

March 15, 2006

Mr. Mike Bolch  
Operations Manager  
Powell River Regional District  
5776 Marine Avenue  
Powell River, BC  
V8A 2M4

Dear Mr. Bolch:

**RE: SOUTHERN REGION WATER SUPPLY STUDY – Phase 1**  
**Presentation of Results – FINAL REPORT**  
**Our File 355.004**

---

We are pleased to submit this report to the Powell River Regional District to present our findings for the *Southern Region Water Supply Study - Phase 1*. This Phase 1 investigation is a preliminary study to our April 20, 2005 proposal for updating the *Southern Region Water Resource Study* compiled in 1989. The intent of this study is to document key water supply and water quality issues that exist for homeowners with individual wells in the southern region.

Presently the PRRD is relying on limited technical information and many subjective reports from residents pertaining to select areas of the southern region. Without a full understanding of the problems, the District cannot decide what action it can or should take. The Regional District requested to undertake this study to understand what and where the problems exist so that they can identify the best approach for resolving them in a systematic, cost-effective manner.

The original proposed work program presented to the Regional District at the July 21, 2005 Board meeting was revised to include the collection and evaluation of water samples. In addition, the emphasis on Community Water Systems was removed and the additional effort was to be expended on investigation of individual wells located in the Southern Region.

Subsequent to the Board meeting, a significant modification to the original KWL work program was the addition of a mailed survey to all residents of the Southern Region. A survey form was compiled and revised based on discussion and review with the Regional District. The Regional District mailed the survey form to all of the homes of the Southern Region.

The KWL work program was modified to accommodate the manual entry of returned survey forms into a spreadsheet database. The survey has provided significantly more information than originally expected with approximately 570 data line entries in the final database summarizing responses to key questions. The Regional District indicated that there are approximately 1800 homes in the Southern Region.

Ms. Laura Weston (KWL) undertook the fieldwork for this investigation during the month of August 2005. Field data and reporting has been completed during September and October as per the original proposed schedule.

## 1. Background

In 1989, Kerr Wood Leidal prepared the *Southern Region Water Resource Study* for the Powell River Regional District. The report included:

- discussion of planning parameters;
- discussion of regional water supply requirements;
- review and assessment of the existing water works systems in the Regional District;
- assessment of potential water supply sources; and
- preparation of a 'Master Plan' for long-term water supply and distribution.

The Regional District desired an update to the 1989 study to reflect changes in the regulatory requirements, water treatment and technology, and in the existing water utilities since the original study was prepared. However, prior to updating this 1989 study, the District requested more information to justify the need for the re-evaluation of this study.

More specifically, before deciding whether or how to proceed with respect to supplying water, the Regional District requested more information on existing and anticipated water problems in the study area. The objective of this study is to determine not only **what** the problems are but also **where** they are located.

## 2. Resources and Reference Material

A number of resources were used to collect information and evaluate for inclusion into this report. The attached Table 1 provides a summary of the key resource documents and references that were used as part of the investigation. Several of the resource drawings are old and contain duplicate information. Considerable effort was made to remove duplicate information but given the format and content of the resource material, complete removal cannot be assured.

The information collected for the 2005 survey is compiled on a southern region base map drawing provided by the District (Drawing No. 1A and 1B). Also on a separate base map drawing (Drawing 2A and 2B), information from older resource materials compiled by others has been located approximately; however, the accuracy of this information and its location cannot be assured. For clarity, the 2005 well survey information along with information from the BC Water Atlas (Ministry of Environment) is shown on reduced size drawings attached to this report as Figures 1 to 10. The larger base plan drawings are provided separate from this report.

### 3. Survey Results

The summary of results to all of the surveys received are shown in the attached Table 2. Based on discussion with the Regional District, the study area was divided into local areas that generally are arranged on a geographical basis to focus on homes located between the larger existing community water systems. These areas are highlighted on the drawings provided with this report (Figures 1-10). There are a total of eight study areas as shown on Figure 1. However, the majority of survey responses for the non-community water systems were from Areas 1 to 6, which includes the area from the municipal boundary to the Lang Bay community water system.

A total of 404 survey responses were returned for non-community water systems. The responses from each of the areas for these water systems are as follows:

- Area 1: 17 %
- Area 2: 12 %
- Area 3: 17 %
- Area 4: 16 %
- Area 5: 12 %
- Area 6: 21 %
- Area 7: 2 %
- Area 8: 3 %

There were also 174 responses from users of community water systems. The breakdowns of these are as follows:

- Brew Bay: 13 %
- Lang Bay: 43 %
- Myrtle Pond: 8 %
- Pine Tree: 7 %
- Stella Maris (Centennial Drive Water Users): 6 %
- Stillwater: 18 %
- Woodlynn: 5 %

Based on all 578 survey results, each of the types of water sources are outlined as follows:

- Dug wells: 33 %
- Drilled deep wells: 28 %
- Drilled shallow wells: 4 %
- Community systems: 30 %
- No response: 5%

The presentation provided in Appendix A provides a graphical summary of all key survey data, including details not discussed in the text of this report. Slides 1 to 9 provide data on the overall survey results. The two key questions from the survey are:

- Does your water meet health standards?
- Does your water source and system provide you with enough water to meet all domestic needs?

The responses to these two questions are shown below in Table 3 for the entire southern region and separated for each type of water source. As noted, on average 55 percent of wells were stated to meet current health standards and approximately 77 percent of wells supplied sufficient quantity of water for domestic purposes.

**Table 3: Summary of Key Results**

Water Source	Dug Wells		Drilled Wells				All Wells		Community Sys		No Response	
			Deep		Shallow							
		%		%		%		%		%		%
1) Meets Health Stds?												
Yes	96	51	97	61	15	58	208	55	84	48	4	14
No	23	12	14	9	1	4	38	10	31	18	2	7
Don't Know	61	32	35	22	8	31	104	28	39	22	4	14
No response	10	5	13	8	2	8	25	7	20	11	19	66
Total	190		159		26		375		174		29	
2) Enough water?												
Yes	147	77	127	80	15	58	289	77	138	79	8	28
No	37	19	22	14	10	38	69	18	23	13	3	10
No response	6	3	10	6	1	4	17	5	13	7	18	62
Total	190		159		26		375		174		29	

O:\0300-0399\355-004\400-Work\Survey\_Results-Sept\_26\_2005\_Rev8.xls\Rpt\_Sum\_Table

The detail results for the southern region are summarized on slides 10 to 18 of the presentation to the Regional District (Appendix A). This presentation includes numerous charts showing the breakdown of results for the each local area highlighted in the attached Figures. Slides 19 to 34 summarize the response to the following survey questions based on the type of water source (i.e dug well, drilled well, etc...):

- Does your water meet health standards?
- Does your water have other non-health related water quality problems?
- Does your water source and system provide you with enough water to meet all domestic needs?

Appendix B contains a summary of the raw data compiled for this study.

#### 4. Groundwater Quality Sampling

Several water samples were collected as part of the revised scope of work. A list of potential sample locations were discussed and reviewed based on a combination of several criteria including the following:

- geographical location;
- water meets health standards;
- higher well yield (generally, 0.6 to 1.9 L/s {10-30 USgpm});
- potential development as local community supply; and
- type of water source.

Generally the focus was to sample groundwater and not any source that would be considered under direct surface water influence. The preliminary list was reviewed with the Regional District and confirmed prior to proceeding with collection of the water samples. Actual locations sampled were a sub-set of the approved list depending on owner approval for collection of samples and access. As approved by the Regional District, each well owner was advised that they would be provided with a copy of the sample results for their well.

The water quality results are summarized in the attached Table 4. In general, the only noted parameters of concern are manganese and to a lesser extent, total iron. The iron and manganese is likely the source of turbidity and colour at three of the sampled locations where these parameters were elevated. These results are consistent with other communities as iron and manganese are typically the most common aesthetic concern with most groundwater sources. There also was no definitive pattern to the presence of these two parameters making it impractical to attempt to predict where they may or may not be present.

It is also noted that the sample from Alta Vista Road in Area 3 showed a Total Organic Carbon (TOC) level of 2.51 mg/L, which is higher than all of the other locations. Although the TOC is not a health related parameter, the level present at this location is sufficiently high that any consideration for developing community wells in this area may need to evaluate Trihalomethane (THM) Formation Potential. THM formation is a long-term health parameter in the Guidelines for Canadian Drinking Water Quality. However, THMs only form when water that is elevated in TOC is disinfected with a chlorine based disinfectant. In evaluating THMs, one must never compromise the disinfection of water since lack of disinfection may result in a severe immediate health risks whereas THMs are a long-term risk over a lifetime period (70 years).

## **5. Summary**

The results for the two key questions for the southern region can be summarized as follows:

- 55 percent of all respondents with wells have water that meets health standards; and
- 77 percent of all respondents with wells have sufficient water quantity.

Based on the above, although there may be localized concerns with the quantity of well water from individual wells, there is generally a majority overall satisfaction with adequacy of supply. From a public health perspective and regional perspective, the number of opinions expressed by residents that cannot confirm that their well water meets health standards is a significant concern.

Although there is no regulatory requirement that governs individual wells, community water systems (greater than one connection) are required to meet legislated standards. The existence of many individual wells that may not meet health standards is typically the initiating point for consolidation of these systems and the creation of larger local water systems. These results need to be discussed and reviewed with the local Health Authority and in particular the Drinking Water Officer for the area.

## **6. Regional Water Supply Discussion**

Based on the survey results, approximately 23 percent of the survey respondents indicated that they have insufficient water supply to meet their needs 45 percent of respondents have water that does not meet health standards or they do not know if their water meets the health standards. Potential solutions to address these concerns are as follows:

- expansion of existing community water systems;
- location of existing or new wells with sufficient capacity to supply new community water systems or supplement existing water systems; and
- expansion of the Powell River municipal water system.

The study areas were selected based on the location of existing community water systems. In order to service long term needs that address water quality and water supply issues, it is envisioned that several of these water systems could reasonably be expanded to include additional homes. These community water systems could be operated locally by the owner of the water system or alternatively, transferred to the PRRD for oversight of management and operation.

It is anticipated that most development will occur along the Highway 101 corridor with a greater population density along this route than in other areas of the southern region. Obvious candidates for community water system expansions would be those water systems adjacent to each other. Some examples are noted as follows:

- Myrtle Pond, Oceanside RV Park and Stella Maris;
- Woodlynn and Pinetree Place;

Those community water systems that may be candidates for operation and oversight by the PRRD should be assessed to determine compliance with the Drinking Water Protection Act and Drinking Water Regulation. The same assessment could also include a preliminary evaluation of the ability for expansion of the community water system.

The details and costs associated with the above options can be further evaluated in Phase II of the PRRD work program, which will update the *Southern Region Water Resource Study* that was compiled in 1989. Given the majority of residents live in the area between the existing

Mr. Mike Bolch  
March 15, 2006

---

municipal boundary and the Lang Bay area, further studies and investigations should be focused on this area.

Investigation and assessment of the existing community water systems may be eligible for planning grants available from the province. The grants are typically not available for private water systems so this would only include the water systems owned by the PRRD.

We trust the above report and enclosed information will provide the Regional District with sufficient information to proceed with completion of Phase 2 (updating the 1989 Study) in order to facilitate long term planning issues for the southern region.

Yours truly,

**KERR WOOD LEIDAL ASSOCIATES LTD.**

*Original Signed*

Irfan Gehlen, P.Eng.  
Project Manager

IG/ig  
Encl.

O:\0300-0399\355-004\300-Report\Final\_Letter\_Rpt-2006\_03\_15-Ver2.doc

**PRRD Well Information Survey**

19-Oct-05

**Table 1: Summary of Wells located in Southern Region**

Source	Total Number of Wells	Individual Wells (1 connection)	Community Wells (2+ connections)	Number of Duplicate Wells	Mapped Wells
1995 Arsenic Study <sup>(1,6)</sup>	178	172	6	-	-
Undated PRRD Map	189	189	0	145	44
1970/71 Provincial Map <sup>(4)</sup>	257	257			257
2000 Arsenic Study <sup>(2,6)</sup>	12	-	-	-	-
2001 BC Water Resource Atlas <sup>(5)</sup>	333	89	2	0	91
Coast Garibaldi Health Authority <sup>(3)</sup>	42	0	42 <sup>(4)</sup>	0	6
Survey <sup>(8)</sup>	272	272			272

O:\0300-0399\355-004\400-Work\Wells\[Mapped\_Wells-2005\_10\_19.xls]Summary of Wells

670

**Notes:**

1. Carmichael, Vicki, Len Clarkson, and Lee Ringham, 1995. Well water survey for arsenic in the Powell River and Sunshine Coast communities of BC. Gibsons, BC: Coast Garibaldi Community Health Services Society.
2. Mattu, Gevan and Hans Schreier, 2000. An investigation of high arsenic levels in wells in the Sunshine Coast and Powell River regions of BC. Vancouver, BC: Institute for Resources and Environment UBC.
3. Dan Glover, EHO - Powell River (604) 485-8860.
4. Province of BC, Department of Lands, Forests, and Water Resources, 1970/1970. Water Well Location Map New Westminster District 38. Victoria, BC.
5. BC Water Resource Atlas, 2001. Province of British Columbia, <http://srmapps.gov.bc.ca/apps/wrbc>. Accessed August, 2005.
6. Well locations were given by district lot and are not precise enough for KWL mapping.
7. 23 of the 42 community wells have fewer than 5 connections.
8. Total survey responses = 578, of which 132 did not provide location info and approx 174 were community water systems



Powell River Regional District  
Table 2: Summary of Well Survey Results

September 26, 2005  
KWL File 355.004

#	Question	Responses	Result	Percent of Total in Area
-	Total number of survey responses	-	578	-
1	Did you complete the Water Quality & Supply Survey in the June 9, 2005 issue of the Powell River Peak?	Yes	70	12%
		No	414	72%
		No response	94	16%
2	From what source do you obtain your domestic water (drinking and household use)?	Dug wells	190	33%
		Drilled deep wells	159	28%
		Drilled shallow wells	26	4%
		Community system	174	30%
		No response	29	5%
3	If you have a drilled well, do you have a well log?	Yes	22	4%
		No	199	34%
		No response	357	62%
	Willing to share records?	Yes	24	4%
		No	3	1%
		No response	551	95%
4	If you know, what is your wells pumping rate (USgpm)?	0 to 5	38	7%
		5 to 10	24	4%
		10 to 20	15	3%
		20 +	10	2%
		No response	491	85%
5	Do you know the approximate age of your well?	0 to 10	59	10%
		10 to 20	81	14%
		20 to 50	117	20%
		50+	3	1%
		No response	318	55%
6	Does any other household(s) use your water source?	Yes	152	26%
		No	152	26%
		No response	274	47%
7	Has your domestic water ever been tested for water quality?	Yes	415	72%
		No	73	13%
		No response	90	16%
	Willing to share records?	Yes	3	1%
		No	3	1%
		No response	572	99%
8	Does your water meet Health standards?	Yes	296	51%
		No	71	12%
		Don't know	147	25%
		No response	64	11%
9	Are there other water quality concerns?	Yes	188	33%
		No	293	51%
		Don't know	23	4%
		No response	74	13%
10	Is your water treated?	Yes	138	24%
		No	338	58%
		No response	102	18%
10	Type of treatment	Bacteria	79	48%
		Iron	39	23%
		Manganese	15	9%
		Arsenic	9	5%
		Odour	24	14%
		Other	0	0%
11	Do you regularly purchase bottled water?	Yes	190	33%
		No	318	55%
		No response	70	12%
12	Does your water source and system provide you with enough water to meet all your needs?	Yes	435	75%
		No	95	16%
		No response	48	8%
13	How many people live in your household?	1	68	12%
		2	273	47%
		3	66	11%
		4	47	8%
		5	31	5%
		6	9	2%
		7+	5	1%
		No response	79	14%

Table 4: PRRD Southern Region Well Water Quality

Sample Location: (Note 3)		W1 (2)	W2 (2)	W3 (1)	W4 (3)	W5 (3)	W6 (4)	W7 (4)	W8 (6)	W9 (6)	W10 (6)	W11 (1)	W12 (3)	W13 (1)	W14 (4)	W15 (7)	GCDWQ
Road Name:		Traff	Traff	Padgett	Armour	Hwy 101	Whalen	Stitttle	Victory	View	Douglas	Padgett	Alta Vista	Regal	Gela	Berger	
Well Type		Drilled	Drilled	Drilled	Dug Well	Drilled	Drilled	Dug Well	Drilled	Drilled	Dug Well	Drilled	Drilled	Drilled	Drilled	Drilled	
Sample Date:		30-Aug-05	30-Aug-05	30-Aug-05	30-Aug-05	30-Aug-05	30-Aug-05	30-Aug-05	30-Aug-05	30-Aug-05	30-Aug-05	30-Aug-05	30-Aug-05	31-Aug-05	31-Aug-05	31-Aug-05	
<b>Physical Tests</b>																	
Colour (CU)		<5.0	12.2	9.1	<5.0	<5.0	7.6	<5.0	5.0	<5.0	<5.0	<5.0	16.7	<5.0	<5.0	<5.0	15
Conductivity ( $\mu$ ohms/cm)		173	193	113	186	129	154	191	129	153	168	146	356	143	169	163	-
Total Dissolved Solids (mg/L)		108	120	74	109	89	87	101	65	77	93	78	231	85	97	99	500
Hardness	CaCO <sub>3</sub>	59.2	53.6	40.0	58.2	43.1	53.9	62.2	43.6	49.6	27.5	55.0	36.2	44.7	62.3	62.2	-
pH		8.21	8.11	7.95	7.31	7.58	7.97	7.49	8.01	8.03	7.15	8.00	8.27	7.85	7.77	7.67	6.5 - 8.5
Turbidity (NTU)		0.17	0.68	0.73	0.13	0.20	0.53	0.11	0.16	0.18	0.34	2.75	0.25	0.59	8.89	0.17	1
UV Absorbance		0.0190	0.0620	0.0410	0.0410	0.0070	0.0320	0.0360	0.0320	0.0110	0.0180	0.0220	0.0870	0.0150	0.0050	0.0060	-
UV Transmittance	%	96	87	91	91	98	93	92	93	97	96	95	82	97	99	99	-
<b>Dissolved Anions (mg/L)</b>																	
Alkalinity - Total	as CaCO <sub>3</sub>	84.4	95.0	58.1	73.7	49.9	75.6	68.5	63.1	68.9	14.0	76.1	122	72.3	70.9	74.3	-
Chloride	Cl	6.99	7.13	2.96	12.3	8.92	6.68	16.4	5.16	8.09	34.6	4.80	43.5	3.54	9.08	11.1	250
Fluoride	F	0.041	0.087	<0.020	<0.020	<0.020	0.053	<0.020	0.082	0.022	<0.020	0.039	0.152	0.098	<0.020	<0.020	1.5
Sulphate	SO <sub>4</sub>	0.72	<0.50	<0.50	3.60	2.24	2.33	3.88	<0.50	2.33	8.08	0.95	<0.50	<0.50	3.18	1.61	500
<b>Nutrients (mg/L)</b>																	
Nitrate Nitrogen	N	<0.10	<0.10	<0.10	1.17	0.75	<0.10	1.15	<0.10	<0.10	0.52	<0.10	<0.10	<0.10	0.36	0.37	10
Nitrite Nitrogen	N	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	1
<b>Total Metals (mg/L)</b>																	
Aluminum	Al	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.019	<0.010	<0.010	0.013	<0.010	<0.010	-
Antimony	Sb	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	-
Arsenic (see Note 2)	As	<0.00010	0.00011	0.00395	0.00018	0.00016	0.00012	0.00044	0.00019	0.00141	<0.00010	<0.00010	0.00012	0.00076	0.00054	0.00024	0.005
Barium	Ba	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	1
Boron	B	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	5.0
Cadmium	Cd	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.005
Calcium	Ca	15.3	13.3	11.3	14.7	11.4	13.0	16.7	11.7	13.6	7.11	14.5	8.27	11.5	17.0	18.1	-
Chromium	Cr	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.1
Copper	Cu	<0.0010	0.0013	<0.0010	0.628	0.0490	<0.0010	0.585	<0.0010	<0.0010	0.0362	<0.0010	0.0015	0.0034	0.0032	0.122	1.0
Iron	Fe	0.050	0.534	0.462	<0.030	<0.030	0.412	<0.030	0.129	0.069	0.071	0.443	<0.030	<0.030	2.61	<0.030	0.3
Lead	Pb	<0.0010	<0.0010	<0.0010	0.0035	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.01
Magnesium	Mg	5.10	4.97	2.85	5.24	3.57	5.23	4.98	3.49	3.78	2.38	4.58	3.77	3.89	4.85	4.14	-
Manganese	Mn	0.0399	0.0898	0.217	<0.0020	0.0044	0.0806	<0.0020	0.148	0.0171	0.0043	0.0753	0.129	0.835	0.0243	<0.0020	0.05
Mercury	Hg	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.001
Potassium	K	2.15	2.27	1.50	1.32	0.76	1.50	1.27	1.61	2.07	1.39	1.65	6.36	1.57	1.47	2.03	-
Selenium	Se	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.01
Sodium	Na	11.2	19.8	5.7	13.3	9.1	10.3	13.2	9.4	12.3	20.1	8.4	59.1	12.9	10.8	7.3	200
Uranium	U	<0.00010	<0.00010	<0.00010	0.00012	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.02
Zinc	Zn	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	-
<b>Organic Parameters</b>																	
Total Organic Carbon	C	0.81	1.24	0.99	0.66	0.51	0.66	1.00	1.08	0.87	1.39	0.71	2.51	0.75	0.74	<0.50	-

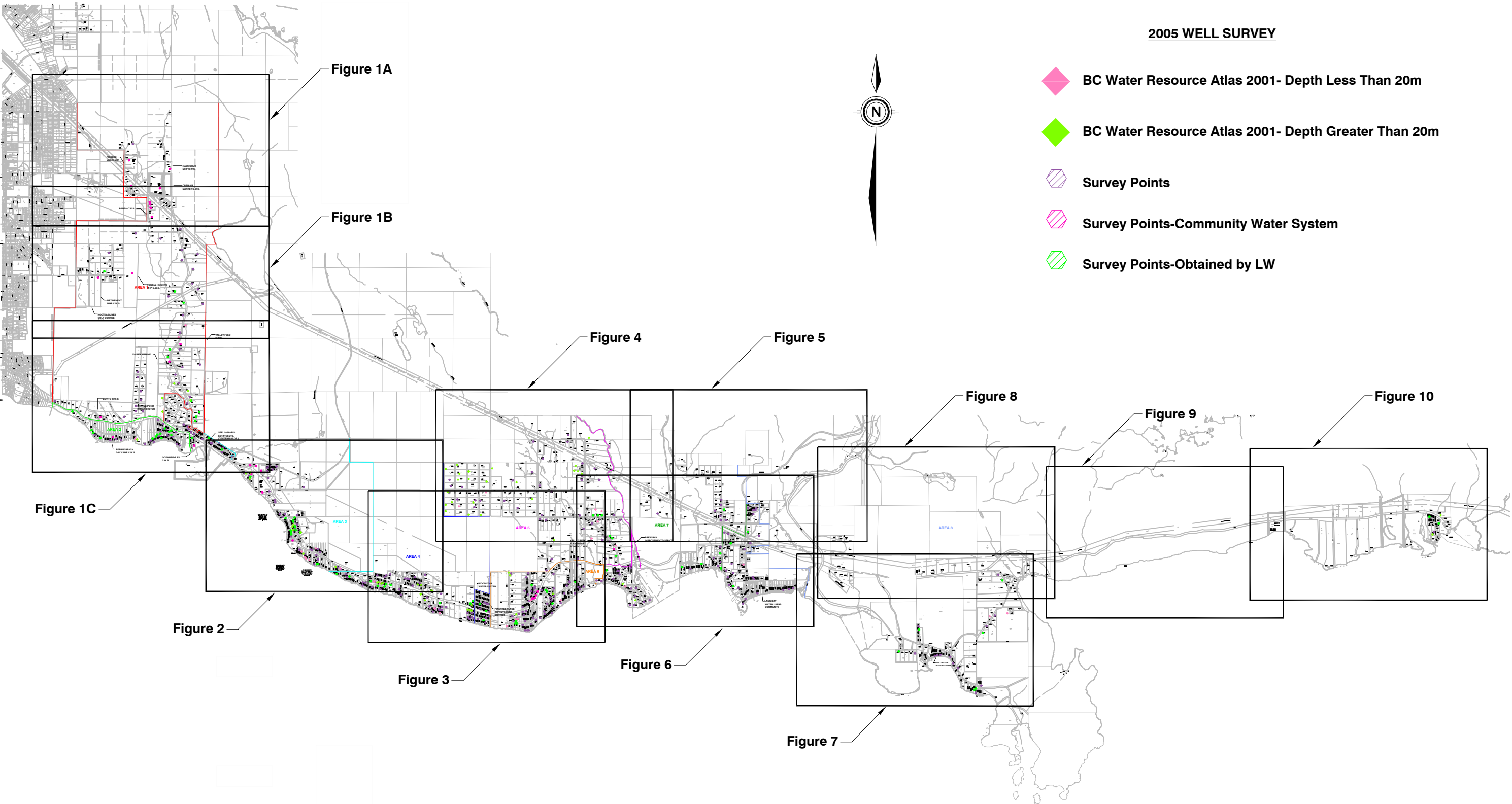
Notes: 1) Miscellaneous: Parameters above the Guidelines for Canadian Drinking Water Quality (GCDWQ) are shown bold and highlighted.

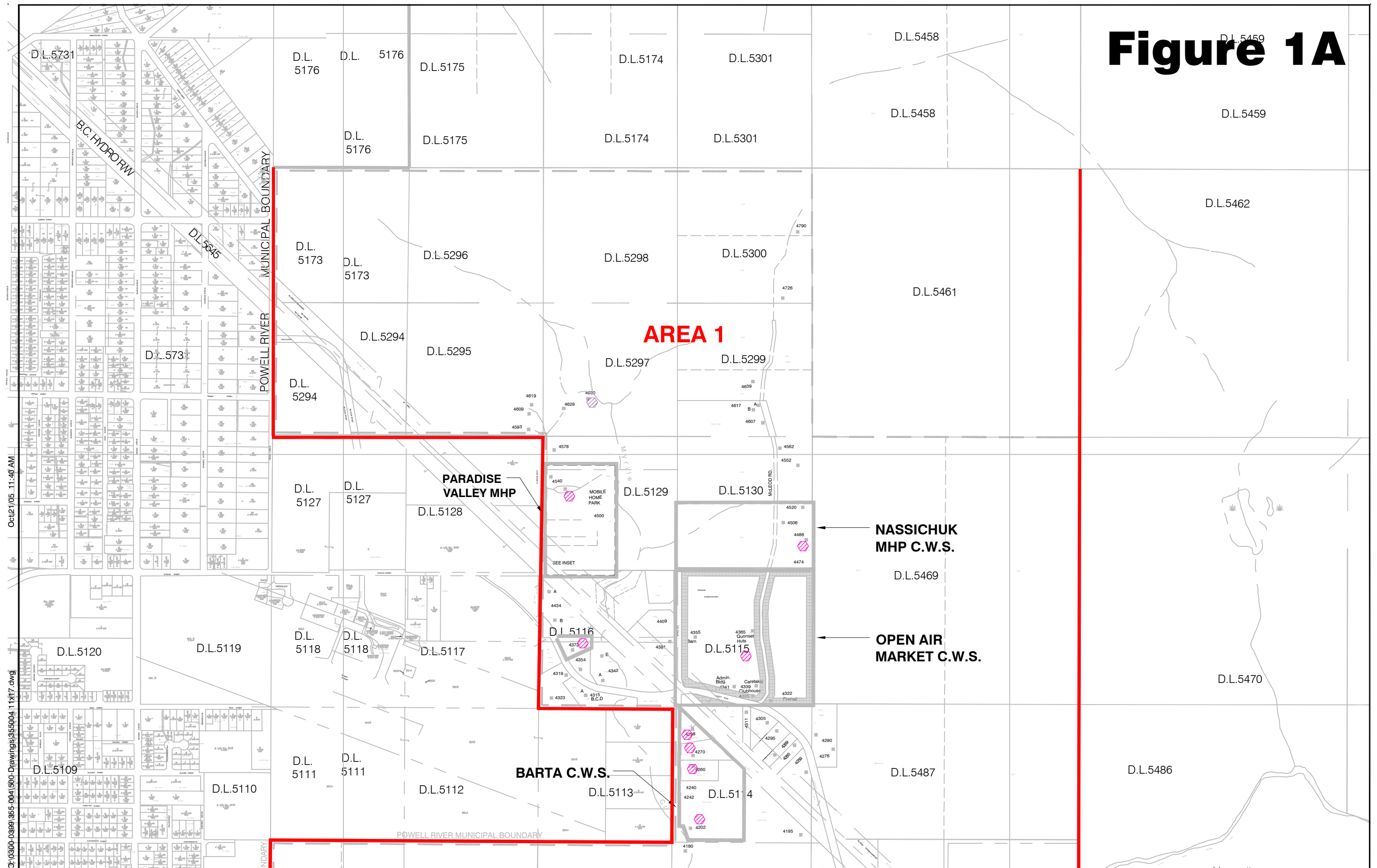
2) Current Proposed Health Canada Drinking Water Guideline for Arsenic is 0.005 mg/L (Actual Interim Guideline level is 0.025 mg/L)

3) Number in brackets refers to the Local Area as designated for this study (ie. 2 = Area 2)

4) UV transmittance is calculated from UV absorbance

2005 WELL SURVEY

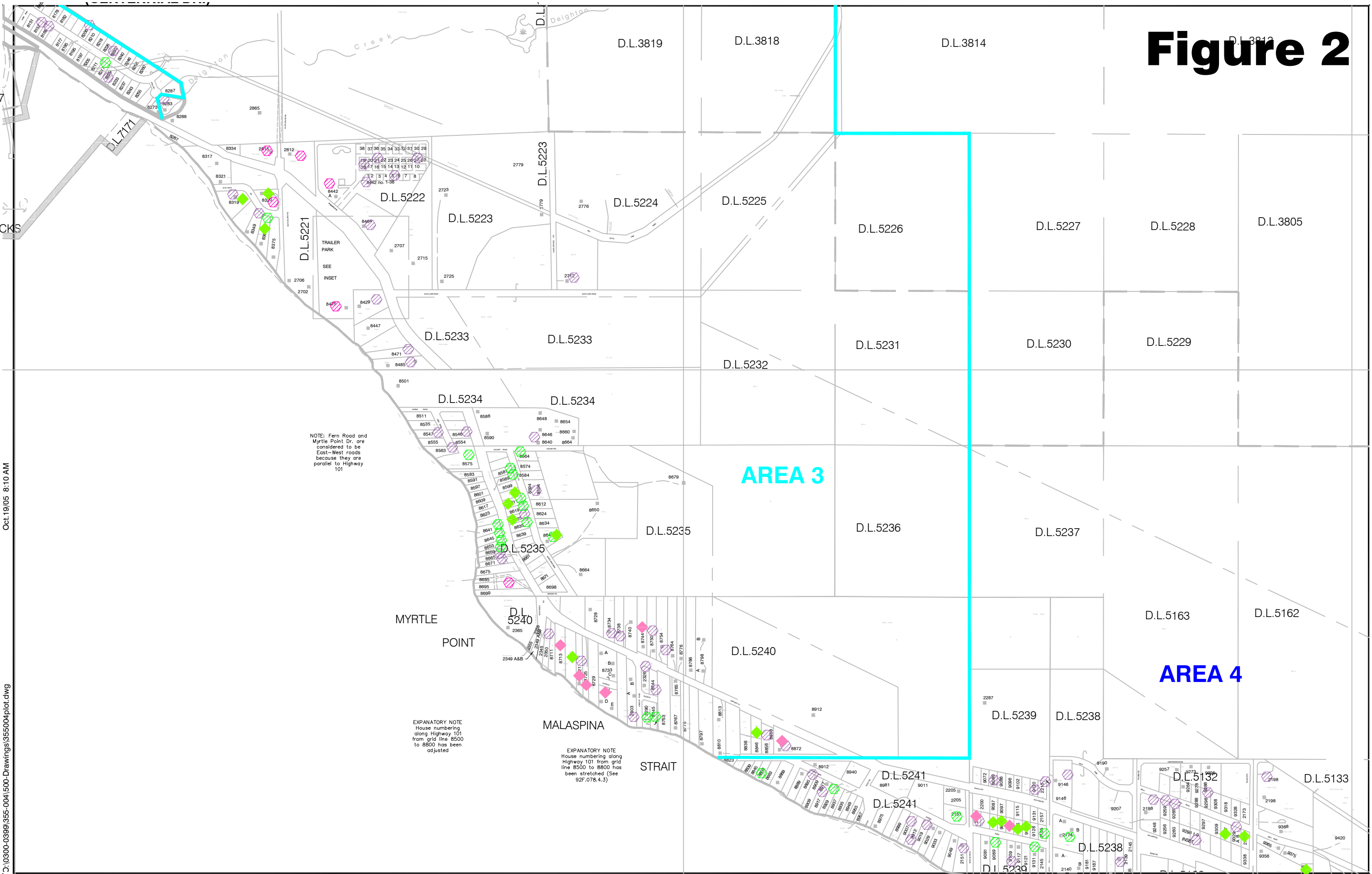






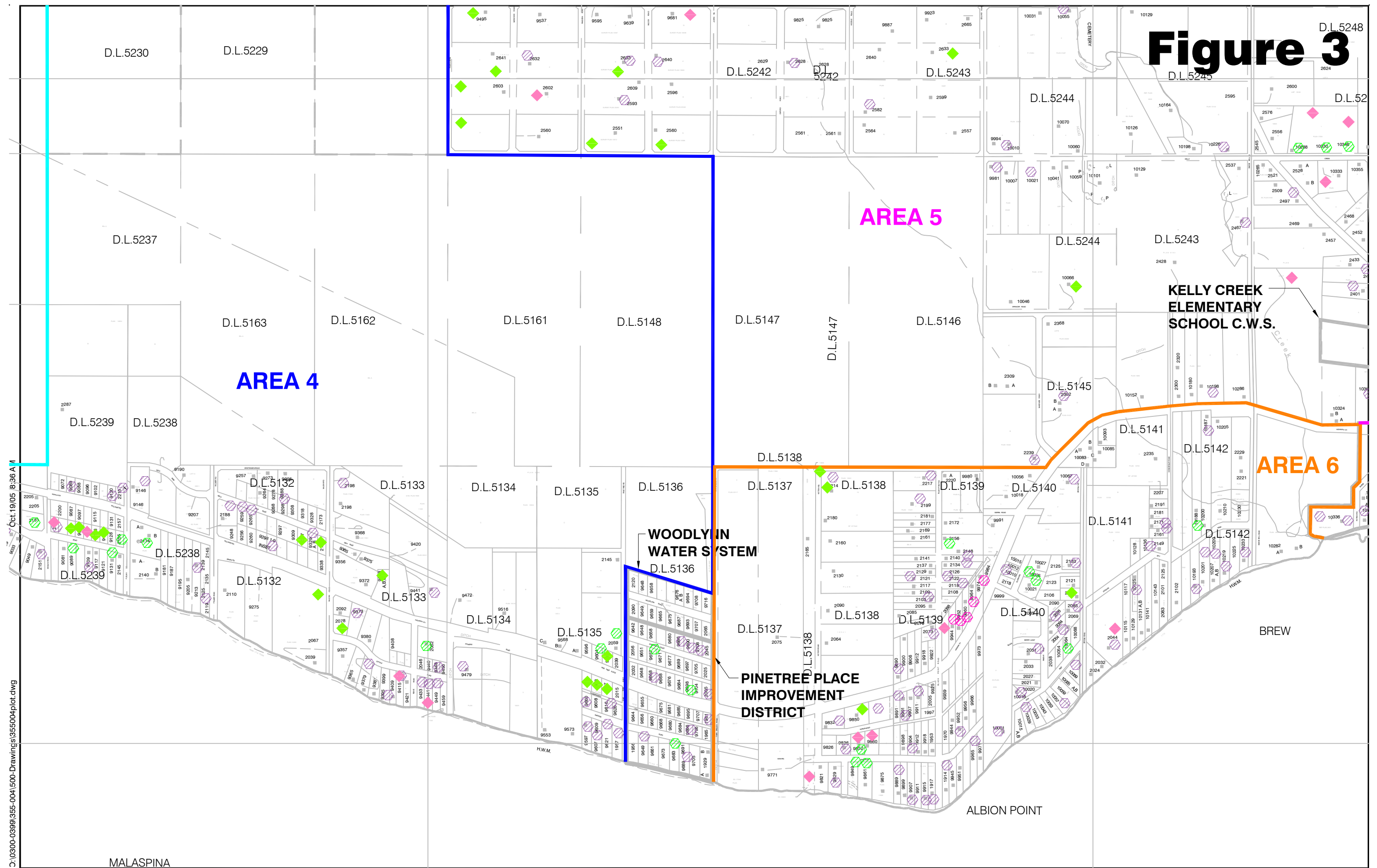






Oct.19/05 8:10 AM

C:\0300-0399\355-004\500-Drawings\3550004\plot.dwg





1

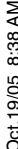


Figure 5

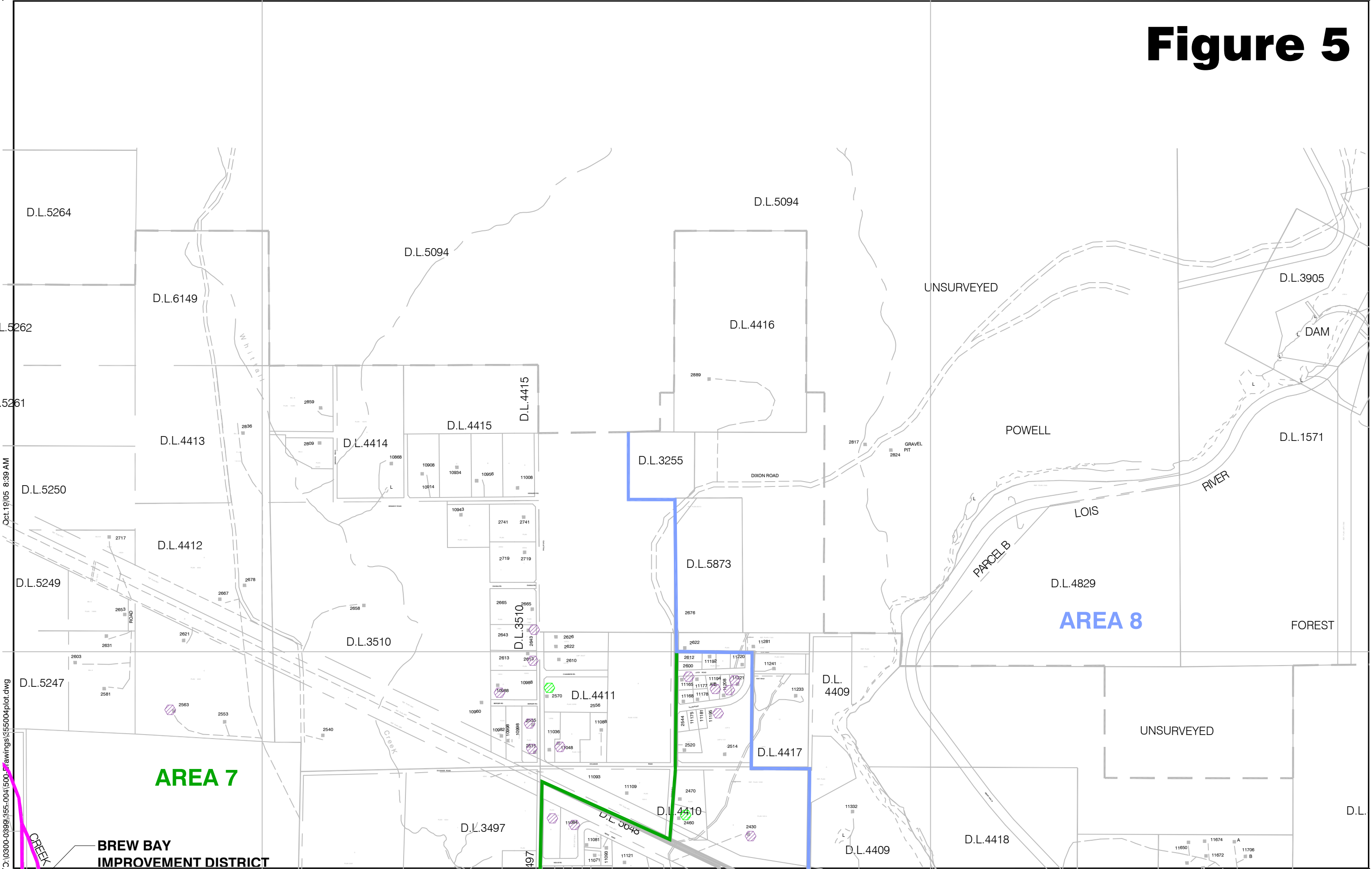
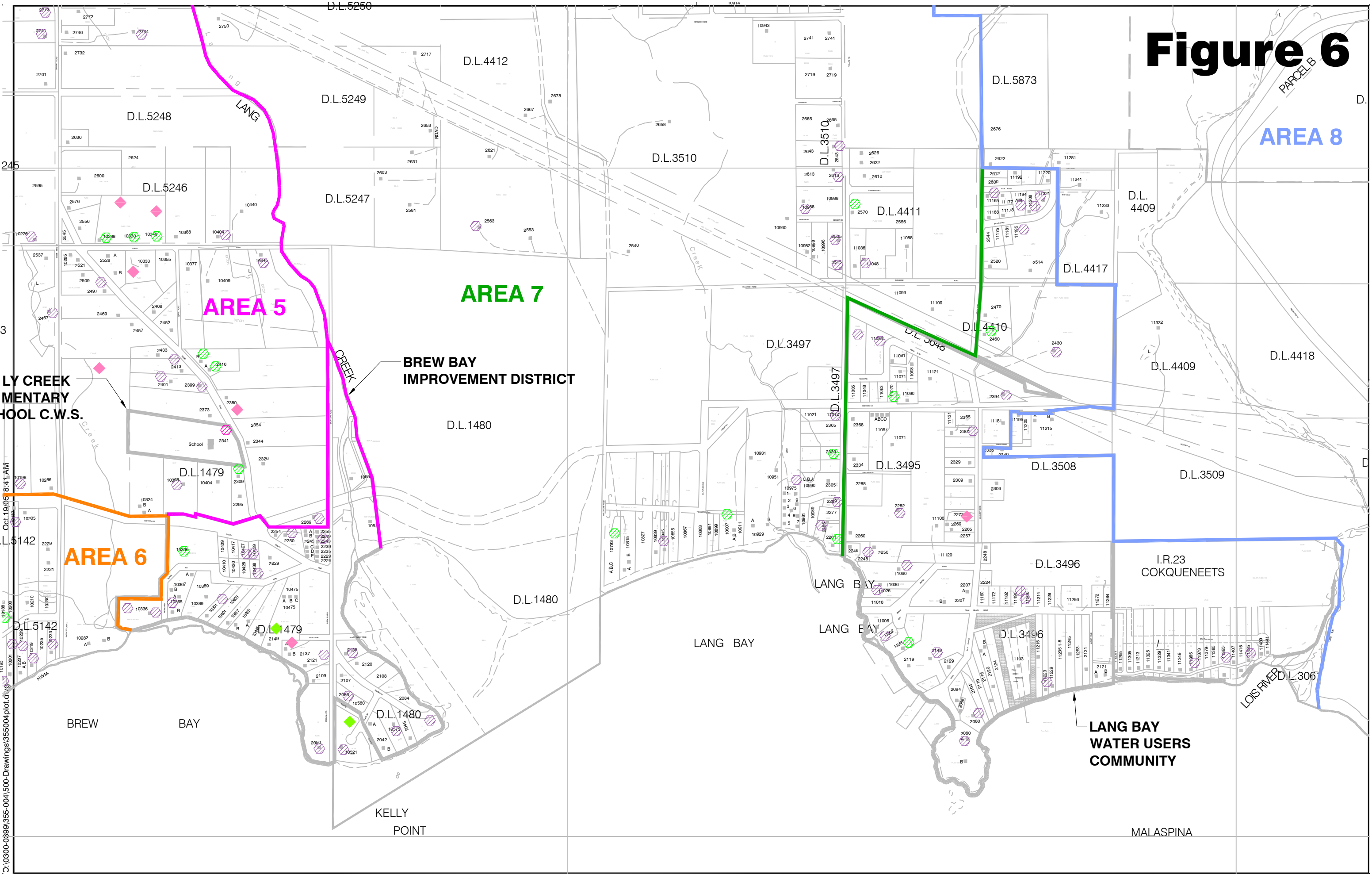


Figure 6



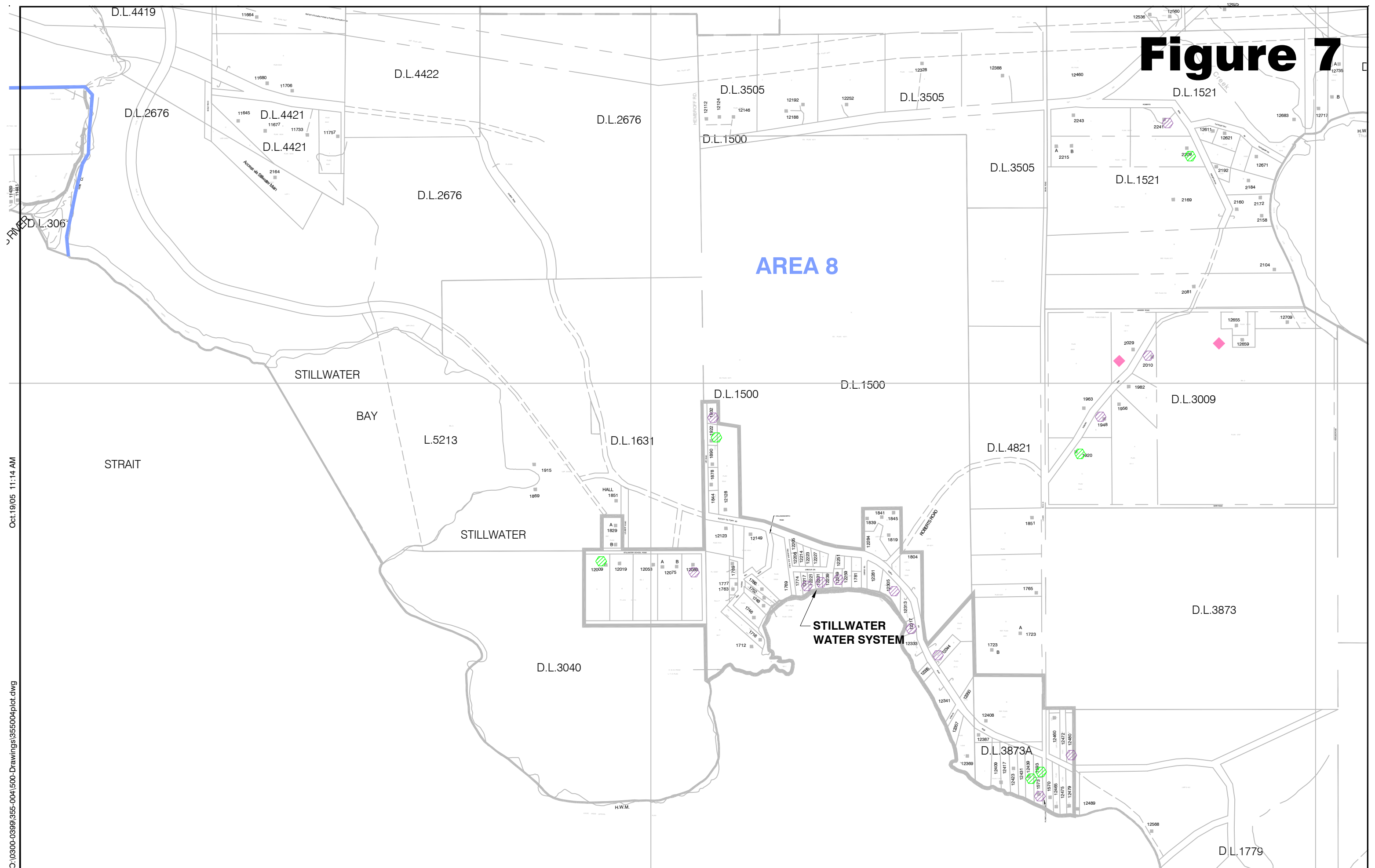
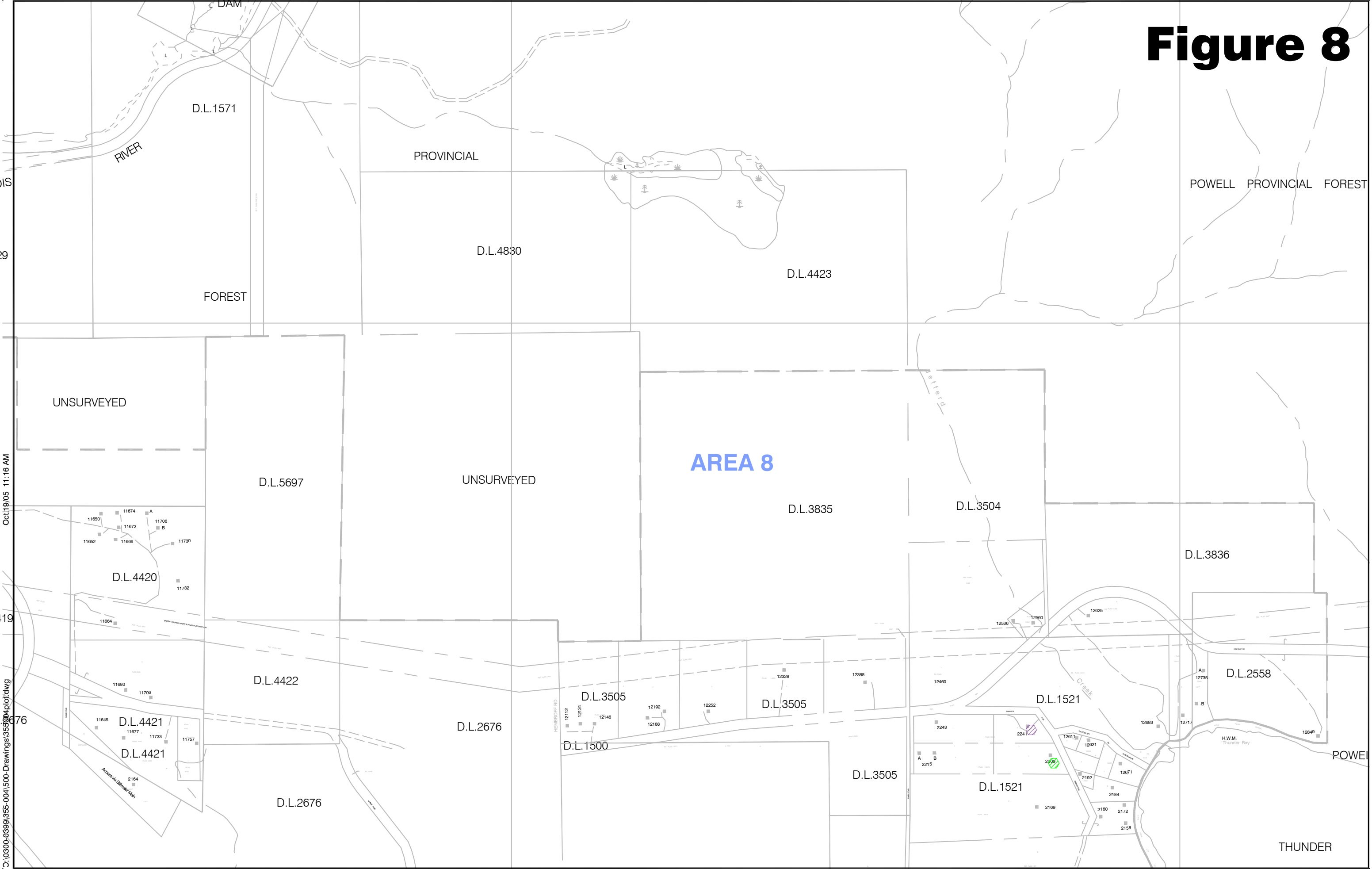


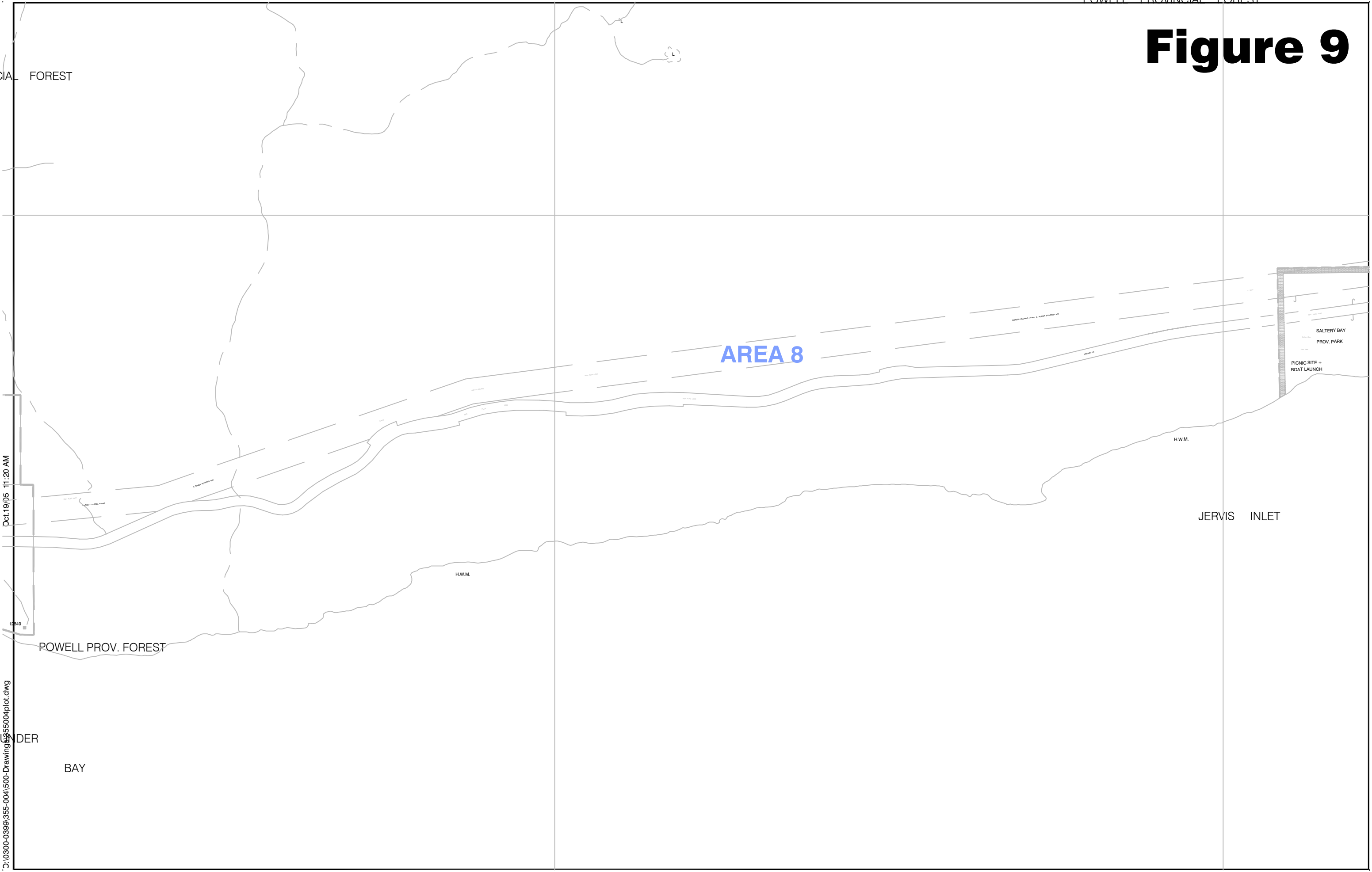


Figure 8



C:\0300-0399\355-004\500-Drawings\355004plot.dwg  
19  
876  
Oct:19/05 11:16 AM

Figure 9



## Figure 10

VINCIAL FOREST



Oct.19/05 11:21 AM

H.W.M.

JERVIS INLET

JERVIS INLET

## Appendix A

# Presentation to Regional District, October 20, 2005



# PRRD Well Information Survey

Presentation of Results

October 20, 2005

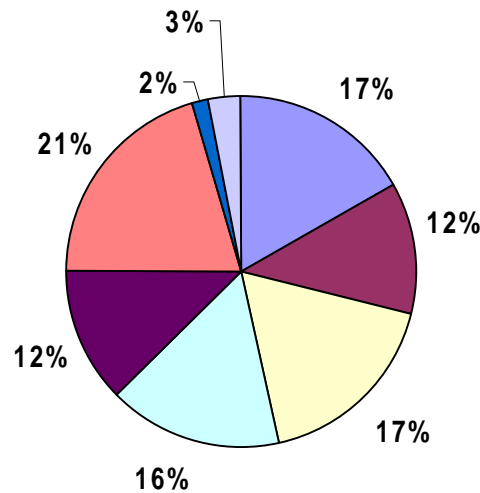
Irfan Gehlen, P.Eng.

Kerr Wood Leidal Associates Ltd.

# Survey Results from Non-Community Water Systems

## PRRD Well Information Survey NON-COMMUNITY WATER SYSTEMS

Total Number of Survey Responses



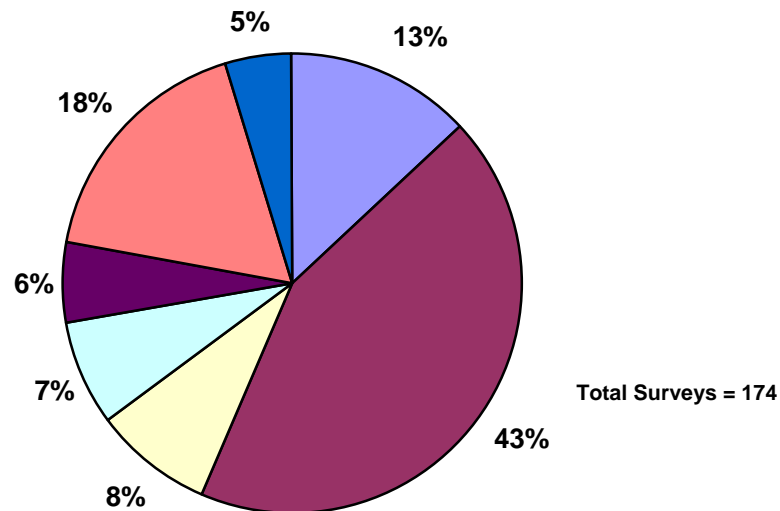
Total Surveys = 404

Area 1 Area 2 Area 3 Area 4 Area 5 Area 6 Area 7 Area 8

# Survey Results from Community Water Systems

## PRRD Well Information Survey COMMUNITY WATER SYSTEMS

Total Number of Survey Responses

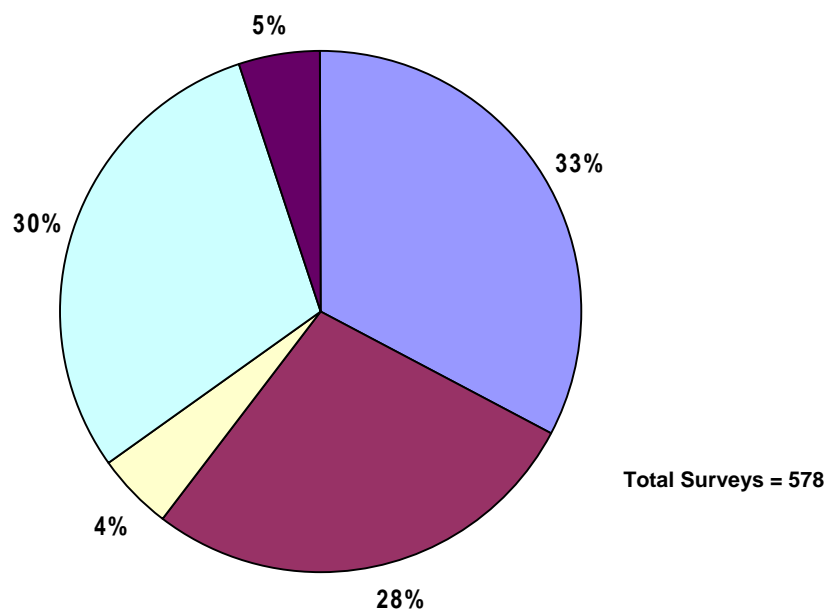


■ Brew Bay ■ Lang Bay ■ Myrtle Pond ■ Pine Tree ■ Stella Maris ■ Stillwater ■ Woodlynn

# Source of Water – Southern Region

## PRRD Well Information Survey ALL SURVEYS

From what source do you obtain your domestic water (drinking and household use)?



■ Dug wells

■ Drilled deep wells

■ Drilled shallow wells

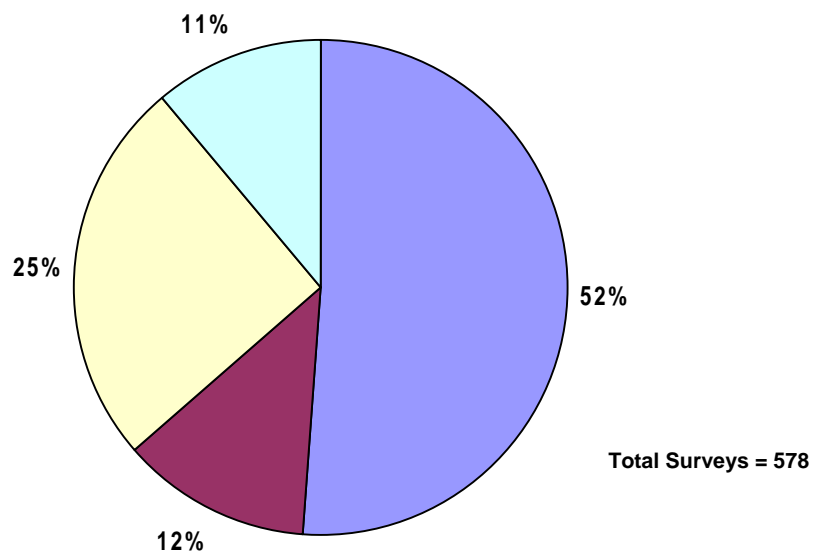
■ Community system

■ No response

# Health Standards – Southern Region

PRRD Well Information Survey  
ALL SURVEYS

Does your water meet Health standards?



■ Yes

■ No

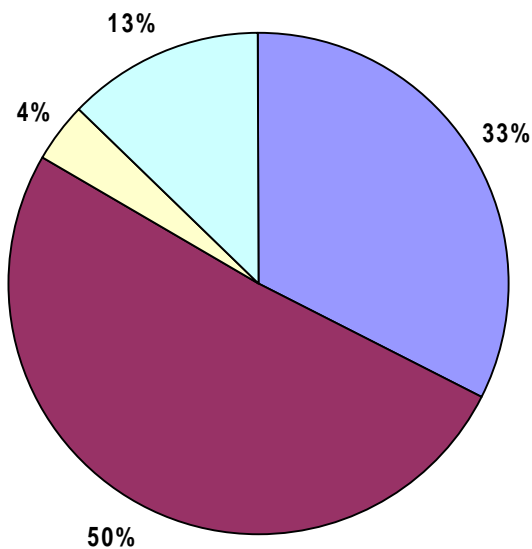
■ Don't know

■ No response

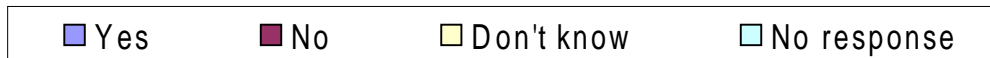
# Other WQ Problems – Southern Region

## PRRD Well Information Survey ALL SURVEYS

Does your water have other non-health related water quality problems?  
(e.g. taste, colour, odour)



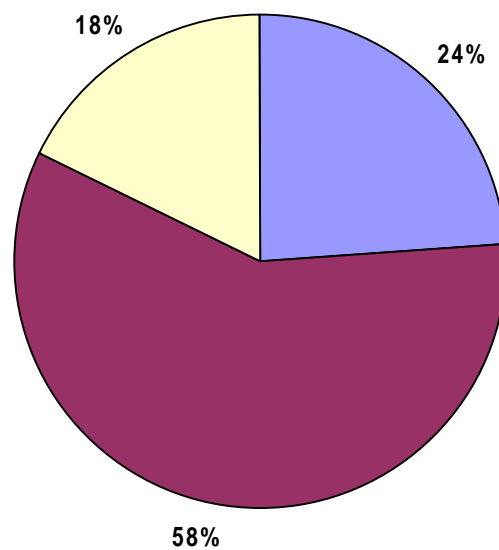
Total Surveys = 578



# Water Treatment – Southern Region

PRRD Well Information Survey  
ALL SURVEYS

Is your water treated?

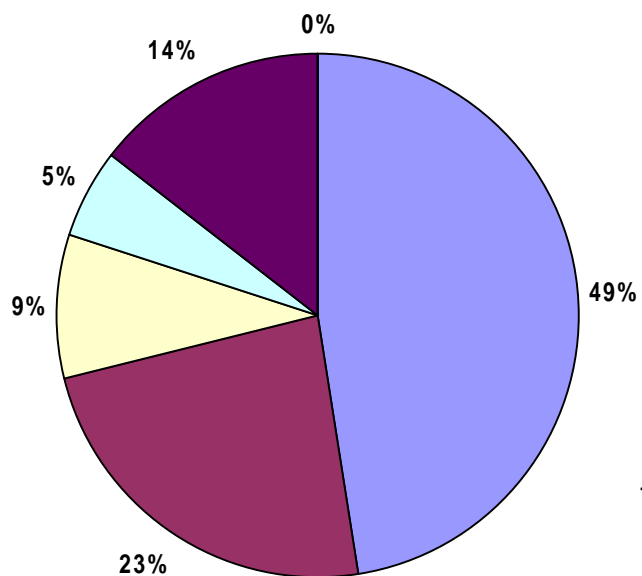


Total Surveys = 578

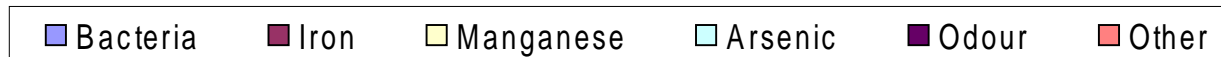
■ Yes    ■ No    ■ No response

# Type of Water Treatment – Southern Region

PRRD Well Information Survey  
ALL SURVEYS  
What is your water treated for?



Total Surveys = 578

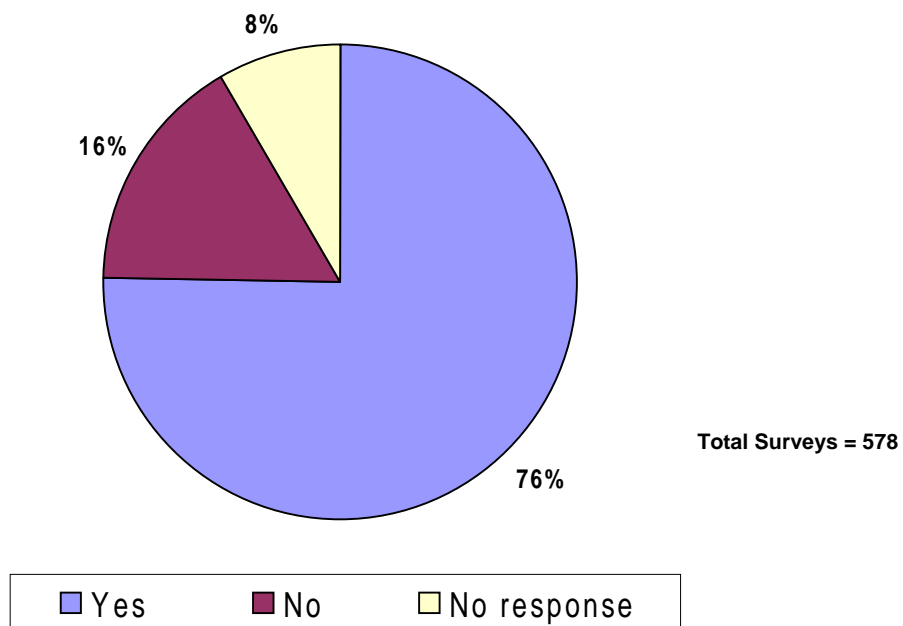




# Water Availability – Southern Region

## PRRD Well Information Survey ALL SURVEYS

Does your water source and system provide you with enough water to meet all your needs?



# Local Areas

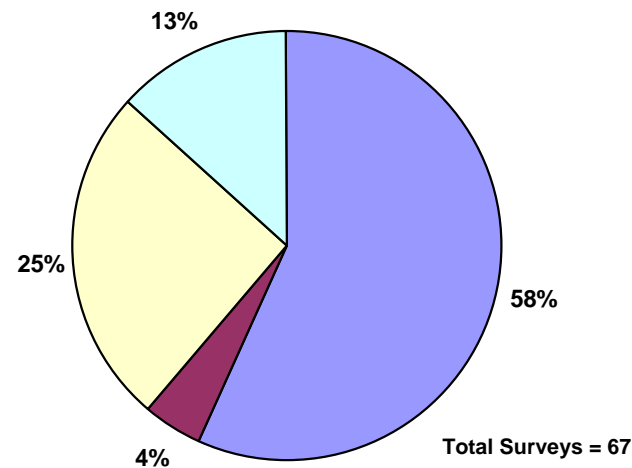
Does Water Meet Health Standards?

Is there sufficient water available?

# Area 1 – Key Questions

## PRRD Well Information Survey AREA 1

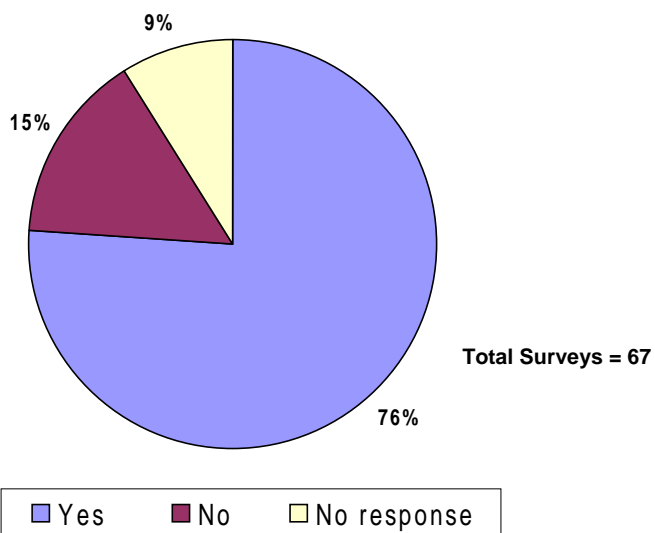
Does your water meet Health standards?



■ Yes ■ No ■ Don't know ■ No response

## PRRD Well Information Survey AREA 1

Does your water source and system provide you with enough water to meet all your needs?

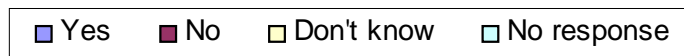
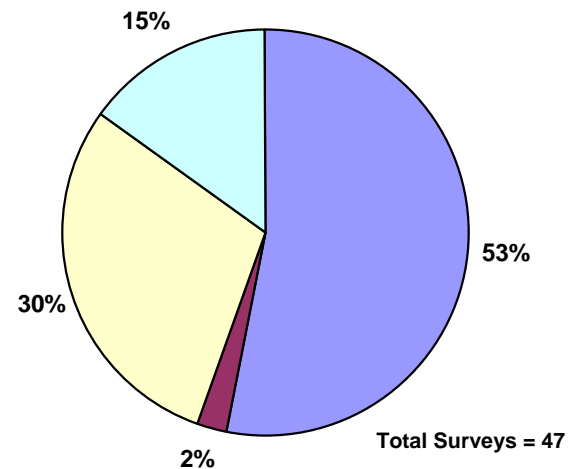


■ Yes ■ No ■ No response

# Area 2 – Key Questions

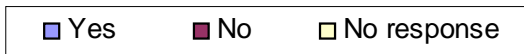
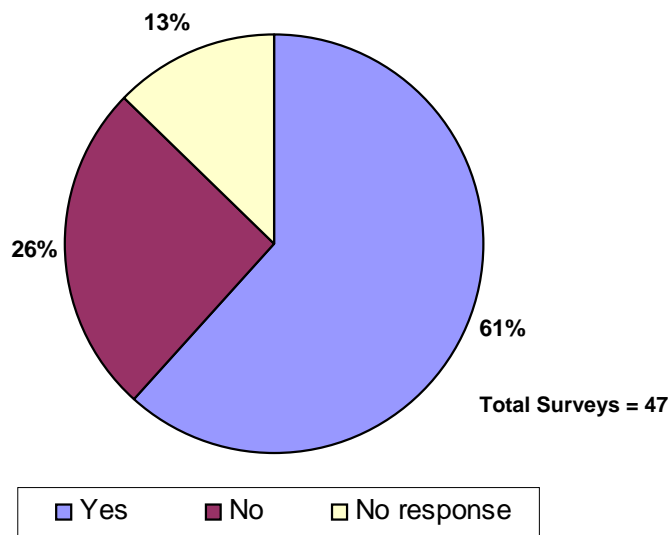
## PRRD Well Information Survey AREA 2

Does your water meet Health standards?



## PRRD Well Information Survey AREA 2

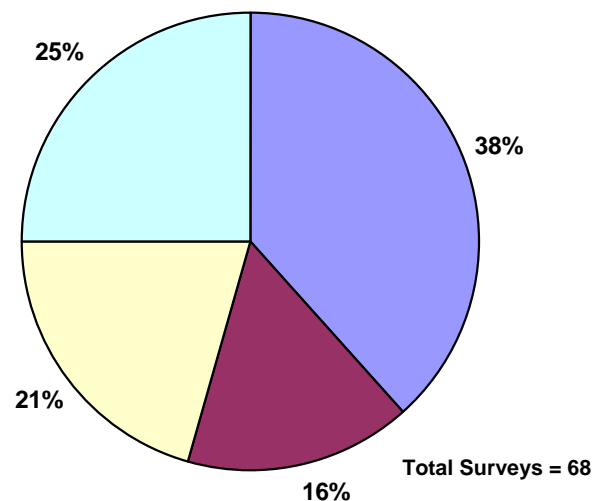
Does your water source and system provide you with enough water to meet all your needs?



# Area 3 – Key Questions

## PRRD Well Information Survey AREA 3

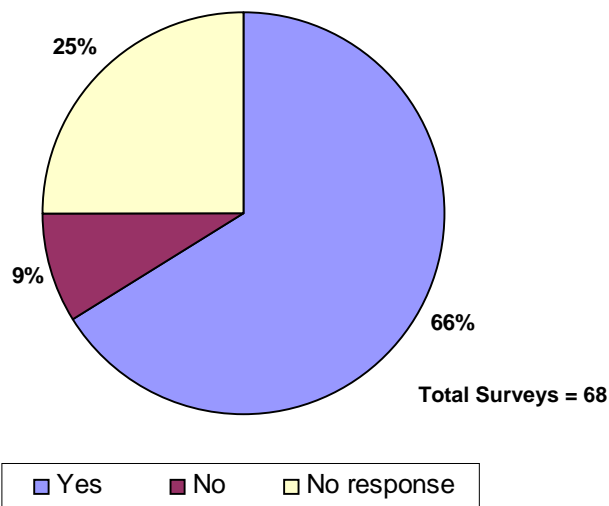
Does your water meet Health standards?



■ Yes ■ No ■ Don't know ■ No response

## PRRD Well Information Survey AREA 3

Does your water source and system provide you with enough water to meet all your needs?

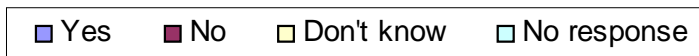
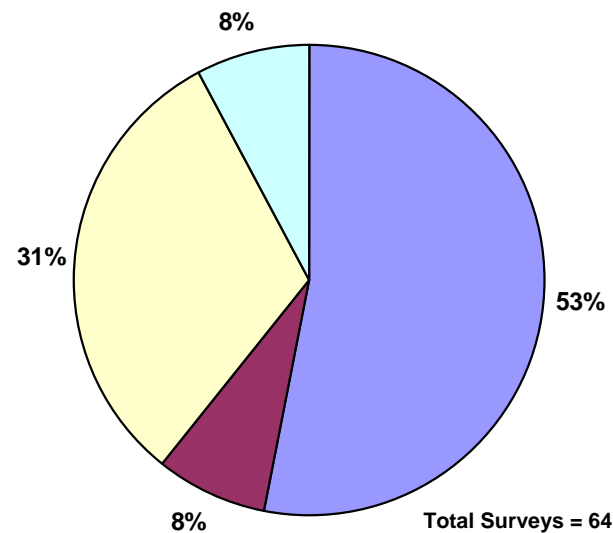


■ Yes ■ No ■ No response

# Area 4 – Key Questions

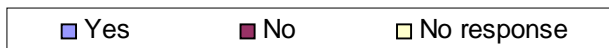
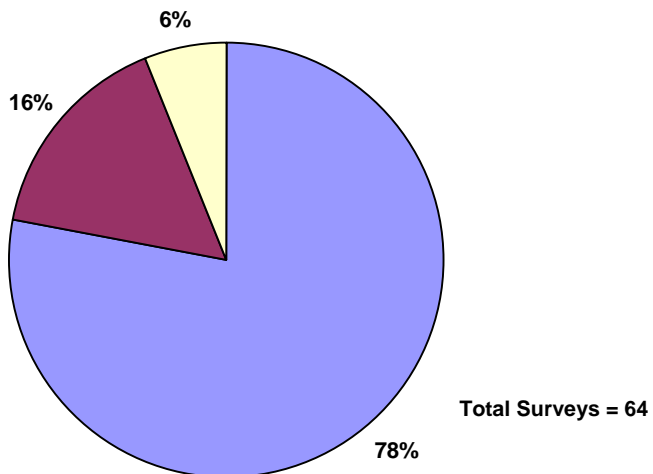
## PRRD Well Information Survey AREA 4

Does your water meet Health standards?



## PRRD Well Information Survey AREA 4

Does your water source and system provide you with enough water to meet all your needs?

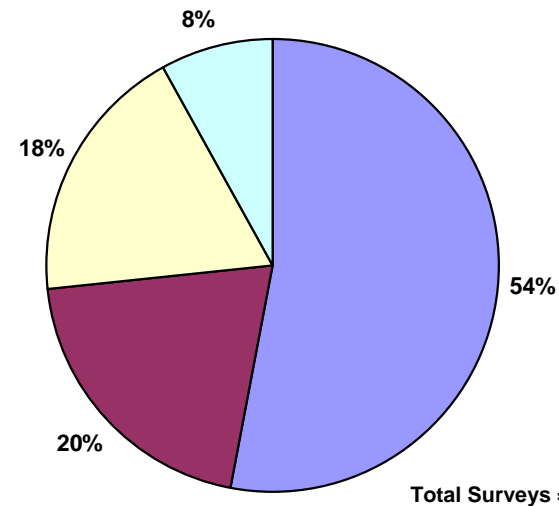


# Area 5 – Key Questions

PRRD Well Information Survey

AREA 5

Does your water meet Health standards?

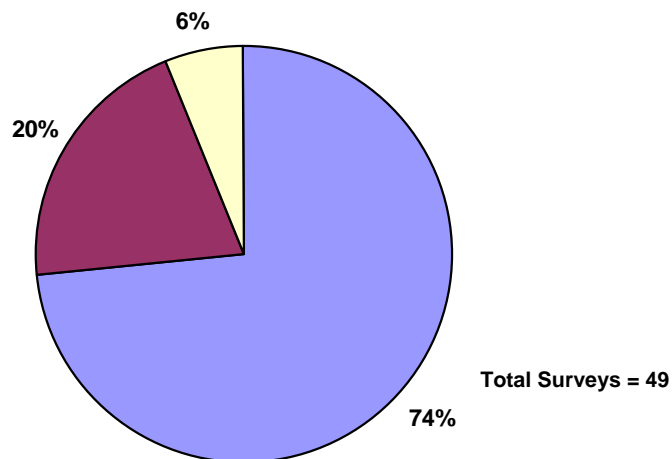


■ Yes ■ No ■ Don't know ■ No response

PRRD Well Information Survey

AREA 5

Does your water source and system provide you with enough water to meet all your needs?

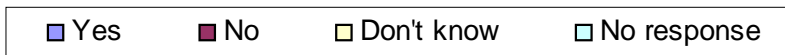
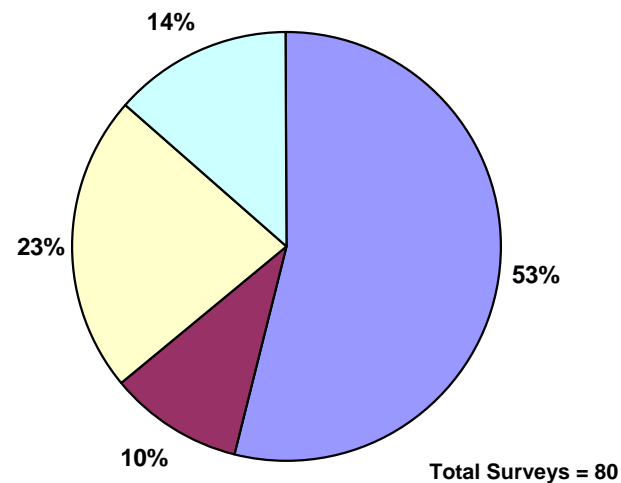


■ Yes ■ No ■ No response

# Area 6 – Key Questions

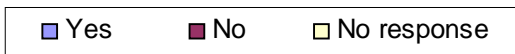
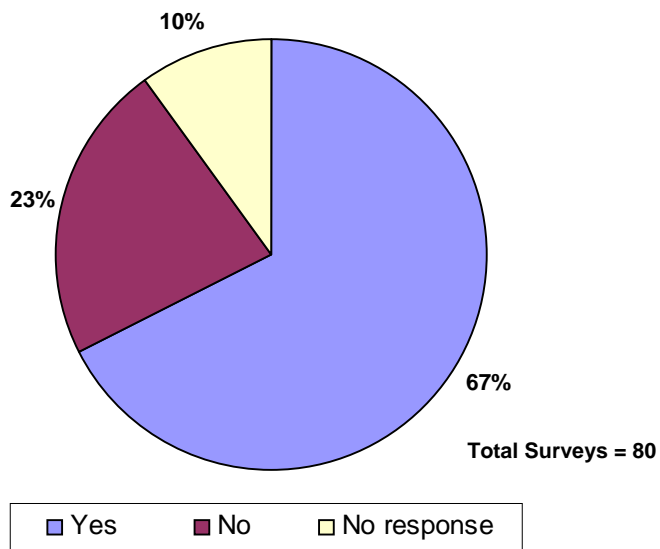
## PRRD Well Information Survey AREA 6

Does your water meet Health standards?



## PRRD Well Information Survey AREA 6

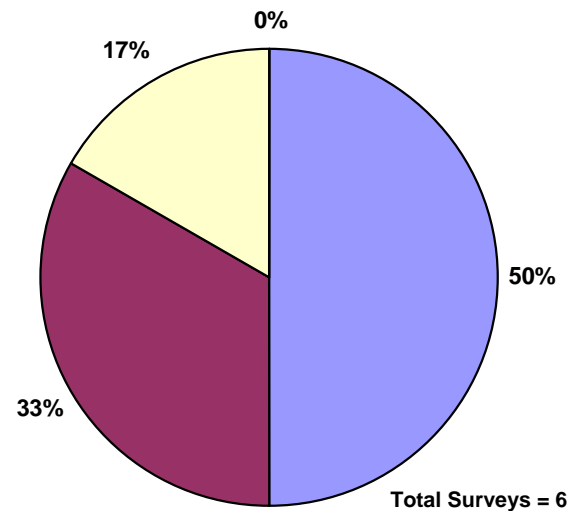
Does your water source and system provide you with enough water to meet all your needs?





# Area 7 – Key Questions

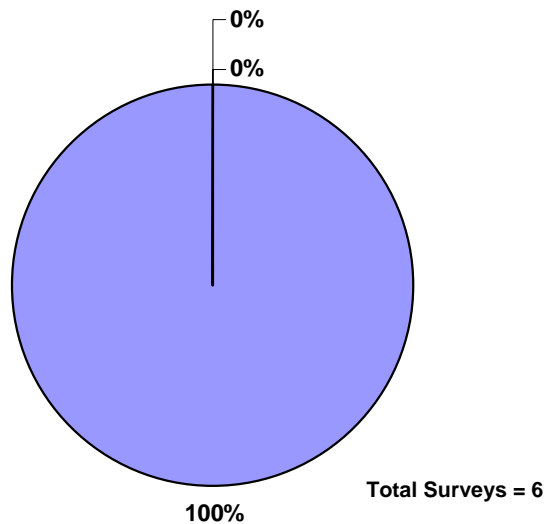
PRRD Well Information Survey  
AREA 7  
Does your water meet Health standards?



■ Yes ■ No ■ Don't know ■ No response

PRRD Well Information Survey  
AREA 7

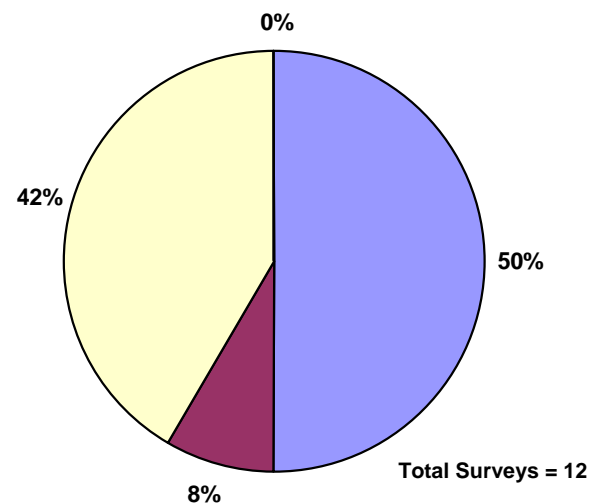
Does your water source and system provide you with enough water to meet all your needs?



■ Yes ■ No ■ No response

# Area 8 – Key Questions

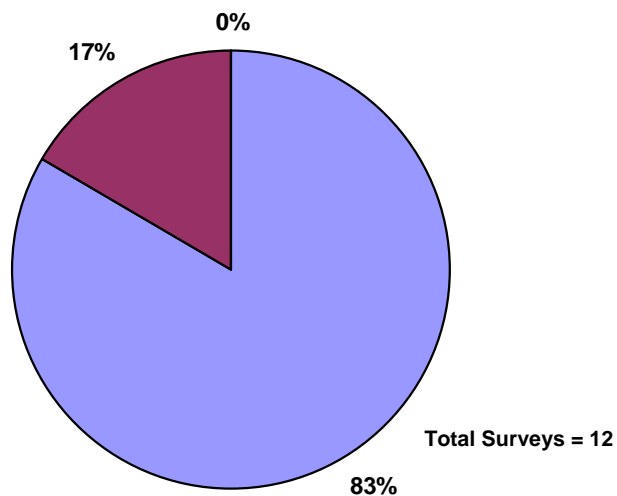
PRRD Well Information Survey  
AREA 8  
Does your water meet Health standards?



■ Yes ■ No ■ Don't know ■ No response

PRRD Well Information Survey  
AREA 8

Does your water source and system provide you with enough water to meet all your needs?



■ Yes ■ No ■ No response

# Water Source Evaluations

Health Standards?

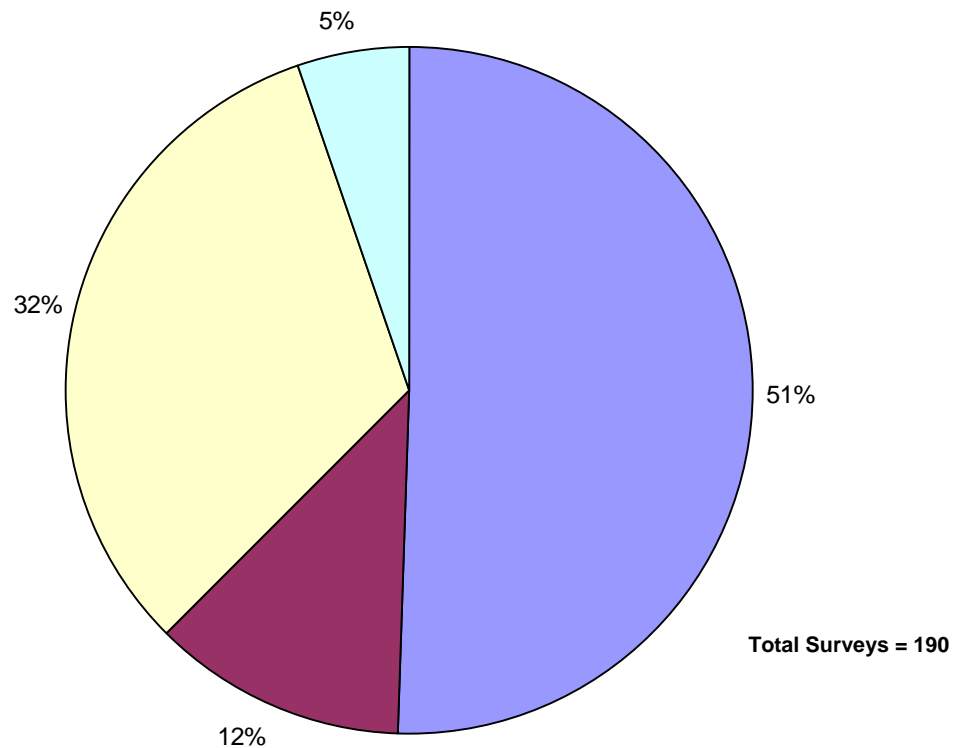
Other Water Quality Issues?

Available Water Quantity?

# Water Source vs Health Standards – Dug Wells

## PRRD Well Information Survey Dug Wells

Does your water meet Health standards?



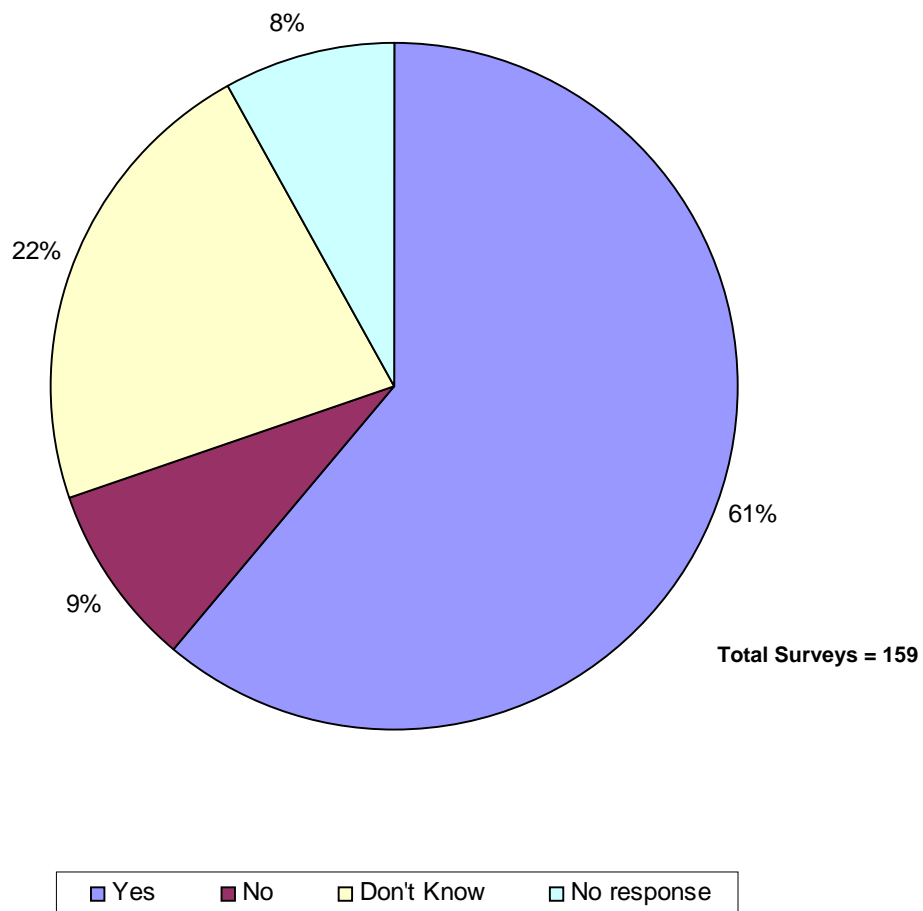
Total Surveys = 190

■ Yes ■ No ■ Don't Know ■ No response

# Water Source vs Health Standards – Deep Drilled Wells

## PRRD Well Information Survey Deep Drilled Wells

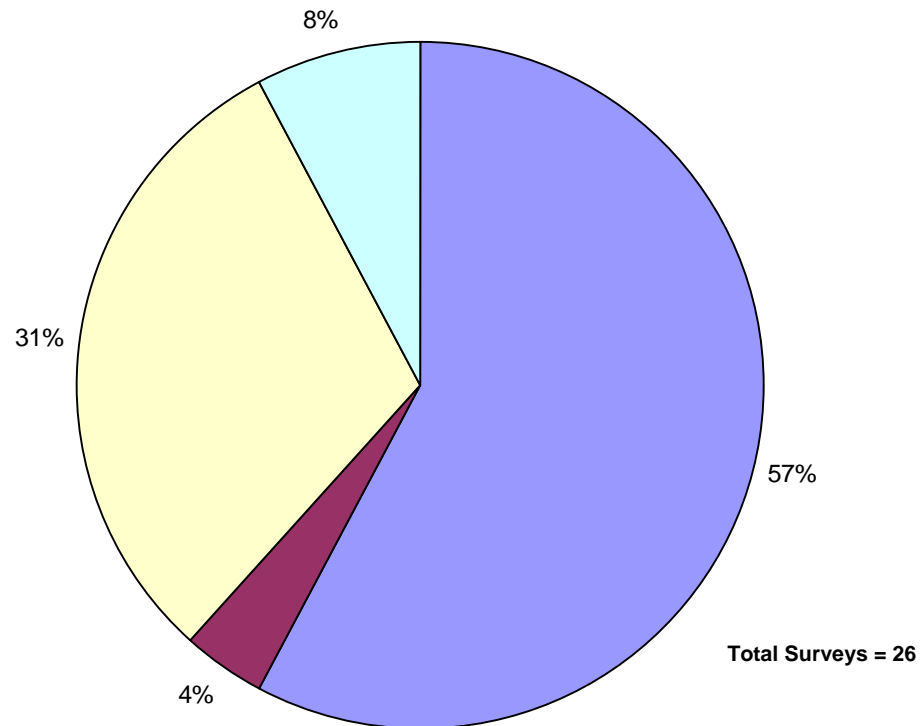
**Does your water meet Health standards?**



# Water Source vs Health Standards – Shallow Drilled Wells

## PRRD Well Information Survey Shallow Drilled Wells

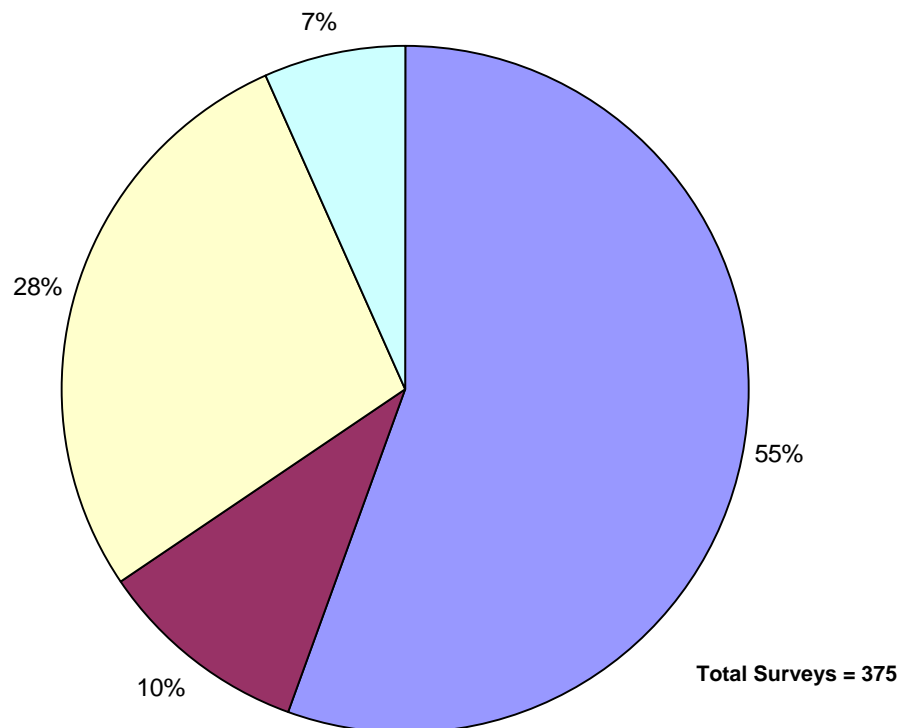
Does your water meet Health standards?



# Water Source vs Health Standards – All Wells

## PRRD Well Information Survey All Wells

Does your water meet health standards?

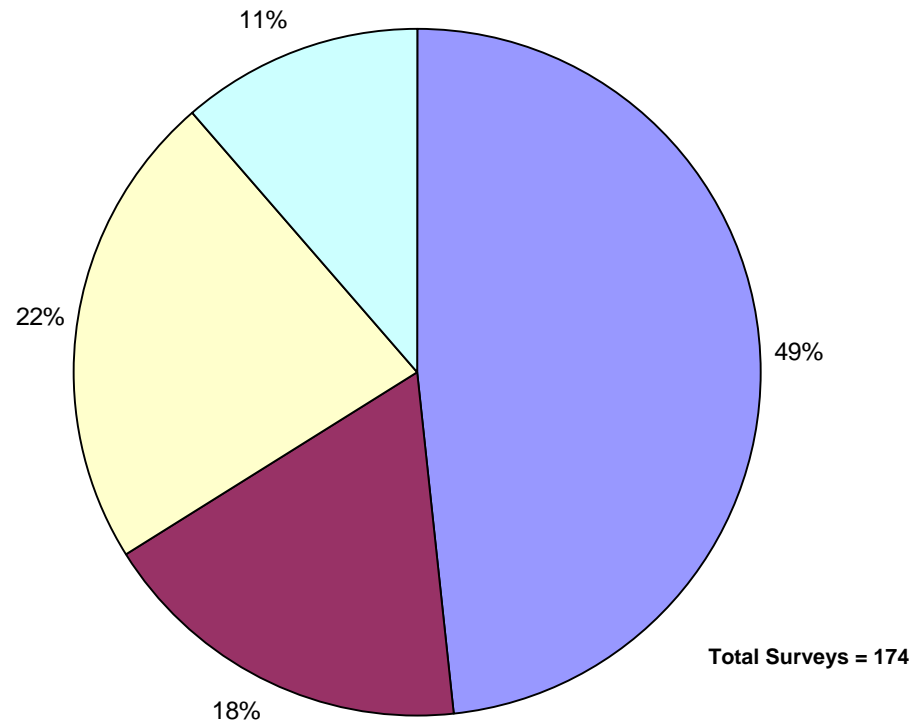


■ Yes ■ No ■ Don't Know ■ No response

# Water Source vs Health Standards – Community Water Systems

## PRRD Well Information Survey Community Water Systems

**Does your water meet Health standards?**

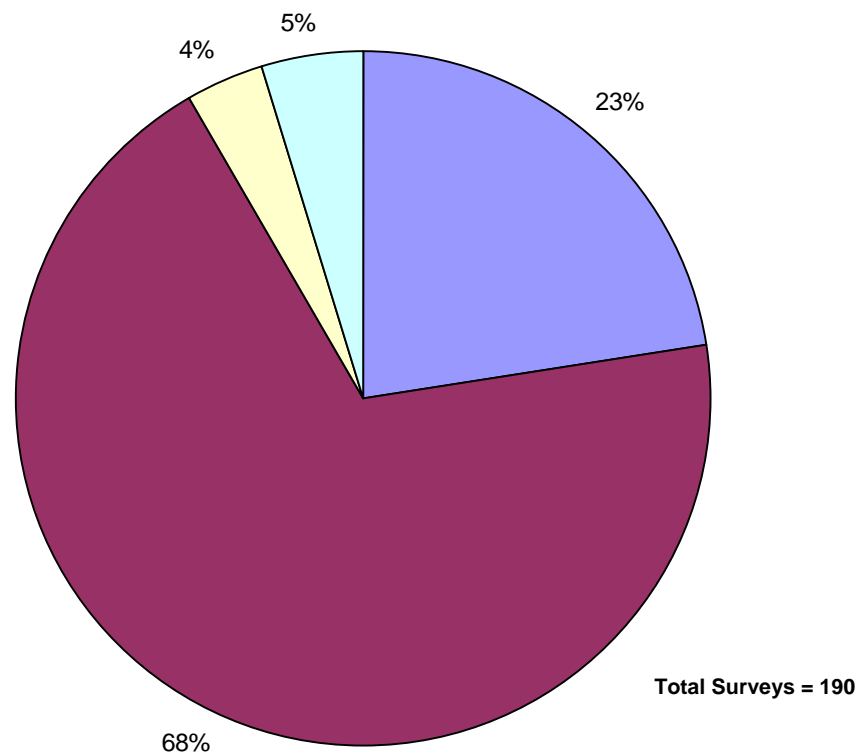


■ Yes   ■ No   ■ Don't Know   ■ No response



# Water Source vs Other WQ Problems – Dug Wells

**PRRD Well Information Survey**  
**Dug Wells**  
**Does your water have other non-health related water quality problems?**  
**(e.g. taste, colour, odour)**

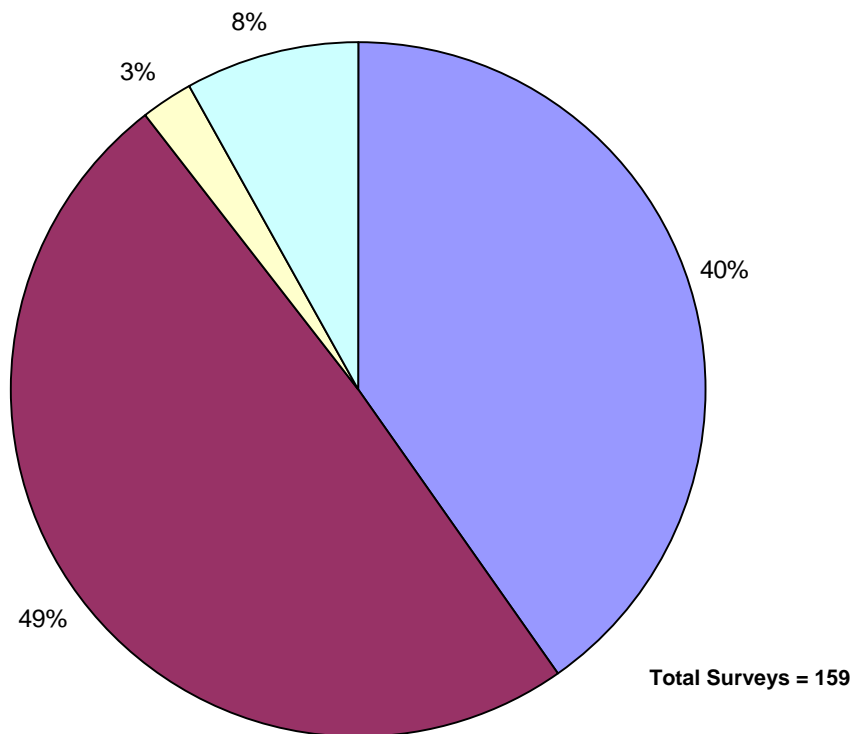


■ Yes   ■ No   ■ Don't know   ■ No response

# Water Source vs Other WQ Problems – Deep Drilled Wells

## PRRD Well Information Survey Deep Drilled Wells

Does your water have other non-health related water quality problems?  
(e.g. taste, colour, odour)

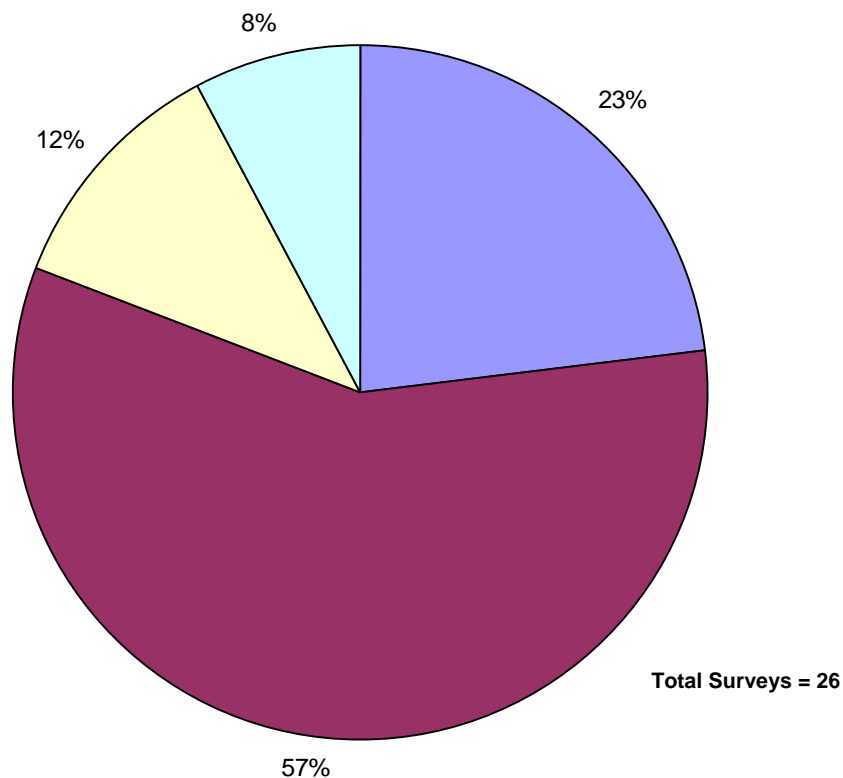


■ Yes ■ No ■ Don't know ■ No response

# Water Source vs Other WQ Problems – Shallow Drilled Wells

## PRRD Well Information Survey Shallow Drilled Wells

Does your water have other non-health related water quality problems?  
(e.g. taste, colour, odour)

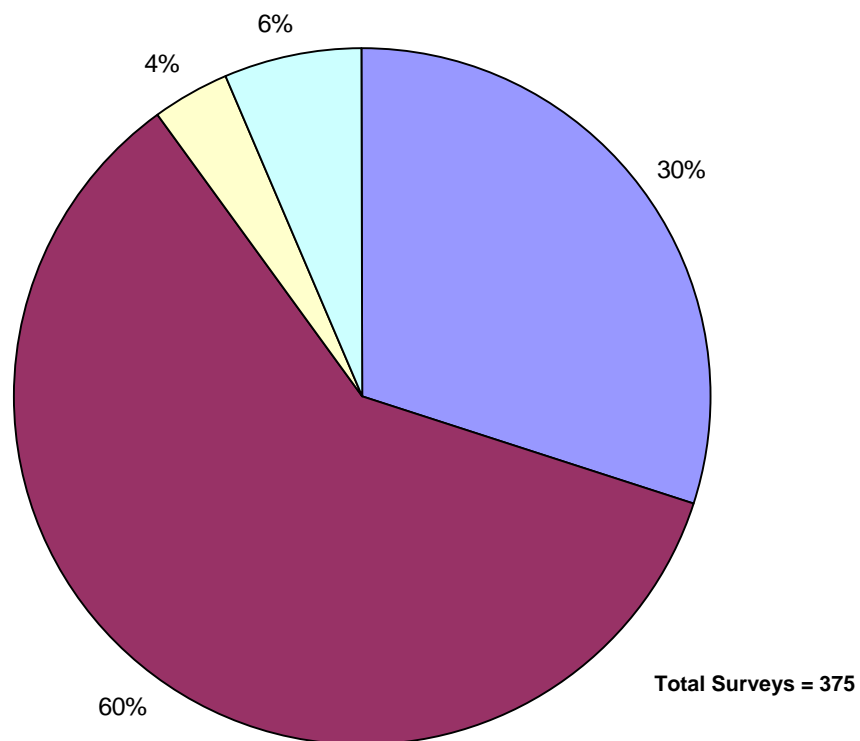


■ Yes ■ No ■ Don't know ■ No response

# Water Source vs Other WQ Problems – All Wells

## PRRD Well Information Survey All Wells

Does your water have other non-health related water quality problems? (eg. taste, color, odour)

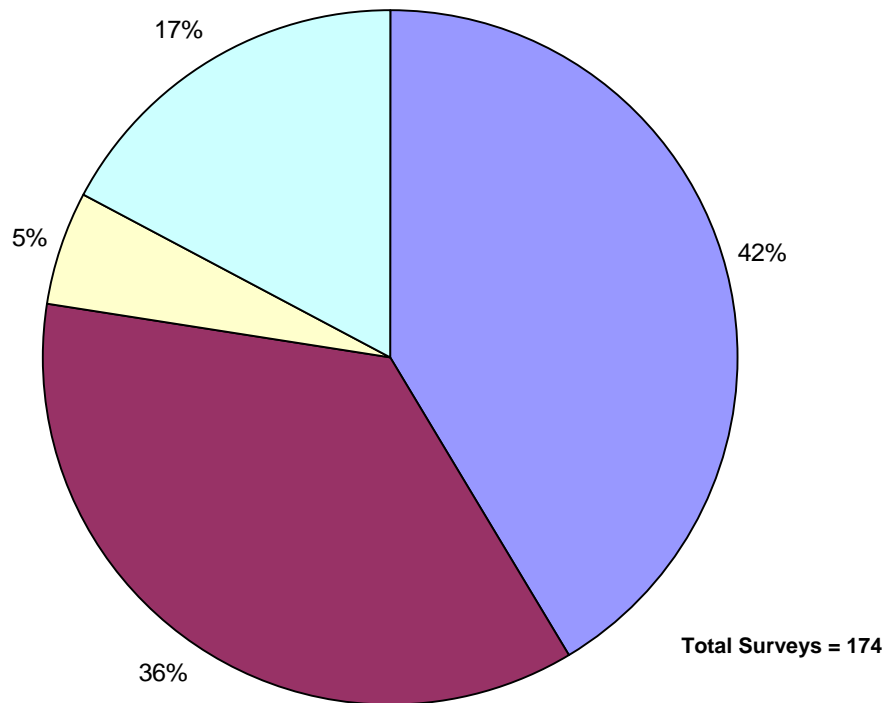


■ Yes ■ No ■ Don't know ■ No response

# Water Source vs Other WQ Problems – Community Water Systems

## PRRD Well Information Survey Community Water Systems

Does your water have other non-health related water quality problems?  
(e.g. taste, colour, odour)

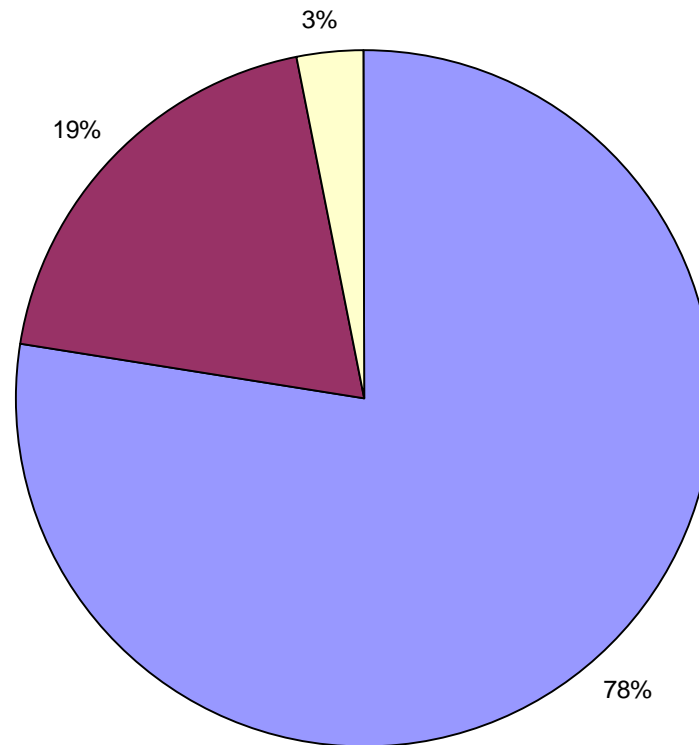


■ Yes ■ No ■ Don't know ■ No response

# Water Source vs Water Quantity Available – Dug Wells

## PRRD Well Information Survey Dug Wells

Does your water source and system provide you with enough water to meet all your needs?



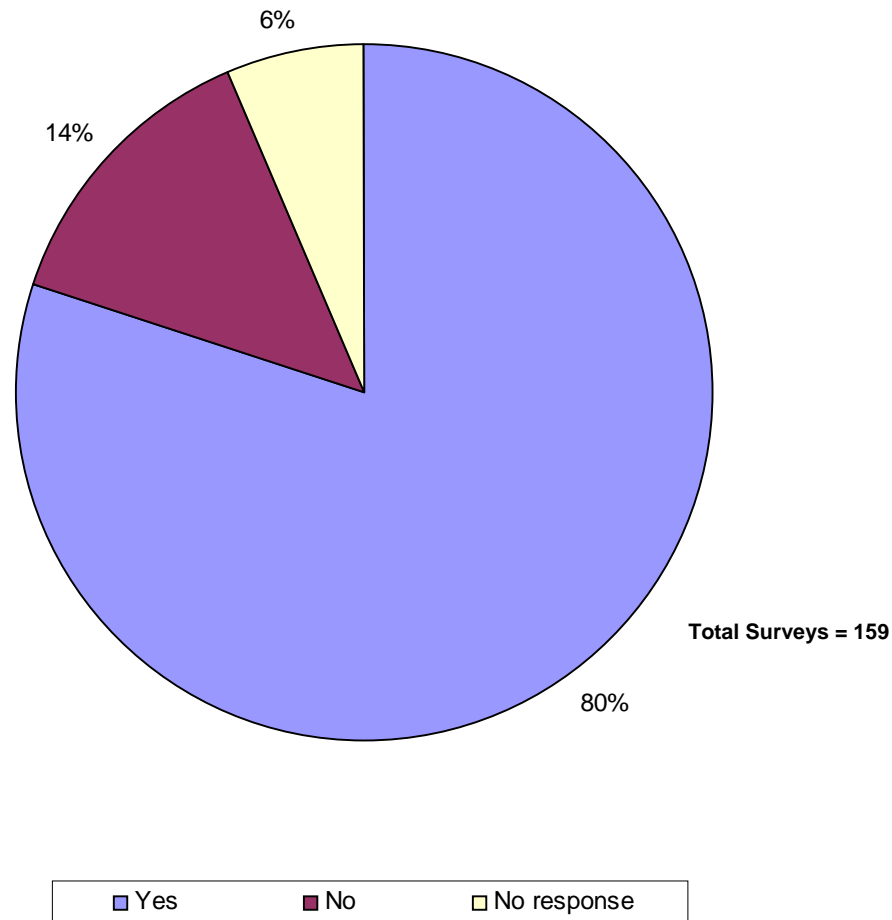
Total Surveys = 190

■ Yes      ■ No      ■ No response

# Water Source vs Water Quantity Available – Deep Drilled Wells

## PRRD Well Information Survey Deep Drilled Wells

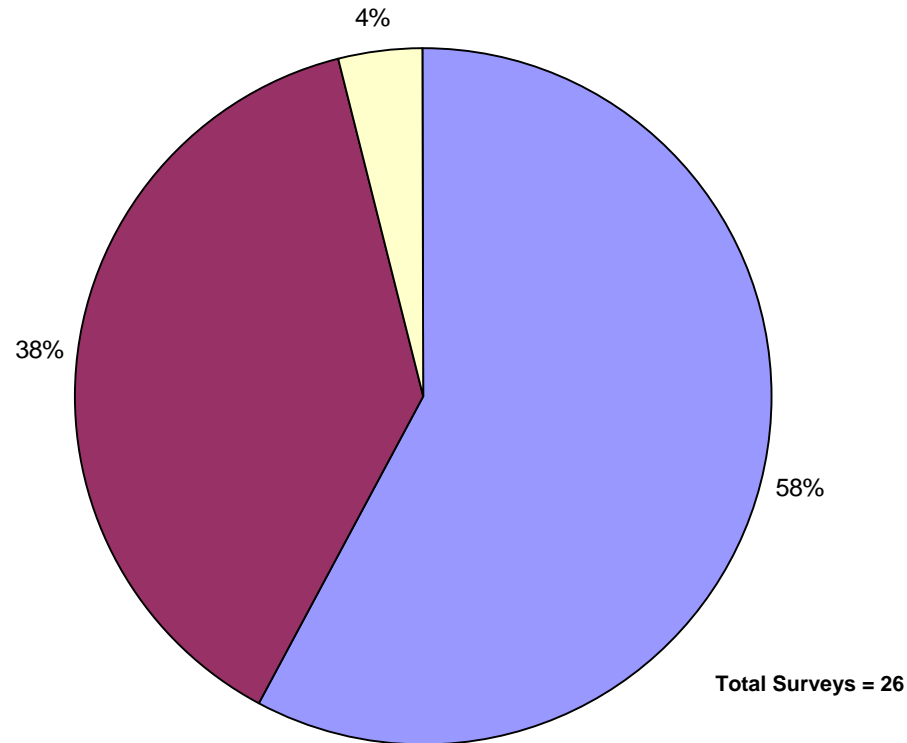
Does your water source and system provide you with enough water to meet all your needs?



# Water Source vs Water Quantity Available – Shallow Drilled Wells

## PRRD Well Information Survey Shallow Drilled Wells

Does your water source and system provide you with enough water to meet all your needs?



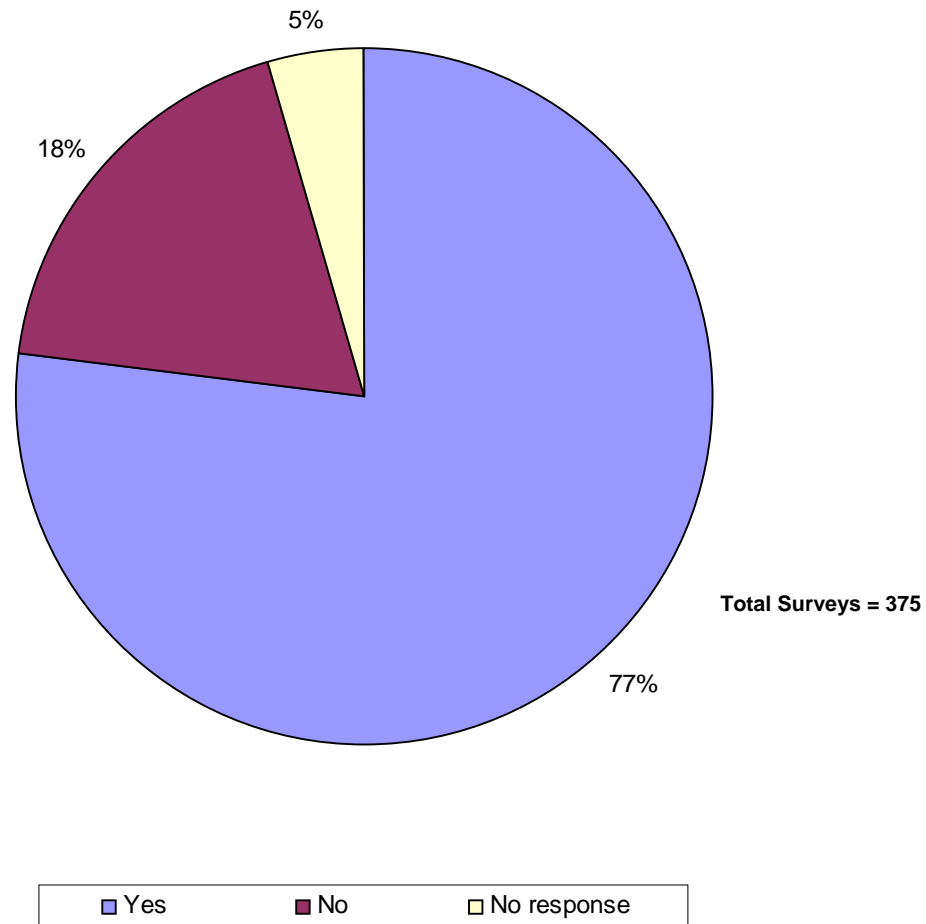
■ Yes      ■ No      ■ No response



# Water Source vs Water Quantity Available – All Wells

## PRRD Well Information Survey All Wells

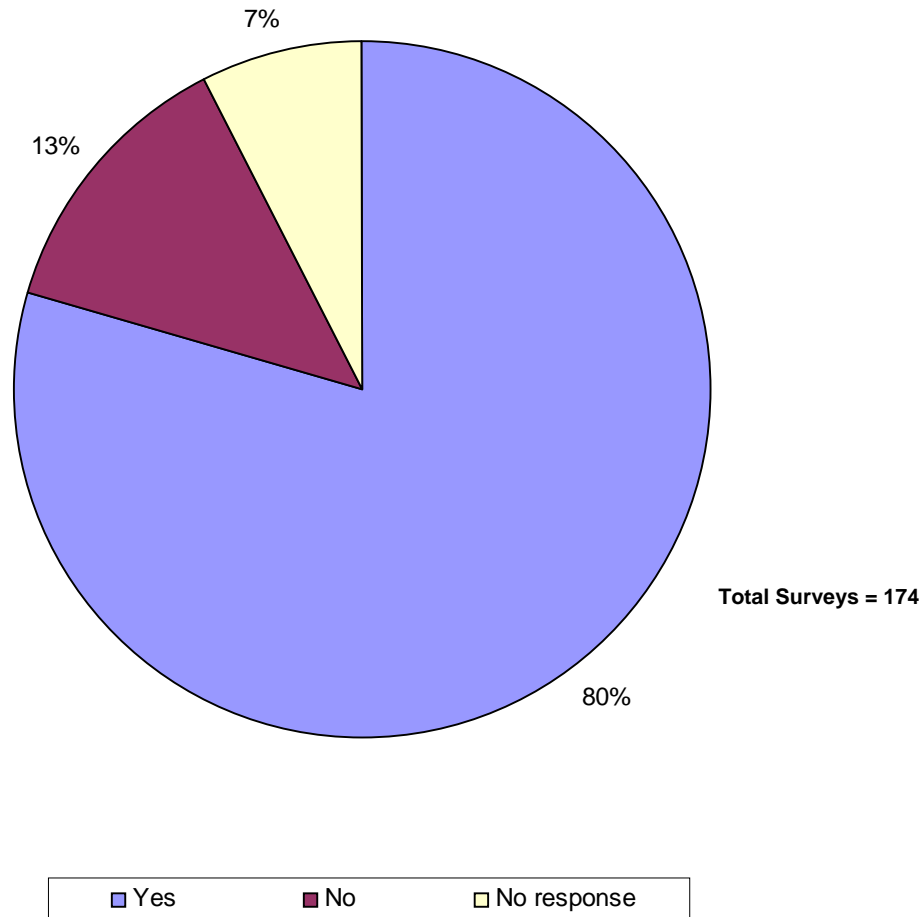
Does your water source and system provide you with enough water to meet all your needs?



# Water Source vs Water Quantity Available – Community Water Systems

## PRRD Well Information Survey Community Water Systems

Does your water source and system provide you with enough water to meet all your needs?



## Appendix B

# Raw Data

Revision Date: September 26, 2005

O:\300-399\355.004\400Work\  
Survey\_Results-Sept\_26\_2005\_Rev8.xls

# Well Information Survey

## Southern Region Water Resource Study - Phase 1

Revision Date: September 26, 2005

Well Information Survey																				Did you complete the Water Quality & Supply Survey in the June 9, 2005 issue of the Powell River Peak?										From what source do you obtain your domestic water (drinking and household use)?										Name of Community system.										If you have a drilled well, do you have a well log?										Willing to share records?										If you know, what is your wells pumping rate?										Do you know the approximate age of your well?										Does any other household(s) use your water source?										Has your domestic water ever been tested for water quality?										Willing to share records?										Does your water meet Health standards?										Are there other water quality concerns?										Is your water treated?										Bacteria (total or fecal coliform or E. Coli)										Iron										Manganese										Arsenic										Odour										Other										Do you regularly purchase bottled water?										Does your water source and system provide you with enough water to meet all your needs?										How many people live in your household?										Well Log Given										Water Quality Results Given										Photograph Number										GPS Waypoint																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
Southern Region Water Resource Study - Phase 1																				Revision Date: September 26, 2005																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											

## Revision Date: September 26, 2005

O:\300-399\355.004\400Work\  
Survey\_Results-Sept\_26\_2005\_Rev8.xls

## Southern Region Water Resource Study - Phase 1

Revision Date: September 26, 2005

Well Information Survey

Southern Region Water Resource Study - Phase 1

Revision Date: September 26, 2005

#	House No.	Street Name	Name Last First	Phone	1	2	Name of Community system.	If you have a drilled well, do you have a well log?	4 If you know what is your wells pumping rate?	5	6	7	8	9	Is your water treated? Bacteria (test or fecal coliform or E.Coli)	Iron	Manganese	Arsenic	Odour	Other	Do you regularly purchase bottled water?	Do you use water source and system provide you with enough water to meet all your needs?	How many people live in your household?	Well Log Given	Water Quality Results Given	Photograph Number	GPS Wapoint	Map Area	Electoral Area	Comments
234		Springbrook Road			No	Community system	Shenwood Park		2.5		Yes	Yes	Don't Know	Yes	Yes	No	No	No	No	No	Yes	Yes	2				3	B		
235		Stager Road			No	Drilled deep well		No		8	No	Yes	Yes	No	No	No	No	No	No	No	No	Yes	2				4	B		
236					Yes	Drilled deep well		No	5	10	No	Yes	Don't Know	Yes	No	No	No	No	No	No	Yes	Yes	2							
237					No	Community system		No			Yes	Yes	Yes	No	Yes	No	No	No	No	No	No	Yes	1							
238		View Road			No	Drilled deep well		No	18		Yes	Yes	Yes	No	Yes	No	No	No	No	No	No	Yes	3				6	C		
239		Hwy 101			No	Drilled deep well		No		30	No	Yes	Yes	No	Yes	No	No	No	No	No	No	Yes	3				6	C		
240		Hwy 101			No	Dug well		No		30	No	Yes	Yes	No	No	No	No	No	No	No	No	Yes	1				2	B		
241		Kelly Creek Road			No	Dug well		No		15	No	Yes	Don't Know	No	No	No	No	No	No	No	No	Yes	3				5	C		
242		Guntner Road			No	Drilled deep well		No		12	Yes	No	Don't Know	Yes	No	No	No	No	No	No	No	Yes	4				1	B		
243		Arbour Drive			No	Community system	Stillwater				Yes	Yes	Yes	No	Yes	No	No	No	No	No	No	Yes	2			Stillwater	C			
244		Hwy 101			No	Drilled shallow well		No		50	No	Yes	Yes	No	No	No	No	No	No	No	No	No	6				2	B		
245					No	Dug well		No		24	No	Yes	Don't Know	No	No	No	No	No	No	No	No	No	6							
246		Weldwood Road			No	Dug well		No		22	No	No	Yes	No	No	No	No	No	No	No	No	Yes	2					C		
247		Southill Road			No	Dug well		No		1	No	Yes	Yes	No	No	No	No	No	No	No	No	Yes	2				1	B	A	
248		Palm Beach Road			No	Community system	Palm Beach	No			Yes	Yes	No	Yes	No	No	No	No	No	No	Yes	No	2			Larg Bay	C			
249		Lee Road			No	Community system	Stillwater				Yes	Yes	Don't Know	Yes	No	No	No	No	No	No	Yes	Yes	2			Stillwater	C			
250		Traffe Road			No	Dug well		No		25	No	Yes	Don't Know	Yes	No	No	No	No	No	No	Yes	No	2				2	B		
251		Gela Road			No	Dug well		No			No	Yes	Don't Know	Yes	Yes	Yes	No	No	No	No	Veg. Collform	No	Yes	3			4	C		
252		Sittler Road			No	Dug well		No			No	Yes	Yes	No	Yes	Yes	No	No	No	No	No	Yes	1				4	C		
253		Nassichuk Road			No	Drilled deep well		Yes		30	No	Yes	Yes	No	No	No	No	No	No	No	No	Yes	2				5	C		
254					No	Dug well				50	No	Yes	Yes	Yes	No	No	No	No	No	No	No	Yes	3							
255		Palm Beach Road			No	Community system	Larg Bay				No	Yes	Yes	No	Yes	No	No	No	No	No	No	Yes	No			Larg Bay	C			
256		Gaudet Road			No	Dug well				35	No	No	Don't Know	Don't Know	No	No	No	No	No	No	No	Yes	Yes	2			3	B		
257		McAulay Road			No	Drilled deep well		No		6	No	Yes	Don't Know	Yes	No	No	No	No	No	No	No	Yes	2				1	B		
258		Stustus Road			No	Community system	IR23 Band				Yes	Yes	Don't Know	Yes	No	No	No	No	No	No	No	Yes	No	3			Larg Bay	C		
259		Alla Vista Drive			Yes	Drilled deep well		No	40 to 60	23	Yes	Yes	Yes	Yes	No	No	No	No	No	No	No	No	Yes	1			3	B		
260		Centennial Drive			No	Community system	Centennial			30	Yes	Yes	Yes	No	No	No	No	No	No	No	No	No	Yes	2						
261					No	Community system					Yes	No	Yes	No	Yes	No	No	No	No	No	Yes	4								
262		Roberts Road			No	Dug well				15	No	Yes	Don't Know	No	No	No	No	No	No	No	No	No	Yes	1			8	C		
263		McKenzie Road			No	Dug well					No	Yes	No	Yes	No	No	No	No	No	No	No	Yes	No	1			5	C		
264		Dixon Road			No						Yes		Don't Know	Yes	No	No	No	No	No	No	No	Yes	1			Larg Bay	C		private water source- Deer	
265					No	Community system	Larg Bay				Yes	Yes	No	Yes	No	No	No	No	No	No	Yes	Yes	2							
266					No	Drilled deep well		Yes		10	Yes	Yes	No	Yes	No	Yes	No	No	No	No	No	No	Yes	2						
267		Brew Bay Road			No	Community system	Brew Bay						Yes	No	Yes	Yes	No	No	No	No	No	No	Yes	2			Brew Bay	C		
268		Pine Tree Place			No	Community system	Pine Tree District						Don't Know	Don't Know	No	No	No	No	No	No	No	No	Yes	2			Pine Tree	C		
269					Yes	Community system	Pine Tree	No			No	No	Don't Know	No	No	No	No	No	No	No	No	Yes	2							
270		Ramsay Road			Yes	Dug well				26	No	Yes	No	Yes	No	Yes	No	No	No	No	No	Yes	Yes	2				6	C	
271		Centennial Drive			No	Community system	Myrtle Pond				Yes	No	Don't Know	No	Yes	No	No	No	No	No	No	Yes	4			Myrtle Pond	B			
272		Scotch Fir Point Road			No	Community system					Yes		Don't Know	Yes	Yes	No	No	No	No	No	No	No	Yes	2			Stillwater	C		
273		Stevenson Road			No						Yes	Yes	Yes	No	No	No	No	No	No	No	No	No	Yes	3			1	B		
274		Hwy 101			No	Dug well				30	Yes	Yes	Yes	No	No	No	No	No	No	No	No	No	Yes	4			2	B		
275		Hwy 101			No	Dug well				10	No	Yes	Yes	No	No	No	No	No	No	No	No	No	Yes	2			3	B		
276		Myrtle Point Drive			No	Drilled deep well		No		30	Yes	Yes	Yes	Yes	No	No	No	No	No	No	No	Yes	3				3	B		
277		Doimrage Road			No	Dug well		No		40	No	Yes	Yes	No	No	No	No	No	No	No	No	Yes	3				3	B		
278		Centennial Drive			No	Community system	Myrtle Pond				No	Yes	Don't Know	Yes	No	No	No	No	No	No	No	Yes	2			Myrtle Pond	B			
279		Centennial Drive			No	Community system	Centennial Drive				Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	Yes	5			Stella Maris	B			
280		Myrtle Point Drive			Yes	Dug well				10	No	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No	Yes	2			3	B		
281		View Road			Yes	Dug well					No	Yes	No	Yes	Yes	Yes	Yes	No	No	No	No	Yes	No	2			6	C		
282					No	Dug well				20+	No	Yes	No	Yes	No	No	No	No	No	No	No	No	Yes	2						
283		Black Point Road			No	Dug well				12+	No	Yes	Don't Know	No	No	No	No	No	No	No	No	No	No	3			6	C		
284		Arbour Drive			No	Community system	Stillwater				Yes	Yes	Yes	Yes	Yes	No	No	No	No	No	No	No	Yes	2			Stillwater	C		
285		Swede Bell Road			No	Dug well				30	No	Yes	Don't Know	No	No	No	No	No	No	No	No	No	No	2			5	C		
286		Tiller Road			Yes	Community system	Larg Bay				No	Yes	No	No	No	No	No	No	No	No	Yes	Yes	3			Larg Bay	C			
287		Orford Road			No	Dug well				11	No	Yes	Yes	Yes	Yes	No	No	No	No	No	No	Yes	No	2						
288		Phillips Road			No	Community system	Larg Bay	No					Don't Know	No	Yes	Yes	No	No	No	No	No	No	Yes	No			Larg Bay	C		
289		Phillips Road			No	Dug well				18	Yes	No	Don't Know	No	No	No	Yes	No	No	No	No	Yes	6				7	C		
290		Hwy 101			No	Drilled deep well		Yes	10	25	No	No	Don't Know	No	No	No	No	No	No	No	No	No	Yes	2			4	C		
291		Springbrook Road			No	Drilled deep well		No			Yes	Yes	Yes	Yes	Yes	No	No	No	No	No	No	No	Yes	2			3	B		
292		Hwy 101 #1			No	Community system	Myrtle Pond				Yes	Yes	Don't Know	Yes	Yes	Yes	No	No	No	No	No	No	Yes	1			2	B		
293		View Road			No	Drilled deep well		No		40	No	No	Don't Know	No	Yes	No	No	No	No	No	No	No	Yes	No						
294		Centennial Drive			No	Community system	Centennial Drive	Yes			Yes	Yes	Yes	Yes	No	No	No	No	No	No	No	No	Yes	4			Stella Maris	B		
295		Morton Road			Yes	Community system	Larg Bay				Yes		Don't Know	Yes	No	No	No	No	No	No	No	Yes	Yes	2			Larg Bay	C		
296		Patrick Road			No	Community system	Brew Bay				Yes		Don't Know	No	No	No	No	No	No	No	No	No	Yes	3			Brew Bay	C		
297		Ramsay Road			Yes	Drilled deep well		No		2	7	Yes	Yes	Don't Know	Don't Know	No	No	No	No	No	No	Yes	No	1			6	C		
298		Fern Road			No	Drilled deep well				28	No	Yes	No	Yes	No	No	No	No	No	No	No	No	Yes	7			3	B		
299		Scotch Fir Point Road			Yes	Community system	Stillwater				No	Yes	No	Yes	No	No	No	No	No	No	No	No	Yes	2			Stillwater	C		
300		Douglas Bay Road			No	Drilled deep well				45	No	Yes	Yes	No	No	No	No	No	No	No	No	No	Yes	2			6	C		
301					No	Community system							Don't Know	Yes	Yes	No	No	No	No	No	No	Yes	Yes	4						
302					No	Dug well				5	No	Yes	Yes	No	No	No	No	No	No	No	No	Yes	Yes	3						
303		Hwy 101			No	Community system	Myrtle Pond	No			Yes	Yes	No	Yes	No	No	No	No	No	No	No	Yes	No	1			Myrtle Pond	B	See 2779 Tanglewood Rd	
304					No	Drilled deep well		No		20	21	No	Yes	Don't Know	No	Yes	No	No	No	No	No	No	Yes	No						
305		Roberts Road			No	Community system	Stillwater				No	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No	No	Yes	1			8	C		
306		Douglas Bay Road			No	Dug well				15	14	No	Yes	Yes	No	No	No	No	No	No	No	No	Yes	2			6	C		
307		Stillwater School Road			No	Community system	Stillwater				No	Yes	Don't Know	Yes	Yes	Yes	No	No	No	No	No	Yes	Yes	5			Stillwater	C		
308																														

<div>Well Information Survey</div> <div>Southern Region Water Resource Study - Phase 1</div> <div>Revision Date: September 26, 2005</div>										Did you complete the Water Quality & Supply Survey in the June 9, 2005 issue of the Powell River Peak?	From what source do you obtain your domestic water (drinking and household use)?	Name of Community system.	If you have a drilled well, do you have a well log?	Willing to share records?	If you know, what is your wells pumping rate?	Do you know the approximate age of your well?	Does any other household(s) use your water source?	Has your domestic water ever been tested to water quality?	Willing to share records?	Does your water meet Health standards?	Are there other water quality concerns?	Is your water treated?	Bacteria (total or fecal coliform or E. Coli)	Iron	Manganese	Arsenic	Odour	Other	Do you regularly purchase bottled water?	Does your water source and system meet all your needs?	How many people live in your household?	Well Log Given	Water Quality Results Given	Photograph Number	GPS Waypoint	Map Area	Electoral Area	Comments				
#	House No.	Street Name	Last	First	Phone	1	2	3	4	5	6	7	8	9	10	11	12	13	Other	Map Area	Electoral Area	Comments																				
312		Black Point Road				No	Drilled deep well	No		5	3	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	Yes	2					6	C					
313						Yes	Drilled deep well	No	No	10	20	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	Yes	1						4	C				
314		Kelly Creek Road				No	Dug well	No		25	Yes	Yes	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	Yes	No	2					5	C					
315		Whalen Road				No	Drilled deep well	No		12	No	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	Yes	No	2					4	C				
316		Evergreen Road				No	Community system				No	Yes	Yes	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	Yes	No	2					4	C				
317						No	Community system					Yes	Yes	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	Yes	No	2					4	C				
318		Jenkinson Road				No	Community system	No			No	Yes	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	Yes	No	2					4	C				
319						No	Drilled deep well	No		10	18	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	Yes	No	2					4	C			
320		Phillips Road				No	Community system	Yes		1	12	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	Yes	No	4					4	C				
321						No	Drilled deep well		Yes	11	5	No	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	Yes	Yes	3						4	C				
322		Hwy 101				Yes	Community system					No	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	Yes	Yes	2						4	C				
323						No	Dug well					No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	Yes	Yes	2						4	C				
324		Pine Tree Place				No	Community system					Yes	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	4						4	C				
325		Tanglewood Road				No	Drilled deep well	Yes	Yes		25	No	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	Yes	Yes	2						3	B			
326		Douglas Bay Road				No	Drilled deep well	No		8	18	No	Yes	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	Yes	No	2						6	C				
327		Wilcox Road				No	Drilled deep well	No			20+	No	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	Yes	No	4						5	C			
328		Zilinsky Road				No	Dug well			5	50	Yes	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	5						5	C			
329		Kelly Creek Road				No	Dug well			5	50	No	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	5						5	C			
330		Padgett Road				No	Dug well	No				No	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	Yes	1						1	B				
331		Pine Tree Place				No	Community system					Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	Yes	2						4	C				
332		Streek Road				No	Dug well					12	No	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	2							4	C			
333						No	Community system					Yes	Yes	Yes	No	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	Yes	Yes	3							4	C			
334		Runnells Road				No	Community system					Yes	Yes	Yes	No	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	No	Yes	3							4	C			
335		Hwy 101				Yes	Community system					No	Yes	Yes	No	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	Yes	No	1							4	C			
336		Hwy 101				No	Community system					Yes	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	Yes	No	1							4	C		
337		Oxford Road				Yes	Dug well				1	No		Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	Yes	Yes	2							5	C			
338						No	Community system					Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	2							4	C			
339		Stittie Road				No	Drilled deep well			15	11	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	2							4	C			
340		Spencer Road				No	Drilled shallow well	No			24	No	No	Don't Know	Don't Know	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	2							4	C		
341		View Road				No	Drilled deep well	Yes	Yes	3	5	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	3							6	C			
342		Patrica Road				No	Dug well				15	No	Yes	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	Yes	2						3	B			
343						No	Drilled deep well	No		10	10	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	Yes	2							4	C		
344		Lang Bay Road				No	Community system	No				Yes	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	Yes	5							4	C			
345		View Road				No	Dug well	No			28	No	Yes	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	No	Yes	2						6	C			
346						No	Dug well				30	No	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	Yes	Yes	2							6	C		
347						No	Dug well				20	No	No	Don't Know	Don't Know	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	Yes	2							6	C		
348		Valley Road				No	Dug well				40	No	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	Yes	2							1	B		
349		Black Point Road				Yes	Drilled deep well	No			30	No	Yes	Yes	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	Yes	6						6	C			
350		Hwy 101				No	Drilled deep well	No		1	35	No	Yes	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	Yes	2							4	C		
351		Black Point Road				Yes	Drilled deep well	Yes	Yes	6	20	No	Yes	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	Yes	No	2							6	C			
352		View Road				No	Drilled deep well	No		4	50	No	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	Yes	5							6	C		
353		Powers Road				No	Drilled deep well	No			5	No	Yes	Yes	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	Yes	2							4	C		
354						No	Drilled deep well	No			18	No	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	Yes	Yes	3								7	C	
355		Berger Road				No	Drilled deep well					No	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	Yes	Yes	2								4	C		
356		Gela Road				No	Dug well					No	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	Yes	2							6	C		
357		Black Point Road				No	Drilled deep well	No			20	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No	No	No	No	No	No	No	No	No	No	Yes	4							6	C		
358		Random Road				No	Community system																						No	2								4	C			
359		Williams Road				No	Drilled shallow well	No				No	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	Yes	3								4	C	
360		Trapp Road				No	Dug well				30	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	2								5	C	
361		Zilinsky Road				No	Drilled deep well	No			20	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	Yes	3								4	C	
362		Myrtle Point Drive				No	Drilled deep well	No				Yes	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	Yes	1								3	B	
363						No	Dug well	No			10	No	Yes	Yes	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	Yes	Yes	2								1	B	
364		View Road				No	Drilled deep well	No		3	8	No	Yes	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	Yes	3								6	C	
365		View Road				No	Drilled deep well	No				No	Yes	Yes	Yes	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	Yes	2								6	C	
366		Douglas Bay Road				No	Dug well	No			15	No	Yes	No	No	No																										



**Southern Region Water Resource  
Study - Phase 1**

Revision Date: September 26, 2005

10/18/2005 6:49 PM

**Southern Region Water Resource  
Study - Phase 1**

#	House No.	Street Name	Name		Phone	1	2	3	4	5	6	7	8	9	10	11	12	13	Other	Map Area	Electoral Area	Comments
			Last	First					GPM													
468		Padgett Road					Barta CWS				Yes	Yes	Yes	No						1	C	Dug well also serves 4298.
469		D.L. 3695					Community system											Yes				
470		Nooka Street					Retirement MHP														B	
471		Nooka Street					Community system		43		Yes	Yes	Yes	No				Yes	se + 4 homes	1	B	drilled well; info from CGH
472		Masters Road					Community system				Yes	Yes	No	No				Yes	me, 4 bigs	1	B	Info provided by CGH
473		Hwy 101					Community system				Yes	Yes	Yes	Yes				Yes	s + 1 house	2	B	Dug well; UV, info from CGH
474		Hwy 101					Community system													2	B	Shared w 7611 Hwy 101
475		Zilinsky Road				No	Drilled deep well	No		17	Yes	Yes	No	No	No	No	No	Yes	na	5	C	High arsenic. School
476		Alta Vista Drive				No	Drilled deep well	No		20	No	No	Don't Know	Yes	No	No	No	No	Yes	2	B	
477		Armour Road				No	Dug well				No	No		No	No	No	No	No	Yes	3	B	
478		Douglas Bay Road				Yes	Dug well				Yes		No	Yes	Yes	Yes	No	No	Yes	5	C	
479		Dolmage Road					Community system				Yes		No	Yes	Yes	Yes	No	No	Yes	5	C	
480		Scotch Fir Point Road				No	Community system				Yes	Yes	Yes	Yes				Yes	Yes	3	C	
481		View Road				No	Drilled shallow well				No	Yes	Yes	No	No	No	No	No	No	2	C	
482		View Road				No	Dug well	No		35	No	No		No	No	No	No	No	Yes	2	C	
483		Morton Road				No	Community system				Yes		Yes	No	No	No	No	No	No	2	C	
484		Hwy 101				No	Dug well				Yes	No	No	Yes	No	No	No	No	Yes	1	B	
485		View Road				Yes	Drilled deep well	No	Yes		No	Yes	Yes	Yes	No	No	No	No	No	1	C	
486		Padgett Road				No	Dug well			17	No	No	Don't Know	No	No	No	No	No	No	2	B	
487		Hellingsworth Road				No	Community system				No	No	Don't Know	No	No	No	No	No	Yes	2	C	
488						No	Dug well	No		19	Yes	Yes	Yes	No	No	No	No	No	No	4		
489							Community system	No			No	Yes	No	Don't Know	No	No	No	No	Yes	4		
490		Tanglewood Road				No	Dug well			15	No	Yes	Yes	No	No	No	No	No	Yes	3	B	
491						No	Dug well			20	No	Yes	Yes	No	No	No	No	No	No	4		
492		Claridge Road				No	Drilled deep well	Yes	No	35	10	Yes	Yes	No	No	No	No	No	No	4		
493		Claridge Road #68				No					No			No	No	No	No	No	Yes	1	B	
494		Claridge Road #30				No					Yes			No					No	1	B	
495		Traff Road				No	Drilled deep well			20	No	Yes		Yes	No	No	No	No	No	3	B	
496		Wilcox Road				No	Dug well			25	No	Yes	Yes	No	No	No	No	No	No	2	C	
497		Roberts Road				No	Community system				No	Yes	Yes	No	Yes	Yes	No	No	No	5	C	
498		Claridge Road #28				No	Dug well				No	Yes	Don't Know	No	Yes	No	No	No	No	8	C	
499		Morton Road				No	Community system				No	Yes	No	Yes	No	No	No	No	Yes	1	B	
500		Black Point Road				No	Drilled shallow well	No	Yes	7	6	No	Yes	No	No	No	No	No	Yes	2	C	
501		Hwy 101				No	Drilled deep well	No		1.25	8	No	No	Don't Know	No	No	No	No	No	5	B	
502		Zilinsky Road				Yes	Community system				Yes	Yes	Yes	No	Yes			No	Yes	1	C	
503		Cove Road				No	Community system				Yes	Yes	Yes	Yes	No	No	No	No	Yes	5	C	Brew Bay C
504		Phillips Road				No	Community system				No	Yes	Yes	No	No	No	No	No	Yes	4	C	Lang Bay C
505		Butler Road				No	Community system				Yes	Yes	Yes	Yes	No	No	No	No	Yes	3	B	Myrtle Pond B
506		Zilinsky Road				No	Drilled deep well				No	Yes	No	No	Yes	Yes	No	No	Yes	4	C	
507		Tuck Rd.				No	Dug well	No	Yes		No	Yes	Yes	Don't Know	No	No	No	No	No	1	C	Lang Bay C
508		Zilinsky Road					Drilled deep well				No	No		No	No	No	No	No	No	5	C	
509		Zilinsky Road (B)				No	Dug well				No	No	Don't Know	No	No	No	No	No	No	1	C	
510		Zilinsky Road (A)				No	Dug well				No	No	Don't Know	Don't Know	No	No	No	No	Yes	3	C	
511		Phillips Road				No	Dug well						No	No	Yes	Yes	Yes	No	No	1	C	
512		Zilinsky Road					Dug well				Yes									5		Uses well from 2497 Zillins
513		Kelly Creek Rd.				No	Dug well			50+		Yes		Yes	No	No	No	No	No	5	C	
514		Kelly Creek Rd.				No	Dug well			50+	No	No	Don't Know	No	No	No	No	No	No	5	C	
515		Kelly Creek Rd.				No	Dug well			15	No	No	Don't Know	No	No	No	No	No	No	Yes	2	C
516		Phillips Road				No	Community system				No	Yes	Don't Know	Yes	No	No	No	No	Yes		C	Lang Bay C
517		Serendipity Road					Dug well			33		Yes	Yes	No	No	No	No	No	No	2+	C	
518		Hwy 101					Dug well				No	Yes	Yes	Yes	Yes	No	No	No	No	Yes	1	B
519		Hwy 101					Dug well			50+		Yes	No	No	No	No	No	No	Yes	2	B	
520		Hwy 101					Drilled deep well			2.5	No	Yes	No	No	No	No	No	No	Yes	2	B	
521		Hwy 101																	Yes	2	B	
522		Hwy 101																		3	B	
523		Hwy 101				Yes	Community system				Yes	Yes	Don't Know	No	No	Yes	No	No	No	2	B	
524		Woodyllyn Road				No	Community system	No		17	16	Yes	Yes	No				No	Yes	2	C	Woodyllyn C
525		Douglas Bay Road				No	Dug well			5	8	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	3	C
526		Williams Road				No	Drilled deep well	No			No	Yes	No	Yes	No	Yes	Yes	No	No	Yes	5	C
527		Claridge Road #36				No	Community system				Yes	Yes	Yes	No	No	No	No	No	Yes	3	B	
528		Myrtle Point Drive				No		Yes		20	No	Yes	Yes	No	Yes	No	No	No	Yes	6	B	
529		Serendipity Road				No	Dug well			20	No	Yes	No	Yes	No	No	No	No	No	Yes	2	C
530						No	Drilled deep well	No		6	No	Yes	Yes	No	No	No	No	No	No	5	C	
531		Claridge Road #22					Community system				No	No	Yes	No	No	No	No	No	No	Yes	1	B
532		Centennial Drive				No	Drilled deep well	No			Yes	Yes	Yes	No	No	No	No	No	Yes	2	C	
533		Gela Road				No	Drilled deep well	Yes		7	14	No	Yes	Yes	Yes	No	No	Yes	Yes	2	C	
534		Claridge Road #48				No	Drilled deep well	No			12	Yes	Yes	Don't Know	Yes	No	No	No	No	4	B	
535		Hwy 101				Yes	Drilled deep well	No		15	30	Yes	Yes	Yes	Yes	No	No	No	No	Yes	2	B
536		Williams Road				No	Dug well			1	20	No	Yes	Yes	No	No	No	No	No	Yes	2	C
537						No	Dug well		Yes		No	No	Yes	No	No	No	No	No	No	Yes	1 to 4	
538		Pine Tree Road				No	Dug well	No			No	No	Don't Know	No	No	No	No	No	No	2	C	
539		Palmer Road				No	Dug well	No			Yes	Yes	Yes	No	Yes	No	No	No	Yes	2	C	
540		View Road				No	Dug well			25	No	No	Don't Know	Yes	No	No	Yes	No	Yes	2	C	
541		Scotch Fir Point Road				No	Community system						Yes	Yes					Yes	1	C	Stillwater C
542		Donkenstry Road				No	Drilled shallow well	No			No	No	Don't Know	No	No	No	No	No	No	2	C	
543		Lander Road				No	Drilled deep well				Yes	Yes	Yes	Yes	No	No	No	No	No	2	C	
544		Edlund Road				No	Dug well	No		12	No	Yes	Yes	No	No	No	No	No	No	2	C	
545						No	Dug well				No	Yes	Don't Know	No	No	No	No	No	Yes	2	C	

Revision Date: September 26, 2005

10/18/2005 6:49 PM Page 8 of 8 Survey\_Results-sept\_26\_2005\_10