PROFESSIONAL ENGINEERS & GEOSCIENTISTS NEWFOUNDLAND & LABRADOR
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PEGNL Practice Guideline for Technical Writing

Professional Engineers & Geoscientists

Newfoundland and Labrador

Approved by PEGNL Board September 2025

Revision History

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1	Jan 24, 2024	Initial Release – For Member Consultation	B. Hunt
2	Sep 16, 2025	For Board Approval – Member suggestions Incorporated	B. Hunt
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1.0 Introduction

1.1 PEGNL

Professional Engineers and Geoscientists Newfoundland & Labrador (PEGNL) is mandated to regulate the practices of engineering and geoscience in the public interest. PEGNL exists so that there will be competent and ethical practice of engineering and geoscience in Newfoundland and Labrador, and to instill public confidence in the professions. To practice engineering or geoscience in Newfoundland and Labrador a person must be registered, and in good standing with PEGNL. In addition, companies (including sole proprietors) offering engineering and geoscience services outside of their organizations (i.e., to any natural or legal entity external to their company) also require a PEGNL permit to practice.

The Newfoundland and Labrador ***Engineers and Geoscientists Act, 2008*** and the associated ***Engineers and Geoscientists Regulations, 2024*** under that Act govern the practices of engineering and geoscience in the Province. PEGNL is the authority that licenses practitioners under the Act and administers all aspects of that legislation and strives to ensure the ethical conduct of all professional members.

PEGNL produces such documents to inform and educate its professional members, permit holders, and the public, in matters of professional practice and to:

- ensure PEGNL professional members, understand their duties in performing specific components of their professional roles in accordance with the current *Act, Regulations and By-Laws*; and
- help the public, especially clients, contractors and suppliers, understand the role of PEGNL professional members and the responsibilities professional members have when performing professional services.

Professional members adhering to PEGNL Guidelines follow the best practices in conforming to the legislation and ethical practices applicable to this guideline.

PEGNL Guidelines seek to advise what is normally expected of a reasonable and prudent Professional Engineer or Geoscientist. However, they do not comprise a comprehensive list of what constitutes substantive professional practice. This is an area of responsibility which will remain fully that of the Professional Engineers and Geoscientists.

With the prevalence of AI tools available for report writing, always remember that you are professionally responsible for all work products that you authenticate (and all reports must be authenticated) and that you should disclose the use of AI tools if sections of your report were sourced from these AI tools

Questions or concerns relating to this document should be addressed to the Professional Standards Director at PEGNL.

1.2 Technical Writing Guideline Introduction

Opinions can differ significantly (and passionately) on what is considered correct written English. This Guideline presents good practices for technical writing for professional members.

It relies on information from standard editorial style guides and writing reference materials available in print and online. The recommendations here are not intended to strictly distinguish correct from incorrect usage—the context and audience determine what is appropriate. The conventions promoted in this Guideline encourage clear and consistent writing and seek to limit potential liability in written communications.

PEGNL gratefully acknowledges the use (with permission) of the Author's Guide from Tetra Tech Canada Inc. as a principal source of much of this guide.

Other online or published references for technical writing are presented in Section 5 (and Section 6 References).

Some useful appendices are included, as follows:

Appendix A – Potential Liability Words and Clear Language Guide includes a list of words and phrases to be avoided or used with caution in professional documents, particularly when referring to specified work or responsibilities. First, we suggest you become familiar with the potential liability words. After that, work on learning how to use clear language.

Appendix B – Spelling and Word Usage provides preferred spelling conventions and addresses some common usage problems. It is not intended to be a glossary of technical terms, and it does not replace a standard dictionary. If a word you are looking for is not on the list, please check Merriam-Webster Online (http://www.merriam-webster.com/).

Appendix C – Citations and References Guide provides more detail on creating consistent references. Other formats for references and citations in professional documents may be more suitable for your use. You are encouraged to apply any format consistently.

1.3 Purpose of the Guideline and Who Should Use It

This guide is a writing support tool for authors and reviewers/mentors, as well as administrative and word processing staff, who should refer to it when writing and reviewing professional documents and correspondence.

This Guideline is designed for authors, reviewers, and administrators.

An author is anyone who writes documents (letters, reports, proposals, technical memos, emails, etc.) for external (user, client, supplier) or internal (other staff) audiences. Reviewers and mentors review the work of authors and, usually, add their signature or professional seal to the signature page. Ultimately, the people who sign the document are professionally responsible for its content and organization. Throughout this guideline, "user" or "client" refers to the principal recipients (person or group) of the document.

1.4 Why We Need It

Reputation is of value - clear writing is a hallmark of good reporting

Many professional deliverables are written products. Clear writing reflects the quality of your work. When a document is riddled with typos and unclear writing, the reader may feel that the content of the work is shoddy as well, which affects your organization's reputation. Using language clearly and organizing your document to suit your audience are key elements for effective writing.

This guide provides a benchmark for writing style recommended by PEGNL. It will help you better match your writing to your intended audience, avoid being misunderstood, maintain quality and rigor in your writing and enhance the portrayal of professional competence and scientific integrity.

This guide also addresses the legal implications of unclear or imprecise writing. Certain words may have one meaning in your work environment but can be interpreted differently in a legal context. Such words can create misunderstandings with employers, clients or other users, leading to dissatisfaction, claims, or legal action. We refer to these words as potential liability words. Professional document authors should recognize and understand them, and use them cautiously in their proper legal context. If necessary, include a clause paraphrasing what you explicitly mean when using such words. Here is an example:

Using potential liability words cautiously can help you avoid client dissatisfaction, claims, or litigation.

ABC Corp. will inspect the bearing surface (that is, closely observe the nature and quality of the soil in relation to the design specification, acting as owner's agent).

Aside from potential liability words, unnecessary or misused words or phrases make a document wordy or confusing. Removing unnecessary words shortens your documents and makes your message stand out. Chatty or colloquial language creates a casual style, which may appear unprofessional in some contexts or distract the reader from your intended message.

2.0 Writing Guidelines

2.1 Writing Style

Writing style is personal, but authors should remember that they are writing on behalf of their organization. Aim to keep your voice authoritative but approachable. You can do this by using active voice (Section 4.5) and, where appropriate, first-person pronouns (we and our) to describe your work. To maintain a professional approach, do not use contractions, slang, or colloquialisms, or refer to the reader as "you" and make sure you are objective and unbiased.

Professional technical writing can be thought of as non-fiction for business, government, technical organizations, or the public without the embellishing details. Before you begin writing, you need to know the purpose, audience, and intended final use of the document. It is valuable to understand your reader's perspective and goals and the level of technical knowledge. For example, a full report should have a lot of detail, while a brochure should have

only the main points. The type of document you are creating, and your user's preferences should inform the level of formality in your writing.

This guide aims to help you through the writing process and provide you with tools to make appropriate choices to illuminate your message.

Note to Technical Reviewers

Resist imposing your personal style on writing that is already clear and appropriate; doing so uses up time without adding value. Editorial review is about checking quality, fostering clarity, and reducing liability; it is not about making another author sound the same way you do.

2.2 Recognizing the Target Audience

Writing effectiveness is the degree to which a reader's objectives and needs are met. Readers, not authors, are the final judges of the effectiveness of a piece of writing. You need to recognize our readers' needs and their level of comprehension. For example:

Write for your intended reader.

A professional engineer presented plans for an airport expansion at Pelly Bay in Nunavut through an interpreter at a community meeting. Only some of the people in the audience spoke English. The engineer used terms like "apron" and "tarmac," which the audience could not understand despite the interpreter's efforts. The engineer then substituted the phrase "parking area for airplanes" and the audience immediately understood.

Education/reading level, amount of time available to read, and technical sophistication are important characteristics to recognize in our target audiences.
Figure 1 shows a schematic diagram of different audience groups in relation to technical sophistication and time available to read your document. On the right, are report sections various reader groups may actually read. When you identify and understand your audience, you can give your document the appropriate focus.

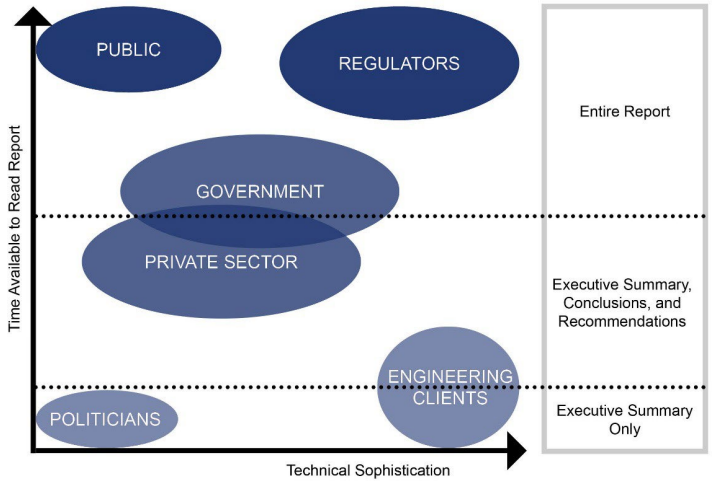


Figure 1: Typical Audience Groups

Unfortunately, a document may not be entirely for the intended user's sole use (for example, a report that becomes a public document), which can make the extended audience difficult to identify. If possible, ask the intended recipient how the document will be used (will it be submitted to regulators, the public, or other third party?). If you cannot establish the ultimate purpose of a document, your employer or client should be considered your target audience.

Plain Language and Accessibility

Documents written for public use should be written as simply as possible, limiting or clearly defining technical terminology, with the intent of removing barriers for those who need to access and understand the information. It is best to have a non-technical reader review your document and give you feedback on any parts or concepts they cannot understand.

Some government agencies require their publications to follow plain language principles. Some resources on plain language are listed below:

- The Canadian Style – Section 13: Plain Language
  http://www.btb.termiumplus.gc.ca/tcdnstyl-chap?lang=eng&lettr=chapsect13&info0=13

2.3 Six Pillars of Effective Writing

Effective technical writing should be (in order of importance) *correct, complete, consistent, clear, concise, and compelling.*

Correct

Your priority should be to make sure the results and calculations are technically correct, and all your claims are supported or substantiated. After that, focus on errors in grammar, spelling, format, and appearance that can reduce the credibility of documents. This is primarily the author's responsibility (by the author directly or through peer/editorial review) before the document is provided to the senior reviewer.

One mistake can be the seed of many doubts.

Correctness also includes using the right terms to describe work. See Section 4.2 Potential Liability Words for more information on using accurate terminology.

Complete

Complete technical writing gives the readers everything they want and need to know. At minimum, you need to give your employer or client everything you agreed to provide. If the scope omits items you feel should be included, completeness may require that you raise the issue with your employer or client.

Completeness also involves providing rationale or logic that identifies how the conclusions and recommendations relate to the results or analysis. Authors should state how they arrived at the conclusions. A formal example of completeness is a concordance table in an Environmental Impact

Include everything that you have agreed to provide. Directly connect recommendations and conclusions to results or analysis.

Statement. This kind of table lists every item from the Terms of Reference along with the page numbers where they are addressed in the Environmental Impact Statement.

Consistent

Consistency makes documents easier to read by reducing what your reader needs to remember. Use consistent terms for entities or conditions you describe throughout a document (for example, pick one: study area, project area, subject property, proposed development area, or project study area). This also applies to units of measurement (km or kilometers), mathematical symbols (% or percent), and abbreviations.

> **TIP** While you are writing or reviewing a document, note down the decisions you make about terminology, units, and symbols. If you change your mind on anything, you'll have a record of what to search for in a global find-and-replace.

Clear

Documents should be unambiguous and understandable.

Clear writing is fully understandable to the target audience. As you write and revise your document, review it from the reader's point of view.

Clear writing includes main points that are easy to find and understand. The text should be unambiguous and follow corporate usage and grammar guidelines. Graphics should be clearly labelled and support the text.

Section 4.0 discusses grammar, word usage, and other editorial elements that enhance clarity.

Concise

Write briefly without sacrificing completeness, correctness, or clarity.

Be as brief and direct as possible without sacrificing technical accuracy and correctness. A low word count is pointless if you omit details that are necessary to the defined scope of services or that clarify your meaning. In contrast, too much information will tire your reader and your point is more likely to be lost.

Novice technical writers should concentrate on being correct, complete, consistent, and clear while not omitting your assumptions and the limitations of your findings. Conciseness comes with experience and practice as you learn from editorial and senior review comments on your documents.

Compelling

Compelling documents are authoritative, persuasive, and authentic.

Compelling documents give the readers the sense that 1) the facts, analyses, and conclusions are authoritative and persuasive, and 2) the combination of correctness, completeness, consistency, clarity, and conciseness results in an authentic and presentable document.

You should write so your reader wants to read what you wrote. This is something that develops with experience and practice, but a strong focus on the other five pillars should assist with creating a compelling document.

3.0 Document Content and Organization

A well-organized document has a logical progression suited to the subject matter. You can organize a document by sequence of events, type of work, or identified scope items. Authors need to choose the most appropriate document structure for the reader. It is beneficial to always start with a document outline, developed with a reviewer or your supervisor, to make sure you don't forget essential information or scope items.

Sometimes your document structure may be laid out for you, as in a request for proposal (RFP) or construction specifications. Section 3.1 gives one possible way to organize a report.

Document organization includes all elements of a report, not just the body. You should consider the logical order and content of attached figures, tables, and appendices. Appendices should be introduced in the body of the document in the same order they are attached to the document.

3.1 Steps for Compiling a Report (The Pyramid Method)

If you find the idea of writing daunting, it may be helpful to first, create graphic and tabular summaries of the content (e.g., drawings, tables, graphs, and figures), then summarize them in writing. While you must document your work as you go, it may be best to not start writing a report before you have all results and supporting material in hand; any change in figures or tables later may require reworking parts of your report (and likely figure and table numbering).

Every document should have a clear and logical flow. Start with an outline to help you stay focused and capture all the required content. An outline can be simply an organized list of topics, or have annotation (e.g., bullet list of intended content, or name of section author). If reports are repetitive, a table of contents from a previous report can become a template.

Creating an outline will keep you organized as you write and allow you to check if your report is complete.

Figure 2 provides an example report structure that works for typical technical reports (methods, results, interpretation, conclusions, and recommendations). Figure 2 also suggests an order for writing that works well for many people (from the bottom up). Other options are possible. For example, writing the introduction first might help focus your writing for subsequent sections, but you might find it easier to start with methods or results.

An executive summary should always be written *last* and should be able to stand on its own (without the reader having to refer to parts of the main report). A well-written, concise executive summary contains the essential information from the entire report including the problem, purpose, objectives/research questions, methods, main findings/outcomes, significance or contribution of the findings, and key message.

It is best practice to use several levels of review (e.g., self, peer, and editorial) to make sure each section contains what it should. The sections below give details on what belongs in each part of a report.

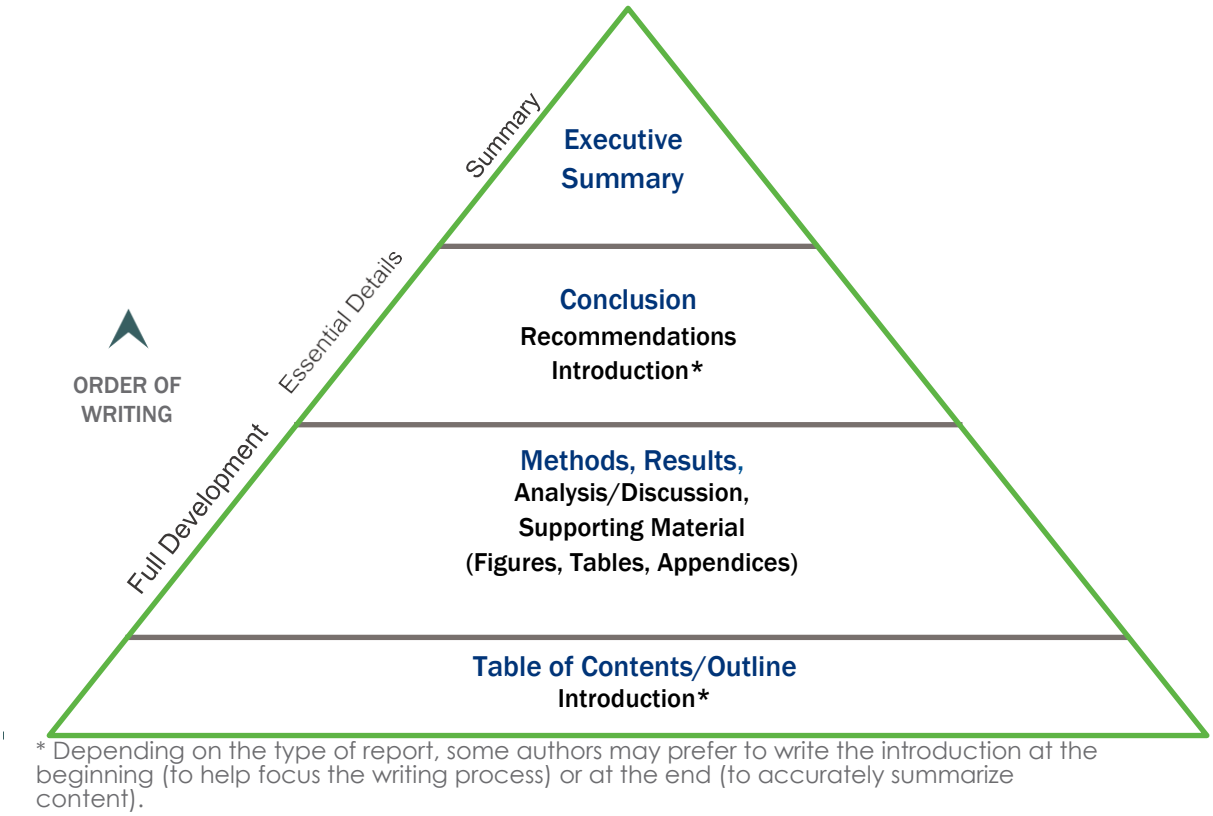


Figure 2: Pyramid Concept for Compiling Reports (adapted from Blicq, 1983)

3.1.1 Executive Summary

The executive summary should be able to stand as a complete document and should cover the key points of the report.

Aan executive summary is the most important section of a report. It should summarize the important points from the report as a stand-alone document. You can refer to the main report's table of contents to confirm that you have covered the key points.

Guidelines

- Include the full name of the organization or party for whom the document was written, and the names of any co-authors, consultants, subconsultants or subcontractors involved.
- Include scope, objectives, rationale, methods, main findings, results, analysis, discussion, conclusions, and recommendations, as appropriate. Create a concise representative summary of the content that does not just provide verbatim information from other sections of the report.
- Typically, aim to limit your executive summary to three pages or less, unless your report is long and complex.
- Define abbreviations within the executive summary and only abbreviate terms that appear four or more times.

Common Problems with Executive Summaries

- Omit essential information (e.g., who, what, when, where, or why of the project; conclusions or recommendations).
- Contain too much detail (common with wholesale copy and paste from the report body).
- Present different content compared with the report text.

3.1.2 Introduction

The introduction sets up who, what, where, and why.

An introduction should identify the parties involved (who is authoring and who is receiving the document) and present report objectives, background/rationale, and scope. This is where you describe the purpose of your document in terms of what the user asked for or what issue is being addressed.

Guidelines

- Spell out the full names of author and user group or organization, then give abbreviations (see Section 4.8.1 and Section 4.8.2 for guidelines on the use of acronyms and abbreviations). For example, "This document was prepared by XYZ Consultants Inc. (XYZ) for ABC Developments Ltd (ABC)."
- If the report is being provided for a client, include the client's identifying file number, if known, and explicitly describe any deviations from a terms of reference or request for proposal, if applicable. Identify the specific person who authorized the work and when, if applicable.
- Explicitly list the project objectives (e.g., as a numbered or bulleted list). For example:

  "The three principal goals of this project are:

  1. Review background reports and materials regarding site soil conditions;
  2. Carry out an intrusive test pit program to identify and classify soil conditions and assess foundation requirements in the area of the proposed school building; and,
  3. Prepare this report, including methods, results, analysis, conclusions and recommendations."

  This focuses the reader's expectations, and you can itemize your conclusions to directly correspond to these listed objectives.
- In the scope of services, list what aspects of the work are covered in the report and, equally important, what aspects were not (e.g., "This assessment was a desktop study with no field component or testing.").
- For long or complex reports, consider including a brief summary of report organization.
- State whether the document is part of a series of on-going deliverables (e.g., as part of a longer or multi-disciplinary project).

Common Problems with Introductions

- Does not clearly identify who is the principal recipient of the document.
- Does not clearly identify who did which parts of the work.
- Does not present clear project objectives.
- Does not explicitly state what the scope does and does not include.

3.1.3 Methods

The methods section should describe who, how, and when without reporting on results.

A methods section should describe how things were done, by whom (staff from your firm or organization, or from a consultant, subconsultant/subcontractor), and when. It should also identify any assumptions made and describe, if applicable, the equipment or instruments (make and model) used to do the work.

Guidelines

- Present methods chronologically (e.g., site visit, drilling, laboratory testing, etc.). Can re-order sections if it clarifies readability (e.g., separate description of methods used in different sub-investigations).
- Be specific and scientific when referring to external standard methods (for example, ASTM or CSA) without reproducing them or describing them in too much detail. Note that external standards may have strict copyrights and terms of use.

Common Problems with Methods Sections

- Methodology is not synonymous with methods but is commonly misused that way. Methodology relates to the *choice of methods* (e.g., qualitative vs quantitative; desktop vs intrusive), while methods describe how things were done;
- Incomplete or unclear.
- Does not include assumptions made or full details of equipment/instruments used and their calibration.
- Prematurely includes results (e.g., “Soil samples were collected from the bottom of each test pit and consisted predominantly of silty sand.”
- Repetitive or unnecessarily detailed.

3.1.4 Results

The results section should contain only facts.

A results section should contain only factual findings (field or laboratory observations or measurements, or analytical laboratory data) and not your interpretation.

Guidelines

- Organize results in a way that makes sense to for the audience (for example, by geographic area, phase of work, or time sequence). The results section should follow the same organizational sequence presented in the methods section.
- If interpretation is to be added to the factual results, rename the section as "Results and Discussion". It is often cleaner and more concise to present Results alone, followed by a separate Discussion section.
- Present medium to large amounts of data in tables, either within the text or in an appendix (see Section 3.2.1).
- Colour-code tables, charts, or figures to help the reader group pertinent sets of results together (but remember to consider readers who may have a colour vision deficiency; see Section 3.2.2).

Common Problems with Results Sections

- Includes too much information (text or tables) that should be moved to an appendix.
- Prematurely includes discussion, conclusions, or recommendations (e.g., "The silty sand was dense to very dense, and is suitable for the foundation of the proposed building. No additional soil compaction is required.").

3.1.5 Analysis/Discussion

Analysis/discussion interprets the results for the reader and evaluates validity and completeness of the work.

An analysis or discussion section is for evaluating and interpreting results, considering implications, assessing the completeness of the work, and considering necessary follow-up actions.

Guidelines

- Stay within the scope of services described in the introduction. If conducting work for an outside entity, doing out-of-scope work may incur liability.

Common Problems with Analysis/Discussion Sections

- Lack adequate analysis.
- Introduce additional results or findings that should be presented earlier.
- Stray from the presented results, are too speculative, or are not within the stated scope of services.
- Prematurely present conclusions or recommendations.

3.1.6 Conclusions

Conclusions should clearly connect to results/analysis and concisely answer project objectives.

Conclusions should provide concise responses to the project objectives. For some reports, this can be a numbered list of conclusions that directly correspond with a numbered list of objectives in the introduction.

Summaries are rarely required, especially if the document has an executive summary. Conclusions (and recommendations) are what the user is looking for. If you feel a need to summarize the report's contents, label the section "Summary and Conclusions".

Guidelines

- Be direct and concise. Do not include unnecessary details.
- Clearly state the limits to generalizing the findings or key outcomes.
- State any other assumptions and limitations of the work to reduce the likelihood of the findings being taken out of context.

Common Problems with Conclusions Sections

- Include unneeded summary statements with the conclusions. If you must summarize, title the section "Summary and Conclusions"
- Present conclusions which do not directly relate to the project objectives.
- Present conclusions that are not rationally supported by the methods, results, analysis, or discussion (i.e., a "leap of faith" conclusion with no recognizable support or rationale earlier in report).

3.1.7 Recommendations

Recommendations offer professional guidance for further action, based on the results, analysis, and conclusions.

Recommendations describe specific, actionable future activities presented to the client based on the results, analysis, and conclusions presented. Not all reports or documents require recommendations. Some recommendations sections are presented separately from the main document for information management purposes.

Guidelines

- Recommendations give the reader a concise list of future activities (i.e., bullet or numbered list). This list may or may not correspond with the list of project goals.
- Recommendations should state specifically what should be done and, if appropriate, by whom, when, where, and how. For example:

  > "XYZ recommends that duplicate water samples be taken at the four existing sampling points during spring (April-May) and fall (September-October) next year. The samples should be collected as surface dip samples by ABC technical staff, following the same sampling methods as in previous years. For analytical continuity, the samples should be submitted to Test-All Laboratories in St. John's, NL for analysis, as in previous years."

  Such detailed recommendations are actionable, in that the user can readily determine the effort and cost needed for carrying out this work.

Common Problems with Recommendations Sections

- Too wordy or not clear about the who, when, where, and how of recommended actions;
- Present unrealistic or unachievable recommendations (e.g., "Collect groundwater samples from all wells within a 10 km radius of the site.");
- Incomplete (missing aspects of who, when, where and how);
- Written as commands (using must) instead of discretionary statements (using should). Typically, only authorized regulatory bodies can issue mandatory actions.

- Present recommendations that are not supported by the methods, results, analysis, discussion, or conclusions (i.e., a "leap of faith" recommendation with no recognizable support earlier in report).

3.1.8 Closure

The closure contains names and credentials of those who prepared the report.

The closure page of a report primarily contains the signatures and contact information for authors and reviewers involved in the project. PEGNL's Guideline for Authenticating Professional Documents presents details on the correct format and options for stamps and signatures.

Guidelines

- You should include a section on limitations on the use of the document.

3.1.9 References

References give details on supporting material. They need to be *complete* and *consistent*.

The references list presents supporting material that was either directly cited in or used to prepare the document. Not all documents will need a references list. For guidelines on formatting in-text citations and references lists, see Section 4.8.14 and Appendix C.

Guidelines

- Include all information needed for the reader to locate the cited reference document.
- Follow a consistent format. As a minimum, include the author and year of publication in brackets after the cited work or quoted text (e.g., Jones 2003) and make sure the full reference appears in the references list.
- If a document only has a few references, it may be less cumbersome to use footnotes instead of a separate References section.
- Include personal communications within the text but not in the references list (e.g., "The site manager indicated that the tailings pond has always had water at the surface (J. Roberts, pers. comm.)").

Common Problems with References Sections

- Citation information incomplete (not enough detail for a reader to find it if needed).
- Citations within the text absent from the reference list.
- Citation formats inconsistent within the report text (e.g., (Jones 2003) and (Smith, 2017) both used in text).
- Website citations have incorrect or incomplete links (that is, they do not return the expected results when clicked) or omit the date of access.

3.2 Supporting Material

3.2.1 Tables

Tables are a compact way to present data (table captions should be placed above the table), particularly numerical data, but they may become confusing if they contain too much data. To make the data more presentable:

- Avoid large or dense tables that are difficult to read or understand. Tables should be readable at arm's length. If needed, break large tables into subtables (e.g., Table 2a, Table 2b).
- Avoid subtle highlighting that cannot be easily distinguished. Instead, use bold font or different weights/styles of cell borders to highlight table entries.
- Avoid dark cell shading. This photocopies to black, which obscures the highlighted information.
- Use data labels when amounts are not easily discernable.
- Use 9-point font or larger at final table size, for readability. Tables in Excel spreadsheets often become scaled down to fit the page when printed, and font can become too small to read. Check the PDF or print copy to make sure that your tables are still legible when scaled.
    - Example: This is 9-point font.
- Make sure any colour used will be legible when the document is printed in black and white (that is, will show as different shades of gray).
- Make sure captions exactly match those in the table of contents (if tables are listed).
- Move tables to an attachment section or appendix if they are large or distract from the flow of reading.
- Match the order of numbering to the order of appearance in the text. If you have a combination of in-text and attached tables, consider using two different numbering systems (for example, Table 1, 2, 3 for in-text and Table A, B, C for appendix tables). Consider using functions to automatically number tables as part of the table title and the cross-reference feature to link table numbering throughout the document.

3.2.2 Figures

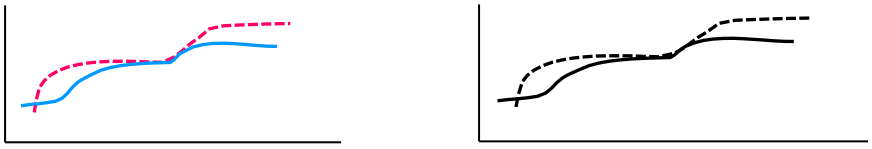
Figures add visual appeal to a report. They enhance understanding by supporting or replacing lengthy descriptions. Make sure your figures are visually accessible, that is, consider how colours may appear to someone with a colour vision deficiency.[1] Figure captions should be below the figure.

- For plans or maps, always include a north arrow (pointing up if possible) and a bar scale (a figure's scale may change with copying or different viewing tools);
- For schematic diagrams, make sure "Not to Scale" appears on the figure.
- Watch for sloppy mechanics such as:
    - Labels overprinted with linework,

[1] Consider using a free colour-blindness simulator: http://www.color-blindness.com/coblis-color-blindness-simulator/

- Too-small fonts (common if figures are generated with great enlargement on screen, then print with very fine font on paper),
- Figure and legend symbols of different sizes, and
- Project names and figure titles that do not exactly match those in the report.
- Missing labels for the x and y axis,
- inconsistent scales for the axis across figures that are intended to be compared.
- Not attributing the original source to an adapted figure included in the report.

- Match the order of numbering to the order of appearance in the text. If you have a combination of in-text and attached figures, consider using two different numbering systems (for example, Figure 1, 2, 3 for in-text and Figure A, B, C for appendix figures). Consider using MS Word functions to automatically number figures as part of the figure title and the cross-reference feature to link figure numbering throughout the document.
- Move figures to an attachment section or appendix if they are large or distract from the flow of reading.
- When using coloured lines, use different line types to retain the meaning in grayscale printing. The graphics below illustrate the importance of line type versus colour in figures (note: this difference will only be evident when this page is viewed in colour). The red and blue lines with differing line types (on the left) remain unambiguous in black and white (on the right). If solid red and blue lines were used, the black and white version would show two solid black lines and would be ambiguous.



3.2.3 Appendices

Appendices can be used to provide supporting data or materials and improve the flow of information within the text. Any non-essential supporting information should be moved to an appendix. Conversely, essential supporting information should remain within the body of the document. To determine whether information is essential, consider whether your reader will have to flip back and forth between appendices and the document body to understand the report.

Guidelines

- Match the order of appendices to the order of reference in the text.
- Make sure titles exactly match those listed in the table of contents.
- Organize appendix material to correspond chronologically or spatially with the project work. This is especially useful for voluminous laboratory data or field records (like chemical lab results or borehole logs).
- Follow the same writing practices and grammatical choices as the main report.

- Number figures or tables with the prefix of the appendix in which they appear (e.g., Figure D2 for the second figure in Appendix D or Table B3 for the third table in Appendix B). If space allows, list appendix figures and tables in the appropriate sections of the table of contents of a report.

Common Problems with Appendices

- They contain information that should be included within the document body.
- They are not organized logically or with reference to the document body.
- They are not reviewed for consistency with the conventions applied to the document body.

3.3 Report Formatting

To maintain a strong, consistent image in all forms of visual communication, all documents should follow the formatting standards used in your organization. These standards typically cover use of a logo, graphics, stationery layout, and templates for letters, letter reports, faxes, memos, emails, and other aspects of organizational branding.

In some organizations, administrative staff are responsible for checking document formatting before a document is issued. In those cases, authors may want to limit the amount of time they spend formatting and should not create new or custom formats or rely on standardized templates in software packages (e.g., MS Word document templates). If you cannot start from an established organizational template, it may be best to produce an unformatted document for review and eventual formatting.

Note

MS Word files with a .doc file extension are not compatible with some SharePoint tools, such as Workflow (which may be required for internal review) or co-authoring. It may be helpful to copy text into MS Word templates and save the document with a .docx file extension before uploading it to SharePoint.

4.0 Language and Usage

4.1 Grammar

Poor grammar and spelling errors can damage your technical content.

Grammar is the system of rules that govern sentence construction. Consistent use of grammatical conventions is essential to effective writing. Users notice grammatical errors, inconsistencies, and misspelled words, and this can distract from the technical content of reports.

This Technical Writing Guideline only covers the basics of writing style. If you are interested in improving your writing, these resources are a good place to start.

- The Canadian Style by Public Works and Government Services Canada

- Geological Survey of Canada Guide to Authors by Geological Survey of Canada, Earth Sciences Sector, Natural Resources Canada, Ottawa (PDF for download)
- Grammar Girl's Quick and Dirty Tips for Better Writing by Mignon Fogarty
- Purdue Online Writing Lab by Purdue University

Other technical writing guides and resources are available on the internet.

4.2 Potential Liability Words

The term "potential liability words" refers to words you should avoid or use with caution in reference to organizational activities or responsibilities because they could be misconstrued by others and potentially introduce liability into your documents (which may open your organization up to the risk of legal action or claims). Professionals are liable for their work and should avoid the potential liabilities brought on by the use of inappropriate language. This section describes different types of potential liability words; a more complete list can be found in Appendix A.

4.2.1 Words of Direction

Words of direction that instruct or direct users, consultants, subconsultants, or contractors. Make sure you differentiate between giving direction (as in a set of specifications) and making recommendations.

Examples

- *Must* – means "to be obliged to, expressing insistence." It is a mandatory condition, an explicit direction. Use with caution.
- *Should* – means "express what is probable or expected." It describes a future condition but is not mandatory.
- *May* or *could* – means "expressing permission or possibility." It describes a discretionary or optional condition or action.

Consider how the meaning of a sentence changes with each of the above words:

1. A buffer zone must be maintained between the borrow pit and the airstrip.
2. A buffer zone should be maintained between the borrow pit and the airstrip.
3. A buffer zone may be maintained between the borrow pit and the airstrip.

4.2.2 Absolute Words

Absolute words can convey a more inclusive meaning than you intend, and can have legal implications. They should be used with caution or avoided.

Examples

- No, none
- Every
- Full
- Complete
- Best
- Final
- All, any
- Maximize, minimize
- Optimize

> **Note**
> *Final* is a word with many legal uses and meanings and can be considered a liability word. The legal complexity of the words *draft* and *final* is one reason why some organizations use alternative words for project deliverables at these stages (e.g., "for review" or "for use").

4.2.3 Words of Promise

Words of promise imply a level of authority that the author may not have. Avoiding these words in reference to your organization's work will help to limit your risk.

Examples

- *Guarantee, warranty* – means "a pledge, promise or assurance of specified work or replacement"; due to inherent uncertainties in services or work, many organizations do not give guarantees or warranties.
- *Certify* – means "to endorse with authority"; Should be used by a certifying authority; you may want to avoid this word unless in a specific certifying role.
- *Assure, ensure* – means "to make certain, safe or sure";
- *Approve* – means "to sanction, consent to, confirm, or ratify"; Should be used by a government agency or by those acting for an approving agency.

4.2.4 Words of Control

Words of control carry a level of responsibility the author may not be willing to accept. The author should carefully consider what level of responsibility is reasonable to assume and therefore what terminology should be used in the circumstances.

Examples

- *Supervise* – means "to have charge of or to direct"; this word has complex legal meanings and may imply job site control (including safety responsibility for contractors, the public, and us) that your organization may not be willing to accept. Alternatives include oversee, guide, or monitor.
- *Inspect* – means "to look at carefully, to examine or review officially"; Often used by a government agency, or by those acting in this capacity. Alternatives include observe, investigate, or monitor.
- *Direct* – can mean "to regulate the activities or course of" or "to request or enjoin with authority"; Consider whether your organization provides direction in a legal sense. Alternatives include oversee, guide, or monitor.

4.2.5 Judgmental Words

Judgmental words assign subjective (often negative) or vague qualities to what should be objective results. They can introduce unintended biases into your writing and should be replaced with specific, factual reporting.

Examples

- *Contaminated/contaminant, polluted/pollutant* – Judgmental statements (The soil is contaminated by…) should be replaced with factual statements (The concentration in soil is greater than [reference value]).
- *Elevated* – This word is often misused, referring to some vaguely high value. State a reference value or rephrase the sentence (The chloride concentration was greater than the Drinking Water Standard).

4.3 Unnecessary and Misused Words

4.3.1 *Unnecessary Words*

Unneeded words and phrases slow down reading, so strive to eliminate words that add nothing to your message.

- Search for sentences beginning with "*It is"* and "*There are"*. Such sentences can often be rephrased with fewer words or stronger verbs and the reader may have a difficult time keeping track of what you're referring to when sentences begin with the words it, this, and there.
- Look for nouns (comparison, presentation, selection) with corresponding verb forms (compare, present, select) and rephrase the sentence. For example, *"Laboratory analysis will include the comparison of several samples"* can be rephrased to "*Laboratory analysis will include comparing several samples."*

Examples

Unnecessary Word/Phrase	Alternatives
actually	(delete)
a number of	many, several
at the same time as	while
by means of	by
end result	result
exhibit a tendency	tend
for the purpose of	for, to
in an area where	where

A longer list of unnecessary words and alternatives is presented in Appendix A.

4.3.2 *Misused Words*

Misused words can undermine otherwise clear and authoritative writing or cause confusion for the reader. Authors should work with reviewers to identify words that may be used incorrectly. Consult a dictionary (Merriam-Webster Online); words you use often may not mean exactly what you think they mean.

Examples

- *Affect/effect* – Affect is a verb meaning to have influence on (sunlight affects plant growth); effect is commonly a noun meaning a result or influence (sunlight has a positive effect on plant growth).
- *Between/among* – Between suggests a one-to-one relationship (variation in test results between the laboratories) and among suggests distribution rather than relationship (lessons learned shared among the participants).
- *Biweekly/bimonthly/biannually* – Can lead to confusion about whether an event is every two weeks/months/years or twice per week/month/year. Rephrase with the precise meaning (We will hold conference calls twice per week and have team meetings every two months).
- *Continual/continuous* – Continual refers to events that occur frequently but with intervals (I couldn't work because of the continual interruptions). Continuous refers to non-stop events (A continuous barrage of loud music kept me awake all night).
- *Invaluable/valuable* – Invaluable (above valuation, inestimable) is sometimes used when valuable (of great value, price, or worth) is intended.
- *Its/It's* – "Its" is a possessive pronoun (The dog chased its tail in the parking lot). "It's" is a contraction of it is or it has (It's been fun, but it's time to go).
- *Methodology/methods* – Methodology is the study or evaluation of methods or the collective body of methods for an area of study. Methods describe how you do something. For example, methodology would discuss whether a desktop or intrusive study was appropriate for the project; methods would describe how you drilled boreholes. It is common to misuse methodology to describe what was done when methods is the preferred term.
- *Photography/imagery* – Photography is the process of obtaining photos; imagery is the process of obtaining images. Satellite images are the pictures, while satellite imagery is the process to acquire those images.
- *Utilize/finalize* – Replace with simpler words (use; complete or finish).
- *Which/that* – **That** introduces an essential clause—one that changes the meaning of a sentence if removed (*The book that won the award is on sale. Without "that won the award", essential information about the book on sale is omitted; any book could be on sale*). **Which** introduces a non-essential clause—one that simply adds information (*The sky was blue, which made me happy. The writer is providing information that could be removed without compromising the central meaning of the sentence*.). Note: Non-essential clauses are normally introduced or set off by commas (*put a comma before which*), but essential clauses should not be (*do not put a comma before that*).

Appendix B includes more misused words that frequently appear in documents.

Both Geological Survey of Canada Guide to Authors and The Canadian Style have extensive lists of commonly misused words and phrases.

4.4 Bias Free Language

Avoid language that refers to personal characteristics that are not essential to the content. Biased language includes references to gender, ethnicity, race, age, disability, religion, and sexual orientation.

Avoid using Mr. or Ms. when referring to team members. Instead use full names or position titles.

If mentioning a specific group is essential to the project (such as Indigenous engagement), ensure that you are using terminology preferred by that group or recommended by a related government agency, such as Indigenous Services Canada.

For additional information, refer to the University of Wisconsin's *A Guide to Bias-Free Communications*

(http://academicaffairs.ucsd.edu/_files/aps/adeo/Article_Guide_to_Bias-Free_Communications.pdf)

Examples

- *Man-hours* – Use staff hours or labour time.
- *Manpower* – Use workforce or staff.
- The contractor should use *his* judgment. – Use The contractor should use their judgment.

4.5 Active and Passive Voice[2]

In active sentences, the agent (what or who does the action) is clearly identified at the beginning of the sentence (The technician collected samples at 16 sites).

In passive sentences, the agent is less important or unknown, so it is moved to the end of the sentence or omitted (Samples were collected at 16 sites [by the technician]).

Most of your writing should be in active voice, particularly when describing work your organization did or intends to do (see Example 1). However, when it is not important who did the action or you want to remove emphasis from the agent, passive voice is the correct choice. Always consider your reader and the meaning you would like to convey; either of the sentences in Example 2 could be correct depending on purpose and audience.

If you read a report or proposal and can't tell who did most of the work, you likely have too much passive voice.

Examples

1. Active: ABC Ltd. completed the remediation.
   Passive: The remediation was completed (by ABC Ltd).
2. Active: I heard the rooster crow at dawn.
   Passive: At dawn, the crowing of the rooster could be heard.

[2] See Purdue Online Writing Lab for more detail on active vs. passive voice and tips for changing passive to active voice.

4.6 Indeterminate Statements

There is/are and *it is/was* are common introductory phases that bloat your sentences. Other examples to avoid are it was considered, it was determined, it was assumed. Reword sentences that begin with any of these phrases to be more direct.

Examples

- Indeterminate: It was considered that the correct depth for discontinuation of drilling was 60 m.
  Definitive: The field technician stopped drilling at 60 m depth.
  Or simply: Drilling was stopped at 60 m depth.
- Indeterminate: There was no detailed information available at the time of reporting.
  Definitive: Detailed information was not available at the time of reporting.

4.7 Sentence Length

Sentences that are too long can lose your reader (legal contract language is an extreme example of this). Many short sentences can sound disconnected or abrupt. Use a variety of sentence lengths in your documents to make them easier to read.

Guidelines

- Aim to keep sentences short without losing meaning.
- Look for conjunctions (and, but, or, yet) or conjunctive adverbs (therefore, however, furthermore) to see if you can break up long sentences.
- Use transition words and phrases to connect disjointed or choppy sentences.
- Use bullets to present long or complicated lists (see Section 4.8.9 for more information on bullet lists).

4.8 Usage Conventions

4.8.1 Acronyms

An acronym is a term formed from the initial letters of a phrase or name that can be pronounced as a separate word (NATO for North Atlantic Treaty Organization). Since acronyms place extra burden on the reader, they should only be used if they appear four or more times in a document or section. Otherwise, write the term in full for each use. For reports with many abbreviated terms, include a list of the acronyms and abbreviations in the table of contents.

Clearly define acronyms for company names and cumbersome phrases that are used four or more times in a document.

Acronyms should be defined on first usage in the text within the main body of a document. Once introduced, acronyms should then be used consistently throughout the document. For example, use biological oxygen demand (BOD) the first time it appears in the text, and BOD afterwards.

Avoid using acronyms in headings, figures, or tables, unless the acronyms are commonly understood (like NATO or NAFTA) or you are certain your audience is familiar with the acronym.

The plural of acronyms should not have an apostrophe (PCBs, ATVs not PCB's, ATV's).

4.8.2 Abbreviations

Abbreviations should not be used at the beginning of a sentence, even if they were previously defined. They should only be used if they improve readability.

When an abbreviation comes at the end of a statement, do not add another period (written English has no circumstance when a sequence of two periods is correct). Other punctuation (commas, semi-colons, question marks) should be included.

Months and days of the week should not be abbreviated, except in tables or figures to save space.

Depending or your organization's writing standards, the words Figure, Table, and Appendix should not be abbreviated. Photo is appropriate when referring to specific photographs (Photo 7), but Photographs should always be used for headings and appendix titles.

The abbreviation "i.e." stands for "that is" and introduces a definition or a fuller explanation; "e.g." means "for example" and introduces an example or list of examples. When you introduce a list with "e.g.", do not end it with "etc." Both "e.g." and "i.e." are followed by a comma and should not be in italics. For clarity, these phrases should be enclosed in parentheses. Example: Proper names should be capitalized (e.g., the Confederation Building).

The abbreviations NE, NW, SE, SW may be used to denote town and city divisions, but compass directions (north, south, southeast, northwest) should be spelled out. (Section 4.8.5 addresses capitalization of compass points.)

Avoid using "M" for a million. Use the full number ($17,000,000) or spell out the words ($17 million). If using "K" to mean thousand, define this on first usage ($100,000 or $100K). Use these conventions sparingly in formal reporting because they may compromise the precision of the numbers.

4.8.3 *Contractions*

Contractions (don't, won't, can't, shouldn't, you're, they'd) should not be used in formal documents. In less formal settings (like email), contractions may prevent your writing from sounding stuffy or overly formal.

4.8.4 Compound Words

A compound word is two or more words that act as a single unit. Compound words can be closed (one word), hyphenated, or open (separate words). The most common errors and questions about compound words are related to adjectives.

The prefix non- should never appear as a word on its own; hyphenate the whole phrase (non-frost-susceptible, not non frost-susceptible or non-frost susceptible).

When two or more words form a compound adjective, always use the hyphenated form (the south-facing window). If the compound adjective appears after the verb, do not hyphenate (the window was south facing).

The following types of compound words should always be open, a compound word that consists of a number and the word percent (as in 99 percent certainty) and a compound

word that consists of a non-English phrase (as in per diem allowance, in situ treatment, or ex situ technology).

Appendix B explains how to hyphenate commonly used compound words. Check a standard dictionary (Merriam-Webster Online) for the correct convention. If you get conflicting (or no) information, pick one convention and use it consistently throughout the document.

Examples

- Open compounds: specially trained (staff), federally listed (species), naturally occurring (levels).
- Hyphenated compounds: large-scale, south-facing, coarse-grained, north-trending, gold-bearing, odd-looking, till-like, one-third, on-site, off-site, up-gradient, down-gradient.
- Closed compounds: widespread, southeast, testpit, borehole, offshore, ongoing, cleanup (noun), groundwater, stormwater.

4.8.5 *Capitalization*

Capitalization signals the reader to pay attention, but too much capitalization clutters the text and is difficult to read. Avoid capitalization intended to accentuate ordinary words.

Capitalizing too many words in a document distracts the reader and clutters the text. Learn when capitalization is appropriate and be consistent.

Capitalize all proper nouns, including the names of months and days, or names that are trademarks (Xerox or Cineplex). Pay attention to how trademarks are capitalized (iPod).

Capitalize titles when used with personal names (Prime Minister Jean Chretien) or when referring to a specific person in an office (the King of England), but not when referring to the generic office (Canada's government is led by a prime minister, not a president).

Verbs derived from proprietary terms are often not capitalized (xeroxing, googling, skidooing). In general, generic terms should be used instead of proprietary words (photocopying, searching the internet, snowmobiling).

Use title case for headings and titles: the first letter of each main word is capitalized and minor words stay in lower case (Summary of Concentrations of Lake Water Samples).

Titles and headings should never end with a period.

Capitalize "section" when referring to specific report sections (The soils are described in Section 3.2).

Stratigraphic names should not be capitalized unless you need to follow to a specific convention. The convention may come from the geological map of the area, or the International Commission on Stratigraphy (ICS), or be a colloquial name for a stratigraphic unit that is accepted by the geological scientific community.

Do not capitalize compass points or geographic areas unless they represent an identifiable region ("The subject site was west of Highway 2", "We have not expanded into the West").

Do not capitalize geographic adjectives combined with proper nouns (western Canada, not Western Canada).

Do not capitalize the names of project facilities (water treatment plant) unless they are formal names (the Iona Water Treatment Facility). This also applies to project titles (see examples).

Examples

- ABC Ltd. prepared the Highway 18 Study Plan for the Province.
- ABC Ltd. prepared a study plan for the Province.

4.8.6 Italics

Italics are used to differentiate words or phrases from regular body text. They are used in this guide to indicate examples. Use italics sparingly in technical documents, except:

- Italicize foreign terms and phrases, except Latin terms that are fully accepted as English forms (versus, in situ) and Latin abbreviations (ca., cf., et al., etc., i.e., e.g., viz., vs.).
- Italicize the titles of publications (books, periodicals, maps) named in the text, but not in the references list.

4.8.7 *Use of Latin Names*

Environmental reports often require the use of Latin names for flora and fauna. In general, the terms should be italicized according to the guidelines below. It may be helpful to put the common name in front of the Latin name.

Latin names for organisms are given as binomial names in italics, with genus first and species following. The genus is capitalized, and the species name is in lower case.

The genus can be abbreviated by its first capital letter. Where multiple species are considered, unitalicized “sp.” can be inserted (sp. for one species; spp. for many species; ssp. for subspecies).

Examples

- Forget-me-not (*Myosotis sylvatica*)
- *Escherichia coli* or E. coli (a common type of water-borne bacteria)
- *Pinus spp.* (referring to various species of pine tree)

4.8.8 *Punctuation*

Punctuation tells the reader which words and phrases belong together and clarifies meaning. For the names of businesses, always use the company’s preferred spelling and punctuation. For further information on punctuation, visit Purdue OWL’s punctuation pages (see Section 5.0).

<u>Periods</u>

Put only one space after a period. When a sentence ends with an abbreviation, only use one period: The project manager for this assignment is Henry Higgins, P.Geo.

<u>Semi-colons</u>

Semi-colons have only two uses:

1. To join two complete, related sentences (The weather was sweltering; we needed to find a way to cool off.)
2. To separate items in a complex list (Our options were a swim in the crowded, dirty public pool; a run through the sprinkler in our tiny backyard; or a long, hot drive to the nearest lake, which would also be crowded and dirty.)

Semi-colons should never be used to introduce a bullet list, and they should never appear after the word "including" in lists within a paragraph.

Colons

Colons should be used to introduce bullet lists but not lists within a paragraph (We ate one of every item at the buffet, including pasta salad, roasted vegetables, mashed potatoes, chicken cordon bleu, and roast beef).

Only one space should appear after a colon.

Never place a colon after the word "including" for a list within a paragraph.

Commas

Place a comma before a conjunction between two complete sentences (The situation is perilous, but there is still one chance of escape.).

Use the comma before and after the year in a date expressed as month-day-year (We visited the project site on July 15, 2018, to assess conditions), but omit the comma when only the month and year are stated (July 2018).

In a series of three or more items with a single conjunction, place a comma after each item (red, white, and blue; the height, width, or depth; removing all structures, recontouring fill material, and revegetating the slope).

4.8.9 Bullet or Numbered Lists

Bullet lists present information clearly and concisely, but too many bullet lists within a document can tire readers. Use them to break up paragraphs.

Do not use bullets for lists with fewer than three items.

Keep a consistent, parallel format for each item in the list. For lists that start with verbs, all items should have the same tense. Do not mix up noun forms (the construction of) and verb forms (constructing).

Capitalize the first word in each bullet item.

Each bullet list should have an introductory sentence and consistent punctuation, but you do not need to use the same format for all lists in a document. For a cleaner look, you may choose to omit punctuation at the end of each item.

The project has the following objectives:

- Analyze 20 samples
- Tabulate data
- Report the findings by September 27

If the items are complete sentences, introduce the list with a complete sentence, and use periods at the end of each bullet.

If the list continues from the introductory clause, use commas (for simple lists) or semi-colons (for complex lists). It is never correct to put a comma after "and" when it appears at the end of a list item.

If any bullet in a complex list has more than one sentence, consider revising the list so the items are consistent.

4.8.10 Spelling

Most Canadian organizations use Canadian English spelling. Most spelling variants fall into a few well-defined classes:

Variants

Spelling Choice	Example
Words ending in ise/ize	Use –ze (analyze, organize)
Words ending in re/er	Use –re (centre, meter, kilometer; but meter for an instrument, a pH meter)
Words ending in a single l	Use ll for –ing and –ed forms (fuelling, fuelled, modelling, modelled)
Words ending in ce/se	Use –ce (defence, practice; except the verbs practise and license)
Letter combinations (digraphs) ae and oe	Use ae (archaeology, palaeontology)

Spelling variants do not, in general, impede understanding, so focus on consistency. If you're unsure of a word, check Appendix B Spelling and Word Usage. If the word isn't on the list, look it up at Merriam-Webster Online.

Your MS Office default language should be set to Canadian English, but never rely exclusively on spell check. It will not flag misused words or catch typos if they are accepted words in their own right (consider from and form or for and fro).

4.8.11 *Numbers and Units*

Numbers and units should be used consistently. Spell out whole numbers from one to nine. Use numerals for 10 and above (three lakes, 10 samples, 20 carats, 400 million years).

Exception: If you have numbers both above and below 10 in the same sentence, use numerals for both (We collected 8 samples at Site A and 12 samples at Site B, not We collected eight samples at Site A and 12 samples at Site B).

Numbers and units are part of our documents.

Using incorrect or inconsistent formats can damage our credibility.

Always spell out numbers at the beginning of a sentence. If the number is complicated to spell out, try re-arranging the sentence so the number is not at the beginning.

Use numerals with abbreviated units (5 m not five m nor 5 meters), and add a space between the numeral and the unit (8.2 km not 8.2km). Numerals and units should never be hyphenated (a 5 km stretch of road) unless the numbers are spelled out (five-mile corner).

Keep numbers and units together on the same line of text; a non-breaking space (CTRL+SHIFT+SPACEBAR) between the numeral and the unit prevents a line break splitting a number from its unit.

When writing a range of numbers, be careful not to mix up "between/and" (between 2 m and 5 m deep) and "from/to" (from 1.5 m to 3.0 m long).

In most cases, use commas to break up numerals four digits and greater (1,000 and 10,000,000). However, for Map Scales, use a non-breaking space (CTRL+SHIFT+ SPACEBAR) rather than a comma in numerals five digits or greater (1:30 000, but 1:5000)

Lead with SI or metric units, and put US imperial units in parentheses if they are required (58 m (190.3 ft.)). You can abbreviate US customary units (ft. for feet, in. for inches, mi. for mile). The period is mandatory for these abbreviations.

When using the symbols % for percent and °C for degrees, no space should appear between the number and the symbol (59%, not 59 %; 12°C, not 12° C or 12 °C).

Use month day, year format for written dates (June 14, 2008). Do not put a comma between month and year when the day is not given (June 2008, summer 2008). Always put a comma after the year when the date appears mid-sentence (The site visit on June 14, 2008, began with a safety meeting.) Do not use ordinals (6th, 3rd, or 2nd) for dates (June 5 or July 2, not June 5th or July 2nd).

CAUTION

Do not use superscript letter *O* or numeral *0* for the degree symbol.

To find the degrees symbol (°) in MS Word 2016, go to the Insert tab, click on *Symbol* > *More Symbols*..., select "Basic Latin" subset, and choose °. Alternatively, hold down the ALT key and type 0176 on your number pad.

4.8.12 Equations

Equations are supporting material that can tell the reader what was used in the analysis or how specific conclusions were reached. Remember that your audience may not be able to read and understand equations. Depending on the audience and purpose of your document, equations may be better placed in an appendix.

Equations may intimidate some readers. Do they need to be within the main document or can they be moved to an appendix?

Equations should be indented and numbered. Specific equation formatting is left up to the author but should be applied consistently.

Where only a few equations are included, list and define the parameters (with units) beneath the equation. Where many equations are used, a separate list of symbols and terms should be appended to the report for reference.

Example

Darcy's Law in one dimension is shown in Equation 1:

$$Q = K\ I\ A \qquad [1]$$

Where:

Q = groundwater flow (m^3/s),

K = hydraulic conductivity (m/s),

I = hydraulic gradient (m/m), and

A = cross-sectional area of flow (m^2).

4.8.13 Quotation Marks

Quotation marks can be used for:

1. Identifying direct quotations of another person's exact words;
2. Identifying the title of a short piece of writing (journal article, technical paper, report) within the body of a document; or
3. Paraphrasing a complex or unusual term; or
4. Presenting words ironically, with reservation, or in some unusual way.

Quotation marks serve a specific purpose in writing. Use them sparingly and carefully.

Avoid using quotation marks to set off unusual or ironic words in documents. Instead, try to rephrase using direct and descriptive language.

Quotations marks should never be used for emphasis.

For a long block of quoted text, consider using left and right indentation to set off the quoted text from the main body of the document. Remember to cite your quote according to the agreed citation and reference style (e.g., APA, MLA, IEEE) .

Example

(Paragraph introducing quotation)

> *"But the secret of good writing is to strip every sentence to its cleanest components. Every word that serves no function, every long word that could be a short word, every adverb that carries the same meaning that's already in the verb, every passive construction that leaves the reader unsure of who is doing what—these are the thousand and one adulterants that weaken the strength of a* sentence." (Zissner 2006, p. 6)

(The document text would resume here.)

4.8.14 Citations and References

We use references to properly attribute ideas that are not original to the author as well as to direct readers to additional information. We must include them to avoid plagiarism. (See Section 3.1.9 for additional information on references.)

Complete, consistent references allow your reader to easily locate material from outside sources

The format for citations and references should be complete and consistent. The precise reference format may be left up to the author as long as the information is presented using the same conventions for all references in a single document. Refer to the standard formats used in your field (i.e., IEEE Style).

Appendix C includes guidelines that can be used if no other group-specific preferences or instructions are established. Examples of standard formats are presented in Geological Survey of Canada Guide to Authors and Purdue OWL - Reference List: Basic Rules.

- When citing websites, include the date of access. Links may change after original access.
- The format may need to adhere to specific requirements for the document (e.g., when submitting a journal article or conference paper).
- When listing documents in the references, include the job number so others can find the document in the future. Do not include the names of individual authors or reviewers; corporate documents belong to the corporate entity.

4.8.15 Personal vs. Organizational Reference (First vs. Third Person)

After you have initially identified your organization, you may choose to use first person "we" when referring to the company or project team. This can avoid stiff, disjointed writing such as *ABC Ltd. collected the stream samples* or ABC Ltd. considers that… Clearly, ABC Ltd. (a business entity) did not collect samples or consider anything, a person did.

Get a little bit personal.

Using "ABC Ltd." instead of "we" can sound too formal. Don't be afraid to let the people shine through.

However, we do not advise using "our" or "we" in the same sentence as ABC Ltd.; use "its" (for example: ABC Ltd. has assigned *its* top experts, not ABC Ltd. has assigned *our* top experts).

Letting the reader relate on a human level to your work can be worthwhile. Personal rapport underpins healthy business relationships, and current business practices allow for less formality than in the past.

4.8.16 Verb Tense

Verb tense shows when an action occurs. Incorrect tense leaves the reader wondering when actions happened in relation to each other. Pay particular attention to verb tense when writing documents that report a chronology of events (for example, a construction summary report).

- Use past tense for actions that are complete (for example, fieldwork, laboratory work, literature reviews).
  - *The soil samples were analyzed at XYZ Laboratories.*
  - *Our literature review identified the following information gaps.*
- Use present tense for ongoing actions or fixed or enduring conditions.
  - *ABC Ltd. collects samples from all monitoring wells twice weekly.*
  - *The stream branches at the highway.*
- Use future tense for planned or proposed actions.
  - *The planning phase will be completed in 2020.*

Verbs also have aspects to show duration and relative position in time. Knowing which verb tense and aspect to use can be challenging, even for experienced writers. HyperGrammar has extensive information on Using Verbs.

5.0 Resource Information

Authors should consult available organizational guidelines, procedures, and templates before relying on external sources. However, since internal sources may not be exhaustive, provided below are additional resources that may be useful to authors who want to improve their skills.

General Writing Resources

- Language Portal of Canada Writing Tools includes grammar and usage tips, lessons, quizzes, and more, developed and maintained by the Government of Canada.
- Purdue Online Writing Lab (OWL) at Purdue University contains general writing guidance as well as advice on writing for different settings.
- On Writing Well by William Zissner is a well-respected resource for non-fiction writers. Chapter 15 discusses Science and Technology, and Chapter 16 focuses on Business Writing.

Technical Writing Resources

- Geological Survey of Canada Guide to Authors , by Geological Survey of Canada, Earth Sciences Sector, Natural Resources Canada, Ottawa. This guide comprises general report-writing guidelines and comprehensive discussions and examples of grammar and word usage.
- Technical Report Writing, NASA Technical memorandum 105419, May 2000. This 43-page document is a comprehensive guide for writing technical reports.
- Technically-Write, by Ron S. Blicq. Prentice-Hall, Scarborough, Ontario (currently 8th edition). This is a well-known and well-regarded Canadian textbook on technical writing.

Grammar, Style and Usage Resources

- HyperG inquiries@osc.gov.on.caar from the University of Ottawa's Writing Centre provides a comprehensive guide to grammar and style for academic writing.
- Writers Workshop Grammar Handbook from the University of Illinois at Urbana-Champaign's Center for Writing Studies is a useful reference for learning about various aspects of grammar.

Resources for English as a Second Language

Below are some references to help people who have a first language other than English improve their understanding of English-language structure and style.

- English for Speakers of Other Languages by J. Strausser and J. Paniza. Barrons, New York, 2007. This book uses an easy-to-follow process to teach basic English grammar for ESL students.

- Sources for English as a Second Language (ESL) on the website of the Massachusetts Inst. of Technology (links to books and online resources).

6.0 References

Blicq, Ronald S., 1983. Technically-write! Communicating in a Technological Era. 2nd Ed. Prentice-Hall Canada Inc., Scarborough, ON.

The Chicago Manual of Style, 17th ed. 2017. University of Chicago Press, Chicago, Illinois.

Editors' Association of Canada, 2000. Editing Canadian English, 2nd Edition. McClelland & Stewart Ltd., Toronto, ON. Geological Survey of Canada, 2016. Guide to Authors. Geological Survey of Canada, Open File 8095; 208 pages.

Massachusetts Institute of Technology. Sources for English as a Second Language (ESL) https://cmsw.mit.edu/writing- and-communication-center/resources/teachers/esl-resources-students/ (accessed November 20, 2018).

University of Ottawa, Writing Centre, HyperGrammar. http://arts.uottawa.ca/writingcentre/en/hypergrammar (accessed November 20, 2018).

Appendix A – Clear Language and Potential Liability Words to Avoid

Clear Language

Flagged Word or Phrase	Comments	Alternative(s)
A distance of	Redundant; omit	
A majority of		most
A number of		many, several
Actually	Often over-used to emphasize points; delete	
Adequate number	Wordy	enough
Administer	Word of control; avoid	give, run, operate, oversee
Advise	Word of control; use with caution	suggest, recommend
Affirmative		yes
Afford an opportunity		let, allow
As a means of		for, to
At the present time		now, at present
At the rate of		at
At the same time as		while
At this point in time		now
Attached hereto		attached
Bring to a conclusion		conclude
By means of		by, using
By use of		by, using
Certification (after grading)	Your organization may not provide certification	memorandum
Communicated with	Imprecise; specify means of communication	called, wrote, emailed, faxed, contacted
Connected together	Redundant; connected implies together	connected
Covered over	Redundant; covers are typically over	covered
Due to the fact that		because, since
During such time		during
During the time that		while
Enclosed herewith		enclosed, attached
End result	Redundant; results happen at the end	result
Endeavour		try
Examination	Word of promise; use with caution	observation, review, study, evaluation
Excessive number	Judgmental phrase; state value where appropriate	(too) many
Execute	Word of promise; can have legal meanings we may not intend	do, sign
Exhibit a tendency		tend
Exposed at the surface	Redundant phrase	exposed
Few in number	Redundant phrase	few
Finalize	Officious sounding word with the same legal implications as “final”; avoid	complete, finish
For a period of		for
For the purpose of		for, to
If possible		if practicable

Clear Language

Flagged Word or Phrase	Comments	Alternative(s)
Impact (verb)	Use sparingly, unless you are talking about one object striking another with force	affect
Impact(s) (noun)	Commonly used in environmental reports; use effect when meaning will not be compromised	effect(s)
In an area where		where
In an effort to		to
In close proximity to	Redundant; proximity implies closeness	close to, near
In colour	Omit; the names of colours are usually obvious	
In connection with		about, regarding
In fact	Unnecessary phrase; omit	
In lieu of		instead of
In order to	Use sparingly	to
In reference to		refers to, referring to
In respect of		for
In short supply	Cliché and wordy	scarce, sparse
In spite of the fact that		despite, although
In such a manner as to		to
In terms of		in, for
In the absence of		without
In the course of		during
In the direction of		towards
In the event that/of		if
In the foreseeable future		in future
In the form of		as
In the matter of		regarding
In the neighbourhood of	Colloquial use; avoid	about, approximately, near
In the vicinity		near
In view of the fact that		because, given that
Inevitably	Word of judgment; avoid or use with caution	
Inspect, inspection	Word of control; avoid if untrue when referring to your organization's activities or responsibilities	observe, monitor, review, study, look over; document, record (verb),
observation, monitoring		
Institute (as verb)	Use only to mean "establish as an institution"	start, begin
Insufficient	Judgmental word; use with caution	not enough
Investigation (soil)	Word of control; author should use precisely	exploration, reconnaissance, evaluation
Involves the necessity of		demands, requires, needs
Involves the use of		employs, uses
Irregardless	Nonstandard usage; avoid	regardless, irrespective
It can be seen that		thus, so
It is considered desirable		I or we want to

Clear Language

Flagged Word or Phrase	Comments	Alternative(s)
It is probable that	Omit and rephrase the sentence if necessary	probably
It should be noted that	Can often be omitted without losing meaning	note that
It would appear that	Omit and rephrase the sentence if necessary	apparently
Last but not least	Cliché; avoid	
Least	Absolute word; be specific	lowest observed, lowest practicable
Manpower, man-hours	Biased language	workforce, staff, labour time, staff hours
Manmade	Biased language	synthetic
Maximize (effort or scope)	Use with caution; avoid in most cases	increase
Minimize (effort or scope)	Use with caution; avoid in most cases	reduce
Obvious	Word of judgment; avoid	apparent
Of considerable magnitude		large
On account of		because
Owing to the fact that		since (because)
Periodic	Refers to something occurring at regular intervals (every month, every three minutes). Use alternatives if interval is irregular.	occasional, sporadic
Pertaining to		of, about
Please feel free to	Use alternative or avoid	please
Presently		now
Prevent	Word of control; use with caution	forestall, act/seek to avoid
Prior to		before
Proper	Judgmental word; use with caution	recommended
Provided that		if
Pursuant to		by, following, per, under
Pursuant to your request	Avoid	
Readily		may be
Regarding the matter of	Avoid	regarding
Relating to		about, regarding
Risk	Use to describe qualitative or quantitative exposure to a hazard; be aware that “risk” has many definitions. Consult relevant codes/standards.	
Subsequent to		since, after
Subsequent, subsequently	Often redundant; avoid this word when describing sequential events	later
Sufficient	Judgmental word; use with caution	enough
Suitable	Use only where judged fit for purpose	
Terminate		end, stop, finish
Transpire		happen
Until such time	Redundant phrase; “until” implies future time	until
Very	Omit, unless part of an official classification system	

Clear Language

Flagged Word or Phrase	Comments	Alternative(s)
We wish to state that	Omit; the sentence is the statement	
We are pleased to submit	Cliché; omit and rephrase the sentence	We have prepared/are submitting
With a view to		to
With the aid of		with, assisted by
Witnessed	Word of control; use with caution	saw, observed, noted

Potential Liability Words

Flagged Word or Phrase	Comments	Alternative(s)
All	Absolute word; use with caution	some, most, usually
Always	Absolute word; avoid	most times, mostly
Any	Absolute word; avoid	
Approve	Word of promise; avoid	accept, review
As-built	Avoid when referring to reports/drawings produced by your organization; many firms do not issue as-built reports or drawings	record
Assure	Word of promise; we do not assure	confirm
Best	Absolute word; use with caution	recommended
Certify	Word of promise; avoid unless our specific role requires it	confirm, document
Complete scope/full scope	Absolute word; rephrase specifically	scope limited to; our scope included…
Contaminated	Judgmental word; rephrase to include a reference value	"The soil had concentrations greater than the guideline value"
Control (a job)	Word of control; rephrase specifically	control the equipment, give guidance, oversee tests
Cost estimate/estimated cost	May be viewed as binding contractor-style quote; rephrase in all other cases	probable cost, predicted cost, suggested budget, fee summary, summary of costs
Critical, crucial	Too decisive for most engineering and scientific settings; use only when implying imminent danger to property or life	important, warranted
Direct (as verb)	Word of direction; avoid in reference to our activities or responsibilities	oversee, guide, monitor
Draft	For internal documents only.	preliminary, issued for review/discussion
Elevated (value)	Judgmental word when used on its own; include reference value or rephrase	elevated with respect to the standard; higher than (standard)
Ensure	Word of promise; avoid when referring to our activities or responsibilities	confirm, document, verify
Entire	Absolute word; avoid	bulk of, majority of, most
Equal to	Equal means exactly the same; no substitutes	equivalent to
Essential	Means cannot do without; rephrase if untrue	important, key, main, recommended

Potential Liability Words

Flagged Word or Phrase	Comments	Alternative(s)
Every	Absolute word; use with caution	most, all practicable
Extreme, extremely	Judgmental word; avoid or use with caution	substantial, very
Final	Absolute word with many potential legal implications; avoid	issued for use
Guarantee	Word of promise; avoid when referring to our activities or responsibilities	
Ideal	Absolute word; rephrase	appropriate, recommended; not ideal
Maximum, maximize (scope)	Avoid or use cautiously	most practicable; increase
Minimum, minimize (scope)	Avoid or use cautiously	least practicable; reduce
Most	Absolute word; be specific	highest observed, highest practicable
Must	Absolute word; use only for mandatory action	should
Never	Absolute word; avoid	rarely
No	Absolute word; be specific	no known/observed/measured/detected
None	Absolute word; be specific	none known/observed/measured/detected
Nothing	Absolute word; be specific	nothing seen/observed/measured/detected
Optimum, optimize	Absolute words; avoid or use cautiously	recommended, most practicable
Perfect (as adjective)	Absolute word; avoid	highly recommended, well-suited, appropriate
Polluted	Judgmental word; rephrase specifically	“concentrations exceeded guideline values”
Safe (condition)	Word of promise; rephrase	protected against known hazards/ dangers
Shall	Word of promise; use only for future required action	“The contractor shall do the work”
Significant	Use only with statistical basis	considerable, substantial, large, marked
Supervise, supervision	Words of control; do not use to refer to your organization’s activities or responsibilities	observe, monitor, document, guide, review observation, guidance
Unique	Absolute word; means no other like it. Do not combine with “very” or “most.”	unusual, atypical, uncommon
Warranty	Word of promise; avoid	
Whole	Absolute word; rephrase	most of, all observed/measured/detected
Will	Use only for future commitment (e.g., ABC Ltd. will collect samples at the three sites.)	Should, might/may, could
Worst	Judgmental and absolute word; be specific	worst observed, lowest known quality, least suitable

Appendix B – Spelling and Word Usage

This list provides guidance for spelling conventions and explanations for commonly confused words. It is not intended to be a glossary of technical terms, and it does not include entries that appear in Merriam-Webster Online Dictionary (www.merriam-webster.com). If variations in spelling exist (Canadian vs. US), the preferred spelling is listed here.

General Conventions

Spelling Variants	Comments
-ise/-yse vs. -ize/-yze	use -ze (analyze, organize)
-our vs. -or	use -our (colour, favourable)
-re vs. -er	use -re (centre, metre; but meter for an instrument: a pH meter)
Words ending in a single l	use ll for -ing and -ed forms (fuelling, fuelled; modelling, modelled)
Words ending in ce/se	use –ce (defence, practice; except the verbs practise and license)
Letter combinations (digraphs) ae and oe	use ae (archaeology, palaeontology)

- For company names and trademarked products, refer to the company's website or other official sources (like corporate letterhead or email signature blocks) to verify preferred spelling and abbreviations. If this information is not available online, confirm the company name and preferred abbreviation with an employee of that company.
- Do not use an apostrophe to pluralize acronyms (PCBs, ATVs, PSEs, PDs), except to prevent awkward or confusing constructions.

Units of Measurement

In general, use Canadian spellings and standard metric/SI abbreviations for units of measurement. This list provides commonly used measurements and abbreviations. If you are using a non-standard measurement (e.g., metres below ground surface), spell it out on first reference in the text and include it on the Acronyms & Abbreviations page of your report.

degree Celsius, Fahrenheit	°C, °F	meters below top of casing	mbtoc	gram	g
liter	L	meters below ground level	mbgl	milligram	mg
milliliter	mL	meters above sea level	masl	kilogram	kg
meter	m	meters below ground surface	mbgs	tonne	t
millimeter	mm	meters below grade/ground	mbg	pascal	Pa
centimeter	cm	imperial gallons per minute	igpm	kilopascal	kPa
kilometer	km	hour	h		
hectare	ha				

User Conventions

#

1990s / 1970s – Do not use apostrophes with full years or abbreviations. Years should not be shortened to the last two digits (never ‘90s or ‘70s).

A

above ground – Hyphenation depends on where it falls in the sentence. The tank was above ground. / It was an above-ground tank.

above-noted – Hyphenated. The above-noted scope of services.

accept – (verb) I accept the position. Sometimes confused with except.

acclimate, acclimatize – Both mean “to adapt to a new environment.” Be careful not to confuse with climatized.

achievability

addendum – Use the plural form “addenda” in documents, but “addendums” is acceptable if the client prefers that form.

aeolian

affect – Verb: How will this affect me? Commonly confused with effect (noun).

air- In compound words, it should be hyphenated unless the word is well established (air-rotary, air-sparging, air-stripping, BUT airplane, airport, airstrip).

air photos – Always two words, no hyphen. Consider using “aerial photos” to increase clarity, depending on your audience. The government agency is the “National Air Photo Library.”

alleyway – One word, no hyphen.

a.m., p.m. – Not AM/PM or am/pm.

as-built – Potential liability word; better to use “record” instead.

asbestos-containing

AutoCAD

B

backfill (backfilled, backfilling)

back lane

behavior

below ground – Never hyphenated (The tank was below ground). Do not use “below-ground” (We searched for signs of a below-ground tank); use “underground” instead.

between, among – Normally use “between” when referring to two elements and “among” for three or more elements (The two brothers split the apple between them, but they shared the soup among their four friends).

bio- – Prefix relating to life, living things, or biology. In general, words that start with “bio” should not be hyphenated.

biweekly, bimonthly, biannually – Can mean “every two weeks/months/years” or “twice per week/month/year”. Rephrase for clarity (We will hold conference calls twice a week and a project review meeting every two months).

blasthole

brooming

built in – Hyphenation depends on where it falls in the sentence. These are built-in cupboards. / The cupboards are built in.

bullrushes

bushline

C

cannot – Always one word.

capacitively

catchbasin – One word, no hyphen. catchwater

centre – Canadian spelling. Also applies to compound words (e.g., centreline).

chainage

chain-link – Always hyphenated.

channelize (channelization)

checklist

cheque – Form of payment.

clean up – Two words when used as a verb (Please clean up this mess); one word when used as a noun (We performed an environmental cleanup).

climatize (climatized, climatizing) – Used in the sense of modifying something for comfort in a specific climate. Be careful not to confuse with acclimatize meaning "to adapt to a particular environment."

coarse grained – Hyphenation depends on where it falls in the sentence. The soil is coarse grained. / It is coarse-grained soil.

colour

compactive – Typically found as compactive effort.

compactor

comprise(s) – The journal comprises scientific papers from many disciplines. Usage note: The phrase "is comprised of" is common, but non-standard usage. Use "is composed of" instead.

constructable (constructability)

contaminated (contaminant) – Word of judgment; avoid or use with care. In compound words, substitute "-affected": hydrocarbon-affected, PCB-affected (soil).

Continual, continuous – Continual refers to events that occur frequently, with intervals (I couldn't work because of the continual interruptions). Continuous refers to non-stop events (A continuous barrage of loud music kept me awake all night).

cooperation

coordinate

coordinator

corehole

co-worker

criss-cross

criteria – Plural of "criterion"; takes a plural verb.

crossfall

cross-gradient – Always hyphenated. In titles and captions, capitalize as "Cross-Gradient."

cross-section – Always hyphenated. In titles and captions, capitalize as "Cross-Section."

cutline

cutslope

D

data – In scientific circles, this word is treated as plural, but in most other situations, it is singular. Consider your audience, and be consistent throughout your document.

database

datalogger – Always one word, no hyphen.

day-tank

debond

defence – In general, use Canadian spelling, but watch out for proper names (e.g., U.S. Department of Defense).

deformation – The alteration of a form or shape; the change in dimension associated with relative displacement.

de-ice (de-ice, de-icing)

deletable

densometer

desliming

dewater

dike (dyke) – Standard North American dictionaries prefer dike, but the client's preference can be used if consistency is maintained within a document.

discing

discreet – Means "tactful, trustworthy"; commonly confused with discrete.

discrete – Means "separate or individually distinct"; commonly confused with discreet.

displacement – The difference between the final and initial point of reference; the movement of something from an original position (or place) or individual points due to external source.

dissipator

ditchlines

down- – Compound words beginning with "down" are generally not hyphenated (downwind, downhole). Exceptions: down-cutting, down-gradient.
drainline

dredgability

drillhole

drop-tube

dry cleaner – Two words, no hyphens.

dual-level

dual-phase

E

e.g., – Stands for “for example” (from the Latin exempli gratia). Used to introduce a list of examples. Commonly confused with i.e. Usage note: A list of examples introduced by e.g. should not finish with etc. because e.g. already implies that the list is not complete.

earthworks – One word, no hyphen.

effect – (noun) The environmental effects are minimal. Commonly confused with affect (verb).

email – One word, no hyphen.

end-bearing – Always hyphenated.

erodible (erodibility)

et al. – Stands for “and others” (from Latin et alia). It should be used for in-text citations with more than two authors and should not be italicized.

etc. – Stands for “and the rest” (from the Latin et cetera). Usage Note: Do not use etc. to end a list that begins with e.g.

everyday – Never hyphenated. One word before a noun (These are my everyday clothes), two words elsewhere (I wash my hair every day).

ex situ – Always two words, no hyphens.

exceedance

except – Preposition. She works every day except Sundays. Sometimes confused with accept (verb).

F

Factor of Safety (FoS)

favour (favourable, favourably)

fenceline

fibre – This also applies to compound words and phrases that incorporate “fibre” (e.g., fibreboard, fibreglass, fibre optics, carbon fibre).

fieldwork – One word, no hyphens.

fine grained – Hyphenation depends on where it falls in the sentence. The soil is fine grained. / It is fine- grained soil.

flare pit

flashpoint – One word, no hyphen.

floodplain

focus (focused, focusing)

foredune

freeze-back

freshwater – Adjective; This is a freshwater tank.

fuel (fuelled, fuelling)

full-scale

full-service

full time – Hyphenation depends on where it falls in the sentence. The position is full time. / It is a full-time position.

G

geo- – Prefix relating to earth, ground, or soil. In general, words that start with “geo” should not have a hyphen (geotechnical, geoenvironmental).

glaciofluvial

glaciolacustrine

glaciomarine

gradeline

grain size – Prefer “particle size”.

Grams per tonne, g/t

gram molar

gravel (gravelled, gravelling, gravelly)

gray (grayish)

groundwater

H

hand auger

hand-pick – Always hyphenated. I will hand-pick the samples. / The samples were hand-picked

hayland

headscarp

headslope(s)

hectare (ha) – Metric measurement of area.

historic – Adjective meaning 'important' or 'significant'; implies judgment (publication about the historic resources of the Yukon).

historical – Adjective referring to anything in the past; neutral (the historical review revealed that the subject site was formerly occupied).

hog fuel – Two words. homeowner – Always one word.

hydr(o)- – Prefix related to water or hydrogen. Words that start with "hydro" should not have a hyphen.

hydrovac (hydrovaccing)

hazmat – Preferred acronym for "hazardous materials"; "HazMat" may be used at the author's discretion or according to the client's preference.

I

i.e., – Stands for "that is" (from Latin id est). Used to clarify or re-word a statement. Commonly confused with e.g.

image vs. imagery – Imagery is the process of acquiring images. Satellite images are obtained using satellite imagery. We do not obtain satellite imagery. See photograph vs. photography.

infill (infilled, infilling)

inquire (inquiry) – Use instead of "enquire (enquiry)".

in situ – Always two words, no hyphens.

instream

inter- – Prefix meaning "mutually" or "between." In general, words that start with inter- should not have a hyphen. Exceptions: inter-group, inter-office, inter-till.

Internet – Commonly considered a proper noun. Should always be capitalized in formal reports.

invaluable, valuable – Invaluable (above valuation, inestimable) is sometimes used when valuable (of great value, price, or worth) is intended.

its, it's – "Its" is a possessive pronoun (The dog chased its tail in the parking lot). "It's" is a contraction of it has or it is (It's been fun, but it's time to go).

J

judgment (judgmental)

K

kilojoule (kJ) kilopascal (kPa)

kilometres per hour (km/h) – never kph

L

label (labelled, labelling)

labour (labourer)

landfarm (landfarming)

land use – Two words, not hyphenated. laydown

lb. – Abbreviation for "pound" (non-SI measurement of weight).

lead, led – "Lead" (noun) is an elemental metal. "Lead" (verb) has the past tense/participle form "led." Today, they lead the horses down the path. / For this project, she led the geotechnical team.

licence (noun)

license (verb)

LiDAR – Light Detection and Ranging lightweight – One word, no hyphen.

long term – Hyphenation depends on where it falls in the sentence. In the long term, it will be best. My long- term plans keep falling through.

M

man-hours – Biased language. Use staff hours or labour hours.

man-made – Biased language. Use synthetic.

manoeuvre

manpower – Biased language. Use workforce or staff.

medium grained – Hyphenation depends on where it falls in the sentence. The soil is medium grained. / It is medium-grained soil.

meter – Device for taking measurements.

metre (m) – SI base unit of linear measure.

Contractions should not be used in formal documents but may be used in emails

microsurfacing

midslope

milli-equivalent

mobilize (mobilizing, mobilization)

model (modelled, modelling)

mould

Mr./Ms./Dr. – Always has a period, followed by a single space. For bias-free writing, avoid using personal titles for team members.

mudslab

multi- – Prefix meaning many or more than one. In general, words that start with “multi” should not have a hyphen unless it clarifies meaning or prevents an awkward combination of vowels (multi-use).

N

neighbourhood

non- – Prefix denoting a negative sense of the word it is attached to. In general, words starting with “non” should have a hyphen. Exception: nonwoven. Usage note: “non” should never appear as a word on its own. It should always be connected to the word or phrase it modifies (non-frost-susceptible, not non frost- susceptible or non-frost susceptible).

northeast, northwest – One word, not hyphenated. Should not be capitalized or abbreviated as a general direction (We lived northwest of the city). May be capitalized when referring to a region (The storm ravaged the Northwest) and may be abbreviated (NE or NW) as part of an address or legal land description.

O

odour

oedometer

off-gas

off-lease – Hyphenation depends on where it falls in the sentence. Off-lease impact / the farmhouse is off lease.

offshore – One word, no hyphen.

methodology, methods – Methodology is the study or evaluation of methods or an entire body of methods. Methods describe how you do something. To describe your work, use Methods.

offtake

oilfield – One word, no hyphen.

oil sands – Two words, no hyphen.

ongoing – One word, no hyphen.

on-site – Hyphenation depends on where it falls in the sentence. The on-site investigation went well. / The tools were found on site.

onshore – One word, never hyphenated.

open-pit – Hyphenation depends on where it falls in the sentence. open-pit mining / into the open pit.

orthophoto

over- – Prefix denoting many senses of the adjective over. In general, words starting with “over” should not have a hyphen. Exceptions: over-excavate, over-excavation.

ozone-depleting – Hyphenated.

P

paratilling

part-time – Hyphenation depends on where it falls in the sentence. This is a part-time position. / The position is part time.

pasture land – In general, you only need “pasture,” but if you need to use “pasture land” for clarity, it should be two words, no hyphen.

percent (%) – Always one word. Do not switch between the word and the symbol in documents; pick one and use consistently.

Phase I, Phase II, Phase III (Environmental Site Assessment) – Used across Canada for environmental approvals if a province does not have its own regulations or for bank lending purposes and for Federal clients (e.g., ESAs conducted in accordance with CSA/ASTM standards for due diligence).

Phase 1, Phase 2 (Environmental Site Assessment) – ESAs in Alberta for upstream oil and gas sites conducted in accordance with AER guidance).

off-site – Hyphenation depends on where it falls in the sentence. The off-site work went well. / The tools were found off site.

phyto- – Prefix relating to plants. In general, words that start with “phyto” should not have a hyphen.

pilot-scale

pipe rack

pit run – Two words, no hyphen.

plantsite

polyfibre

polyheed

porewater – Always one word, no hyphens.

post- – A prefix meaning “after in time or order.” In general, it should be joined to the following word with a hyphen (e.g., post-disturbance, post-construction). Exceptions: postglacial, postdate.

practice (noun)

practise (verb)

pre- – Prefix meaning “before.” In general, words that start with “pre” should not have a hyphen except to clarify meaning (pre-tender as in a meeting vs. pretender “a person who pretends”) or to interrupt two e’s (pre-existing).

principal – Means “first, primary.” He is the principal owner. Commonly confused with principle.

principle – Means “a rule, law, moral guideline, or general truth.” We follow the general principles of good style. Commonly confused with principal.

probehole – Always one word, no hyphens.

profilograph

proof-roll (proof-rolled, proof-rolling) pumphouse

pumpjack

Q-R

rail lines – Always two words. R

ravel (ravelled, ravelling)

re- – Prefix denoting “again” or “back.” Words that start with “re” should not be hyphenated except to clarify meaning (re-creation vs. recreation; re-sign vs. resign) or to interrupt two e’s (re-evaluate).

record-keeping

photograph vs. photography – Photography is the process for obtaining photographs. We do not obtain aerial photography. See image vs. imagery.

photo-log

photoionization detector

rippable (rippability)

rip-rap

river basin – Two words, no hyphen.

rock fall – Always two words.

S

sawcutting

scourability

scrapyard

semi- – Prefix meaning “half” or “partly.” In general, words that start with “semi” should have a hyphen. Exceptions: semicircle, semiconductor.

sewered

sheetpiles

short term – Hyphenated depends on where it falls in the sentence. In the short term, this is the best plan. / This is my short-term goal.

shotcrete

shotrock

sideslope – Always one word, no hyphen.

site specific – Hyphenation depends on where it falls in the sentence. The study is site specific. / It is a site- specific study.

slab-on-grade

snow line – Always two words.

snowplow

southeast, southwest – Always one word, no hyphen. Not capitalized or abbreviated as a general direction (We lived southwest of the city). May be capitalized when referring to a region (The storm ravaged the Southeast) and may be abbreviated (SE or SW) as part of an address or legal land description. Hyphenated if divided into smaller units (south-southwest)

Stage 1, Stage 2 – ESAs conducted in BC in accordance with the BC Contaminated Sites Regulation for a legal instrument – Stage 1

right-of-way – Hyphens required for all uses. Plural: rights-of-way.

steady-state

step-test

stereonet

storey – Level of a building (a two-storey house).

stormwater

strawbale – One word, no hyphen.

stream flow

sub- – Prefix indicating “beneath” or “below.” In general, words that start with “sub” should not have a hyphen, except to interrupt two b’s (sub-base, sub-basement).

sulphur (sulphate, sulphide, sulphuric, sulphurous)

superplasticize

surface water

T

tank farm – Always two words, no hyphen.

testhole(s)

testpit – Always one word, no hyphen.

testwork

thermosyphon

timeline – Always one word, no hyphen.

to date – Never hyphenated.

top-of-bank

topsize

townsite – Always one word, no hyphen.

track mounted – Hyphenation depends on where it falls in the sentence. The unit was track mounted. / It was a track-mounted unit.

travel (travelled, travelling)

treeline – Always one word, no hyphen.

truck mounted – Hyphenation depends on where it falls in the sentence. The unit was truck mounted. / It was a truck-mounted unit.

tunnel (tunnelled, tunnelling)

Preliminary Site Investigation (PSI), Stage 2 PSI/Detailed Site Investigation (DSI).

state-of-the-art – As an adjective, it always has hyphens between the words (state-of-the-art technology). As a noun, it should have no hyphens (The state of the art in mining engineering is to use 3-D modelling technology).

U

un- –Words starting with “un” should not have hyphens, unless the prefix appears before a proper noun (un-PC, un-American).

underdrain

up-gradient – Always hyphenated.

up-to-date – Always hyphenated.

utilidor

utilize – Replace with use.

V

vapour

videolog

W

wastewater

water-bearing

waterbody (waterbodies) – One word, no hyphens.

watercourse

website – One word, not capitalized.

well – Phrases with “well” (noun) should be two words in most cases. Exception: wellpad.

well- – Hyphenation depends on where it appears in the sentence. Refer to well-established guidelines. / The guidelines are well established.

Which, that – That introduces a clause that changes the meaning of a sentence if removed (The book that won the award is on sale). Which introduces a clause that adds information (The sky was blue, which made me happy).

wood waste

wood- – Compound words that start with “wood” should not have hyphens in most cases (woodworking, woodchips). Exceptions: wood-burning (stove); wood- fired (oven).

turn around – One word when used as a noun (The turnaround was too small for the plane to maneuver); two words when used as a verb (You will see it when you turn around).

work plan/scope - Always two words, no hyphens.

X-Y-Z

zero-valent – Always hyphenated.

Appendix C – References Guide

Citations and References Guide

This quick reference offers a suggested format for in-text citations and reference lists in documents. It is not meant to replace or supersede established group-specific standards. The recommendations below do not adhere to a specific industry or academic standard (e.g., APA, MLA, ISO) and are not the only option for consistent references. Please use these guidelines if you have no other instruction on formatting references.

General Guidelines

The format for citations and references should be clear, complete, and consistent. That is, the information should be presented using the same conventions for each reference in a single document, and each reference should have all the information needed for the reader to locate the document.

When listing organizational/internal documents in the references, include a job or project number so the document can be easily located in the future.

In-text Citations

All in-text citations, except personal communications, must have a corresponding full reference listed in the References section of a document. However, when you have only one or two references within a document, it is acceptable to include the full reference as a footnote.

One Author

When the citation is in the sentence, the year of publication should be included in parentheses after the author's name.

- In his book The Power of Chocolate, Jervis (2003) states that chocolate quality is a determining factor in dessert selection.

When the sentence paraphrases the cited work, include the author's name and the year of publication in parentheses at the end. Do not put a comma between the name and year. Separate multiple citations with a semicolon.

- The average length of time that houseguests stay directly depends on quality of soap (Moore 1995; Jones 2011).

Two Authors

If you have only two authors, list both followed by the year.

- Jervis and Featherstone (1994) provide ample, if questionable, evidence to support their claim of former civilizations on other planets.
- While evidence suggests the existence of former civilizations on other planets (Jervis and Featherstone 1994), the sources of this evidence are less than scientific.

Three or more Authors

For more than two authors, use the first author's name followed by "et al.". Never italicize "et al."

- Simmons et al. (2011) set out guidelines for cataloguing poisonous plants in your backyard, including first aid responses for accidental ingestion.

- When cataloguing poisonous plants in your backyard, you should make note of any first aid responses required if the plants are accidentally ingested by people or animals (Simmons et al. 2011).

Personal Communication

Personal communications (email, conversation, post-it note, etc.) should only use in-text citations or footnotes in the form (J.N. Coles, pers. comm., 2012) or (J.N. Coles, personal communication, 2012). Personal communications should not be included in reference lists.

References List

References may not have a corresponding in-text citation but should be listed if they were used during document preparation.

List authors as Last Name, Initials (e.g., Minister, J.). If two different authors have the same last name and initials, use full first names for both to avoid ambiguity.

When you have multiple documents that would result in the same in-text reference (i.e., multiple reports for the same author/entity in a given year), put a letter after the year (2002a, 2002b, etc.) to differentiate.

Include page numbers at the end of the reference only if you are referencing specific pages within a larger volume of work. It is not necessary to include the total number of pages for a whole document.

Your Organization's Document

[note: Do not include individual authors or reviewers; corporate documents belong to the corporate entity.]

> ABC Engineering Consultants Ltd. (ABC Ltd.). 2010. Mysterious project environmental baseline studies aquatic resources program. Prepared for Mysterious Holdings Co., Gander, NL. May 2010. Project Number 231010.

Book

Alexander, S.A., Doyle, F.I., Eckert, C.D., Grünberg, H., Hughes, N.L., Jense, M., Johnson, I., Mossop, D.H., Nixon, W.A., & Sinclair, P.H. 2003. Birds of the Yukon Territory. UBC Press: Vancouver, British Columbia.

Website

Committee on the Status of Endangered Wildlife in Canada (COSEWIC). 2010. Canadian wildlife species at risk. http://www.cosewic.gc.ca/eng/sct0/rpt/dsp_booklet_e.htm [accessed May 31, 2010].

Journal Article

Leveller, R.T., Minister, J., and Stout, A. 2009. Polymorphic rock types in the dalliance trench. Science, Volume 23, 234- 252.

Government Publication

BC Research. 1986. Summary of fishery studies carried out on behalf of Logistic Silver Mines Ltd. 1980-1981 (publication no. 24-098). Victoria, BC: Queen's Printer.

Government of Yukon. 2003. Yukon Environment: A birder's checklist of the Faro & Ross River region. Wildlife viewing program, Whitehorse, YT (pamphlet).

Letter

Fisheries and Oceans Canada (DFO). 1991. Letter to Joan Eamer, Environmental Protection Yukon Branch from A. von Finster. File Number 8507. November 13, 1991.

Map

Energy, Mines and Resources Canada. 1983. Mount Selous Yukon Territory map 105K/16, Edition 1. Scale 1:50 000.