Government of Alberta ■

DRINKING WATER SAFETY PLAN

Guidance Notes for Drinking Water Safety Plan Template

1. Introduction

These notes are intended to assist in the compiling of a Drinking Water Safety Plan (DWSP) using the Drinking Water Safety Plan template. The intended function of each sheet is described and clarification given on the expected content. A summary of the individual sheets is given in Section 2.

If there are any terms or abbreviations that you are not familiar with, the Glossary sheet contains a list of commonly used ones together with a definition. The DWSP Info sheet also provides further information about DWSPs.

There are four main groups of sheets that contain information about the four elements of supply: source, treatment, network and customer. The sheet tabs on these have been colour coded to help identify them. Also, if you go to the menu sheet there are direct links to the start of each of these sections and to some other frequently used sheets.

The risk sheets will require the most effort to complete even though they have been partially pre-populated with expected risks (risks common to most water supply systems). These need to be assessed to see if they apply to your system and scored by you to assess the severity of the risk. You must then consider whether there are other risks which haven't been listed which are site specific to your system and add them into the risk table. Once you have completed the risk scoring you must identify an intervention for those with a score of 32 and above. An intervention is an additional measure or control that will reduce the risk to an acceptable level.
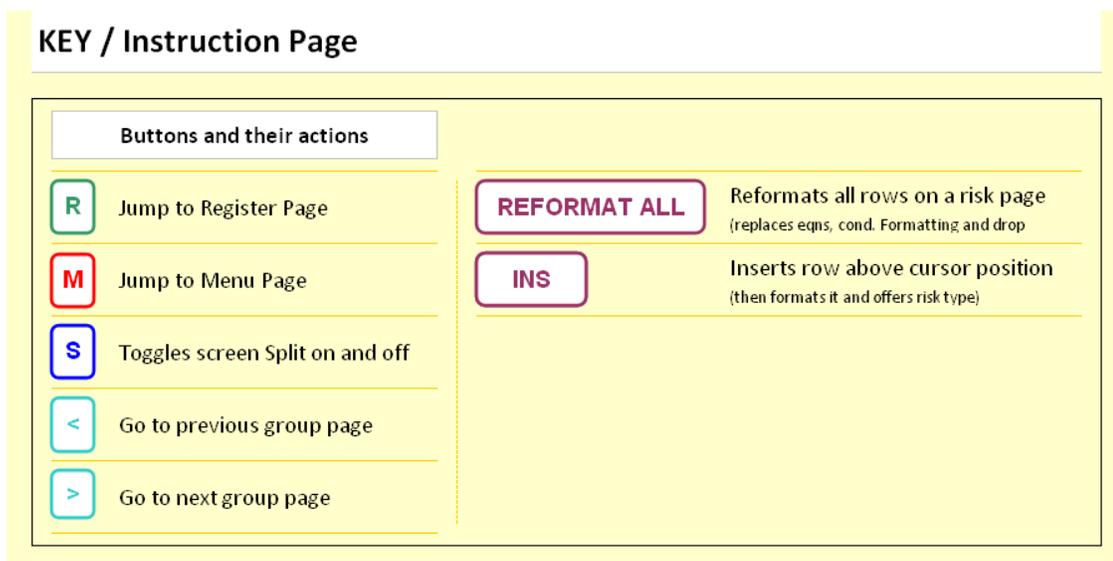
Where a risk has a score of 32 or more it will be copied through to the Key Risks Sheet. This is a summary of all the significant risks in your water supply system and how you intend to mitigate them.

You will also need to provide a schematic for the three elements of source, treatment and network. Guidance on how to produce these and the standard symbols you should use is provided in Section 13.

If you are unable to fill in any of the information due to lack of knowledge, do not leave it blank. In the meantime put in not known and attempt to find a colleague that is able to help. If you need further assistance or technical advice please contact your Drinking Water Operations Specialist at Alberta Environment.

2. The Sheets

- **Title**
  Input the water supply system, location, Approval Holder, Approval Number, AbWARN and the name of the person compiling the DWSP.

- **KEY/Instruction page**

  More details on how to use this page are provided in Section 6

- **Sheet Register**
  This provides a list of the worksheets and a hyperlink which allows you to navigate directly to the sheet rather than using the tabs at the bottom of the page.

- **DWSP Intro**
  Static information, no input required. This sheet provides you with basic information about DWSPs and the template.

- **Glossary**
  This provides a list of commonly used terms and abbreviations and their definitions.

- **Sheet Guide**
  Static information, no input required. Contains a summary of all of the sheets in the DWSP, their function and the content required.

- **Menu**
  No input required. This provides quick links to the main areas of the DWSP.

- **Risk Scoring**
  Static information, no input required. This sheet provides an explanation of the risk scoring method used, with definitions of the likelihood and consequence definitions and a matrix indicating the severity of the risk scores, highlighted in red, amber and green.

- **Core Detail**
  This sheet contains the basic information about your water supply system. Input information in all of the fields indicated.

- **Source Detail**
  Requires the principal information about the raw water source, including the watershed. Input information in all of the fields indicated.

- **Source Schematic**
  Unless you have one already, use the guidance given in Section 13 to construct a schematic showing how your raw water source is arranged, including any pump stations, raw water mains or other significant features. If possible, then paste it into the template here, or, if you working on hard copy insert it into the document.

- **Source Risks**
  This sheet consists of a risk table partially pre-populated with expected source risks. In addition to a general section they are divided into risks associated with specific types of source. You must review each of these risks to see whether they apply in your system and if so score them for likelihood and consequence. A value will then appear in the risk score box which will be colored either green, or amber or red depending on its severity. You must also consider whether there any additional site specific risks and if there are add them to the table. Once all the risks have been scored and the highest risks identified ($\geq$32) you then need to identify what actions are needed to mitigate these risks and who will be responsible. The highest risks will be colored red will be copied into the Key Risks sheet.

- **Treatment Detail**
  Requires the principal information about the treatment works. Input information in all of the fields indicated.

- **Treatment Schematic**
  Using the guidance given in Section 13 construct a schematic showing how your treatment works is arranged. This should include all major components of the treatment process, an indication of any point at which treatment chemicals are added and any on-line monitoring points. If possible, once complete, paste it into the template here, or, if you working on hard copy insert it into the document at this point.

- **Treatment Risks**
  This sheet consists of a risk table partially pre-populated with expected treatment risks. In addition to a general section they are divided into risks associated with specific types of process. You must review each of these risks to see whether they apply in your

system and if so score them for likelihood and consequence. A value will then appear in the risk score box which will be colored either green, or amber or red depending on its severity. You must also consider whether there any additional site specific risks and if there are add them to the table. Once all the risks have been scored and the highest risks identified ($\geq$32) you then need to identify what actions are needed to mitigate these risks and who will be responsible. The highest risks will be colored red will be copied into the Key Risks sheet.

- **Network Detail**
  Requires the principal information about the network, including reservoirs and pump stations. Input information in all of the fields indicated.

- **Network Schematic**
  Using the guidance given in Section 13 construct a schematic showing how your network is arranged, including any pump stations, service reservoirs or majors valve settings . If possible, once complete, paste it into the template here, or, if you working on hard copy insert it into the document at this point.

- **Network Risks**
  This sheet consists of a risk table partially pre-populated with expected network risks. In addition to a general section they are divided into risks associated with pumping stations and reservoirs. You must review each of these risks to see whether they apply in your system and if so score them for likelihood and consequence. A value will then appear in the risk score box which will be colored either green, or amber or red depending on its severity. You must also consider whether there any additional site specific risks and if there are add them to the table. Once all the risks have been scored and the highest risks identified ($\geq$32) you then need to identify what actions are needed to mitigate these risks and who will be responsible. The highest risks will be colored red will be copied into the Key Risks sheet.

- **Customer Detail**
  Requires the principal information about your customers. Input information in all of the fields indicated.

- **Customer Risks**
  As with the other three risk tables the customer risks sheet is pre-populated and requires to be scored. If there any supply specific risks then these should be added as before. Once all the risks have been scored and the highest risks identified ($\geq$32) you then need to identify what actions are needed to mitigate these risks and who will be responsible. The highest risks will be colored red will be copied into the Key Risks sheet.

  Although some control may be exercised on customer risks through the use of bylaws and bylaw inspections, in reality it is much more difficult to control risks and provide feasible interventions.

- **Key Risks**
  This will be used to bring together all of the major risks that have been identified in the risk tables. Risks scoring 32 or more should automatically be copied through from the source, treatment, network and customer risk tables.

- **Action Summary**
  The action summary sheet is used to record all of the actions that have been generated from the Key risks sheet, to assign ownership of the actions and to record expected date by which they should be completed.
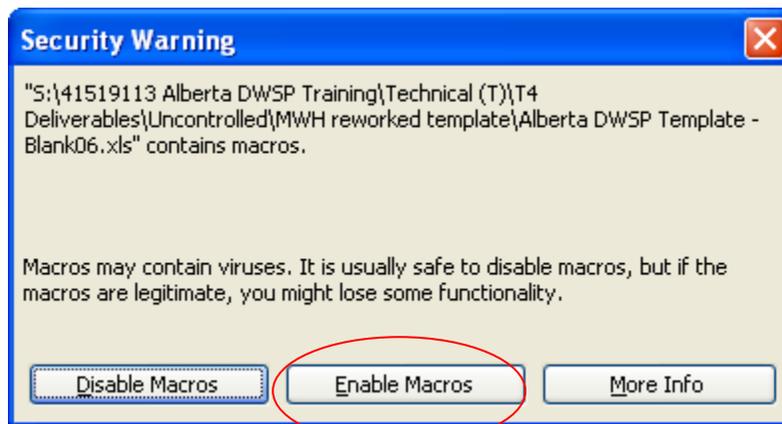
- **SOPs**
  This sheet is used to record any standard operating procedures that are used in the system and the cells should be filled in as shown.

3. Enabling Macros

For the template to operate correctly 'Macros' must be enabled upon opening of the file.

In **Microsoft Excel 2003** a warning box will appear when the file is opened – the user should click 'Enable Macros' (see below)

*Microsoft Excel 2003 – Enable Macro Security Warning*

In **Microsoft Excel 2007** the user should click the 'Options' button which appears at the top of the page and then select 'Enable this Content'
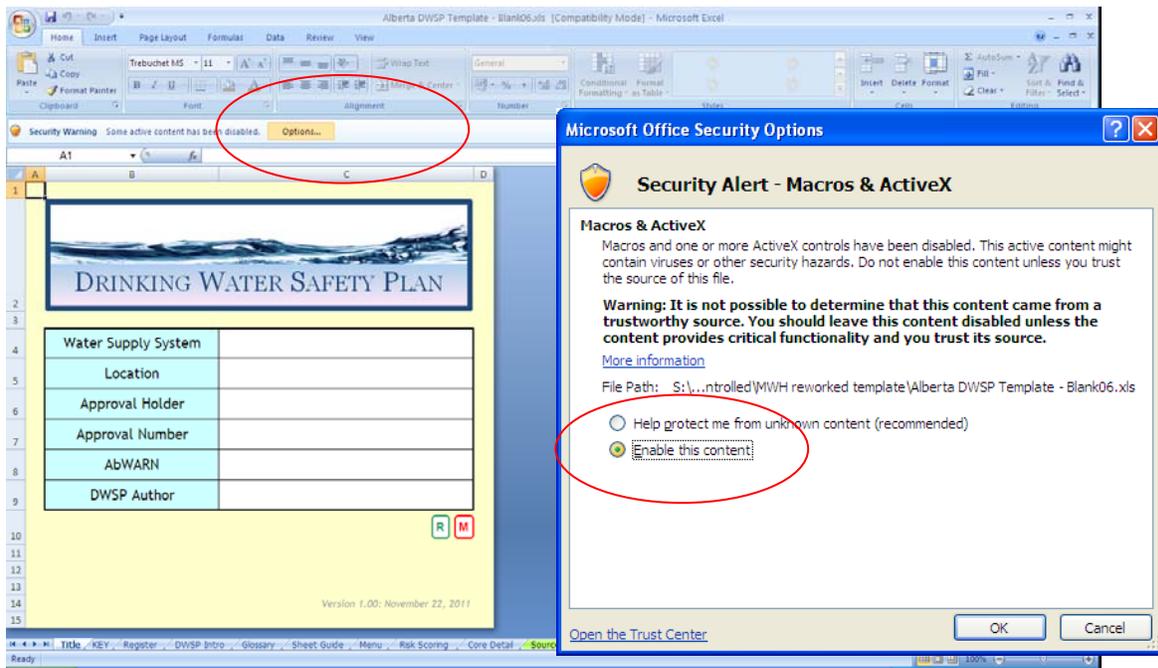
Microsoft Excel 2003 – Enable Macro Security Warning

4. Page Headings

Data entered in the boxes on the Title Page will now automatically be entered into the relevant data field at the top of all sheets. For example:
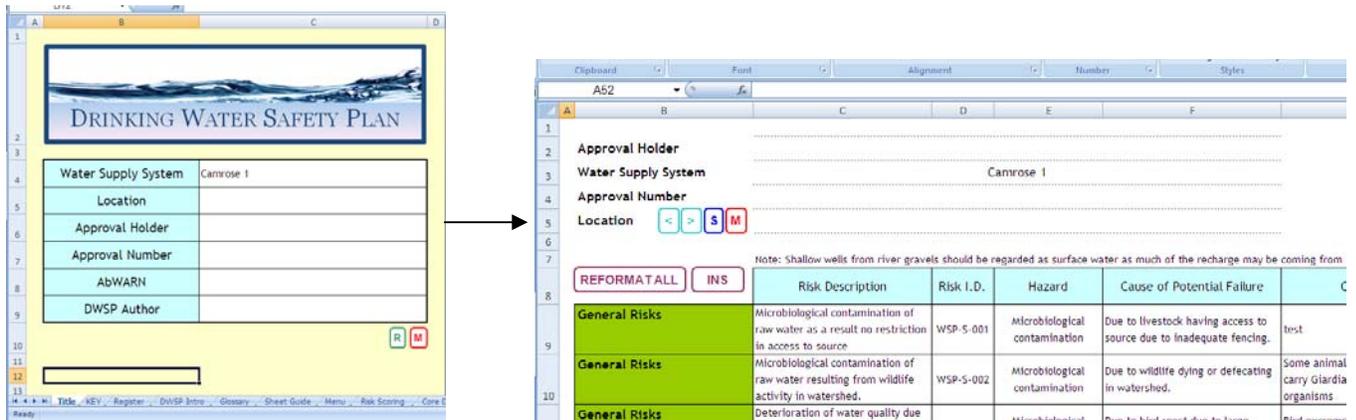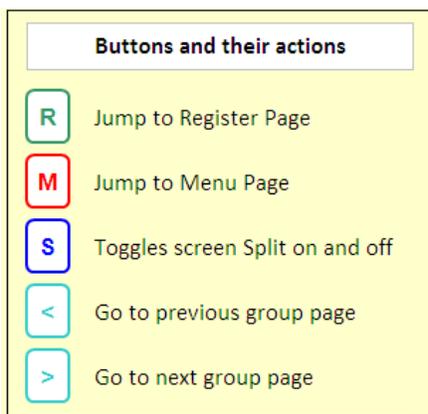
5. Core Detail

Datafields in the Core Detail sheet are linked with the individual information sheets for Source, Treatment, Network , where they share the same data.

6. Template Navigation

The following buttons are utilised in various pages to aid viewing and navigation

	Buttons and their actions
R	Jump to Register Page
M	Jump to Menu Page
S	Toggles screen Split on and off
<	Go to previous group page
>	Go to next group page

Clicking [S] will split the screen at the point Column E Row 9 in any of the four risk sheets, this enables the user to navigate around the risk sheet whilst always been able to view the Risk Description /ID and column headings.

The navigation buttons, [<][>], allow the user to move around pages in the same group e.g. Source Detail, Source Schematic, and Source Risk

7. Risk Page Formatting

The following formatting has been added to the risk page:

- Likelihood and Consequence scores are now automatically added depending upon the descriptors in columns L & M.
- Text in all boxes in now wrapped and is of a standard size and font

To ensure the format is retained following user edits two new functions have been included.

REFORMATALL   This will enforce the set format across all rows in the risk table. It will not delete any data

INS   The user may want to insert new rows in the risk sheet. To ensure these rows have the set format, the INS button should be used. This will insert a row in the line above the current point of the cursor. The risk section name, e.g. Facility Specific Risks, will be added based on the row where the cursor is placed. For example, with the cursor on a 'Facilities Specific' risk, the new line with be named 'Facility Specific' risk. This datafield, however, can be changed by the user if they wish.

8. Alterations to Risk Page Format [ADMINSTRATOR FUNCTION]
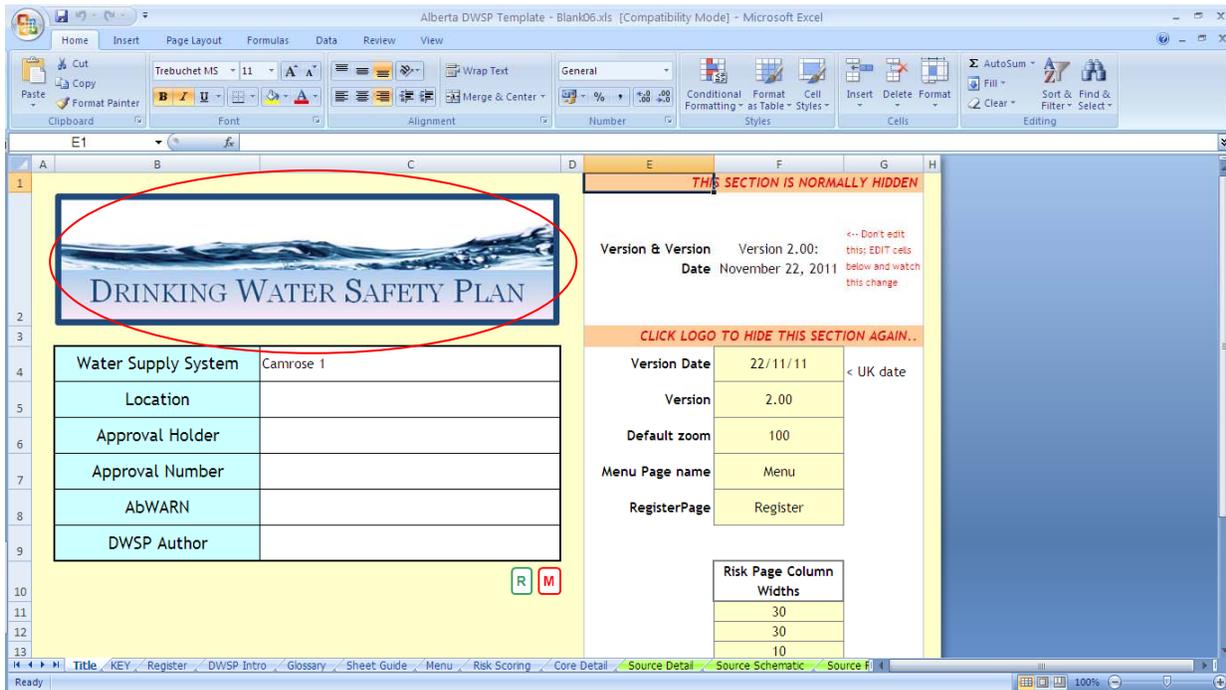
Left click mouse button, and pressing shift at the same time, will bring up a normally hidden section.   This contains some extra data fields which allow the default zoom, and risk page column widths, to be set.

9. Key Risks Sheet

As previously, pressing **Clear and Consolidate Risks** button on the Key Risks page will pull through those risks from the each of the four risk sheets which have a score greater than 32. This data will be overwritten each time this button is pressed.

Therefore, no original data should be entered by the user in the datafields on this sheet. Data should be entered on the relevant risk sheets.

10. Action Summary Sheet

When the 'Update Action Summary' button is pressed Excel, will cross reference each risk (by its ID) on the Action Summary sheet, with a risk on the Key Risk sheet. Where new risks have been added, since the last update, to the Key Risk sheet, Excel with add these risks to the bottom of the list on the Action Summary page. The remaining risks on this page will be untouched. This enables an audit trail to be kept of where risks have been resolved.

Aside from the Risk Description and Risk ID columns, all the other datafields on this page are original data i.e. it is not stored in, or referenced to, any other sheet in the Workbook.

11. Note on risk numbering

To ensure that the Key Risk / Action Summary function operates correctly the following rules need to be adhered to regarding risk numbering:

1. After the Key Risk sheet has been populated for the first time, the user should not re-number any risks.
2. Each new risk added must have a unique reference number

12. Note about using Macros

If the buttons in the template do not work correctly, check that the Excel file is not set to 'Design Mode'.

In **Excel 2003**, this can be found through clicking on Tools / Macro / Visual Basic Editor, and then clicking on the button that looks like a set-square and pencil (see below)
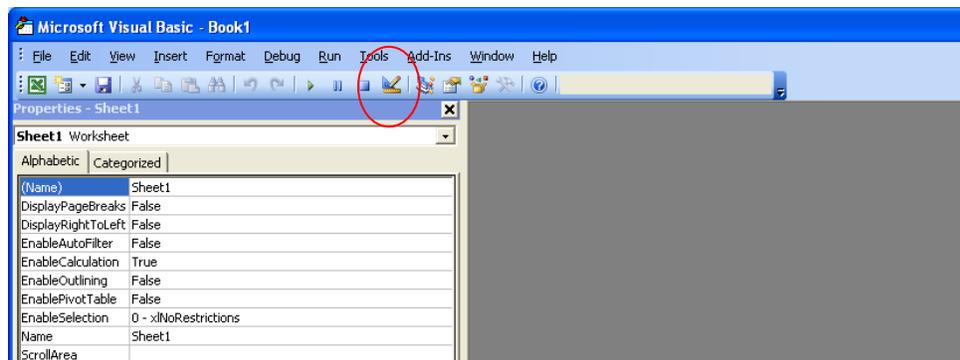
Microsoft Excel 2003 – location of Design Mode button

In Excel 2007, select 'Developer' tab at the top, then click on the button that looks like a set-square and pencil.

If you don't see the 'Developer' tab, then Click the Microsoft Office Button, and then click Excel Options. Click Popular, and then select the Show Developer tab in the Ribbon check box.

13. Schematics Guidance

The schematic (diagram) represents the elements of the water supply system using abstract, graphic symbols rather than realistic pictures of the constituent parts of the process and is not drawn to scale.

It takes the form of a flow chart with the symbols used to represent each stage of the process in its logical progression. Lines with arrows are usually used to indicate the direction of flow and to indicate any loops in the process (e.g. wash-water re-cycle) It is important to include all the stages of the process and to include any monitoring.

If you already have a suitable schematic, then this may be used instead of producing a new one. If using an existing one, however, make sure that it is an accurate depiction of 'as built' rather than a planned or subsequently modified design.

The symbols shown on the next two pages are those recommended by Alberta Environment and Water for the preparation of schematics. To use the symbols in the worksheets, open this file and right-click over the symbol you wish to use then select "copy" from the pop-up menu; go to the worksheet and with the mouse indicator close to where you wish the symbol to be placed right-click the mouse button again and select "paste". The symbol will now appear on the worksheet and can be moved around to fit your schematic.

Appendix 1 gives some examples of schematics suitable for inclusion in the DWSP. Further details are provided in the on-line training materials available on the Alberta Environment and Water website.

14. Additional Information and Support

There is additional information on the Alberta Environment and Water website at this address [web address] where you will also find links to other websites of interest. There is also a dedicated Drinking Water Safety Plan mailbox where you can send any additional questions you may have on the Drinking Water Safety Plan approach or the use of the template.

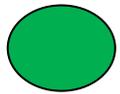**Symbols for use in DWSP Schematics**

Transport Step
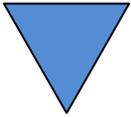
Storage

Human & Natural Activity

Monitoring

Valve

Chemical Process

Consumers

 Operational Step
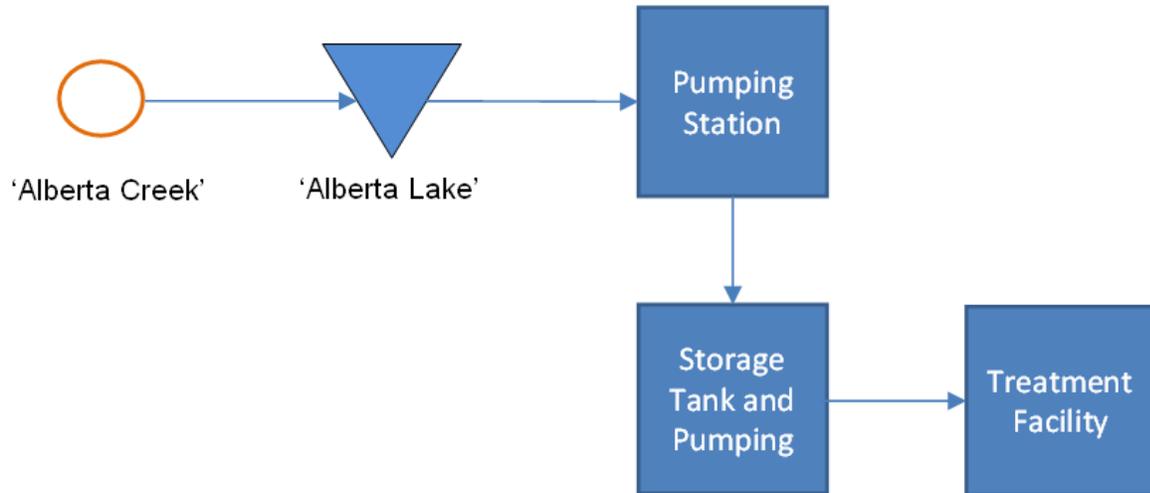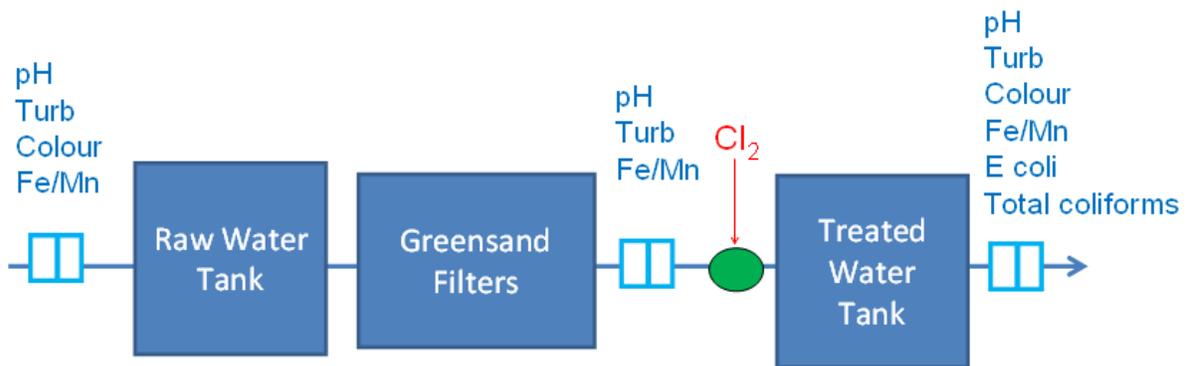
 Flow meter

 Pump

Treatment process

Treatment process

Appendix 1 – Examples of Schematics for use with DWSPs

(a) Example Source Schematic

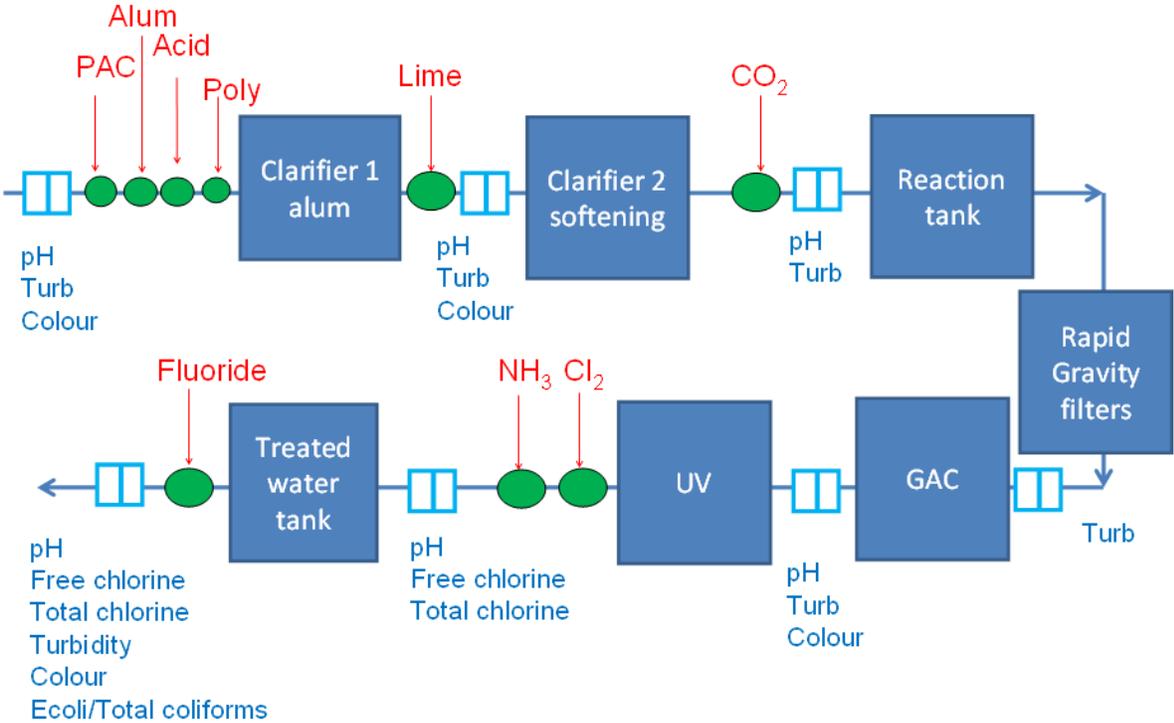## (b) Example Well Treatment Schematic

(c) Example Surface Water Treatment Schematic

(d) Example Network Schematic