

**WRITE WELL AND PROSPER
IN THE MINING INDUSTRY**
**WORDS AND PUNCTUATION, SENTENCE STRUCTURE,
PARAGRAPHS, HEADS AND SUBHEADS MATTER!**

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for the Management & Economics Society Discussion Group,
Canadian Institute of Mining, Metallurgy and Petroleum (CIM)

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OUTLINE

- Why good technical writing matters
- Disclosures
- Tips to improve your writing
- Technical graphics
- Focus on NI43-101 technical reports
- Editing as a team sport

WHY GOOD TECHNICAL WRITING MATTERS TO ME

- Writing clearly and editing technical material are two of my skills
- Technical writing is much like other types of writing
- Vital for mining and exploration companies
- Just as important to other stakeholders

WHY IT MATTERS TO YOU

- Good writing improves the governance of your organization
 - Corporate governance is the system of rules, practices, and processes by which a firm is directed and controlled. Communicating a firm's corporate governance is a key component of community and investor relations. [*Investopedia*]
- Operations work better
- You are judged by your emails, text messages, reports, etc. Make them shine.

TECHNICAL LANGUAGE AT THE MOVIES

- ***First Man***, 2018, about the life of U.S. astronaut Neil Armstrong, the first person to walk on the Moon
- ***Deepwater Horizon***, 2016, about the disastrous explosion of an offshore oil rig in the Gulf of Mexico



CLARITY IN BASEBALL LANGUAGE

Dodgers, Giants gear up for the game of a lifetime

From an article in The Globe and Mail, October 14, 2021

- “We’ve had a lot of success here and in the past four, five, six, whatever years, and I think one of the biggest things is there’s teams that operate out of, ‘We want to get here,’ and there’s teams that it’s disappointing if we don’t get there, and I think we’re one of those teams that it’s disappointing if we don’t get there.: -- Mookie Betts, right fielder, Los Angeles Dodgers
- “This time of year, you’re going to face great pitching night in and night out. And as much as you can, you’re hoping that when you do get some traffic out there, you can get a big hit and, because sometimes those opportunities are limited and hopefully that’s something we will be able to do on Thursday.” – Buster Posey, catcher, San Francisco Giants



Mookie Betts, right fielder, LA Dodgers



Buster Posey, catcher, SF Giants

DISCLOSURES – WHAT ARE THEY?

- **Disclosure** is the process of making facts or information known to the public. Proper disclosure by corporations is the act of making its customers, investors, and any people involved in doing business with the company aware of pertinent information. [*Investopedia*]
- Disclosures include **any information** that is reported outside the company

DISCLOSURES – WHO SHOULD WRITE THEM?

- Technically trained people should write the technical information in a disclosure
- Approval should be by an appropriate technical person

DISCLOSURES – RULES TO FOLLOW

The rules for reporting exploration results and mineral resources and reserves

- **Australasia:** JORC code, 2012 edition
- **Canada:** NI43-101, 2011 edition amended in 2016, using CIM definition standards, 2014 version
- **South Africa:** SAMREC and SAMVAL codes, 2016 edition

CAUTION ABOUT RULES !!!

- Be sensible - fight to protect your clear wording.



TIPS TO IMPROVE YOUR WRITING

I. Read quality writing



TIPS TO IMPROVE YOUR WRITING

2. Improve your attitude

- Good writing is more important at work than it was at school
- Put yourself in the reader's place
- Check your resume and letter **especially** carefully when applying for a job

TIPS TO IMPROVE YOUR WRITING

3. Words and punctuation

- Choose the right words
 - One word is better than two...
 - ... But repetition may be helpful occasionally
 - A shorter word is better...
 - ... But complex words and jargon okay if you include them in a glossary
- Use commas and hyphens as tools, e.g., fine-grained

TIPS TO IMPROVE YOUR WRITING

4. Check sentence structure by simplifying it

- Work out the parts of each sentence – subject, verb, object, clauses
- Check sentence structure by simplifying the sentence
- You do not have to know the terms for grammar

TIPS TO IMPROVE YOUR WRITING

subject

verb

object

- Original sentence: “These **rocks** **can be described** in the field **as** fine- to medium-fine-grained dark grey to light grey-green **rocks** **characterized by** mineral **banding** millimetres to centimetres in width, **that shows** small scale **folds and faults** (Fig. 6).”
- Simplified for checking: “These **rocks** **can be described** ~~in the field as fine- to medium-fine-grained dark grey to light grey-green~~ **rocks** **characterized by** mineral **banding** ~~millimetres to centimetres in width,~~ **that shows** small scale **folds and faults** (Fig. 6).”
- Simplify the final phrase to check the pronoun “that”: “... **banding shows** **folds and faults**...”

TIPS TO IMPROVE YOUR WRITING

5. A long sentence can be broken into two or three sentences

- Original sentence: “These rocks can be described in the field as fine- to medium-fine-grained dark grey to light grey-green rocks characterized by mineral banding millimetres to centimetres in width, that shows small scale folds and faults (Fig. 6).”
- Broken into two sentences, and edited to clarify: “In outcrop, these rocks ~~can be described in the field as~~ are fine- to medium-fine-grained, and dark grey to light grey-green rocks. They are characterized by mineral banding, millimetres to centimetres in width, that shows small-scale folds and faults (Fig. 6).”

TIPS TO IMPROVE YOUR WRITING

6. Paragraphs and flow

- Place the sentences in a logical order
- Break the paragraphs, and start each one with an introductory sentence
- Remove repetition and unneeded fluff
- Does it say what you want it to say?

TIPS TO IMPROVE YOUR BASEBALL LANGUAGE – MOOKIE’S QUOTE

“We’ve had a lot of success here and in the past four, five, six, whatever years, and I think one of the biggest things is there’s teams that operate out of, ‘We want to get here,’ and there’s teams that it’s disappointing if we don’t get there, and I think we’re one of those teams that it’s disappointing if we don’t get there.” -- Mookie Betts, right fielder, Los Angeles Dodgers

From an article in The Globe and Mail, October 14, 2021



Mookie Betts, right fielder, LA Dodgers

“We’ve had a lot of success in post-season play in the last several years. One of the biggest reasons for the success of teams like ours is that we don’t just want to get to the playoffs; we’ll be disappointed if we don’t get there.”

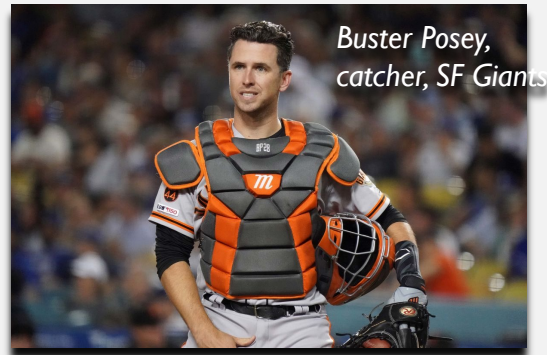
Mookie Betts’ quote edited for clarity

TIPS TO IMPROVE YOUR BASEBALL LANGUAGE – BUSTER’S QUOTE

“This time of year, you’re going to face great pitching night in and night out. And as much as you can, you’re hoping that when you do get some traffic out there, you can get a big hit and, because sometimes those opportunities are limited and hopefully that’s something we will be able to do on Thursday.”

– Buster Posey, catcher, San Francisco Giants

From an article in The Globe and Mail, October 14, 2021



Buster Posey,
catcher, SF Giants

“**In playoff baseball**, you’re going to face great pitching **in every game**. **As a hitter**, you’re hoping that when you do get **a pitch in your zone**, you can get a big hit, because those opportunities are limited. **I hope we can do that in Thursday’s game.**”

Buster Posey’s quote edited for clarity

TIPS TO IMPROVE YOUR WRITING

7. Use one set of reference documents

- Dictionary
- Glossary of technical terms
- Style guide - a system of spelling, punctuation and word use
- **Do not** rely on Spellcheck and Google

HOW TO IMPROVE YOUR WRITING – DESIGN

8. Consistent design (formatting) of technical documents

- Include table of contents, list of tables and list of figures
- Use References tools in software, and defined levels of text
- Recommend numbering for heads and subheads, e.g., Item 2.3.2
- Recommend figure and table numbering to reflect the item or chapter, *i.e.*, Table 2.3
- Ensure tables are formattable, and captions for figures are separate from the image

HOW TO IMPROVE YOUR WRITING - TECHNICAL GRAPHICS

- **9. Use graphics and illustrations**
- Graphics and maps – great visual tools
- Better maps from geographic data and new software
- Types of Illustrations:
 - 2D plans and sections
 - 3D isometric views

TECHNICAL GRAPHICS

Common elements of the maps	
Title of property	Arrow indicating north
Legend	Scale in bar or grid form
Inset map with location	Coordinate system and projection used in map
Borders (neatlines)	Effective graphical design
Visual Hierarchy	Purpose

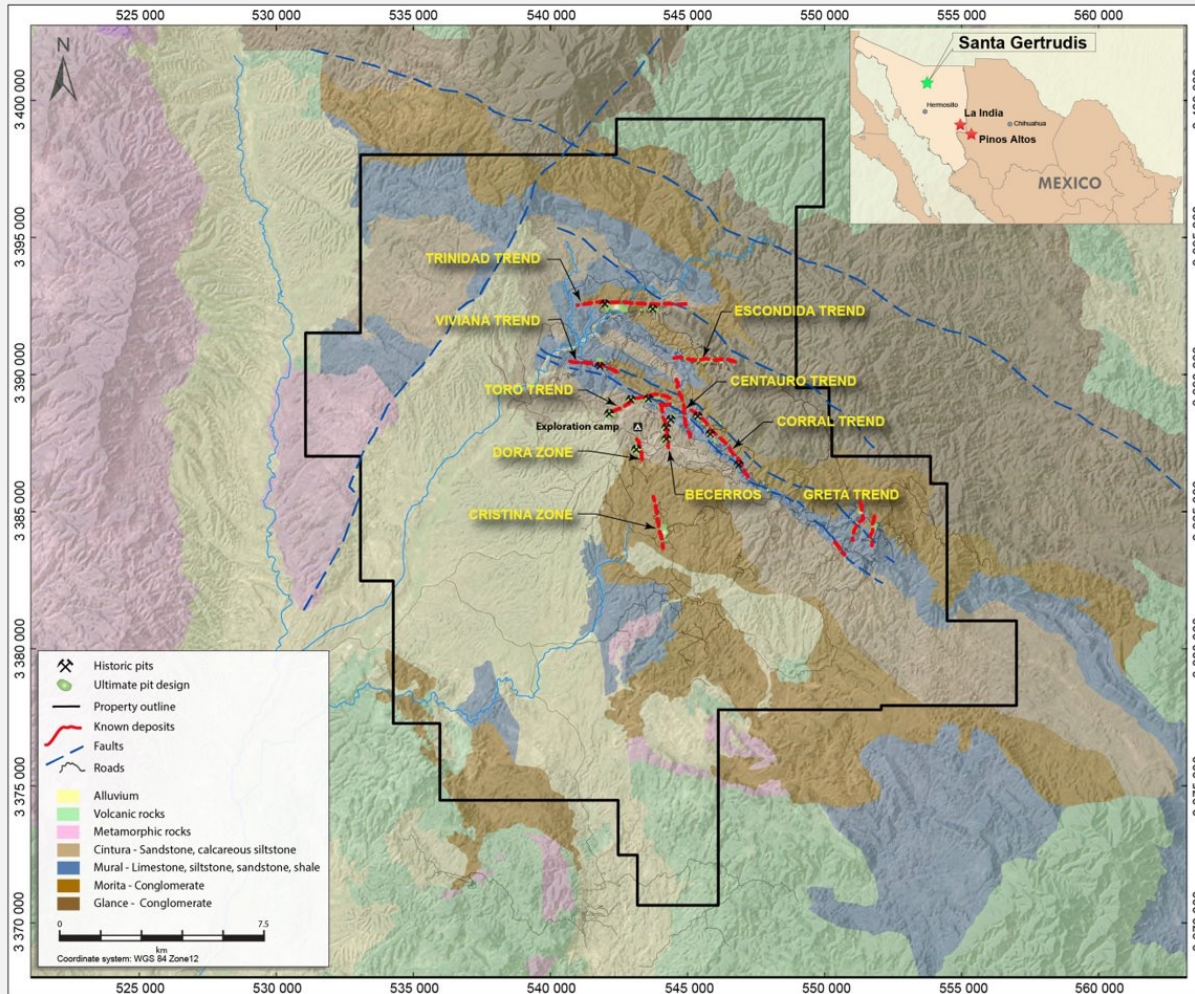
TECHNICAL GRAPHICS

PURPOSE: The purpose should influence every element of the map and its layout.

EFFECTIVE GRAPHICAL DESIGN:

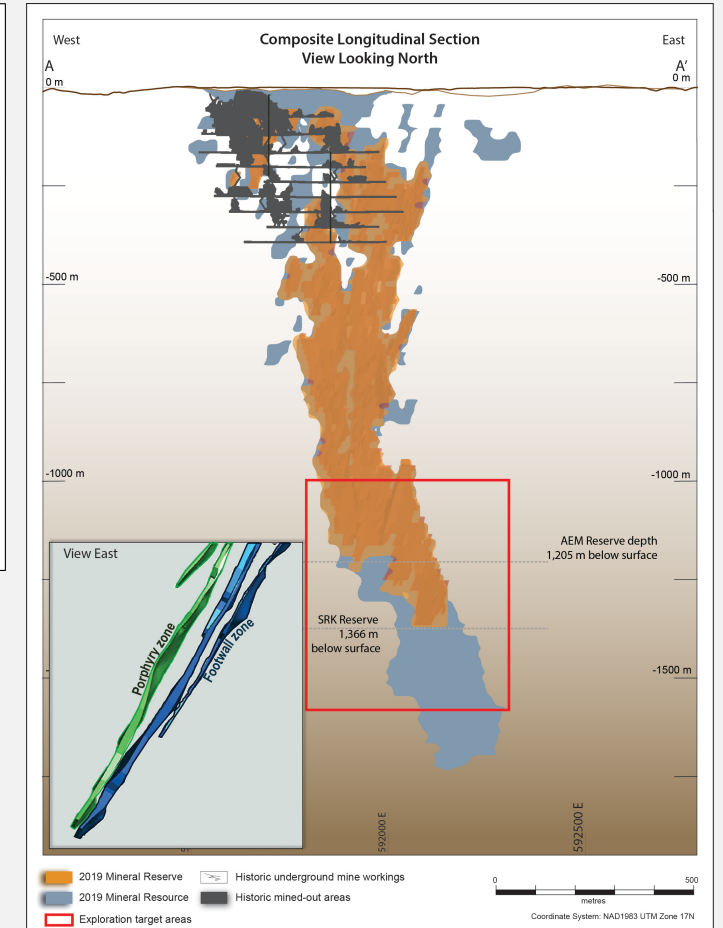
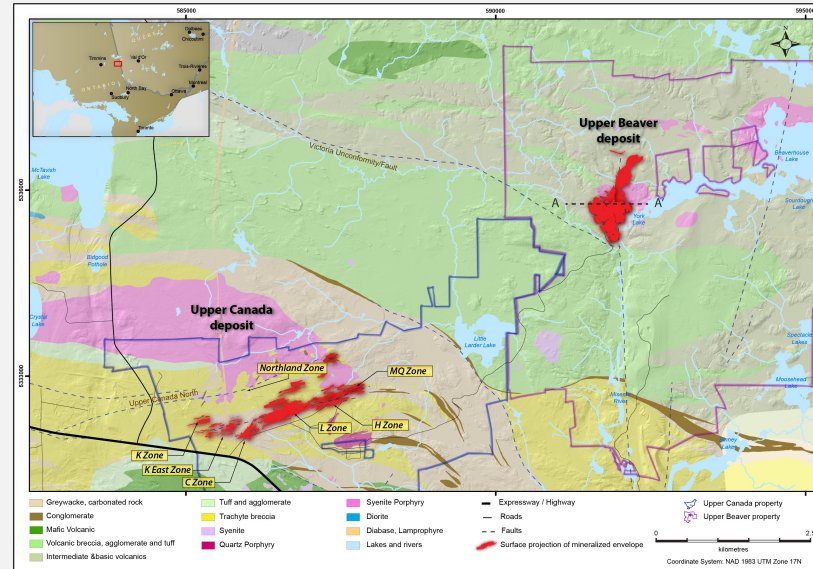
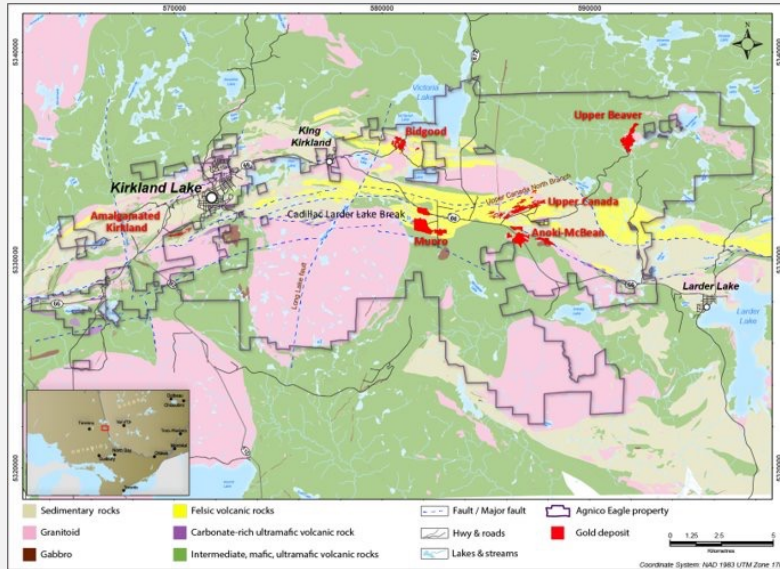
- “Layout design” - the visual display of the spatial data
- The map and map elements should be:
 - Neatly drawn
 - Appropriately and consistently generalized
 - Symmetrically balanced
 - Without unnecessary clutter

TECHNICAL GRAPHICS – EXPLORATION PROJECTS



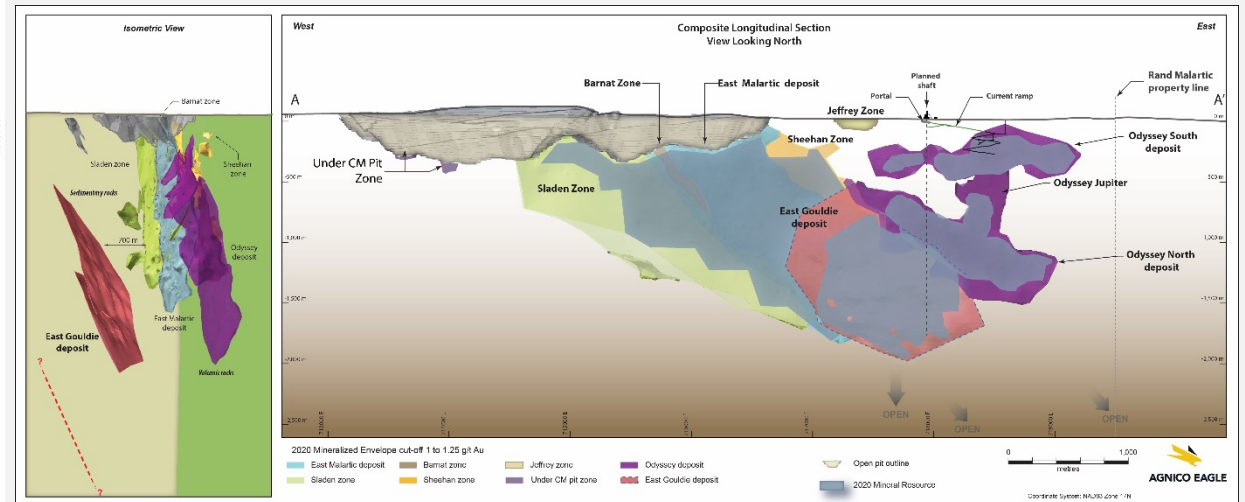
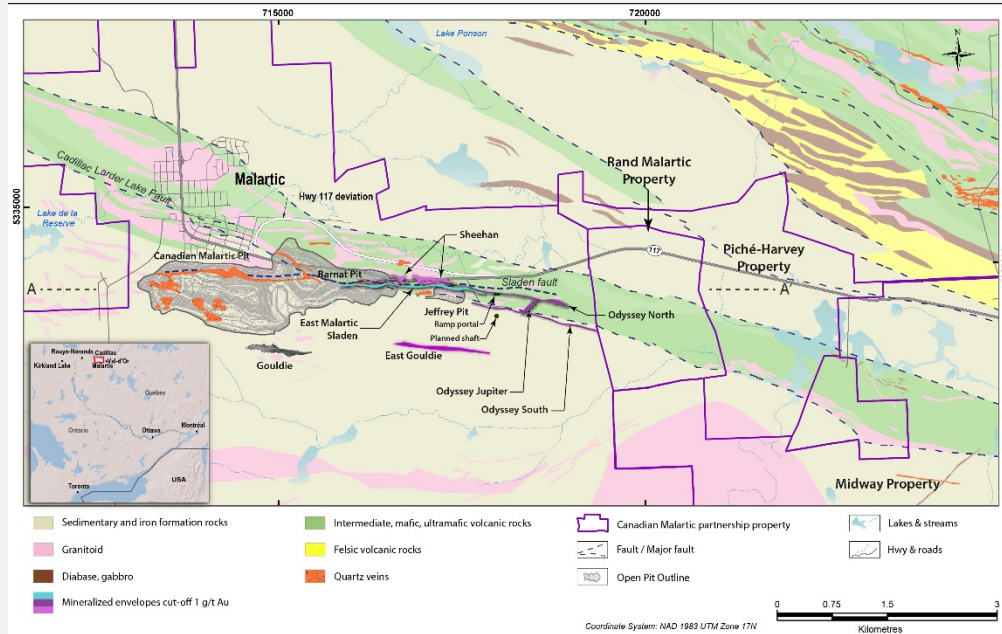
- A general map accompanied by a location or index map
- A compilation map outlining the general geology of the property
- Detailed maps showing all important features described in the text, relative to the property boundaries
- Areas of previous or historical exploration, and the location of known mineralization, geochemical or geophysical anomalies, drilling, and mineral deposits

TECHNICAL GRAPHICS – ADVANCED PROJECTS



- Location
- Surficial outline of mineral resources, mineral reserves
- Areas for potential access and infrastructure (planned pits, camp, roads)
- Potential projects adjacent to the current project

TECHNICAL GRAPHICS – PROPERTIES UNDER DEVELOPMENT OR IN PRODUCTION




- For properties under development or in production, show the location of pit limits or underground development, plant sites, tailings storage areas, waste disposal areas, and all other significant infrastructure features.
- Adjacent/nearby properties in relation to the location of the properties and any relevant mineralized structures discussed in the report must be shown in relationship to the subject property.

FOCUS ON NI43-101 TECHNICAL REPORTS

- Understandable to a reasonably informed investor
- Summary is most important
- All data and information is internally consistent
- Let authors check their sections after editing
- Technical report “template” – all technical reports are consistent

EDITING AS A TEAM SPORT, NOT A BLOOD SPORT

- It is **everyone's responsibility** to catch mistakes before disclosures are released
- Don't take it personally – editing improves your work
- Editing marks:

- ~~cross bedded~~ 

QUESTIONS AND COMMENTS