Acid Rain
ELG05

Compiled by NB-IRDT Staff
Last updated February 2024

How to Obtain More Information

For more information about this Codebook or other services and data available from the New Brunswick Institute for Research, Data and Training (NB-IRDT), contact us in any of the following ways:

- visit our website at: https://www.unb.ca/nbirdt
- email us at nb-irdt@unb.ca
- call us at 506-447-3363 Monday to Friday, 8:30am to 4:30pm

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About this Codebook

This data product is provided 'as is,' and NB-IRDT makes no warranty, either express or implied, including but not limited to warranties of merchantability and fitness for a particular purpose. In no event will NB-IRDT be liable for any direct, special, indirect, consequential or other damages, however caused.

Due to the operational nature of administrative data sets, there is potential for discrepancies between the names of variables and their corresponding definitions. In the case of such a discrepancy, the variable definition should be considered the most accurate representation.

Overview

Commented [MP1]: DA please complete.

Overview of the database

Sample Universe

Commented [MP2]: DA please complete.

Who/what is contained in the dataset (e.g., the Citizen Database contains people who have or had New Brunswick Medicare)

Date Range

Commented [MP3]: DA please complete.

Date range of the data. If the range does not follow the calendar year, please list the exact dates (if possible). (format: yyyy-mm-dd)

Data Source

Commented [MP4]: DA please complete.

Source where the data came from

How to Cite this Codebook

New Brunswick Institute for Research, Data and Training. (2024). Acid Rain ELG05 Codebook for years 1987-2022. Fredericton, NB: New Brunswick Institute for Research, Data and Training.

Acknowledgements

The ELG05 Database is used with the permission of "New Brunswick Department of Environment and Local Government."

About this Product

Purpose of the Product

The purpose of the ELG05 Database Codebook is to provide information on the linkable New Brunswick Acid Rain data held at the New Brunswick Institute for Research, Data and Training (NB-IRDT). This data is accessible to researchers for environmental and other areas of research.

Definitions and Concepts

Any relevant definitions and concepts related to the dataset

Commented [MP5]: DA please complete.

Content

Contents of the dataset including the number of fields and field names
Please include a description of what each record represents

Commented [MP6]: DA please complete.

General Methodology

If known

Commented [MP7]: DA please complete.

Limitations

Any limitations of the dataset (e.g., may not contain all variables in the data source)

Commented [MP8]: DA please complete.

Comparison to Other Products/Versions

If applicable

Commented [MP9]: DA please complete

Using with Other Products

If applicable

Commented [MP10]: DA please complete.

Record Layouts and Data Descriptions

Overview

Acid Rain

#	Name	Label	Type
1	STATION_NAME	Station ID (key into Station Table)	Text
2	STATION_ID	Lab number	text
3	LATITUDE	Latitude of the station	Numeric
4	LONGITUDE	Longitude of the station	Numeric
5	LAB_NO	Field number	Numeric
6	FIELD_NO	Field number assigned by DELG	Numeric
7	FROM_DATE	Sample collection start date	Date
8	TO_DATE	Sample collection end date	Date
9	WEEK_NO	Week identifier (x of 52 weeks) using end-date column	Numeric
10	YEAR_NO	Sample year	Numeric
11	SAMPLE_WT_g	Sample weight	Numeric
12	PRECIP_mm	Precipitation amount calculated from sample weight	Numeric
13	CALC_PRECIP	Precipitation amount	Text
14	EFFIC_PERCENT	Efficiency (recorded precipitation relative to sample weight)	Numeric
15	SUBSTAND	Substituted rain gauge reading	Numeric
16	LSUBSTAND	Tolerance indicator for measurement	Text
17	LAB_WT_g	Lab sample weight	Numeric
18	ACDT	Acidity measurement	Numeric
19	ACDT_Units	Unit in which measured	Text
20	LACDT	Tolerance indicator for measurement	Text
21	CAD	Cadmium spices	Numeric
22	CAD_Units	Unit in which measured	Text
23	LCAD	Tolerance indicator for measurement	Text
24	COND	Conductivity measurement	Numeric
25	COND_Units	Unit in which measured	Text
26	LCOND	Tolerance indicator for measurement	Text
27	MGD	Magnesium species measurement	Numeric
28	MGD_Units	Unit in which measured	Text
29	LMGD	Tolerance indicator for measurement	Text
30	NA	Sodium species measurement	Numeric
31	NA_Units	Unit in which measured	Text

32	LNA	Tolerance indicator for measurement	Text
33	NH3T	Ammonia species measurement	Numeric
34	NH3T_Units	Unit in which measured	Text
35	LNH3T	Tolerance indicator for measurement	Text
36	NOX	Nitrogen species measurement	Numeric
37	NOX_Units	Unit in which measured	Text
38	LNOX	Tolerance indicator for measurement	Text
39	NO2D	Nitrite	Numeric
40	NO2D_Units	Unit in which measured	Text
41	LNO2D	Tolerance indicator for measurement	Text
42	PH	PH measurement	Numeric
43	PH_Units	Unit in which measured	Text
44	LPH	Tolerance indicator for measurement	Text
45	POTASS	Potassium measurement	Numeric
46	POTASS_Units	Unit in which measured	Text
47	LPOTASS	Tolerance indicator for measurement	Text
48	CLIC	Chloride/Cl inductive coupled	Numeric
49	CLIC_Units	Unit in which measured	Text
50	LCLIC	Tolerance indicator for measurement	Text
51	SO4IC	Sulphate measurement	Numeric
52	SO4IC_Units	Unit in which measured	Text
53	LSO4IC		Text
54	ALKG	Alkalinity Gran's	Numeric
55	ALKG_Units	Unit in which measured	Text
56	LALKG	Tolerance indicator for measurement	Text
57	ACDG	Acidity	Numeric
58	ACDG_Units	Unit in which measured	Text
59	LACDG	Tolerance indicator for measurement	Text
60	ALKT	Alkalinity	Numeric
61	ALKT_Units	Unit in which measured	Text
62	LALKT	Tolerance indicator for measurement	Text
63	HION	Hydrogen Ion	Numeric
64	HION_Units	Unit in which measured	Text
65	NO3	Nitrite species calculation	Numeric
66	NO3_Units	Unit in which measured	Text

67	LNO3	Tolerance indicator for measurement	Text
68	HARD	Hardness calculation	numeric
69	HARD_Units	Unit in which measured	Text
70	LHARD	Tolerance indicator for measurement	Text
71	NH4	Ammonium species calculation	Numeric
72	NH4_Units	Unit in which measured	Text
73	LNH4	Tolerance indicator for measurement	Text
74	ESO4	Excess sulphate	Numeric
75	ESO4_Units	Unit in which measured	Text
76	LESO4	Tolerance indicator for measurement	Text
77	VANDIUM	Vanadium	numeric
78	VANDIUM_Units	Unit in which measured	Text
79	LVANDIUM	Tolerance indicator for measurement	Text
80	AL	Aluminum	Numeric
81	AL_Units	Unit in which measured	Text
82	LAL	Tolerance indicator for measurement	Text
83	CD	Cadmium	Numeric
84	CD_Units	Unit in which measured	Text
85	LCD	Tolerance indicator for measurement	Text
86	PB	Lead	Numeric
87	PB_Units	Unit in which measured	Text
88	LPB	Tolerance indicator for measurement	Text
89	IB	Ion balance calculation	Numeric
90	IB_Units	Unit in which measured	Text
91	AS	Arsenic species measurement	Numeric
92	AS_Units	Unit in which measured	Text
93	LAS	Tolerance indicator for measurement	Text
94	ONE_EVENT	Single day of precipitation within week	Text
95	SMPL_MISS	Observation missing	Text
96	COMMENTS	Comment codes – comma separated	Text

STATION_NAME
Station Id (key into Station Table).

STATION_ID
Lab number.

LATITUDE
Latitude of the station.

LONGITUDE
Longitude of the station.

LAB_NO
Field number.

FIELD_NO
Field number assigned by DELG.

FROM_DATE
Sample collection start date.

TO_DATE
Sample collection end date.

WEEK_NO
Week identifier (x of 52 weeks) using end-date column.

YEAR_NO
Sample year.

SAMPLE_WT_g
Sample weight.

PRECIP_mm
Precipitation amount calculated from sample weight.

CALC_PRECIP
Precipitation amount.

EFFIC_PERCENT
Efficiency (recorded precipitation relative to sample weight).

SUBSTAND
Substituted rain gauge reading.

LSUBSTAND
Tolerance indicator for measurement.

Code	Description - English	Description - French
A	Approximate value	
B	Lab error/blunder	
C	Calculated value	
F	Result to follow	
G	Greater than result shown, unable to quantitate	
I	Interferences present	
L	Detected at a level below method detection limit	
M	Missing result	
N	No sample bottle received at the laboratory	
Q	Results not quality assured	
S	Sample received in inappropriate condition/time	
T	Trace – estimate of value between zero and detection limit	
U	Undefined	
V	Insufficient volume to perform analysis	
*****	VMV Code: (Valid Method Variable) # indicating comparable methods of analysis between federal & provincial laboratories	
<	Lower limit for detection	
0		
1		
2		

LAB_WT_g
Lab sample weight

ACDT
Acidity measurement.

ACDT_Units
Unit in which measured.

LACDT
Tolerance indicator for measurement.

Code	Description - English	Description - French
A	Approximate value	
B	Lab error/blunder	
C	Calculated value	
F	Result to follow	
G	Greater than result shown, unable to quantitate	
I	Interferences present	
L	Detected at a level below method detection limit	
M	Missing result	
N	No sample bottle received at the laboratory	
Q	Results not quality assured	
S	Sample received in inappropriate condition/time	
T	Trace – estimate of value between zero and detection limit	
U	Undefined	
V	Insufficient volume to perform analysis	
*****	VMV Code: (Valid Method Variable) # indicating comparable methods of analysis between federal & provincial laboratories	
<	Lower limit for detection	

CAD
Cadmium spices

CAD_Units
Unit in which measured.

LCAD
Tolerance indicator for measurement.

Code	Description - English	Description - French
A	Approximate value	
B	Lab error/blunder	
C	Calculated value	
F	Result to follow	
G	Greater than result shown, unable to quantitate	
I	Interferences present	

L	Detected at a level below method detection limit	
M	Missing result	
N	No sample bottle received at the laboratory	
Q	Results not quality assured	
S	Sample received in inappropriate condition/time	
T	Trace – estimate of value between zero and detection limit	
U	Undefined	
V	Insufficient volume to perform analysis	
*****	VMV Code: (Valid Method Variable) # indicating comparable methods of analysis between federal & provincial laboratories	
<	Lower limit for detection	

COND
Conductivity measurement

COND_Units
Unit in which measured.

LCOND
Tolerance indicator for measurement.

Code	Description - English	Description - French
A	Approximate value	
B	Lab error/blunder	
C	Calculated value	
F	Result to follow	
G	Greater than result shown, unable to quantitate	
I	Interferences present	
L	Detected at a level below method detection limit	
M	Missing result	
N	No sample bottle received at the laboratory	
Q	Results not quality assured	
S	Sample received in inappropriate condition/time	

T	Trace – estimate of value between zero and detection limit
U	Undefined
V	Insufficient volume to perform analysis
*****	VMV Code: (Valid Method Variable) # indicating comparable methods of analysis between federal & provincial laboratories
<	Lower limit for detection

MGD
Magnesium species measurement.

MGD_Units
Unit in which measured.

LMGD
Tolerance indicator for measurement.

Code	Description - English	Description - French
A	Approximate value	
B	Lab error/blunder	
C	Calculated value	
F	Result to follow	
G	Greater than result shown, unable to quantitate	
I	Interferences present	
L	Detected at a level below method detection limit	
M	Missing result	
N	No sample bottle received at the laboratory	
Q	Results not quality assured	
S	Sample received in inappropriate condition/time	
T	Trace – estimate of value between zero and detection limit	
U	Undefined	
V	Insufficient volume to perform analysis	
*****	VMV Code: (Valid Method Variable) # indicating comparable methods of analysis	

	between federal & provincial laboratories	
<	Lower limit for detection	

NA
Sodium species measurement.

NA_Units
Unit in which measured.

LNA
Tolerance indicator for measurement.

Code	Description - English	Description - French
A	Approximate value	
B	Lab error/blunder	
C	Calculated value	
F	Result to follow	
G	Greater than result shown, unable to quantitate	
I	Interferences present	
L	Detected at a level below method detection limit	
M	Missing result	
N	No sample bottle received at the laboratory	
Q	Results not quality assured	
S	Sample received in inappropriate condition/time	
T	Trace – estimate of value between zero and detection limit	
U	Undefined	
V	Insufficient volume to perform analysis	
*	VMV Code: (Valid Method Variable) # indicating comparable methods of analysis between federal & provincial laboratories	
<	Lower limit for detection	

NH3T
Ammonia species measurement.

NH3T_Units
Unit in which measured.

LNH3T
Tolerance indicator for measurement.

Code	Description - English	Description - French
A	Approximate value	
B	Lab error/blunder	
C	Calculated value	
F	Result to follow	
G	Greater than result shown, unable to quantitate	
I	Interferences present	
L	Detected at a level below method detection limit	
M	Missing result	
N	No sample bottle received at the laboratory	
Q	Results not quality assured	
S	Sample received in inappropriate condition/time	
T	Trace – estimate of value between zero and detection limit	
U	Undefined	
V	Insufficient volume to perform analysis	
*****	VMV Code: (Valid Method Variable) # indicating comparable methods of analysis between federal & provincial laboratories	
<	Lower limit for detection	

NOX
Nitrogen species measurement.

NOX_Units
Unit in which measured.

LNOX
Tolerance indicator for measurement.

Code	Description - English	Description - French
A	Approximate value	
B	Lab error/blunder	

C	Calculated value
F	Result to follow
G	Greater than result shown, unable to quantitate
I	Interferences present
L	Detected at a level below method detection limit
M	Missing result
N	No sample bottle received at the laboratory
Q	Results not quality assured
S	Sample received in inappropriate condition/time
T	Trace – estimate of value between zero and detection limit
U	Undefined
V	Insufficient volume to perform analysis
*****	VMV Code: (Valid Method Variable) # indicating comparable methods of analysis between federal & provincial laboratories
<	Lower limit for detection

NO2D
Nitrite.

NO2D_Units
Unit in which measured.

LNO2D
Tolerance indicator for measurement.

Code	Description - English	Description - French
A	Approximate value	
B	Lab error/blunder	
C	Calculated value	
F	Result to follow	
G	Greater than result shown, unable to quantitate	
I	Interferences present	
L	Detected at a level below method detection limit	
M	Missing result	

N	No sample bottle received at the laboratory	
Q	Results not quality assured	
S	Sample received in inappropriate condition/time	
T	Trace – estimate of value between zero and detection limit	
U	Undefined	
V	Insufficient volume to perform analysis	
*****	VMV Code: (Valid Method Variable) # indicating comparable methods of analysis between federal & provincial laboratories	
<	Lower limit for detection	

PH
PH measurement.

PH_Units
Unit in which measured.

LPH
Tolerance indicator for measurement.

Code	Description - English	Description - French
A	Approximate value	
B	Lab error/blunder	
C	Calculated value	
F	Result to follow	
G	Greater than result shown, unable to quantitate	
I	Interferences present	
L	Detected at a level below method detection limit	
M	Missing result	
N	No sample bottle received at the laboratory	
Q	Results not quality assured	
S	Sample received in inappropriate condition/time	
T	Trace – estimate of value between zero and detection limit	
U	Undefined	

V	Insufficient volume to perform analysis
*****	VMV Code: (Valid Method Variable) # indicating comparable methods of analysis between federal & provincial laboratories
<	Lower limit for detection

POTASS
Potassium measurement.

POTASS_Units
Unit in which measured.

LPOTASS
Tolerance indicator for measurement.

Code	Description - English	Description - French
A	Approximate value	
B	Lab error/blunder	
C	Calculated value	
F	Result to follow	
G	Greater than result shown, unable to quantitate	
I	Interferences present	
L	Detected at a level below method detection limit	
M	Missing result	
N	No sample bottle received at the laboratory	
Q	Results not quality assured	
S	Sample received in inappropriate condition/time	
T	Trace – estimate of value between zero and detection limit	
U	Undefined	
V	Insufficient volume to perform analysis	
*****	VMV Code: (Valid Method Variable) # indicating comparable methods of analysis between federal & provincial laboratories	
<	Lower limit for detection	

CLIC
Chloride/Cl inductive coupled.

CLIC_Units
Unit in which measured.

LCLIC
Tolerance indicator for measurement.

Code	Description - English	Description - French
A	Approximate value	
B	Lab error/blunder	
C	Calculated value	
F	Result to follow	
G	Greater than result shown, unable to quantitate	
I	Interferences present	
L	Detected at a level below method detection limit	
M	Missing result	
N	No sample bottle received at the laboratory	
Q	Results not quality assured	
S	Sample received in inappropriate condition/time	
T	Trace – estimate of value between zero and detection limit	
U	Undefined	
V	Insufficient volume to perform analysis	
*****	VMV Code: (Valid Method Variable) # indicating comparable methods of analysis between federal & provincial laboratories	
<	Lower limit for detection	

SO4IC
Sulphate measurement.

SO4IC_Units
Unit in which measured.

LSO4IC
Tolerance indicator for measurement.

Code	Description - English	Description - French
A	Approximate value	
B	Lab error/blunder	
C	Calculated value	
F	Result to follow	
G	Greater than result shown, unable to quantitate	
I	Interferences present	
L	Detected at a level below method detection limit	
M	Missing result	
N	No sample bottle received at the laboratory	
Q	Results not quality assured	
S	Sample received in inappropriate condition/time	
T	Trace – estimate of value between zero and detection limit	
U	Undefined	
V	Insufficient volume to perform analysis	
*****	VMV Code: (Valid Method Variable) # indicating comparable methods of analysis between federal & provincial laboratories	
<	Lower limit for detection	

ALKG
Alkalinity Gran's.

ALKG_Units
Unit in which measured.

LALKG
Tolerance indicator for measurement.

Code	Description - English	Description - French
A	Approximate value	
B	Lab error/blunder	
C	Calculated value	
F	Result to follow	

G	Greater than result shown, unable to quantitate	
I	Interferences present	
L	Detected at a level below method detection limit	
M	Missing result	
N	No sample bottle received at the laboratory	
Q	Results not quality assured	
S	Sample received in inappropriate condition/time	
T	Trace – estimate of value between zero and detection limit	
U	Undefined	
V	Insufficient volume to perform analysis	
*****	VMV Code: (Valid Method Variable) # indicating comparable methods of analysis between federal & provincial laboratories	
<	Lower limit for detection	

ACDG
Acidity.

ACDG_Units
Unit in which measured.

LACDG
Tolerance indicator for measurement.

Code	Description - English	Description - French
A	Approximate value	
B	Lab error/blunder	
C	Calculated value	
F	Result to follow	
G	Greater than result shown, unable to quantitate	
I	Interferences present	
L	Detected at a level below method detection limit	
M	Missing result	
N	No sample bottle received at the laboratory	

Q	Results not quality assured
S	Sample received in inappropriate condition/time
T	Trace – estimate of value between zero and detection limit
U	Undefined
V	Insufficient volume to perform analysis
*****	VMV Code: (Valid Method Variable) # indicating comparable methods of analysis between federal & provincial laboratories
<	Lower limit for detection

ALKT
Alkalinity.

ALKT_Units
Unit in which measured.

LALKT
Tolerance indicator for measurement.

Code	Description - English	Description - French
A	Approximate value	
B	Lab error/blunder	
C	Calculated value	
F	Result to follow	
G	Greater than result shown, unable to quantitate	
I	Interferences present	
L	Detected at a level below method detection limit	
M	Missing result	
N	No sample bottle received at the laboratory	
Q	Results not quality assured	
S	Sample received in inappropriate condition/time	
T	Trace – estimate of value between zero and detection limit	
U	Undefined	
V	Insufficient volume to perform analysis	

*	VMV Code: (Valid Method Variable) # indicating comparable methods of analysis between federal & provincial laboratories
<	Lower limit for detection

HION
Hydrogen Ion.

HION_Units
Unit in which measured.

NO3
Nitrite species calculation.

NO3_Units
Unit in which measured.

LNO3
Tolerance indicator for measurement.

Code	Description - English	Description - French
A	Approximate value	
B	Lab error/blunder	
C	Calculated value	
F	Result to follow	
G	Greater than result shown, unable to quantitate	
I	Interferences present	
L	Detected at a level below method detection limit	
M	Missing result	
N	No sample bottle received at the laboratory	
Q	Results not quality assured	
S	Sample received in inappropriate condition/time	
T	Trace – estimate of value between zero and detection limit	
U	Undefined	
V	Insufficient volume to perform analysis	
*	VMV Code: (Valid Method Variable) # indicating	

	comparable methods of analysis between federal & provincial laboratories
<	Lower limit for detection

HARD
Hardness calculation.

HARD_Units
Unit in which measured.

LHARD
Tolerance indicator for measurement.

Code	Description - English	Description - French
A	Approximate value	
B	Lab error/blunder	
C	Calculated value	
F	Result to follow	
G	Greater than result shown, unable to quantitate	
I	Interferences present	
L	Detected at a level below method detection limit	
M	Missing result	
N	No sample bottle received at the laboratory	
Q	Results not quality assured	
S	Sample received in inappropriate condition/time	
T	Trace – estimate of value between zero and detection limit	
U	Undefined	
V	Insufficient volume to perform analysis	
*	VMV Code: (Valid Method Variable) # indicating comparable methods of analysis between federal & provincial laboratories	
<	Lower limit for detection	

NH4
Ammonium species calculation.

NH4_Units
Unit in which measured.

LNH4
Tolerance indicator for measurement.

Code	Description - English	Description - French
A	Approximate value	
B	Lab error/blunder	
C	Calculated value	
F	Result to follow	
G	Greater than result shown, unable to quantitate	
I	Interferences present	
L	Detected at a level below method detection limit	
M	Missing result	
N	No sample bottle received at the laboratory	
Q	Results not quality assured	
S	Sample received in inappropriate condition/time	
T	Trace – estimate of value between zero and detection limit	
U	Undefined	
V	Insufficient volume to perform analysis	
*****	VMV Code: (Valid Method Variable) # indicating comparable methods of analysis between federal & provincial laboratories	
<	Lower limit for detection	

ESO4
Excess sulphate.

ESO4_Units
Unit in which measured.

LESO4
Tolerance indicator for measurement.

Code	Description - English	Description - French
A	Approximate value	

B	Lab error/blunder
C	Calculated value
F	Result to follow
G	Greater than result shown, unable to quantitate
I	Interferences present
L	Detected at a level below method detection limit
M	Missing result
N	No sample bottle received at the laboratory
Q	Results not quality assured
S	Sample received in inappropriate condition/time
T	Trace – estimate of value between zero and detection limit
U	Undefined
V	Insufficient volume to perform analysis
*****	VMV Code: (Valid Method Variable) # indicating comparable methods of analysis between federal & provincial laboratories
<	Lower limit for detection

VANDIUM
Vanadium.

VANDIUM_Units
Unit in which measured.

LVANDIUM
Tolerance indicator for measurement.

Code	Description - English	Description - French
A	Approximate value	
B	Lab error/blunder	
C	Calculated value	
F	Result to follow	
G	Greater than result shown, unable to quantitate	
I	Interferences present	
L	Detected at a level below method detection limit	

M	Missing result
N	No sample bottle received at the laboratory
Q	Results not quality assured
S	Sample received in inappropriate condition/time
T	Trace – estimate of value between zero and detection limit
U	Undefined
V	Insufficient volume to perform analysis
*****	VMV Code: (Valid Method Variable) # indicating comparable methods of analysis between federal & provincial laboratories
<	Lower limit for detection

AL
Aluminum.

AL_Units
Unit in which measured.

LAL
Tolerance indicator for measurement.

Code	Description - English	Description - French
A	Approximate value	
B	Lab error/blunder	
C	Calculated value	
F	Result to follow	
G	Greater than result shown, unable to quantitate	
I	Interferences present	
L	Detected at a level below method detection limit	
M	Missing result	
N	No sample bottle received at the laboratory	
Q	Results not quality assured	
S	Sample received in inappropriate condition/time	
T	Trace – estimate of value between zero and detection limit	

U	Undefined
V	Insufficient volume to perform analysis
*****	VMV Code: (Valid Method Variable) # indicating comparable methods of analysis between federal & provincial laboratories
<	Lower limit for detection

CD
Cadmium.

CD_Units
Unit in which measured.

LCD
Tolerance indicator for measurement.

Code	Description - English	Description - French
A	Approximate value	
B	Lab error/blunder	
C	Calculated value	
F	Result to follow	
G	Greater than result shown, unable to quantitate	
I	Interferences present	
L	Detected at a level below method detection limit	
M	Missing result	
N	No sample bottle received at the laboratory	
Q	Results not quality assured	
S	Sample received in inappropriate condition/time	
T	Trace – estimate of value between zero and detection limit	
U	Undefined	
V	Insufficient volume to perform analysis	
*****	VMV Code: (Valid Method Variable) # indicating comparable methods of analysis between federal & provincial laboratories	

<	Lower limit for detection

PB
Lead.

PB_Units
Unit in which measured.

LPB
Tolerance indicator for measurement.

Code	Description - English	Description - French
A	Approximate value	
B	Lab error/blunder	
C	Calculated value	
F	Result to follow	
G	Greater than result shown, unable to quantitate	
I	Interferences present	
L	Detected at a level below method detection limit	
M	Missing result	
N	No sample bottle received at the laboratory	
Q	Results not quality assured	
S	Sample received in inappropriate condition/time	
T	Trace – estimate of value between zero and detection limit	
U	Undefined	
V	Insufficient volume to perform analysis	
*	VMV Code: (Valid Method Variable) # indicating comparable methods of analysis between federal & provincial laboratories	
<	Lower limit for detection	

IB
Ion balance calculation.

IB_Units
Unit in which measured.

AS
Arsenic species measurement.

AS_Units
Unit in which measured.

LAS
Tolerance indicator for measurement.

Code	Description - English	Description - French
A	Approximate value	
B	Lab error/blunder	
C	Calculated value	
F	Result to follow	
G	Greater than result shown, unable to quantitate	
I	Interferences present	
L	Detected at a level below method detection limit	
M	Missing result	
N	No sample bottle received at the laboratory	
Q	Results not quality assured	
S	Sample received in inappropriate condition/time	
T	Trace – estimate of value between zero and detection limit	
U	Undefined	
V	Insufficient volume to perform analysis	
*****	VMV Code: (Valid Method Variable) # indicating comparable methods of analysis between federal & provincial laboratories	
<	Lower limit for detection	

ONE_EVENT
Single day of precipitation within week.

SMPL_MISS
Observation missing.

COMMENTS
Comment codes – multiple codes are separated. See comments codes table.

Code	Description - English	Description - French
110	No Comment: No comment from field operator	
111	Contaminated Sample – Particules: Particules/Debris in sample	
112	Contaminated Sample – Organic: Organic Matter in sample (leaf, grass, etc.)	
113	Contaminated Sample – Insects: Insect(s) in sample	
114	Bulk Sample: Collector open when precipitation not occurring	
115	Partial Event Collected: Part of event missed	
116	Sample Spilled – Before Weighting: Sample spilled or leaked before weighted (includes unspecified spilling and bag leaking)	
117	Sample Leaked – After Weighting: Sample spilled after being weighted	
118	Other Field Comment: Refer to Sample History Form	
119	Bag cut before being weighted: Sample weight suspect	
120	Collector Operated: No problem with sample collector	
121	No Sample: Collector did not open during precipitation	
122	Partial Sample: Collector opened for only part of the event	
123	Bulk Sample: Collector opened before and/or after precipitation	
124	Manual Operation: Collector was operated manually	
125	Poor Hood Bucket Seal: Suspect contamination of sample	
126	Sampler Malfunction: Non-specific malfunction	
127	Rain or Snow Gauge Malfunction: Rain or snow gauge not installed or operating properly	
128	Balance or Heat Sealer Malfunction: Balance or heat sealer not operating properly	

129	Other Instrument Field Comment: Refer to Sample History Form
130	Possible Contamination: Dust in air
131	Possible Contamination: Cultivation/spraying/fertilizing near site
132	Possible Contamination: Cultivation at or near site
133	Possible Contamination: Snow ploughing at or near site
134	Possible Contamination: Blowing snow collected
135	Possible Contamination: Smoke/odor/ash detected at site, or burning in area
136	Standard Gauge Spilled: Standard gauge spilled or overflowed
137	Late Collection/Lost Sample: Operator not able to collect one or more daily samples
138	Not Used: Site and/or sampler not actively collecting precipitation for sampling program
139	Other Unusual Field Comment: Specified on sample history form, includes comments on weather
140	Region contacted regarding problem: An environmental issue was reported to local regional office by site operator
141	Region returned contact: A staff member working in the local regional office responded to site operators issue report
142	Instrument(s) repaired: A broken or malfunctioning item/part on the acid rain sampling equipment was repaired by either the site operator or the program coordinator
143	New Collector: A new acid rain collector was installed at the site (the old sampler, as a whole, was replaced)
144	New Hood Gasket: A hood gasket is a protective shield for the

	sample bucket, found inside the sampler 'hood', creating a firm seal between the sample and the environment during periods of no precipitation. This prevents sample contamination. This protective shield is replaced at least once annually as the contact seal for the sample lessens with time.
145	Site Inspection: The program coordinator visited the station and performed an inspection on the site grounds, building and sampling equipment
146	New Operator: Each site has a designated person or 'operator' who collects rain/snow sample from the collector daily. This indicates a new operator has begun tending to the site and station, permanently.
147	New Procedure: Operators follow strict guidance on how to handle samples daily. A deviation from this stepwise procedure should be noted, in case an impact to the sample is found following analysis. This can also indicate the start of a new, permanent change to the daily procedure as directed by the program coordinator.
148	Site Change: A change to the station or station grounds has been identified. This could indicate a number of changes from vegetation/tree removal near the collector to sampling equipment being relocated on the same property.
149	QA Comments: Refer to collection of fields and/or control blanks and other QA comments
150	Alternate Operators: Trained short-term replacement for full time operator

151	Multiple Operators: More than one person is tending to the daily sample collection within the sample week
152	No Field Comments: No sample history form received at lab
153	Nipher cylinder placed in field: Nipher cylinder and shield placed to collect precipitation in frost period
154	Rain Gauge placed in field: Rain gauge placed to collect precipitation during frost-free period
155	Sample Received: Sample received at lab
156	Sample Leaked: Sample leaked in transit
157	Sample < 5 ml
158	Sample Received – No Comments: Before April 5, 1988, lab comments were not used
159	Code not used: No sample code is assigned with regards to lab sample handling (on a sample handling form, a code must be entered for field, office and lab handling, therefore this acts as a placeholder)
160	Sample Not Received: No precipitation sample was received by the lab for the sample week (however paperwork was received). This could be a week without any precipitation or a sample lost in transit
161	Unidentified Sample: Sample arrived at lab with no label
162	Refer to Sample History Form: Unspecified Comment
163	Contaminated Sample: Organic matter visible in sample
164	Lost Data: Sample lost in lab
165	Missing Data: Instrument malfunction – the collector did not operate properly at some time

	during the weekly collection period. Partial or no sample received at the lab
166	Missing Data – Not in Sampler: The standard gauge collected the precipitation, but the collector did not
167	Missing Data – Small Sample: The sample was less than 5 ml
168	No precipitation: No precipitation occurred during the collection period; therefore, no data reported
169	Operator not collecting samples: One or more daily samples were not collected because the operator was not available, due to severe weather conditions. Collected water remains in sampler for two or more days
170	Missing Data – Sample Lost: A sample was collected, but no chemical analysis was carried out because it was lost in the field, in the laboratory, or in transit
171	Missing Data – other: Other reason for missing data, refer to sample history form
172	Missing Sample – reason unknown: A sample appeared to have sufficient volume for analysis (based on the field weight) but was either not submitted to the laboratory, or was submitted but not analyzed, and no explanation was given
173	Partial Sample: The precipitation collector did not operate properly for the full week, or the operator could not or did not collect one or more daily samples during the week. May be due to sampler malfunctions, power failure
174	No Comment: No apparent problems

175	Bulk Sample: Sampler was open before and/or after the precipitation event. This comment generally occurred when the precipitation collector malfunctioned
176	Non-Standard Procedure – Daily Precipitation: Sample includes precipitation which fell outside the normal operating week, or the sample period is less than 7 days. The number of days included, and the inclusive dates are noted in the data record
177	Sample Leaked: Collection bag leaked but left sufficient volume for analysis. Leaked water was discarded
178	Insufficient Sample for Analysis: A sample was sent to the laboratory but was less than 5 ml and deemed insufficient for chemical analysis
179	Contaminated Sample: Sample was contaminated in the field by handling or direct atmospheric input (includes pollen, insects, dirt, bulk samples)
180	Suspect Sample Weight: The lab weight is substituted. Qualifies chemical data for specified collection period due to likelihood of handler error in other areas
181	Estimated Data Included: For example, the precipitation amount may have been estimated from the collection batch. Qualifies chemical data for specified collection period due to likelihood of handler error in other areas
182	Low Collection Efficiency =< 55%: Collection efficiency was less than or equal to 55% (lower 5th percentile of data). Qualifies

	chemical data for specified collection period
183	High Collection Efficiency => 110%: Collection efficiency was greater than 100% (upper 5th percentile of data). Qualifies chemical data for specified collection period
184	Non-Standard Procedures: Sample was collected using non-standard operating procedures or under unusual circumstances, see field or lab comments for details
185	Standard Gauge: Operator not following standard operating procedures (determined during station audit, or by other means)
186	Standard Gauge: Standard gauge determined to be off level. Invalidates precipitation data for specified collection period
187	Standard Gauge: Standard gauge or Nipher gauge opening obsecured. Invalidates precipitation data for specified collection period
188	Standard Gauge: Standard gauge leaking due to breakage. Invalidates precipitation measurements for specified collection period
189	Collection Catch: No field weight reported for one or more events, or the sample volume is incorrect because the sample spilled or leaked before the field was determined. Also used if partial or no sample, instr. Fault
190	Collection Catch: The sample volume is incorrect because the operator dud nig follow the proper bag cutting and weighting procedure, and the correct sample weight could not be determined
191	Collection Catch: The sample volume is known to be in error as

	the result of balance malfunction (e.g. balance not zeroed, improper use of balance, sample exceeds balance capacityor lab weight exceeds field weight
192	Standard Gauge: No field value reported for 1 or more events, or operator reports that value may be inaccurate
193	Standard Gauge: See sample history form. Qualifies precipitation measurements for specified collection period
194	Collection Catch: See sample history form
195	Bucket Type: ALTERNATE COLLECTION BUCKET (TYPE A-1) IN USE – collection efficiency calculation modified accordingly
196	Bucket Type: BUCKET TYPE CHANGED – no efficiency was calculated since buckets of different dimensions were used during the week
197	Suspect Data: There are reasons to suspect that one or more recorded parameters may be incorrect or inaccurate, although there is no proof (e.g. no record of precipitation when all surrounding sites report some)
198	Other: See sample history form for details
199	One Event Only: Sample for the entire week only consists of one rainfall event
253	Duplicate Sample: A 'duplicate' sample was created at the lab (a single sample received is split in two and quality assurance secondary sample analyzed)
285	Triplicate Sample Collection: A 'triplicate' sample was created at the lab (a single sample received is split in three and two quality assurance samples are analyzed)

Document History

Version	Author	Nature of Change	Date
1.0	NB-IRDT Staff	Creation of Document	February, 2024
Approved by		Approval Date	Review Date