



NB-IRDT

New Brunswick Institute for
Research, Data and Training

Acid Rain Quality Control ELG06

Compiled by NB-IRDT Staff
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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.nbirdt.ca/>
- 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

Overview of the database

Sample Universe

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

Date Range

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

Data Source

Source where the data came from

How to Cite this Codebook

New Brunswick Institute for Research, Data and Training. (2024). Acid Rain Quality Control ELG06 Codebook for years 1997-2021. Fredericton, NB: New Brunswick Institute for Research, Data and Training.

Acknowledgements

The ELG06 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 ELG06 Database Codebook is to provide information on the linkable New Brunswick Acid Rain Quality Control 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

Content

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

General Methodology

If known

Limitations

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

Comparison to Other Products/Versions

If applicable

Using with Other Products

If applicable

Record Layouts and Data Descriptions

Overview

Acid Rain Quality Control

#	Name	Label	Type
1	STATION_NAME	Station Id (key into Station Table)	Text
2	STATION_ID	Unique station identifier	Text
3	LATITUDE	Latitude of the station	Decimal
4	LONGITUDE	Longitude of the station	Decimal
5	LAB_NO	Lab number	Integer
6	FIELD_NO	Field number assigned by DELG	Integer
7	FROM_DATE	Sample collection start date	Date
8	TO_DATE	Sample collection end date	Date
9	SAMPLE_CATEGORY	Differentiate samples based on Control Blanks, Field Blanks, and Duplicates	Text
10	CAD	Cadmium species	Decimal
11	CADUnits	Unit in which measured	Text
12	LCAD	Tolerance indicator for measurement	Text
13	COND	Conductivity measurement	Decimal
14	CONDUUnits	Unit in which measured	Text
15	LCOND	Tolerance indicator for measurement	Text
16	MGD	Magnesium species measurement	Decimal
17	MGDUnits	Unit in which measured	Text
18	LMGD	Tolerance indicator for measurement	Text
19	NA	Sodium species measurement	Decimal
20	NAUnits	Unit in which measured	Text
21	LNA	Tolerance indicator for measurement	Text
22	NH3T	Ammonia species measurement	Decimal
23	NH3TUnits	Unit in which measured	Text
24	LNH3T	Tolerance indicator for measurement	Text
25	NOX	Nitrogen species measurement	Decimal
26	NOXUnits	Unit in which measured	Text
27	LNOX	Tolerance indicator for measurement	Text
28	PH	pH measurement	Decimal
29	PHUnits	Unit in which measured	Text

30	LPH	Tolerance indicator for measurement	Text
31	POTASS	Potassium measurement	Decimal
32	POTASSUnits	Unit in which measured	Text
33	LPOTASS	Tolerance indicator for measurement	Text
34	CLIC	Chloride/Cl inductive measurement	Decimal
35	CLICUnits	Unit in which measured	Text
36	LCLIC	Tolerance indicator for measurement	Text
37	SO4IC	Sulphate measurement	Decimal
38	SO4ICUnits	Unit in which measured	Text
39	LSO4IC	Tolerance indicator for measurement	Text
40	ALKG	Alkalinity Gran's	Decimal
41	ALKGUnits	Unit in which measured	Text
42	ACDG	Acidity	Decimal
43	ACDGUnits	Unit in which measured	Text
44	LACDG	Tolerance indicator for measurement	Text
45	LALKT	Tolerance indicator for measurement	Text
46	HION	Hydrogen Ion	Decimal
47	HIONUnits	Unit in which measured	Text
48	NO3	Nitrate species calculation	Decimal
49	NO3Units	Unit in which measured	Text
50	HARD	Hardness calculation	Decimal
51	HARDUnits	Unit in which measured	Text
52	LHARD	Tolerance indicator for measurement	Text
53	NH4	Ammonium species calculation	Decimal
54	NH4Units	Unit in which measured	Text
55	ESO4	Excess Sulphate calculation	Decimal
56	ESO4Units	Unit in which measured	Text
57	LESO4	Tolerance indicator for measurement	Text
58	VANDIUM	Vanadium	Integer
59	VANDIUMUnits	Unit in which measured	Text
60	LVANDIUM	Tolerance indicator for measurement	Text
61	AL	Aluminum	Decimal
62	ALUnits	Unit in which measured	Text
63	LAL	Tolerance indicator for measurement	Text
64	CD	Cadmium	Decimal

65	CDUnits	Unit in which measured	Text
66	LCD	Tolerance indicator for measurement	Text
67	PB	Lead	Decimal
68	PBUnits	Unit in which measured	Text
69	LPB	Tolerance indicator for measurement	Text
70	IB	Ion balance calculation	Decimal
71	IBUnits	Unit in which measured	Text
72	AS	Arsenic species measurement	Decimal
73	ASUnits	Unit in which measured	Text
74	LAS	Tolerance indicator for measurement	Text
75	ONE_EVENT	Single day of precipitation within week	Integer
76	SMPL_MISS	Precipitation occurred, but sample is missing. Reason – various	Integer
77	WEEK_NO	Week identifier (x of 52 weeks) using TO_DATE column	Integer
78	YEAR_NO	Sample year using TO_DATE column	Integer
79	SAMPLE_WT_G	Sample weight	Integer
80	PRECIP_mm	Precipitation amount	Integer
81	CALC_PRECIP	Precipitation amount calculated from sample weight	Integer
82	EFFIC_PERCENT	Efficiency (recorded precipitation relative to sample weight)	Integer
83	SUBSTAND	Substituted rain gauge reading	Integer
84	LSUBSTAND	Tolerance indicator for measurement	Text
85	LAB_WT_g	Lab sample weight	Integer
86	COMMENTS	Comment codes – multiple codes are separated. See comments codes table	Text

STATION_NAME

Station Id (key into Station Table).

STATION_ID

Unique station identifier.

LATITUDE

Latitude of the station.

LONGITUDE

Longitude of the station.

LAB_NO

Lab number.

FIELD_NO

Field number assigned by DELG.

FROM_DATE

Sample collection start date.

TO_DATE

Sample collection end date.

SAMPLE_CATEGORY

Differentiate samples based on Control Blanks, Field Blanks and Duplicates.

CAD

Cadmium species.

CADUnits

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 analyses between federal & provincial laboratories
<	Lower limit for detection

COND

Conductivity measurement.

CONDUnits

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 analyses	

	between federal & provincial laboratories
<	Lower limit for detection

MGD

Magnesium species measurement.

MGDUnits

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 analyses between federal & provincial laboratories	
<	Lower limit for detection	

NA

Sodium species measurement.

NAUnits

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 analyses between federal & provincial laboratories	
<	Lower limit for detection	

NH3T

Ammonia species measurement.

NH3TUnits

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 analyses between federal & provincial laboratories
<	Lower limit for detection

NOX

Nitrogen species measurement.

NOXUnits

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 analyses between federal & provincial laboratories
<	Lower limit for detection

PH

pH measurement.

PHUnits

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 analyses between federal & provincial laboratories
<	Lower limit for detection

POTASS

Potassium measurement.

POTASSUnits

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 analyses between federal & provincial laboratories	
<	Lower limit for detection	

CLIC

Chloride/Cl inductive measurement.

CLICUnits

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 analyses between federal & provincial laboratories	
<	Lower limit for detection	

SO4IC

Sulphate measurement.

SO4ICUnits

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 analyses between federal & provincial laboratories	
<	Lower limit for detection	

ALKG

Alkalinity Gran's.

ALKGUnits

Unit in which measured.

ACDG

Acidity.

ACDGUnits

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 analyses between federal & provincial laboratories	
<	Lower limit for detection	

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 analyses between federal & provincial laboratories
<	Lower limit for detection

HION

Hydrogen Ion.

HIONUnits

Unit in which measured.

NO3

Nitrate species calculation.

NO3Units

Unit in which measured.

HARD

Hardness calculation.

HARDUnits

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 analyses between federal & provincial laboratories
<	Lower limit for detection

NH4

Ammonium species calculation.

NH4Units

Unit in which measured.

ESO4

Excess Sulphate calculation.

ESO4Units

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 analyses between federal & provincial laboratories
<	Lower limit for detection

VANDIUM

Vanadium.

VANDIUMUnits

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 analyses between federal & provincial laboratories
<	Lower limit for detection

AL
Aluminum.

ALUnits
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 analyses between federal & provincial laboratories	
<	Lower limit for detection	

CD

Cadmium.

CDUnits

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 analyses between federal & provincial laboratories	
<	Lower limit for detection	

PB

Lead.

PBUnits

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 analyses between federal & provincial laboratories	
<	Lower limit for detection	

IB

Ion balance calculation.

IBUnits

Unit in which measured.

AS

Arsenic species measurement.

ASUnits

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 analyses between federal & provincial laboratories	
<	Lower limit for detection	

ONE_EVENT

Single day of precipitation within week

Code	Description - English	Description - French
0		
1		

SMPL_MISS

Precipitation occurred, but sample is missing. Reason – various.

Code	Description - English	Description - French
0		

WEEK_NO

Week identifier (x of 52 weeks) using TO_DATE column.

YEAR_NO

Sample year using TO_DATE column.

SAMPLE_WT_g

Sample weight.

PRECIP_mm

Precipitation amount.

CALC_PRECIP

Precipitation amount calculated from sample weight.

Code	Description - English	Description - French
0		
1		

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 analyses between federal & provincial laboratories
<	Lower limit for detection

LAB_WT_g

Lab sample weight.

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

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- 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
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	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 5 th percentile of data). Qualifies chemical data for specified collection period
183	High Collection Efficiency => 110%: Collection efficiency was greater than 100% (upper 5 th 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 obscured. 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 did not 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 capacity or 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
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