Schedule 14, Appendix 2

MANITOBA CONSERVATION AND WATER STEWARDSHIP
ENVIRONMENTAL MANAGEMENT SYSTEM

EMS Lab Data File Format
Nov 2011

For example the first Lab-Opr file from Laboratory 27 would be named "`00000001.M027`". The second file would be named "`00000002.M027`", and so on.

It is the responsibility of the Laboratory to maintain their file naming sequence. If a file is sent with a filename that has already been used, the file will be rejected

B. **Lab-MWS** files (i.e. files submitted by the Laboratory for Samples submitted by MWS must adhere to the following naming conventions:

- The filename must either be the data file sequence number for the given Laboratory, or the work order number (if linked directly to Invoicing).

- The filename must be left padded with "zero" characters to make the filename exactly 8 characters (alphanumeric) long.

- The file name extension must be the three-digit Laboratory code assigned to the Laboratory by MWS.

- Each file must contain analysis for only one User Group (e.g. 381:Manitoba Water Stewardship Surface Water Quality,

For example the first Lab-Opr file from Laboratory 127 would be named "`00000001.127`". The second file would be named "`00000002.027`", and so on.

It is the responsibility of the Laboratory to maintain their file naming sequence. If a file is sent with a filename that has already been used, the file will be rejected.

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Record Name   Sample Header Record

Description   This record type contains information about a Sample

Notes   All Fields are 'fixed format'. If optional data is not included the appropriate character positions must be filled with spaces. Character fields that are not completely filled must be padded on the right with spaces. Numeric fields that are not completely filled must be padded on the left with zeroes or spaces.

This Record type is required for Lab-MWS and Lab-Opr files.

All Dates must be in Central Standard Time (CST).

The "Required/Optional" Columns indicate whether each field is Required (R) or Optional (O) for the two file types: "Lab-MWS" or "Lab-Opr". An "n/a" (not applicable) in the required column indicates that the field should be left blank as it is ignored for that type of file.

Sample Header Record (Type "S")

Field No.	Field Name	Description	Required / Optional Lab-Opr	Required / Optional Lab-MWS	Data Type	Data Format	Data Len.	Start Pos.	End Pos.
1	Record Type	"S"	R	R	Char	X	1	1	1
2	Record Number	Sequential number of each record in the file	R	R	Num	999999	6	2	7
3	Sample No.	Sample No. Issued by MWS	n/a	R	Char	X(10)	10	8	17
4	Sample Date	Date Sample was taken from Station	R	R	Date	YYYYMMDDHHMMSS	14	18	31
5	Sample End Date	Date Sample was completed from station	O	O*	Date	YYYYMMDDHHMMSS	14	32	45
6	Sent Date	Date Sample was sent to the Laboratory	n/a	O*	Date	YYYYMMDDHHMMSS	14	46	59
7	Received Date	Date Sample was received by the Laboratory	R	R	Date	YYYYMMDDHHMMSS	14	60	73
8	Returned date	Date Sample was returned to MWS	n/a	R	Date	YYYYMMDDHHMMSS	14	74	87
9	Laboratory Code	ID Code of Laboratory where measurements are done **	R	R	Char	X(3)	3	88	90
10	Laboratory Sample Number	Sample number used internally by the Laboratory	R	R	Char	X(20)	20	91	110
11	Station No.	Station No. issued by MWS	R	O*	Char	X(10)	10	111	120

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Field No.	Field Name	Description	Sample Header Record (Type "S") Data Type Required / Optional Lab-Opr	Lab-MWS	Data Format	Data Len.	Start Pos.	End Pos.

For Laboratory, If the data is associated with a particular approval (e.g. for bacterial monitoring data), this field will contain the Approval ID issued by MWS associated with the Sample

* Required is supplied by Manitoba Water Stewardship

** If populated must be a valid MWS Code.

*** Required if actual Method Detection Limit differs from the standard VMV Parameter's Method Detection Limit

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Field No.	Field Name	Description	Required / Optional Lab-Opr	Lab-MWS	Data Type	Data Format	Data Len.	Start Pos.	End Pos.
			Measurement Detail Record ("B" or "M")						
7	Measurement Date	The date the measurement was made	R	R	Date	YYYYMMDDHHMMSS	14	49	62
8	VMV Code	VMV Parameter code for Measurement **	R	R	Num	999999	6	63	68
9	Value	Numeric value of measurement	O#	R	Num	999999.99999	12	69	80
10	Flag	Flag to qualify the measurement value **	O	O	Char	C	1	81	81
11	Pre-Treatment Code	Code for any pre-treatment of the Sample	n/a	n/a	Char	X	1	82	82
12	Sample Method Detection Limit	Method Detection Limit for measurement	O***	O***	Char	X(15)	15	83	97
13	Value Type Code	Code to describe the type of value measured	n/a	n/a	Char	X(2)	2	98	99
14	Qualifier 1	1st Qualifier for measured value **	O	O	Char	X(4)	4	100	103
15	Qualifier 2	2nd Qualifier for measured value **	O	O	Char	X(4)	4	104	107
16	Qualifier 3	3rd Qualifier for measured value **	O	O	Char	X(4)	4	108	111
17	Qualifier 4	4th Qualifier for measured value **	O	O	Char	X(4)	4	112	115
18	Qualifier 5	5th Qualifier for measured value **	O	O	Char	X(4)	4	116	119
19	Qualifier 6	6th Qualifier for measured value **	O	O	Char	X(4)	4	120	123
20	Qualifier 7	7th Qualifier for measured value **	O	O	Char	X(4)	4	124	127
21	Missing Meas. Code	Code to indicate reason for missing measurement **	O#	n/a	Char	X(3)	3	128	130

\# Either Value or Missing Meas. Code is required – one or the other, but not both

* Required if supplied by Manitoba Water Stewardship

** If populated must be a valid MWS Code.

*** Required if actual Method Detection Limit differs from the standard VMV Parameter's Method Detection Limit

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Record Name   Measurement detail Comment (Type "K")

Description   This optional record type contains comments pertaining to a measurement or bio-measurement.

Notes   All Fields are 'fixed format'. If optional data is not included the appropriate character positions must be filled with spaces. Character fields that are not completely filled must be padded on the right with spaces. Numeric fields that are not completely filled must be padded on the left with zeroes or spaces.

If a Measurement Detail Comment record is included, all fields in the comment record are required.

Only one Measurement Detail Comment record is allowed for each measurement record.

The Laboratory Sample Number, measurement type and measurement number fields in each "K" record must relate to a corresponding "M" or "B" record in the data file with the same Laboratory Sample number, measurement type and measurement number.

The "Required/Optional" Columns indicate whether each field is Required (R) or Optional (O) for the two file types: "Lab-MWS" or "Lab-Opr". An "n/a" (not applicable) in the required column indicates that the field should be left blank as it is ignored for that type of file.

Field No.	Field Name	Description	Required / Optional		Data Type	Data Format	Data Len.	Start Pos.	End Pos.
			Lab-Opr	Lab-MWS					
1	Record Type	"T"	R	R	Char	X	1	1	1
2	Record Number	Sequential number of each record in the file	R	R	Num	999999	6	2	7
3	Laboratory Sample Number	Sample Number used internally by the Laboratory	R	R	Char	X(20)	20	8	27
4	Measurement Type	"M" = Measurement "B" – Bio-Measurement	R	R	Char	X	1	28	28
5	Measurement No.	Measurement number for this comment	R	R	Num	999999999	9	29	37
6	Comment	Text comment describing measurement	R	R	Char	X(255) (Maximum size is 255 characters. This field is terminated by the LINEFEED character.)	0 to 255	38	38 to 292

Measurement detail Comment (Type "K")

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SCHEDULE 14

TERMS AND CONDITIONS FOR DATA TRANSFER for MANITOBA CONSERVATION AND WATER STEWARDSHIP WATER QUALITY OFFICE OF DRINKING WATER GROUNDWATER

General Specifications

The Laboratory must be required to provide regular electronic "downloads" to Manitoba of all Laboratory Services requested by Manitoba. These downloads shall be performed in the format and specification outlined in this Schedule 14. It shall be the responsibility of the Laboratory to track all Samples and information of interest to Manitoba so that each download is complete and accurate with respect to the information being downloaded and that there is no overlap in the downloaded information. Manitoba shall be kept apprised and/or be part of any changes to the system which may impact on the ability of Manitoba to collect and download data.

For Manitoba Conservation and Water Stewardship, the Laboratory must download electronic data to three different databases designed to receive the electronic download with distinct formatting requirements. The Groundwater Management Section of Water Stewardship currently uses a GWDrill database (formatting requirements can be found in Appendix 14-1). The Groundwater Management Section is currently reviewing its GWDrill Database in expectation of its eventual replacement. This replacement could occur during the period of the Agreement. The Laboratory must be required to change the reporting file format during this contract and must be able to meet those requirements in a timely fashion. The Office of Drinking Water and the Water Quality Management Section both use an Environmental Management System (EMS) based database that are unique but have many common elements. Formatting details on the EMS based database can be found in Appendix 14- 2.

The Laboratory may be required to adjust the reporting units of Parameters to accommodate the number of digits that can be accepted into the EMS database. Currently the number of digits accepted into the database is five (5).

The Laboratory must be prepared to accommodate over the course of the Agreement any at present unforeseen requests made by Manitoba User Groups (*i.e.* monitoring and reporting requirements associated with a new regulation) with regards to potential electronic downloads likely in an EMS format. In the meantime, the Laboratory should anticipate, as a minium requirement for other relevant Manitoba User Groups, downloading electronic data in a spreadsheet format such as Excel.

Laboratory method of analysis for all variables outlined in the Agreement, within a four month period after awarding of the Agreement at no cost to Manitoba.

2.2   All VMV's used in the downloading of data must be initially approved by Manitoba prior to implementation.

2.3   The Laboratory shall be responsible for updating and adding new VMVs as new methods or analyses are developed over the course of the Agreement. Any new VMV shall be forwarded to Manitoba for approval and ultimately as an update to the VMV library within their database system at no cost to Manitoba.

2.4   Manitoba has designated a limited number of VMVs for Parameters such as Sample depth; sequence number; that may/will be found on the Submission Form (see Figure 13-1). The Laboratory shall capture this information from the Submission Form and download it with all measured data relevant to that Sample.

3.   Format of Laboratory Data Transfer Files

See Appendix 14 - 1 to 14- 2 for relevant information.

4.   Manitoba Database Structure

See Appendix 14-1 to 14-2 for relevant information.

5.   Data Reporting

5.1   Data Transfer Quality Audits

(a)   The Laboratory must ensure that the file format and data contained in each downloaded file are free of errors and that the files pass quality control audits performed by Manitoba to verify accuracy and completeness of information.

(b)   Manitoba, at its sole discretion, may request any file which does not pass its quality control audits to be corrected by the Laboratory and re-sent at the Laboratory's cost.

5.2   Reporting Data for Re-analyzed Samples or Report Corrections

6   Data Management Changes

Changes to Analytical Procedures or Codes

The Laboratory shall provide an electronically transferred file containing a complete list of all analytical procedures and codes associated with Manitoba analyses at regular intervals as specified by Manitoba. The Laboratory shall clearly indicate the changes made to the list with each update.

7   Data Storage

The Laboratory must maintain an electronically accessible file containing as a minimum the most recent three years of data after the expiry or earlier termination of the Agreement.