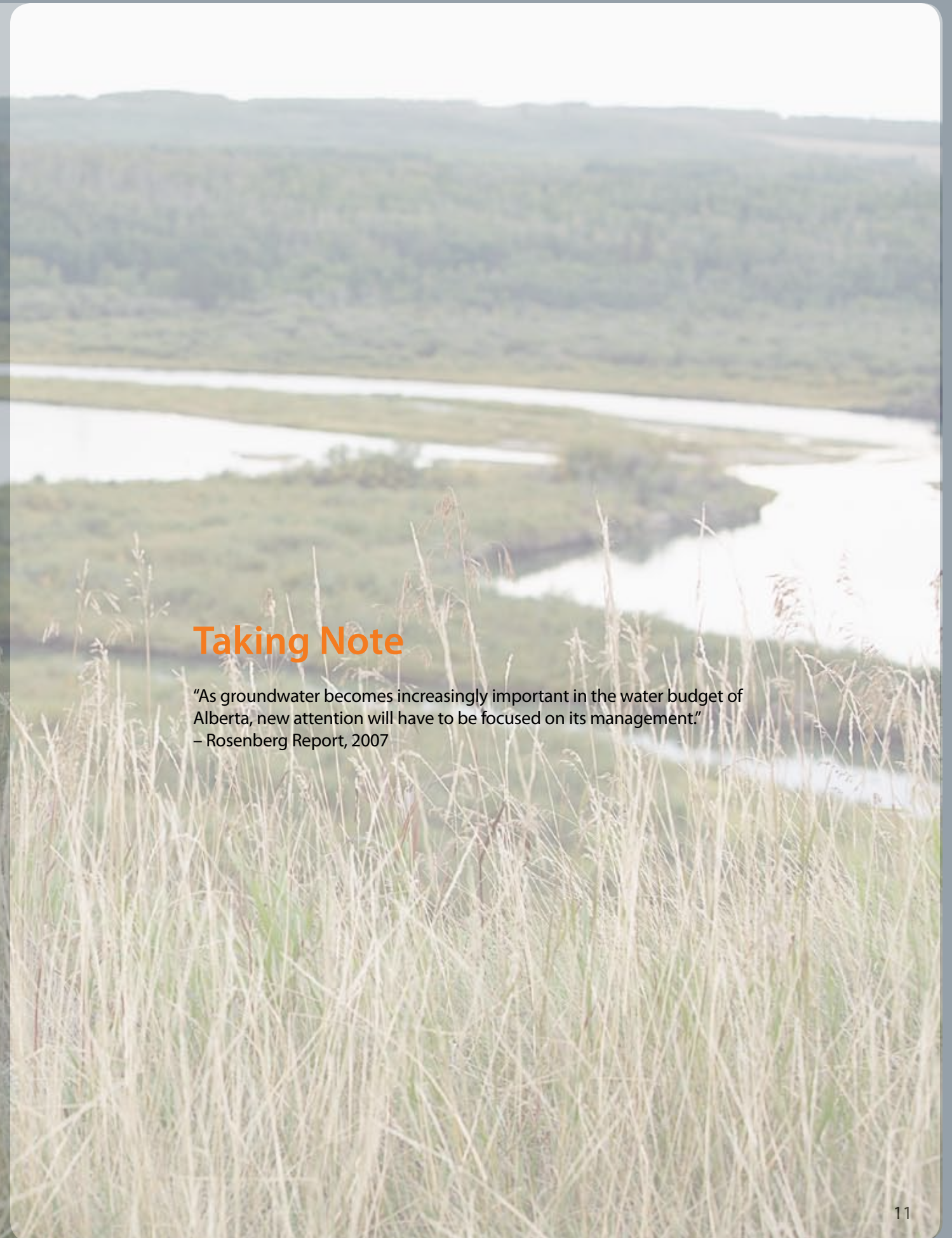
Alberta Environment (AENV), Alberta Agriculture and Rural Development (ARD), Agriculture and Agri-Food Canada (AAFC) and other organizations have collaborated in the past to provide information and advice to well owners. The publication *Water Wells that Last for Generations* is a good example of the collaborative effort between the three agencies. The evolution of well owner education to a provincially-led pilot program was precipitated by events in 2006.

In 2006, AENV received a number of public complaints about methane in private wells. With a view to reducing the number of complaints, AENV central region compliance managers asked education staff to develop a program to help private well owners understand how groundwater works and the importance of proper well maintenance.

AENV pulled a group of people together to determine interest and potential level of involvement in developing an education program. With funding from Water for Life, a steering committee with representation from Parkland County, Yellowhead County, Brazeau County, ARD, AAFC, AENV and Sustainable Resource Development piloted a series of water well workshops. What began as a regional initiative evolved to a successful, province-wide pilot program.

Over the past three years, the Working Well pilot program has delivered community-based workshops, information resources and community outreach to private water well owners. These program elements have ranged in audience reach and scale, some in local communities (workshops) and others being province-wide (information resources).





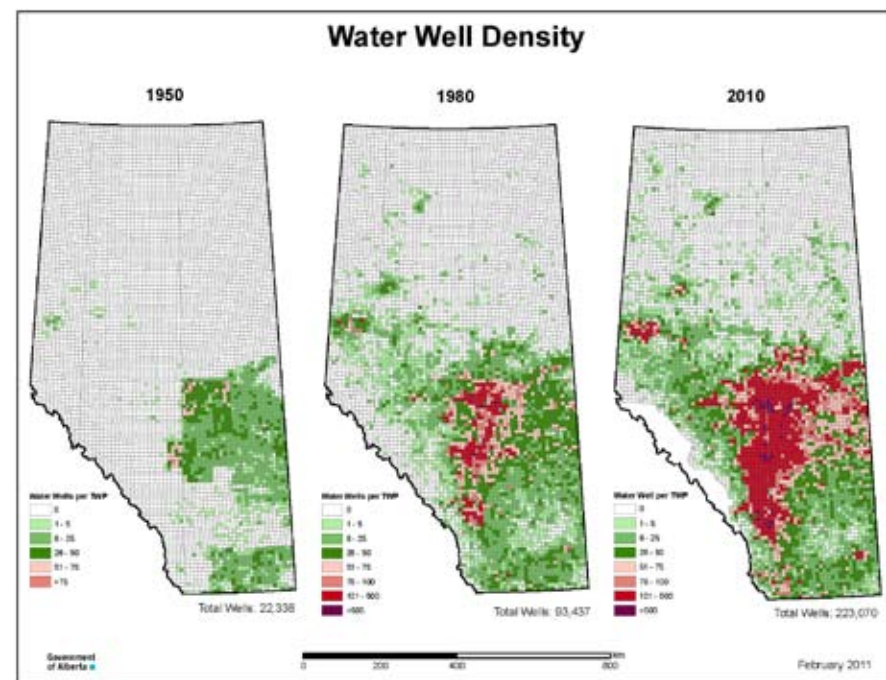
Taking Note

"As groundwater becomes increasingly important in the water budget of Alberta, new attention will have to be focused on its management."
– Rosenberg Report, 2007

Protecting the Resource

Water wells are used to supply groundwater to domestic, agricultural, municipal, industrial and other users in the province. Of the 400,000 reported wells drilled, approximately 215,000 are active and about 4,000 are added each year. There has been a significant increase in the number of wells drilled over time (Figure 1). As surface water becomes more fully allocated, and climate change impacts the availability of surface water supplies, more Albertans will rely on groundwater to meet their needs.

Figure 1: Water well density in Alberta



Active water wells pump water from underground aquifers, increasing the demand and putting pressure on groundwater resources (over pumping risk). Additionally, water wells that have not been properly constructed or maintained, or wells that are inactive or abandoned, pose significant threats to groundwater resources as they provide a direct conduit for surface contamination to reach our aquifers (State of the Environment, www.environment.alberta.ca/02889.html).

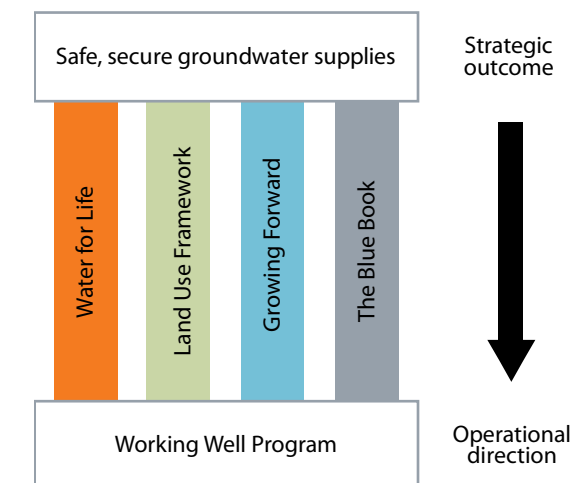
A Shared Responsibility

Managing the economic, social and environmental risks, and cumulative effects associated with water well development is a shared responsibility among federal, provincial and municipal governments, public and private organizations, and regulated and non-regulated parties. The Working Well pilot program is one piece of a whole groundwater management approach that includes regulatory, policy, stewardship and knowledge elements.

The Working Well pilot program is aligned with and supports the following major strategies and policies.

- Water for Life Strategy
- Land Use Framework
- Growing Forward
- The Blue Book¹

Collectively, the implementation of these policies and strategies will contribute to safe, secure groundwater supplies for Albertans.



¹ A Common Reference System and Operational Standards for Environmental Health Programs (Alberta Health Services).



Stepping Up

“Individual commitment to a group effort – that is what makes a team work, a company work, a society work, a civilization work.” – Vince Lombardi

Program Partners

Looking back, it is clear that the success of the Working Well pilot was due in large part to the collaborative nature of the program. Over the past three years, provincial, federal and municipal government agencies, and the water well drilling industry, have stepped up, worked together and contributed significant time and resources to provide Albertans common, consistent information and resources on groundwater and water wells.

Since the beginning, the Working Well pilot program has been administered by a multi-agency partnership with representation and participation from:

- Alberta Environment (AENV)
- Alberta Agriculture and Rural Development (ARD)
- Agriculture and Agri-Food Canada (AAFC)
- Alberta Health Services (AHS)
- Leduc County
- Alberta Water Well Drilling Association (AWWDA)

Program Management & Administration

AENV led the management and administration of the Working Well pilot program. Specifically, AENV coordinated the planning and implementation tasks required to achieve program outcomes. In 2007-08, AENV's Education and Outreach section dedicated up to 50 per cent of one staff person's time for program planning and development including:

- Strategic assessment, planning and development to meet outcomes (e.g. setting priorities, identifying learning outcomes, key messages, activities etc.);
- Program evaluation and reporting; and
- Contract management.

This high level of staff commitment could not be sustained (due to other work priorities and commitments), so in 2008, an external service provider was hired by AENV for workshop coordination, program evaluation and information resource development. Staff from the AENV Groundwater Policy Section and other ministries also committed time to program planning and development (e.g. workshop presentation content).

Partner Organizations and Their Roles

The following table outlines the roles of the various organizations involved in the Working Well program. Some of these roles are shared among several organizations (e.g. Steering Committee) and some are led by one entity (e.g. program manager).

Organization	Role						
	Program Manager	Program Admin	Workshop Delivery	Workshop Host	Technical Committee	Steering Committee	Funder
Alberta Environment	✓	✓	✓		✓	✓	✓
Alberta Agriculture & Rural Development			✓		✓	✓	✓
Alberta Health & Wellness						✓	✓
Agriculture & Agri-Food Canada			✓		✓	✓	✓
Alberta Health Services			✓		✓	✓	
Alberta Water Well Drilling Association			✓		✓	✓	
Municipalities				✓		✓	
External Service Provider		✓	✓				

Steering Committee

Up to two representatives from each partner agency formed the Working Well Steering Committee (call out box). The Steering Committee has been responsible for making the strategic recommendations and decisions that have guided the program. AENV facilitated the regular operation of this committee and presided as committee chair.

2008-2011 Steering Committee Members:

- Krista Tremblett (Chair), Alberta Environment
- Jamie Wuite, Alberta Agriculture and Rural Development
- Melissa Orr, Alberta Agriculture and Rural Development
- Curtis Snell, Agriculture and Agri-Food Canada
- Jennifer Macpherson, Alberta Environment
- Garrett Broadbent, Leduc County
- Karen Emde, Alberta Health Services

Technical Committee

Ensuring the accuracy of the information and resources distributed through the Working Well program has been paramount. The Technical Committee (call out box) played an essential role by providing guidance and advice on program content (workshop, fact sheets, etc.) to ensure it is technically sound.

2008-2011 Technical Committee Members:

- Jennifer Macpherson (Chair), Alberta Environment
- Tony Cowen, Agriculture and Agri-Food Canada
- Ryan Davison, Agriculture and Agri-Food Canada
- Twyla Legault, Agriculture and Agri-Food Canada (past member)
- Melissa Orr, Alberta Agriculture and Rural Development
- Ken Williamson, Alberta Agriculture and Rural Development (retired)
- Carol Larson, Alberta Water Well Drilling Association
- Breeann Barry, Alberta Environment
- Steve Wallace, Alberta Environment
- Karen Emde, Alberta Health Services

Workshop Hosts

Delivery of Working Well workshops has been a shared effort among federal, provincial and municipal agencies. The municipalities and local stewardship groups requesting workshops assumed responsibility for hosting. This included tasks such as workshop advertising, registration, and venue preparation (refreshments, tables, chairs, etc.). Workshop hosts also covered the cost of advertising, venue, refreshments and other hosting expenses.

Program Delivery

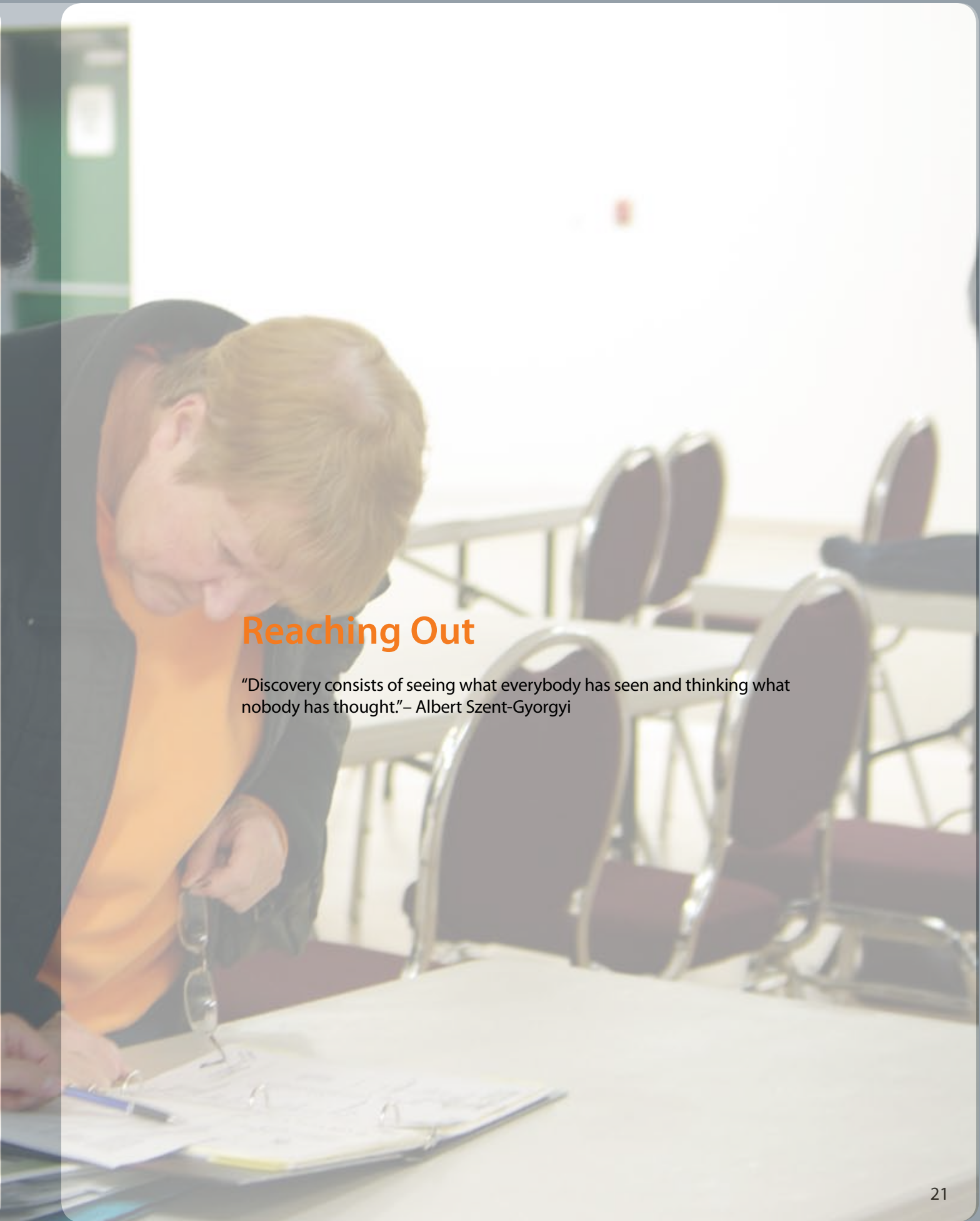
Community-based workshops were the core component of program delivery. A network of technical staff from AENV, AARD and AAFC led and/or supported workshop delivery. AHS staff and members of the Alberta Water Well Drilling Association (AWWDA) (licensed well drillers) also support workshop delivery.

For the past two years, the majority of workshops were led by an external service provider. This decreased the burden on agency staff and helped make the scheduling process more efficient.

The role of leading and/or supporting workshop delivery included the following tasks:

- **Pre-workshop** – acquiring workshop participant materials and securing other workshop resources (i.e. well model, laptop, etc.), contacting the workshop host to confirm logistics, printing participant drilling reports, and inviting the local health inspector and/or driller to attend the workshop.
- **Workshop** – presenting one or more workshop modules and, collecting workshop surveys.
- **Post-workshop** – sending surveys to Program Administrator.

Over the past three years, a sense of community has grown among the partner agencies and staff involved in the program. Working Well has also created the opportunity for staff from various agencies to engage one another and share information.



Reaching Out

"Discovery consists of seeing what everybody has seen and thinking what nobody has thought."- Albert Szent-Gyorgyi

Delivery Approach

The overall approach behind Working Well has been to develop creative solutions for program implementation. As such, the Working Well program components consists of a variety of education and communication tools, which are used either independently or collectively to provide water well owners with the information they need to properly manage their well.

The Working Well pilot program delivered on three main activities: workshops, information resources and outreach (e.g. conferences, open houses). A network of technical staff from AENV, ARD and AAFC provided expertise and assistance with workshop delivery and information resource development (e.g. fact sheets). AHS staff and licensed water well drillers also contributed to workshop delivery and resource development.

The workshops were, by far, the most publicly recognized, time intensive and successful component of the pilot. The ongoing involvement and participation by this network of staff from the partner agencies in workshop delivery has been critical to the success of the program.

Workshops

Over the course of the pilot program, public interest and value in attending workshops remained strong. So, not surprisingly, the most important and impactful component has been the delivery of community-based workshops.

These workshops, delivered by staff from ARD, AENV, AAFC, AHS and members of the AWWDA, have been critical to helping water well owners identify actions to protect both their well and the groundwater resource they rely on. Workshops were held in communities across the province and hosted by a local municipality or stewardship group.

First hand experiences are recognized as an effective method for increasing people's interest in and understanding of an issue. As such, interactive activities as well as visual and physical elements were incorporated into the workshops. This included an exercise where participants learned how to understand their own well drilling report by using it to draw a well diagram. An 8-foot high water well model and construction components were also used at the workshops to identify components and convey concepts to participants.

Since 2008, Working Well has:

- Received 106 requests for workshops.
- Worked with 43 municipalities, eight not-for-profit organizations and one First Nations community.
- Delivered 97 workshops in more than 80 communities across Alberta.
- Had a total of 2,807 well owners attend the workshops.
- On average, had 29 people per workshop.

Workshop participant demographics were fairly balanced between agricultural producers and acreage owners. Demographics tended to skew slightly to an older, agricultural producer audience in the more rural municipalities. Municipalities with a greater acreage population had more acreage owners in attendance. Most workshop hosts used local newspapers, newsletters and websites to advertise their workshops. See Appendix A for a map of workshop locations from January 2008 to March 2011.



Information Resources

To be impactful, information resources not only need to attract and hold readers' interest, they need to lead them to action. This was a key consideration when it came to developing the program's significant suite of information resources which include fact sheets, posters and brochures.

Over the past three years, eleven fact sheets, highlighting a series of best management practices, have been developed. Distributed directly to workshop participants and made available to the general public at trade shows and community events and through the Working Well website, the fact sheets address key best management practices related to:

- Water well design and construction;
- Water well operation (e.g. avoid over-pumping);
- Water well maintenance (e.g. shock chlorination, testing well water, keeping records); and,
- Water well decommissioning (i.e. plugging).

Information resources have served a variety of purposes; from being used to effectively promote the program, to communicating key messages and becoming valuable references for well owners. For a complete list of information resources, see Appendix B.



Community Outreach

Despite limited budget and staff capacity for outreach efforts, the pilot built a positive reputation over time by delivering information through targeted community outreach activities. Word of mouth also played a significant role in spreading Working Well messages and raising awareness for the program.

Through the pilot program's history, partner agency staff participated in and attended various community events and functions on behalf of Working Well. In addition to the workshops, the program has reached several hundred well owners through events such as:

- Brazeau County Rural Landowner Workshop
- Cows and Creek Tradeshow
- Leduc County Rural Living Open House
- Northland's Farm and Ranch Show – Enviro-Tech exhibit
- Parkland County Acreage Days
- Pigeon Lake Annual Open House
- Strathcona County Rural Living Days

Numerous presentations on the Working Well pilot have also been delivered at conferences and other events such as:

- Alberta Association of Municipal Districts and Counties (AAMD&C) board meeting
- Association of Alberta Agricultural Fieldmen In-Service Training
- Canadian Institute of Public Health Inspectors Conference
- Health Inspector InfoShare Session
- Leduc County Agricultural Service Board meeting

Results Achieved

Since its inception, evaluation has been a key strategic priority of the Working Well pilot program. Evaluating and reporting on the most significant program activity – community-based workshops – has served to:

- Track performance of and improve workshops to help achieve program outcomes over time, and
- Maintain accountability and credibility through transparent reporting on program performance.

Staff from partner organizations put considerable time, effort and resources into making the pilot and the workshops successful. To ensure prudent and cost-effective use of these resources, a minimum of 10 pre-registered participants was required to conduct the workshop. Of the 106 workshop requests received in the past three years, only nine were cancelled due to low pre-registration numbers.

Workshops were evaluated based on information collected from workshop participants, workshop hosts (e.g. municipalities and organizations) and workshop delivery staff through surveys, direct contact and formal follow-up questionnaires. This information was analyzed regularly to determine:

- If and how the workshops were contributing to program outcomes,
- The level of support and need for workshops, and
- Where improvements were necessary.

Evaluation results have been organized into the following sections:

1. Workshop Participant Evaluation – summarizes participant reaction to the workshop (i.e., what they thought), any increase in participant knowledge or understanding as a result of attending a workshop and the extent of behaviour change.
2. Host Evaluation – summarizes workshop host feedback and reaction to the workshops including suggestions for improvement.
3. Workshop Delivery Staff Feedback – features feedback from the delivery staff who have participated in workshop delivery.

Workshop Participant Evaluation

Qualitative and Quantitative Results

Working Well utilized three survey instruments (Appendices B, C and D) to engage workshop participants and collect data for workshop evaluation purposes:

1. **Check-up survey** – completed at the beginning of the workshop; the intent of the check up survey was to encourage participants to think about their water well management practices. From January 2008 to March 2011, 1,675 check-up surveys were returned by participants (average 60 per cent response rate).
2. **Workshop participant survey** – completed at the end of a workshop; the survey presented an opportunity to collect information on participants' reaction to and learning from the workshop. During the three-year pilot program period, 1,785 participant surveys were completed and returned (average 64 per cent response rate).
3. **Follow-up survey** – conducted six to eight months post-workshop with only those participants who requested a follow-up call; presented the opportunity to collect information on participants' behaviour change post workshop. From October 2008 to May 2010, a total of 627 follow-up surveys were conducted with participants post-workshop.

Aggregate results of all the workshop participant evaluations (compiled from the survey data) have been organized into three areas:

1. **Participant reaction**
2. **Participant learning**
3. **Participant behaviour change (intended and actual)**

Participant Reaction

Overall, participants were generally quite supportive of the workshops, and very appreciative of the information provided. Participant comments regarding workshop improvements varied from person to person and seemed to relate directly to personal preferences (i.e. workshops were too long/ too short, more detail in presentation/less detail in presentation). Many participants appreciated the hands-on element of the Draw your Well exercise and the information presented on how water wells work. Overall, participants felt the workshops were thorough and informative, very well prepared and well presented.

Most participants felt that the workshop was worthwhile and offered valuable and useful take-home resources (i.e. the workshop binder and fact sheets). They also expressed appreciation for the effort that went into preparing and delivering the workshops.

Table 1 identifies the percentage¹ of participants who expressed a desire for more information about specific topic areas.

Table 1: Percentage of workshop participants wanting more information about specific topics

Topic Area	Percentage of Participants
How groundwater works	4.0%
How my well works	4.2%
Understanding drilling reports	4.9%
Common well problems and contamination hazards	6.2%
Well maintenance, monitoring and management	17.0%
Other ²	4.1%

¹ Percentages provided represent an average of all results from workshops conducted during the pilot program period.

² A sample of other topics includes: how to remove a well pump; understanding and maintaining water softeners; deep well pump installation and removal; septic systems and fields; rust removal systems; chlorination; water testing; how to make a bored well deeper; water contamination by pesticides; municipal well monitoring programs; iron removal equipment and filters; impact of sewage management on water supply; silting problems; government regulation of industrial use of fresh water (i.e. oil field water usage); water treatment systems; petrochemical contamination of water wells; aquifers in Alberta; well driller monitoring; and financial help for people with contaminated wells.

Participant Learning

Below are the key findings related to the impact of the workshop on participant learning^{3,4}:

1. A significant majority of respondents (**90 per cent**) indicated the workshop **increased their understanding of how groundwater works either somewhat or a great deal**. Only seven per cent felt they gained just a slight increase in understanding of how groundwater works.
2. Nearly **94 per cent** of respondents felt their **understanding of how their well works increased somewhat to a great deal**. Almost six per cent felt their understanding increased only slightly, and less than one per cent felt the workshop did NOT increase their understanding of how their well works.
3. **92 per cent** of respondents felt they had **somewhat or a great deal better understanding of their drilling report** after the workshop. Nearly seven per cent of respondents felt the workshop only slightly improved their understanding of drilling report. Slightly more than one per cent felt the workshop did NOT increase their understanding of their drilling report.
4. When asked if the workshop increased their **understanding of common well problems and contamination hazards**, **71 per cent** of participants indicated their **understanding increased a great deal**, 26 per cent said their understanding increased somewhat, and four per cent had just a slight increase in understanding. Less than 0.5 per cent of participants indicated the workshop did NOT increase their understanding of these elements at all.
5. When asked to what degree did the workshop increase their understanding of **well maintenance, monitoring and management**, almost three quarters (**71 per cent**) of respondents said their **understanding increased a great deal**, while slightly more than one quarter (27 per cent) indicated their understanding increased somewhat. Only two per cent of respondents felt their understanding of well maintenance, monitoring and management increased only slightly.
6. **99 per cent** of participants indicated that **the workshop provided information that will be helpful in maintaining and managing their water wells**. Of that number, 60 per cent 'strongly agreed' with this statement. A very marginal percentage (0.2 and 0.1 per cent respectively) either 'disagreed' or 'strongly disagreed' with the statement that the workshop provided information helpful to maintaining and managing their water well.

³ Figures represent an average of all results from workshops conducted during the pilot program period.

⁴ Not all percentages will add up to 100 as some respondents did not answer all questions.

Participant Behavior Change - Intended & Actual

Intended and actual behavior change was determined through two of the three survey instruments identified above – workshop participant survey and follow-up survey. The primary intent of the six- to eight-month follow-up survey was to gauge whether or not the information presented at the workshop had been actually implemented by well owners.

As part of the workshop participant survey, participants were provided a list of various water well management activities, and asked to indicate which activities they intended on doing as a result of attending the workshop (Table 2). The blue highlighted areas indicate the top three activities.

Table 2: Intended behaviour change by workshop participants¹

Intended Behavior or Action	Percentage of Participants
Plug old unused wells on my property	12%
Get rid of my well pit	7%
Install a vermin-proof well cap	23%
Ensure the ground around my well is mounded to prevent water from pooling	26%
Keep records of water well testing results, maintenance and treatments	44%
Check to see if my well is properly set back from contamination sources	19%
Avoid over-pumping	28%
Test my well water	46%
Shock chlorinate	44%
Use a backflow prevention device when drawing from a hydrant to mix chemicals	10%
Avoid over-application of manure, fertilizers and pesticides to my land	11%
Other ²	3%

¹ Figures represent an average of all results from workshops conducted during the pilot program period.

² A sample of other activities includes: checking toilet tank for slime, drilling a new well, verifying correct well report, adjusting depth of pump, monitoring well with county program, and watching for biofouling.

More than 600 follow-up surveys were completed for all workshops between fall 2008 and spring 2010. The summary results³ of the follow-up surveys, conducted six to eight months post-workshop, and which identify actual behaviour change, are as follows:

1. When asked if they received a drilling report for their well at the workshop 64 per cent of participants said yes and 36 per cent said no. Of those who did receive their drilling report, 97 per cent indicated they did keep the drilling report they received at the workshop. Of those who did not receive their drilling report an overwhelming majority (89 per cent) indicated they DID NOT contact Alberta Environment or their well driller for a copy. Typically, comments as to why not included:

- Already had the well report,
- Called previous owners but they couldn't find it, and
- The well is too old.

A significant majority (92 per cent) indicated the Draw your Well Exercise helped them better understand their drilling report. Specific comments from respondents as to what information on the drilling report they found most was also captured. Comments included:

- Depth and helped visualize the whole thing.
- Better understanding of what well was drilled through.
- How deep and how old the well is.
- Report was like French to me before I did the drawing.
- I was in the dark about the whole well process in general - this helped a lot i.e. where pump is, where casing goes.
- This was one of the most valuable parts of the workshop; translate info into a visual concept; really important for me to understand what was being talked about.
- Depth of well, type of pump, screens, casings.

³ Figures represent an average of all follow-up survey results from workshops conducted during the pilot program period.

2. Twenty-nine per cent of respondents indicated they had old, unused wells on their property. Of those who have old unused wells, 28 per cent indicated that since taking the workshop, they have taken steps to have those old, unused wells plugged.

Sample comments from those who DID NOT take steps to plug their old wells included:

- The old well is not seen as a hazard.
 - The well has a heavy concrete lid.
 - The old well is a back up (e.g. for cattle watering).
 - Haven't gotten around to plugging the old well.
 - There is nothing around the well to contaminate it.
 - I don't know where the old well is.
 - I still use it, might use it or plan to use it again.
 - I intend to do it in the future.
3. A majority of participants (59 per cent) said they have not had their well water tested since attending the workshop. When asked when the last time was they had the well water tested, many responded five years ago or less, however responses also ranged from 10 to 20 years ago.
 4. When asked if they had looked at/inspected their well since the workshop, 73 per cent indicated that they had.
 5. In terms of specific inspection activities, of those who had inspected their wells since the workshop, 93 per cent checked that the well was securely capped, 27 per cent said they had installed or considered installing a vermin-proof cap, and 85 per cent had looked to see if the ground around the well was properly mounded.
 6. Of all respondents, 84 per cent surveyed post workshop said they keep records for their well.
 7. Since the workshop, 83 per cent have checked to ensure their wells are at least the minimum setback distances.
 8. Slightly more than half (55 per cent) of respondents have shock chlorinated their wells. Forty-one per cent of those who have shocked their wells do this at least once per year.

9. Of those who have not shock chlorinated their wells, 45 per cent indicated they planned on doing so since attending a workshop.
10. Sixty-eight per cent of respondents DO NOT use water directly from a hydrant to mix pesticides. This question was not applicable to approximately one quarter (24 per cent) of respondents.
11. An overwhelming number of respondents (84 per cent) have shared what they learned at the workshop with others. People generally shared information with family and community members, colleagues, neighbours and friends.

As found with all follow-up surveys, a strong majority of the comments from participants were positive and many people indicated they would recommend the workshop to others. This indicates that although some time had elapsed between the workshop and the follow-up surveys, most participants were still very aware of the workshop, could recall specific details about elements of the workshop, and maintained a very positive perception about the workshop in general.



Workshop Delivery Staff Evaluation

The capacity for Working Well to deliver on its mandate has been founded on the establishment of a program delivery network. From the technical staff at AENV, ARD and AAFC who have provided assistance with workshop delivery and information resource development (e.g. fact sheets), to AHS staff and water well drillers who have been engaged in workshop delivery and resource development, to the municipalities, non-government agencies and First Nations who have hosted workshops – this community of practitioners have, through Working Well, contributed to building greater community capacity to address environmental issues.

A snapshot of partner agency involvement in the pilot program from 2008 to 2010:

- Alberta Environment: 18 staff (includes program coordinator, workshop delivery, steering committee members)
- Alberta Agriculture and Rural Development: seven staff (includes steering committee members, workshop delivery)
- Agriculture and Agri-Food Canada: six staff (includes steering committee member, workshop delivery)
- Alberta Health Services: approximately 16 health inspectors have participated in workshop delivery; 1 person sits on steering committee
- Alberta Water Well Drilling Association: approximately 20 licensed drillers have participated in workshops

AENV, ARD and AAFC staff involved in workshop delivery were surveyed in 2010 and 2011. They provided feedback on various aspects of the Working Well pilot including workshop content, information resources and administrative processes. Their feedback directly resulted in improvements to the pilot including the coordination and workshop delivery process, the workshop presentation and other Working Well products. Staff also provided feedback on the benefits they received from participating in the program.

In what ways has the Working Well program helped you to learn and grow professionally?

- Interacting with well owners has helped me understand their concerns and needs. The ability to be able to talk one-on-one with well owners allows you to build up a sense of trust with them.

- Ability to learn and practice extensions skills; especially public speaking and presentation skills.
- I learned tremendously from the personal experiences of the other presenters.
- Sharing ideas with everyone at the workshops – including well drillers (listening to their input), agricultural producers, and Public Health Inspectors.
- I have a better idea of what the issues are for average well owners. My work planning and project development have had some reliance on that information.

Workshop Host Evaluation

Through a follow-up survey, workshop hosts were given the opportunity to provide feedback on what they found most valuable about the workshop as well as suggestions for improvement. Overall, since the program began, workshop hosts have provided valuable and positive feedback. Most indicated a desire to host additional workshops in the future. Hosts also provided basic demographic information about workshop participants, and information about how they advertised their workshops.

In addition to the formal program feedback provide by hosts, many have been compelled to write letters of support for Working Well. Here are just a few examples of the support Working Well has drawn from municipalities and organizations over the past three years:

"We cannot express the importance of the continuation of these workshops. This is one of the more important issues to address and will give results for the dollars that are spent."

Marvin Brade
ASB Chairman
County of Barrhead

"We feel that these workshops are also an important sustainability linkage for agricultural producers and their acreage owner neighbors. Water wells and groundwater are a resource they all have in common and share the care of."

Ken Lewis
Red Deer County

"Once again, it was great. It was the best workshop I've ever been involved with."

Camrose County

Factors for Success

The Working Well pilot was successful in advancing the goals and outcomes identified in 2008 (refer to p. 5). This section captures the key factors that contributed to this success.

1. Project planning

From formation to completion, planning provides the foundation for successful programs. The Working Well pilot was a result of careful consideration at the planning stage. A logic model process was used to define resource needs (e.g. financial, staff), expected outcomes, and strategies to attain outcomes. The logic model was also helpful for identifying appropriate measures of success.

Prior to the identification of outcomes and strategies, the Steering Committee defined the target audience. The definition was revisited several times for clarity. This was important, as each agency representative on the committee had a slightly different perspective on the audience. For example, agricultural producers are the primary client of ARD and AAFC. While the target audiences for AENV and AHS are broader, including acreage and cottage owners.

2. Evaluation and reporting

Articulating an evaluation and reporting strategy was part of the planning process for Working Well. Having a clear focus on what to evaluate served to:

- Give the evaluation a precise focus – evaluating only what was useful for the agencies participating in the pilot;
- Provide direction on what evidence to collect and data collection method(s) to use; and,
- Make tracking and reporting easy to do.

Frequent, targeted communication on progress and results contributed to strong support for the program. To mobilize resources and support required for the Working Well pilot, it was important to document success and disseminate evidence that would resonate with decision makers of the participating agencies.

3. Project management

From workshop coordination to resource development, clear guidance documents and processes were established at the outset, including a project

charter, steering committee Terms of Reference, and a review/approval process for information resources. Having such documents and processes in place helped build common understanding; clarify assumptions; and deliver an effective, efficient program.

Having a consistent complement of staff and contractors over the course of the pilot has also contributed to Working Well's effectiveness and efficiency. For the past two years, the majority of workshops were led by an external service provider. This decreased the burden on agency staff and helped make the workshop scheduling process more efficient.

4. Program champions

Partner agency staff championed the Working Well pilot program – building recognition of the value of the pilot with decision makers, managers, colleagues and external partners. When the future of the program (beyond the pilot stage) was uncertain, the steering committee exercised considerable initiative and flexibility to champion the program beyond the pilot phase. The committee developed a business case to demonstrate the continued need for Working Well to decision makers.

Community-level champions also voiced their support for the Working Well program. During the pilot, AENV received letters from several municipalities expressing the value and relevance of the program to their communities.

5. Consistent multi-agency collaboration

The Working Well pilot program created the opportunity for staff from municipal, provincial and federal agencies to foster new relationships, share information, and learn from others. Having a consistent, stable staff network has helped build working relationships, and created a sense of community.

In addition to the benefits for individual staff, continuity also helped maintain process efficiencies as well as build credibility with Albertans.

“It has been a great learning opportunity for well owners, government staff and the hosting staff. But we haven't even scratched the surface yet. There are thousands more well owners that could benefit from attending.”

*Ken Williamson,
Alberta Agriculture & Rural
Development (retired)*

Factors for Success (continued)

6. Face-to-face workshops

Face-to-face educational opportunities are the most rewarding and impactful way of learning. The workshops provided well owners the opportunity to interact directly with groundwater and water well experts from AENV, ARD and AAFC as well as water well drillers and health inspectors. Many participants commented on the value and credibility of viewpoints from multiple experts.

First hand learning experiences also increase people's interest in and understanding of an issue. Follow-up comments from workshop participants confirmed this. Although six to eight months had elapsed between the workshop and the follow-up survey, most participants were still very aware of the workshop, could recall specific details about elements of the workshop, and maintained a very positive perception about the workshop in general. Furthermore, an overwhelming number of respondents (84 per cent) shared what they learned at the workshop with others. People generally shared information with family and community members, colleagues, neighbours and friends.



7. Focus on program sustainability

Program sustainability is about continuing program services through potentially changing circumstances and sources of support. The need to examine sustainability of Working Well arose from the challenges and risks associated with program administration, delivery and funding such as staff capacity constraints and limited funding sources. To address these challenges and risks, the Working Well steering committee initiated the development of a business case for the program.

The steering committee invested significant time and effort confirming the business need for extending the Working Well program and how to continue the program beyond the pilot stage. The resulting document was used to communicate that need with decision makers (i.e. Directors, Assistant Deputy Ministers).

"[I learned] a lot more than anticipated. It was worthwhile attending and nice to have an array of professionals there to have the variety of questions answered."

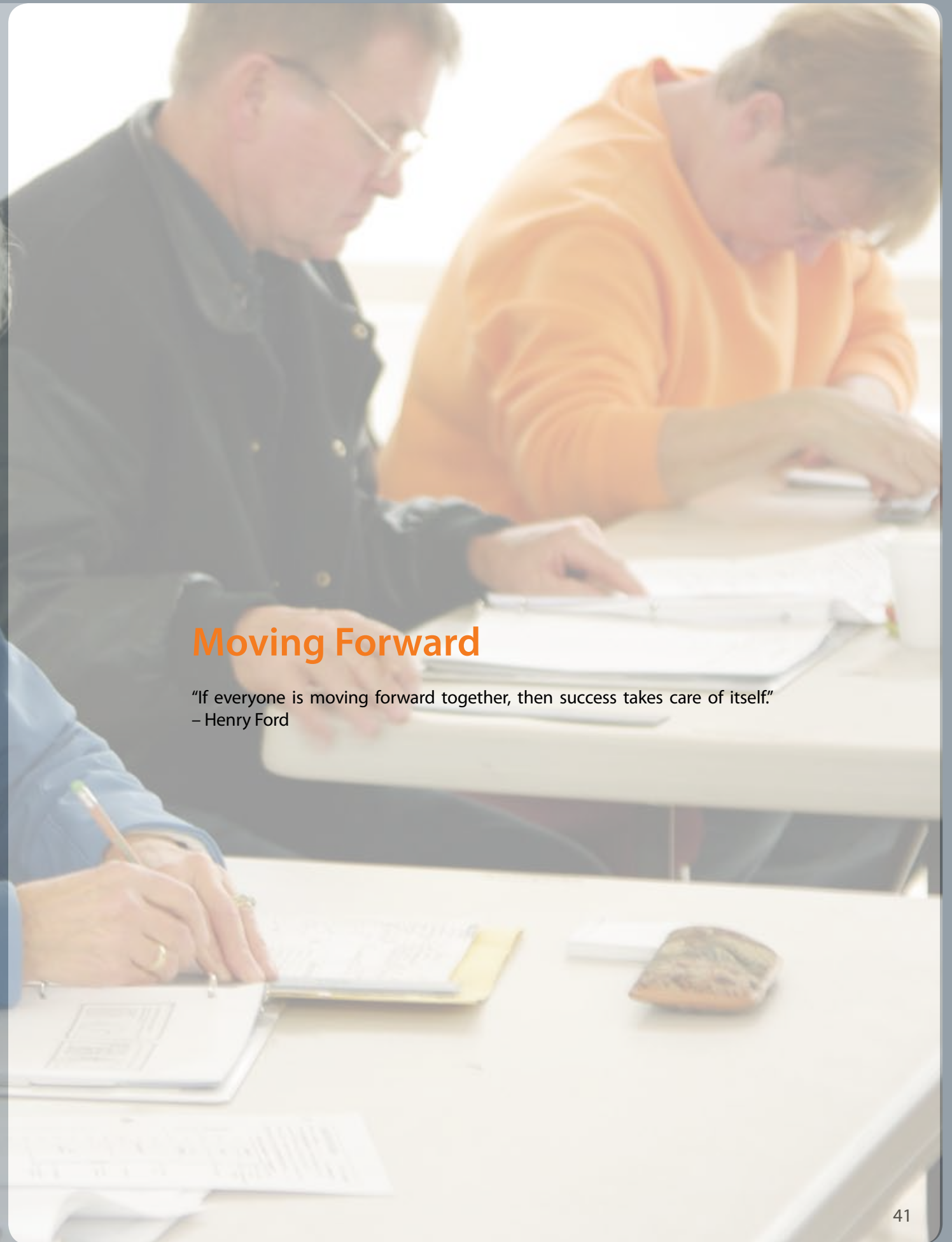
Workshop Participant
Spring 2010

"I gave you guys super marks; the whole thing was superb! I put on adult education workshops and I looked at the workshop from two levels; the coordination and cooperation among the groups was astounding - AB Ag, AENV, driller, public health, etc. I was astounded how you got all those groups together; keep doing it!"

Workshop Participant
Winter 2009

"Enjoyed the workshop and glad I went. I thought I knew about wells, but I did learn a lot at the workshop."

Workshop Participant
Fall 2009



Moving Forward

"If everyone is moving forward together, then success takes care of itself."
– Henry Ford

Why We Need Working Well

Over the past three years, Working Well has clearly demonstrated that the collaborative effort is working – and individuals, agencies and Albertans alike have benefited from the program. The program has also shown positive results and promising trends in behavior changes among well owners. However, the issues and gaps that Working Well has addressed over the past three years still exist, and thus provide a strong rationale to continue the program. These include:

Pressures on groundwater

As surface water becomes more fully allocated and development moves beyond the major urban centers, groundwater resources will play a critical role in defining water availability and resulting economic development. In the future, as more Albertans rely on groundwater, stewardship of this resource will be increasingly important. Working Well maintains that proactive approach to encourage private well owners to be stewards of our groundwater resources.

Water wells are conduits for contamination

One of the easiest ways to contaminate a groundwater source is to drill a well. Research projects on private water well quality across Canada suggest that about 20 to 40 per cent of private wells fall outside of safe drinking water guidelines. In a 1997 study of water wells on rural farmsteads in Alberta, more than 32 per cent of wells tested exceeded at least one health related contaminant. Improperly maintained private water systems have been shown to contribute to a significant number of reported waterborne disease cases throughout the world. There is a mounting body of evidence implicating unlicensed drinking water systems as a significant factor for community acquired waterborne disease.

Water well operation and maintenance is not governed by provincial legislation

While water well construction, well decommissioning, and some elements of source water protection are governed by provincial regulations, the responsibility for maintenance, testing, and local source water protection are the voluntary responsibility of the private water well owner. Working Well is a non-regulatory approach to achieving safe, secure drinking water supplies.

Water wells do not come with an owner's manual

Approximately 400,000 to 450,000 Albertans rely upon privately owned water wells for household needs, and thousands of new wells are drilled each year. Based on investigation results from Alberta Environment, more than 75 per cent of private well issues are due to improperly maintained water wells. After the licensed well contractor leaves the site, there is often very little direction given to well owners on how to operate and maintain their water well.



Transforming From Pilot to Program

Recognizing the importance and impact of this program, partner agencies have agreed to evolve Working Well from a pilot to a full-fledged program for the next three years (2011-2014). As of 2011-12, AENV, ARD and Alberta Health and Wellness entered into a three-year Memorandum of Understanding (MOU) to support the program until the end of 2014. The MOU includes a funding arrangement between the three ministries. Renewing Working Well under this new collaborative agreement will ensure the program continues to:

Meet a continued need in rural Alberta

Despite minimal efforts to promote Working Well, there has consistently been a high demand for workshops. More than one third of hosts requested additional workshops.

In addition, Working Well has reached only a fraction of the private well owners in the province. With these prospects, and with a concerted effort to advertise and promote the program, there is an opportunity to reach a critical mass of well owners over the next three years.

Have an impact with well owners

According to evaluation results, the Working Well program is building understanding and influencing behaviour change. For example, nearly three quarters of all participants (98 per cent) indicated the Working Well workshop increased their understanding of well maintenance, monitoring and management. Almost all participants (99 per cent) agreed the workshop provided information that will be helpful in maintaining and managing their water wells.

Promising trends in behaviour change also emerged from follow-up phone calls with workshop participants. For example, since attending a workshop 28 per cent of participants with old unused wells on their properties have taken steps to have those old wells plugged, and 73 per cent of participants have inspected/looked at their well.

Be a strong platform for consistent, multi-sector education

The Government of Alberta has an ongoing role to ensure that Albertans are knowledgeable about groundwater issues and enhance their capacity to develop solutions.

The Working Well program is a collaborative effort involving provincial, federal and municipal government agencies and the water well drilling industry to provide Albertans common, consistent information and resources on groundwater and water wells.

Ensure information is being shared

In its three year history, an overwhelming number of workshop participants have indicated they have shared what they learned at the workshop (including information and resources) with others. People generally shared information with family and community members, colleagues, neighbours and friends.



Acknowledgements

Over the past three years, the Working Well program has addressed many challenges and realized several milestone achievements. Our ability to reach the levels of success we did was made possible through the collaboration among and continued support of partners who are committed to helping ensure safe, secure groundwater supplies for all Albertans.

The knowledge, expertise and dedication of the Steering and Technical Committees, delivery staff and workshop hosts has also been invaluable to the program, its growth and future direction. These people play a significant role in the achievement of Working Well's strategic goals. We thank them for their extra efforts and commitment to the program over the past three years.

Appendices

Appendix A:

Working Well Workshop Locations January 2008 to March 2011

Appendix B:

Working Well Information Resources

Appendix C:

Survey Instruments - Water Well Check-Up Survey

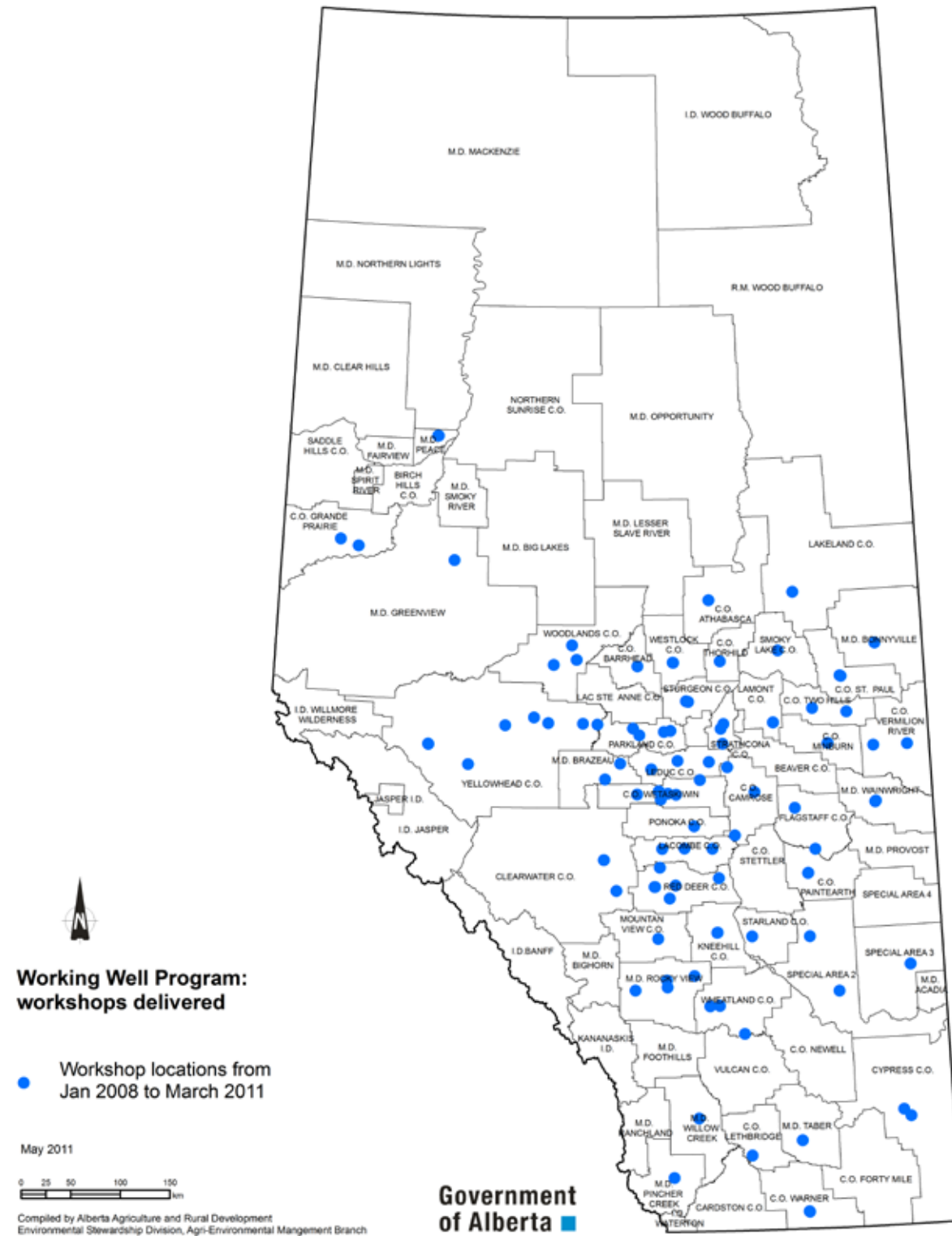
Appendix D:

Survey Instruments - Workshop Participant Survey

Appendix E:

Survey Instruments - Post Workshop Follow-up Survey

Appendix A: Working Well Workshop Locations



Appendix B: Working Well Information Resources

The following Working Well information resources are available online at: <http://environment.alberta.ca/02207.html>

Brochures

Working Well Program Brochure

Fact Sheets

- Issue 1 Ten Ways to Protect Your Well and Groundwater Supply
- Issue 2 Water Well Design and Construction
- Issue 3 Shock Chlorinating Your Well
- Issue 4 Plugging your Well
- Issue 5 Upgrading your Well in a Pit
- Issue 6 Over-pumping your Well
- Issue 7 Measuring Well Water Levels
- Issue 8 Well Owner Responsibilities
- Issue 9 Drilling a New Well
- Issue 10 Private Sewage Systems
- Issue 11 Gas in your Water Well

Miscellaneous

- Resource List
- Well Management Log Sheet
- Water Testing Log Sheet
- Working Well Poster

Appendix C: Survey Instruments

Water Well Check-Up Survey

Workshop Date:

Workshop Location:

Instructions: Please answer each question by completing the Before Workshop column.

	BEFORE WORKSHOP Date:			DO NOT COMPLETE For Admin Only Date:		
	Yes	No	Don't Know	Yes	No	Don't Know
1. Do you have driller's reports for your wells if yes, have you read and understood them?	Yes	No	Don't Know	Yes	No	Don't Know
2. Do you have any old, unused wells on your property? If yes, have they been properly plugged to protect the aquifer?	Yes	No	Don't Know	Yes	No	Don't Know
3. Are your wells located in a pit or in your basement?	Yes	No	Don't Know	Yes	No	Don't Know
4. Are your wells securely capped? Have you installed or considered installing special "vermin proof" well caps?	Yes	No	Don't Know	Yes	No	Don't Know
5. Is the ground around your well casing mounded to prevent water from pooling?	Yes	No	Don't Know	Yes	No	Don't Know
6. Do you keep records for your wells (water testing results, drillers report, well servicing or treatments)?	Yes	No		Yes	No	
7. Do you know the minimum legal setback distances between water wells and potential contamination sources, such as septic systems, fuel tanks, manure piles, and manure application areas? If yes, have you checked to ensure your wells are at least these distances from potential contaminants on your property?	Yes	No		Yes	No	
8. Do you know the recommended pumping rates for your wells? If yes, do you ever exceed these rates?	Yes	No		Yes	No	
	Yes	No	Don't Know	Yes	No	Don't Know

	BEFORE WORKSHOP Date:			DO NOT COMPLETE For Admin Only Date:		
	Yes	No	Don't Know	Yes	No	Don't Know
9. Have you had your well water tested for bacteria and mineral content in the last two years? If no, when was the last time you had it checked? (date/year)	Yes	No		Yes	No	
10. Do you have 'slime' build up in your toilet reservoir or livestock troughs?	Yes	No	Don't Know	Yes	No	Don't Know
11. Do you ever shock chlorinate your wells to disinfect them? If yes, how often?	Yes	No		Yes	No	
12. Do you use water directly from a hydrant to mix pesticides, fertilizers or other chemicals? If yes, do you use a backflow prevention device?	Yes	No		Yes	No	
13. Do you protect your groundwater by ensuring you don't over-apply manure, fertilizers, and pesticides to your land?	Yes	No	Don't Know	Yes	No	Don't Know

Can We Contact You Again?

We would like to contact you in approximately one to six month's time to ask you some questions and see how you are doing with your water wells, and help you with any questions or concerns you might have.

If you would like a follow-up phone call, please provide the following information:

Name: _____

Phone number: _____

Best time to call: (day or evening) _____

Appendix D: Survey Instruments

Workshop Participant Survey

Workshop Date: _____

Workshop Location: _____

Please complete survey and return to Lead Presenter before leaving the workshop.

1. To what degree did the workshop increase my understanding of how groundwater works?

Not at all Slightly Somewhat A great deal

2. To what degree did the workshop increase my understanding of how my well works?

Not at all Slightly Somewhat A great deal

3. To what degree did the workshop increase my understanding of driller's reports?

Not at all Slightly Somewhat A great deal

4. To what degree did the workshop increase my understanding of common well problems and contamination hazards?

Not at all Slightly Somewhat A great deal

5. To what degree did the workshop increase my understanding of well maintenance, monitoring and management?

Not at all Slightly Somewhat A great deal

6. This workshop has provided me with information that will be helpful in maintaining and managing my water well.

Strongly Disagree Disagree Agree Strongly Agree

7. As a result of this workshop I intend to do the following with respect to my water well: (please check all that apply)

Plug old unused wells on my property

Get rid of my well pit

Install a vermin-proof well cap

Ensure the ground around my well is mounded to prevent water from pooling

Keep records of water testing results, maintenance and treatments

Check to see my well is properly set back from contamination sources

Avoid over-pumping

Test my well water

Shock chlorinate

Use a backflow prevention device when drawing from a hydrant to mix chemicals

Avoid over-application of manure, fertilizers and pesticides to my land

Other (please explain) _____

8. One area I would like to learn more about is: (please check one)

How groundwater works

How my well works

Understanding driller's reports

Common well problems and contamination hazards

Well maintenance, monitoring and management

Other (please explain) _____

9. How would you improve the workshop?

10. What was most valuable about this workshop?

11. Additional comments:

Appendix E: Survey Instruments

Post Workshop Follow-up Survey

Participant Name:

Phone:

Date:

This past Fall/Winter/Spring you attended a Water Well Management Workshop in _____. We are following up with workshop participants that indicated we could contact them again. Can we take approximately 7-10 minutes of your time to ask you some follow up questions? If Yes: OK, let's begin...

If No: Is there another time that we can contact you?

1. Did you receive a drilling report for your well at the workshop?

Yes No

If Yes: Did you keep your drilling report?

Yes No Don't Know

If No: Did you contact Alberta Environment or your well driller for a copy?

Yes No Don't Know

- a. Did the exercise to draw your well help you to understand your drilling report?

Yes No

If Yes: What information on the drilling report did you find most helpful?

If No: How could we improve the exercise?

2. Do you have any old, unused wells on your property?

Yes No Don't Know

If Yes: Since attending the workshop have you taken steps to have old, unused wells plugged?

Yes No

If No: Why?

3. Since attending a Water Well Management Workshop, have you taken any water samples to the Health Unit to have your well water tested for bacteria and mineral content?

Yes No

If no: When was the last time you had your well water tested?

Date/Year Never

4. Have you checked (inspected/looked at) your well since the workshop?

Yes No

If Yes: Ask Q4 to Q6

If No: Jump to Q8

5. Since the Workshop, have you checked to ensure your well(s) is securely capped?

Yes No

If No: Why not?

6. Since the Workshop, have you installed or considered installing a "vermin proof" well cap?

Yes No Don't Know

If No: Why not?

7. Since attending the workshop, have you checked to see if the ground around your well casing is properly mounded to prevent surface water from pooling around the casing?

Yes No Don't know

If No: Why not?

8. At the workshop, keeping well records (for example: water testing results, driller's report, well servicing or treatments) was recommended. Do you keep records for your well?

Yes No

If No: Why not?

9. At the workshop, presenters discussed minimum legal setback distances between water wells and potential contamination sources, such as septic systems, fuel tanks, manure piles, and manure application areas. Since the workshop, have you checked to see if your well is at least these distances?

Yes No

If No: Why not?

10. Have you ever shock chlorinated your well(s) to disinfect them?

Yes No Don't Know

If Yes: How often?

Once per year Two or more times per year

If No: Since attending the workshop do you plan on shock chlorinating your well?

Yes No Don't Know

If Yes: When?

0-6 months from now 6-12 months from now 1 or more years from now

11. Have you ever used water directly from a hydrant to mix pesticides, fertilizers or other chemicals?

Yes No N/A

If Yes: Do you use a backflow prevention device?

Yes No Don't know

If No: Why not?

12. Would you recommend that others attend a Water Well Management Workshop (i.e. friends/family/neighbours)?

Yes No Don't Know

If No: Why not?

13. Since the workshop, have you done anything else to maintain your water well that we haven't captured in the above questions?

14. Have you shared what you learned at the workshop with others? i.e. family, friends, neighbors?

Yes No

15. Do you have any final comments or questions you'd like to share about the Water Well Management Workshop?

October 2011

ISBN: 978-0-7785-9536-6 (Printed)

ISBN: 978-0-7785-9537-3 (On-line)

Connect with Working Well at:

Email: aenv.workingwell@gov.ab.ca

Web: www.environment.alberta.ca/01317.html

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