The Mine Medicine Manual

A Community Resource

Glenn M. Grande

Reference Manual & Field Guide to:
Fair Mining Practices: A New Mining Code for British Columbia

FAIR MINING COLLABORATIVE

The Mine Medicine Manual

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INSIDE

Disclaimer	4
Four Keys	5
About the Manual	6
Outcomes	7
Using the Manual	8
Eight Jobs	9
Exploration	10
Consultation	42
Development and Production	66
Closure	74
Field Companion	80
Appendices	109
Glossary	120
Credits	126

The Eight Jobs

Job 1	*Background Check*	23
Job 2	*Gathering the Elements*	36
Job 3	*Assembling the Laws*	51
Job 4	*Calling the Nation*	54
Job 5	*Spreading the Word*	55
Job 6	*Into the NoW*	60
Job 7	*Covering the Field*	108
Side Job	*The National Topographic System*	34

DISCLAIMER

This publication, in all its parts, is presented with the understanding by all parties, publishers, readers, and users, that it does not constitute advice or the last words of knowledge, skill, or expertise, including in the areas, professions or trades of law, negotiations, mining, outdoor survival, geology, or geo-science. In no event, including negligence, the use of inaccurate information, or the misrepresentation of information or the law, on the part of the publishers, authors, funders, or any other persons involved with the creation of this publication, will the publishers, authors, funders, or other persons so involved be liable for any direct, indirect, or consequential damages resulting from the use of this material. The publishers, authors, and funders offer no opinion as to the accuracy of the information. The information represented here is current in the province of British Columbia only at time of writing. Readers and users must confirm the currency and accuracy of the sources and should seek certified, professional advice before proceeding in any of the areas covered in this publication.

Where your footsteps fall so follows your mind and your heart. Know and understand what you are entering before you proceed. Account for yourself and your actions. Own the decisions you make and the consequences that flow from those decisions.

FOUR KEYS

... to success

ENGAGE

The Mine Medicine Manual comes with an invitation to participate. Any ideas you have in order to make it work better are welcome. Send us your comments to help us keep it current. We encourage you to contact the Fair Mining Collaborative to give input or get assistance.

MONITOR

All stages of the mining process will require your attention and energies. Whether it is done on a computer, on paper, or in the field, a large part of your work will be monitoring activities while creating and enacting responses along the way.

FOCUS

Nothing in the mining process operates in isolation - everything is connected. One task may become more than was anticipated. Try your best to stay with one thing at time. Ask for help.

Fair Mining Collaborative
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website: **www.fairmining.ca**
e-mail: **info@fairmining.ca**

PRIORITIZE

The Manual will guide you through tasks but likely there is simply not enough time to do what needs doing. One strategy is to find the most important task and commit to that task alone, without distraction. It is okay to temporarily set aside tasks and return to them later with a fresh outlook.

ABOUT the MANUAL

Calling this work the Mine Medicine Manual and using the seven sacred teachings and colours, are done neither lightly, nor without permission. The author is aboriginal and walks the medicine path under the direction of a medicine man who is an elder and mentor. The medicine is introduced here because responding to mining on the land requires all seven energies and directions. Mind, body, spirit, heart, and all that is above, below, and within. All directions will be called as you are tested. It is understood, as with all things, that the centre as well as the whole must stay strong to do this job effectively.

Fair Mining Collaborative offers the *Mine Medicine Manual* in a good way; with the wish that it is kept and used as part of a job that requires the support of all good traditional ways and customs: walking the Good Red Road with the Seven Sacred Teachings.

Creation of the *Mine Medicine Manual* would not have been possible without the input, comments, and feedback of people that have shared their experiences and provided their insight over the two years that this project has been in development. They are honoured at the end of the *Manual*.

The laws and practices of mining are analyzed generally in *Fair Mining Practices: A New Mining Code for British Columbia* - FMC's extensive academic companion volume to the *Mine Medicine Manual*. *Fair Mining Practices* takes an exhaustive look at the best mining laws from around the world and offers them as suggestions for improving British Columbia's mining laws. It also gives directions for community mining policies.

The *Mine Medicine Manual* is also a 'living document', and readers are encouraged to contribute to its betterment by sharing their stories, wisdom, and suggestions for future editions. Questions and comments may be sent to *info@fairmining.ca.*

The *Manual* is meant for use and for sharing. Please feel free to copy and distribute.

Special mention goes to Fred John - medicineman and honoured elder of the Xaxli'p band of the St'at'imc First Nation, Lillooet B.C. whose wisdom, insight, grace, and patient teachings are present from cover to cover in this book.

OUTCOMES

By the end of the Manual everything will tie together under a common theme: the recognition of inherent aboriginal rights and title in the context of mining. BC mining law lacks in this area, and the aim of the *MMM* is to help you identify where these deficiencies affect your community, and what you can do about it. Within the *MMM* we hope to help you achieve the following objectives:

1. Identify and understand mining Exploration, Development, Expansion, and Closure activities carried out on your traditional territory.
2. Obtain and understand the basic tools available to a mining company in its quest for minerals and how they are used.
3. Create a proactive response to mining on your territory.
4. Learn available measures to reduce the impact and maximize the benefit of mine development for your community.
5. Learn different methods for monitoring land and water affected by mining while protecting them from further unwanted mining development.
6. Learn the basic principles behind consultation, negotiations, and agreements.
7. Recognize and engage with key mining players.
8. Have meaningful and constructive dialogue within your community and with neighbouring communities regarding mining.
9. Gain a basic understanding of the Canadian and British Columbia legal frameworks and how they apply to mining.
10. Learn and utilize in detail the specific British Columbia and Canadian statutes governing mining.

USING the MANUAL

The key feature of the *Mine Medicine Manual* that sets it apart from other toolkits is the Eight Jobs. Seven main jobs and one 'side job' appear at places in the *Mine Medicine Manual* to help guide you through your response to mining in your territory.

Each Job has ...

TASK

The general goal and overall project.

TOOLS

Tools needed - like documents, data.

FOCUS

A key point to help get you going.

OBJECT

A goal to carry forward.

TIPS

Helpful suggestions to use at your discretion.

LINK

Direct link to a web site (at time of publication).

Since the *Mine Medicine Manual* is created from the vision of the *Fair Mining Practices*, we offer, along with the Eight Jobs, the relevant governing statutes, and where applicable, the chapter numbers to *Fair Mining Practices* (*FMP)* pertaining to the topic.

STATUTE

This icon refers to the governing provincial or federal statute and main applicable sections. It may also refer to guidelines, regulations, instruments, or policies.

MMM

Refers directly to pages within the *Mine Medicine Manual.*

FMP

Refers to *Fair Mining Practices: A New Mining Code for British Columbia".*

 = Seek legal advice.

Prophecies tell that this is the time for
One Heart,
One Mind
and One Drum.

EIGHT JOBS

The job of caring for the land while dealing with mining, either in its potential, or in its full production, is not simple or easy. Myriad tasks are on the path: doing research, building community capacity, getting cooperation on the part of the prospector, mining company, or government agency, not to mention all the day-to-day distractions that come up to challenge you. To try to simplify a complex process, the *Mine Medicine Manual* divides the overall job of resource manager for mining into eight smaller jobs.

Some jobs can take a lifetime of work. Some can be accomplished in a morning. You may be required to obtain mapping resources, or do your own mapping. You may have to go to the field just to confirm one small item on a list of many. The point is, this is challenging, detailed and often frustrating work. And in today's reality, there is no guarantee of success; but without giving it our all and helping each other, failure is assured. The current state of mining in British Columbia, especially considering how it is affecting communities, requires extreme dedication and hard work.

1	Background Check	23
You will learn the mineral tenure system, check for claims, check claimants and their histories.		
2	Gathering the Elements	36
You will create profiles of key claims and claimants, and research, gather, and validate their exploration data.		
3	Assembling the Laws	51
You will begin to study and collect relevant laws on mining, as well as those on aboriginal rights and title.		
4	Calling the Nation	54
You will use different ways and means to garner community input to help guide you.		
5	Spreading the Word	55
You will reach out to the world and broadcast your message in all possible ways.		
6	Into the NoW	60
You will investigate Notices of Work from miners and respond to each using the tools in this manual.		
7	Covering the Field	108
Taking everything you learn in the manual, you will perform field tasks from the Field Companion.		
Side Job	The NTS	34
You will learn the National Topographic map system of Canada.		

EXPLORATION

I told them that they were responsible for watching over the land, their four-legged brothers, and All their Relations.

1	The Mining Path	12
2	Types of Mines	13
3	Mine Life Cycle	14
4	Prospecting	15
5	Exploration	16
6	Regulation	17
7	Mineral Tenure	18
8	Claims vs. Leases	20
9	Finding Claims	22
Job 1	*Background Check*	23
10	The BCeID	24
11	Methods & Impacts	26
12	Physical Sampling	28
13	Drilling	29
14	Mineral Grades	30
15	NI 43-101	31
16	BC Securities Commission	32
17	Resources	34
Job 2	*Gathering the Elements*	36
18	Potential Harms	38
19	Potential Benefits	40

1 THE MINING PATH

START

Prospectors pick, mark, claim, and pay for the right to explore the claim temporarily under a Free Miner's Certificate. Claims may be converted to Leases - see page 20.

STAKING

PROSPECTING

Once 'staked' prospectors will take their exploration from the desktop to the field.

Last Step to Full Development

Exploration (2)

MAJOR ACTIVITY

(see pages 26-29)

Cannot Proceed without a *Notice of Work*

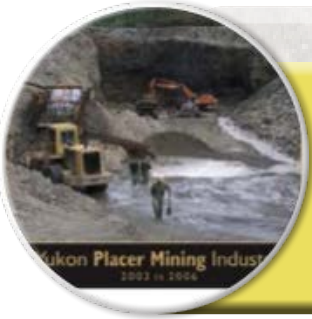
Exploration (1)

LOW LEVEL ACTIVITY

NOW INCLUDES AERIAL SURVEYS

Most intrusive sampling methods short of requiring a Notice of Work - see page 57.

2 TYPES of MINES



PLACER

Alluvial / Glacial / Stream & River beds / also called 'Hydraulic Mining. It uses the water to wash away sediment and expose the heavier minerals like gold. Panning for gold is considered placer mining.

UNDERGROUND

Underground mining for minerals or coal. Except for pre-crushing below the surface, everything dug out of here gets processed on the surface.

OPEN PIT

A pit can be created for anything from a coal mine to any metal mine. Pits may also provide underground access using adits and shafts. Pits can also be used for future containment ponds.

3 MINE LIFE-CYCLE

Closed or abandoned mines can re-open. See: *Brownfield* in Glossary p. 120

Prospecting and Exploration

FMC Code Chapters 1, 5, 6, 10

Development

FMC Code Chapters 4, 6, 7

Production

FMC Code Chapters 4, 6, 7

Closure

FMC Code Chapters 8, 9, 10

4 PROSPECTING

Although similar, Prospecting and Exploration involve different levels of activity.

Prospecting usually refers to the early search for mineral deposits. It meets the definition of "mining activity" under the definitions of both the BC *Mineral Tenure Act*, and the *Mines Act*. It is generally understood to mean non-mechanical, low-impact activities, such as :

- desktop searches,
- geological field mapping
- rock-chip sampling
- aerial surveys

Under Part 9 of the *Health, Safety and Reclamation Code* (HSRC), Prospecting is perhaps best defined as everything that is in the list of exploration activities that are excluded from the permitting process under column (b) on the next page.

If a potential mineral deposit is discovered during prospecting, the deposit may be subject to further exploration to find out more about its size, location, and composition. Exploration activities tend to be more intrusive than prospecting activities and generally require the use of heavy machinery for road construction, drilling, blasting, and trenching.

Prospecting and Exploration activities can also be distinguished according to how they are regulated. In BC, prospecting activities can be performed by any holder of a Free Miner Certificate. For more extensive Exploration activities, a free miner may have to file a Notice of Work, also known as a 'Referral' - see page 57.

STATUTE

Mineral Tenure Act, Part 1
HSRC, Part 9, Definitions
HSRC, s 9.2.1(1)
Mines Act, s 1

FMP

Chapter 5

5 EXPLORATION

In contrast to Prospecting, full Exploration activities require government approval in the form of a mine permit. With each mine permit application a miner must file a ***Notice of Work Application*** also known as a ***Referral*** - see Notices of Work on page 57.

From: *Health, Safety and Reclamation Code,* Part 9, Definitions:

Exploration activities are those activities which are undertaken in the search for and development of coal and minerals, as defined in the Mineral Tenure Act, with the exception of placer minerals:

(a) and include

(i) disturbance of the ground by mechanical means such as drilling, trenching and excavating;
(ii) blasting;
(iii) construction, modification, deactivation and reclamation of an exploration access and camps;
(iv) induced polarization surveys using exposed electrodes; and
(v) site reclamation.

Notice of Work Activities

Prospecting Activities
(no NoW required)

(b) but do <u>not</u> include

(i) prospecting using hand tools;
(ii) geological/geochemical surveying;
(iii) airborne geophysical surveying;
(iv) ground geophysical surveying without the use of exposed, energized electrodes;
(v) hand trenching without the use of explosives; or
(vi) establishment of exploration grid lines that do not require the felling of trees, with the exception of trees and shrubs that create a hazard to safe passage and danger trees as defined in the Workers' Compensation Board Regulation

6 REGULATION

Once a person obtains a Free Miner Certificate (see: Finding Claims on page 22 and The BCeID on page 24) they have the right to stake a claim under certain conditions. A certificate grants the person the right to enter land in order to conduct the prospecting activities listed in column (b) on the previous page.

Anyone can still undertake recreational gold panning in BC without a Free Miner Certificate.

Prospecting can take place anywhere except Indian reserves and:

- land occupied by a building;
- the curtilage (75 feet) of a dwelling house;
- orchard land;
- land under cultivation;
- land lawfully occupied for mining purposes, except for the purposes of exploring and locating for minerals or placer minerals as permitted by the Mineral Tenure Act;
- protected heritage property, except as authorized by the local government or minister responsible for protecting the protected heritage property; and,
- land in a park (except as permitted by section 21 of the *Mineral Tenure Act*).

TIP

Power to Cancel a Free Miner Certificate

Free Miner Certificates can be cancelled in certain circumstances, such as for contravening the *Mineral Tenure Act*, the *Mineral Tenure Act Regulations*, the *Criminal Code of Canada*, the *Mines Act*, the *Mining Right of Way Act,* the *Heritage Conservation Act*, or the *Health, Safety and Reclamation Code* for Mines in BC. See: Appendix 3: Power Provisions on page 118.

STATUTE

Mineral Tenure Act, s 11 (2)

FMP

Chapter 5

7 MINERAL TENURE

The Mineral Tenure system is the BC legal system governing where mining can and cannot occur.

The Mineral Tenure system dates from the 1800s and encourages citizens to exploit mineral resources on behalf of themselves and the state. Since that time the system has been known as a 'free entry' system. Staking was originally done on the ground and is now done on the World Wide Web.

With few restriction on where a miner can go, today's mineral tenure system is also called a 'two-zone' (Prohibited and Allowed) system. The Manual touched on this on the previous page (17) and will expand on the ramifications of this in more detail.

Where Mining is Allowed	
PROHIBITED	**ALLOWED**
Parks (government can override and permit mining in parks)	All Other Areas (see: Regulation on page 17)
Homes & Yards	
Current Mines	
Cultivated Lands	
Orchards	
Heritage Sites	

STATUTE

Mineral Tenure Act, s 11 (2).

FMP

Chapter 5

Free Entry

Criteria To Stake Claims	Process
Holders of mining interests may use the surface of the land to access their minerals. To hold a mineral tenure a person must be a free miner. A free miner must be: (i) over 18 years old and ordinarily reside in Canada, (ii) a Canadian corporation, or (iii) a partnership consisting of persons qualifying under (i) or (ii).	The following pages will guide you through the process for obtaining a BCeID, and Free Miner Certificate. From there you can log on to the Mineral Tenure online website and get familiar with the claim-staking process. To perform Job 1 **Background Check** and Job 2: **Gathering the Elements,** or to simply view and monitor claims on your territory you do not need a Free Miner's Certificate (see: Finding Claims on page 22). www.mtonline.gov.bc.ca
STATUTE *Mineral Tenure Act*, s 8.	**FMP** Chapter 4 Chapter 5

The right granted a miner to explore for minerals is above almost every other land right. The practice is out of balance with reality and Mother Earth. It shows a lack of respect for the land and its people, including those who have lived here since time immemorial.

8 CLAIMS vs. LEASES

The right to hold mineral claims in BC has two major forms: the Mineral Claim, and the Mineral Lease.

Type	Description
Claim (General) *Mineral Tenure Act*, ss 6, 28(2).	A Claim is a mineral claim or placer claim and includes a legacy claim. It is a chattel, which is an item of personal property – i.e., property other than real estate.
Lease (most secure form of mineral tenure) LINK *Mineral Tenure Act*, s 42.	A Lease is a mining lease or placer lease and includes a legacy lease. Unlike a claim, it is an interest in land, and so conveys to the lease holder the minerals or placer minerals within and under the leasehold. A lease holder holds the same rights as the recorded holder of the claim (or group of claims), except a lease is subject to valid charges like liens and debts registered against the record of the claim; meaning, a mineral lease is an asset that can be seized in a debt-collection scenario against the lease owner.
Mineral Claim	A Mineral Claim is a claim to the minerals within an area which has been located or acquired by a method set out in the regulations.
Placer Claim	A Placer Claim is a claim to the placer minerals within an area that has been located or acquired by a method set out in the regulations.
Legacy Claim aka: Crown-Granted mineral claim	A Legacy Claim or Legacy Lease is a claim or lease made prior to the above definitions coming into force under subsequent Acts. Old legacy claims still abound, but ceased to be granted in 1959.

TIP

Uses Other Than Mining

	Mineral Tenure Act, s 40(1)(c)
The use of mineral claims for other purposes is forbidden and is governed by Section 40(1)(c) of the *Mineral Tenure Act*. In the unlikely event you discover a mining claim being used for purposes other than mineral exploration, please report it immediately to the Chief Gold Commissioner at 1 250 952 0335	Under section 40 (1)(c) of the *Mineral Tenure Act*, anyone may file a complaint if the mineral claim is being used for any purpose other than mining. A fee is required to file a complaint and the ultimate decision-making discretion on the appropriate response is held by the Chief Gold Commissioner.

For a fee, and under certain conditions, a mining claim can be converted to a lease (max. 30 yrs.). Miners will do this to secure the claim for further exploration and development, or to prevent the claim from reverting back to the tenure system.

TIP

To help keep track of claim-to-lease conversions (among other things) announcements are printed in the BC Gazette - a publication of the Government of British Columbia, printed through the Queen's Printer. The Gazette is available for a subscription cost at:

LINK **http://www.qplegaleze.ca/default.htm**

You must refer not only to the Crown Grant (Legacy Claim) itself, but the law at the time the claim was granted to find the true nature and extent of Crown-granted mineral claims.

9 FINDING CLAIMS

It is not necessary to obtain a Free Miner Certificate to view mineral titles in BC and find who is staking claims, how many of each kind they have, claim history, and contact information. Here's how:

To find who is staking on your territory:

You will need 2 things:
1. Your territorial map with the areas of concern
2. A computer with internet access. You may need to cross reference your map with the MT Online map to pinpoint the areas you wish to check.

	Action	Web Page / Link
1	Go online to	*https://www.mtonline.gov.bc.ca/mtov/home.do*
2	Click (left menu)	**"View Tenures"** (choose: Mineral / Placer / Coal)
3	Use crosshairs to zoom into your area(s) of concern	
4	Click	**"Legend"** (top menu bar of map) - Light Pink = mineral claims / Dark Pink = mineral leases
5	Copy	6 or 7-digit tenure number in pink area
6	Return	Home page
a	Click (left menu)	**"Search for Mineral / Placer / Coal Tenures"**
b	Paste	The tenure number into 'Tenure Number' box
7	Click	"**Next**" (at bottom of page)
8	Read	**"Tenure Detail"** page View Tenure / Check expiry date / see size of claim area / note NTS map number / check 'Owners' / check 'Submitter' / Get SoWs **(Print Copies)**
9	Click	"**Owners**" Claimant's / owner's contact information **(Print Copies)**
10	Read / Check	Claimant's / owner's other claims & claim history. **(Print Copies)** Print and file any and all applicable claims of each owner. CAUTION: some claimants own, or have owned hundreds of claims.

1	Background Check
TASK	Investigate the mining activity on the land. Begin creating background checks on all prospectors and miners.
TOOLS	You will likely be doing this on a computer. Please ensure that you regularly back-up all your electronic files, as well, to back-up the electronic system, in case of bad connections, power outages, and any other unforeseen crashes of your computer system, please also use: 1. A secure and organized paper filing system. 2. These pages from the MTO site: a. "Tenure Detail" page b. "Owner" page(s) c. "Claim History" page(s) Later, you will add other documents and information that you learn about in the Manual to your file(s).
FOCUS	Begin with the Finding Claims exercise on the preceding page. Later, you can add orphaned and abandoned sites.
OBJECT	Create a file for each prospector, exploration company, and mining company on the land as the foundation of your work. Later, you will be able to create a profile for each claimant and company, as well as respond by sending letters, visiting sites, and creating a community response.

FMP	STATUTE
Chapter 5 Chapter 7	*Mineral Tenure Act*, Part 2

TIPS

These are revealed in reading a claimant's history:
1. How often they stake.
2. Preferences (topography, mine type, minerals).
3. How often or easily they abandon or forfeit claims, and why.
4. Patterns of responsibility or recklessness.

Information and patterns can be graphed or charted and included in your files on each claimant.

10 THE BCeID

Note: Becoming a free miner is an optional step that may help you gain insight into how the Mineral Tenure system works and perhaps stake your own claim(s) – you do not need to be a free miner to respond to mining claims and activities. But to be a free miner, first you must obtain a BCeID which is an electronic government-issued ID to access different provincial government services online. Staking on the Mineral Tenure Online system is one such service.

Obtaining a BCeID

	Step 1 - On Line
1	Go online to www.bceid.ca
2	On the right hand side of the home page under the heading *'Discover'*, click *'Services Available Online'*
3	You will see four headings but three types of BCeID accounts: i. Business ii. Personal iii. Basic iv. (Alphabetical listing of all) Click the *'Business BCeID'* tab
4	Under the 'Energy, Mines, and Petroleum Resources' category, click the *'Mineral Titles Online'* sub-heading.
5	Click *'Register to Get This BCeID Account'*
6	Click *'No'* ... You will see another prompt ...
7	Click *'Yes'*
8	Click *'Proprietorship'* (NOTE: Although this is a 'Business' BCeID you do not need to be a registered business or sole-proprietorship in BC. This is merely a formality for the BCeID process to issue a Free Miner's Certificate.
9	Click the option that applies to you.
10	Click *'I DO NOT have a OneStop Account'*, or *'I DO NOT want to use a OneStop Account'* (assumes you do not have a One Stop Account)
11	Click *'No, do not convert an existing Basic BCeID.'* Fill out your personal and contact information

When you make your in-person visit to verify your ID you will need to bring:

1) your ID (status card, passport, drivers license, birth certificate); AND
2) proof of address (government letter, utility bill, bank account statement).

	Step 2 - In Person
1	Go online to www.bceid.ca and enter your postal code to find the nearest Government Agent or Front Counter BC office.
2	Make a 1-time visit in-person to the nearest location. You must bring the following: 1. 1 piece government-issued ID (accepted IDs include status cards, drivers licenses, passport, and birth certificates). 2. 1 piece with a proof of address (e.g., a letter from a government agent or office, utility bill, or bank account statement).
3	WHILE THERE, PLEASE ENSURE that the counter-attendant: 1) Activates your account 2) Gives you a Business ID 3) Gives you a Printed copy of your Free Miner's Certificate 4) Tests your access on a computer at the counter to double-check and help guide you and familiarize you with the BCeID process

Please Note

The BCeID process is presented here to help guide anyone who wishes to obtain a Free Miner Certificate whether or not one is serious about prospecting for minerals. It is not intended to encourage mining or endorse the online staking system. It is merely provided to allow one to 'walk a mile in the shoes' of a miner and gain insight into how the process works in order to have a deeper and clearer understanding of the source of the entire mining process in BC.

11 METHODS & IMPACTS

Prospecting and Exploration each involve three major methods of activities on the land: Observation, Geological, Geophysical and one that is done almost entirely in a laboratory: Geochemical.

Each has its own level of impact and potential for environmental damage graded here from 1: (Low) to 4: (Extreme), as the chart below explains.

1	**Low**	• Day-trips or short overnight stays • Minor intrusions / Treading on sensitive areas • Surface holes / Chips & channels • Garbage • Minor brush cutting • Wildlife disturbances begin
2	**Moderate**	• Use of small machines & tools • Fuels & chemicals • Air & noise pollution • Noticeable land disturbance • Wildlife interference
3	**High**	• Established & prolonged disturbance • Large ground-altering activities • Major brush-clearing • Damage to watercourses • Damage to land, vegetation, food sources
4	**Extreme**	• Road & corridor construction • Possible irreparable damage to habitat • Damage to vegetation & food sources • Tainted surface & ground waters • Significant and continuous increase in the amount of fuel, chemicals, and toxins to the environment • Complete wildlife displacement and/or destruction

General Category	Form
Observation (Provides samples)	
Observing the clear features and mineral highlights showing through surface	**Showings & Hostings** 1 2
Spotting rock formations that hold or 'host' mineral deposits for later sampling - see Physical Sampling on page 29	
Geological (Provides samples)	
Geologist working in the field, using and augmenting existing maps, builds a 'road map' of geological features	**Mapping** 1 2 3
Removal of 'overburden' - see Overburden on page 70 Search for a clean & continuous rock face to sample Can use heavy equipment & blasting	**Stripping & Trenching** 1 2 3 4
Geophysical (Locates where to physically sample)	
Uses airborne magnetometers and electromagnetic sensor loops hung from aircraft (60 meters /200 ft. Altitude) Impacts include a range of noise disturbances	**Aerial** 1 2 3
Ground version of Aerial Surveys. Backpack units send electrical charges into the ground and read back the signatures of elements in the ground	**(IP) Induced Polarization** 1 2
NOTE	As of December 2012 IP surveys are under review for exemption from the Notice of Work. They will be exempt if they do not "…involve a temporary camp or any mechanized clearing, unless clearing is required for safety reasons under the [*Health, Safety and Reclamation*] Code." - Ministry Discussion Paper, 2012, at 4.
Geochemical (Needs samples to analyze)	
The chemical analysis of the sample(s) Needs the physical sample obtained using the above methods to chemically test for the presence of elements and minerals - these are the basis for technical reports, and NI-43-101. (See: NI 43-101 on page 31)	**Assaying (Lab Analysis)**

TIPS

1) Request flight schedules and routes in advance for aerial surveys.
2) Mapping (aerial or ground) is not deemed 'physically intrusive', so a Notice of Work is no required. You may wish to negotiate for or press for having the miner give a notification for mapping and for IP surveys anyway, as a courtesy.

12 PHYSICAL SAMPLING

1 2 3

Listed below are the physical sampling techniques used in the field. They are used in the Observation and Geological exploration methods. These methods are used alone or in combination to determine the value of minerals in a claim. Some are more reliable than others, depending on several factors like quantity, location, grade, erosion, and origins - the latter (origins) is especially important in soil, stream-sediment, and till samples, as some minerals may have originated many kilometres away but were carried by glaciers.

Type	Identifying Features
Rock Samples (3 main kinds)	GRAB: A single piece, or several, from the same location. Small. Hard to identify. CHIP: A composite from a continuous width (zone). CHANNEL: One or more long, continuous cuts of rock within an area.
Soil Samples	HOLES: Shovel or auger samples 10–50 cm deep in a grid pattern at 10–50 metre intervals.
Stream Sediment Samples	SCOOP MARKS: These evaluate up stream deposits. Prospectors can take thousands of these samples.
Till Samples	HOLES, SCOOPS MARKS: Basically 'dry' sediment samples - 1kg+ bags of glacial sediment taken along the track of a glacier.
Bio - Geochemical Samples	TREE & SHRUB SCRAPINGS: Bark & foliage reveal elements, and possibly the proximity and quantity of minerals.

You may use similar methods (Soil, Stream Sediment, Bio-Geochemical) to test for metal and chemical contamination.

See: Pages 106 Water Sampling, and 107 Soil Sampling.

13 DRILLING

3 4

Otherwise known as 'Advanced Exploration', drilling is done based on results of Pre-Feasibility Studies, Feasibility Studies, and Preliminary Economic Assessments (see: GLOSSARY on page 120). The main drilling types are described below.

COMMON DRILLING TECHNIQUES	
NAME	**OUTPUT**
Diamond Drilling (most common & preferred)	Core Samples (long cylinders of solid rock reveal a cross-section of mineral content)
Reverse Circulation (RC) Drilling (sub-standard)	Bags of mixed rock fragments and soil

Phase I **DISCOVERY** Drilling in the General Area	• aka: Exploration Drilling. • 1st drilling after sampling data analysis. • Used during Exploration, Development, and Production. • Used to 'discover' depth of a mineral deposit and gain a cross-section of the deposit.
Phase II **EXPANSION** Narrows the Search	The expansion stage of drilling means drilling more samples around a deposit confirmed by the discovery drilling. This stage of drilling shows the depth, width and shape of the deposit. It may also be done by an operating mine to help decide where to expand the mine.
Phase III **IN-FILL** Pin-Points specific areas to drill	• 3rd phase takes Expansion results & drills between existing wells for detailed analysis that charts the course for locating the prime deposit. • 3-D cross-sectional 'maps' built from sample data, then compiled with other data.

STATUTE

HSRC s 9.11.1 (and throughout)

FMP

Chapter 3
Chapter 5

14 MINERAL GRADES

Technical Name	Also known as ...	Description
INFERRED (not allowed for use in NI 43-101)	Pathfinder Elements	• What may be present based on early results. • Element or gas associated with desired mineral.
INDICATED	Indicator Elements	Elements or gases associated with desired mineral - may also contain traces of the desired mineral(s).
MEASURED	Target Elements	The desired minerals or elements that reveal with certainty the presence of the desired mineral(s).
Results for gold (Au) and silver (Ag) are reported in grams per metric tonne (g/t)		
Results for copper and other base metals are reported in percentages (%)		

Major Minerals & Their Symbols

Silver	***Ag***
Aluminium	***Al***
Gold	***Au***
Copper	***Cu***
Iron	***Fe***
Potassium	***K***
Molybdenum	***Mb***
Magnesium	***Mg***
Nickel	***Ni***
Lead	***Pb***
Platinum	***Pt***
Zinc	***Zn***

15 N.I. 43-101

Bre-X is the largest mining scandal in history. Toronto-based Bre-X acquired the Busang gold property in Indonesia in 1992 & 1993 and reported amazing drill results. In 1996, Bre-X was trading at $280 per share, and was worth $6 billion on the market. On Feb. 18 1997 Bre-X President David Walsh announced Busang had as much as 200,000,000 ounces of gold reserves. But in March 1997, copper & gold giant Freeport McMoran did its own testing and found only minor traces of gold. On March 19, 1997 the Bre-X geologist fell to his death from a helicopter in the Indonesian jungle. Although a suicide note was found, it is speculated the geologist was murdered or even faked his own death. Bre-X stock plunged to $2.50 per share while panicked trading crashed the TSX computers. A report by Strathcona Minerals stated there was virtually no gold in Busang. Shares fell to $.80 before Bre-X was de-listed from the TSX. From this scandal was created National Instrument 43-101. National Instrument 43-101 (NI 43-101) is a mineral resource classification system used for the public disclosure of information relating to mineral properties in Canada. The NI 43-101 is a strict guideline for how public companies can disclose scientific and technical information about mineral projects on stock exchanges supervised by the Canadian Securities Administrators. To avoid fraudulent or grossly inaccurate reporting of mineral exploration activities, mining companies that issue stocks in Canada are required to file technical reports and have them verified by a geologist or qualified person (QP).

The mine that started it all. Entrance to the Bre-X Busang Mine in Indonesia where doctored samples and falsified data led to billions of dollars in investor losses, suicides, and the advent of National Instrument 43-101. Photo: cbc.ca

16 B.C. SECURITIES COMMISSION

What

The B.C. Securities Commission is the independent provincial agency responsible for regulating trading in securities in British Columbia. It offers investment, policy, and enforcement information. It does not have law enforcement or judicial powers.

Why

In order to sell the potential of a mining property to investors, mining companies naturally focus on the positive results and data, and may not paint a complete and accurate picture of the reality. So the importance of accurate sampling and drilling results cannot be emphasized enough.

The BC Securities Commission lists many common problems with inaccurate and falsified data in its 2012 Mining Report. Missing data, failure to provide cautionary statements, and failure to disclose are some of the common issues. Falsifying mine sampling data is an offence under mining legislation as well as the Criminal Code of Canada (s 396(1)).

The British Columbia Securities Commission 2012 Mining Report identifies areas where mining companies can improve their disclosure, and also reports on interpretative issues that have materialized during the past year.

From the BCSC 2012 Report:

"We find that a company's disclosure in websites, investor relations materials, email promotions, social media sites, and corporate presentations (voluntary disclosure) is less likely to comply than its news releases, technical reports, annual information forms (AIF), and management discussion and analysis (MD&A) (required filings)."

LINK

http://www.bcsc.bc.ca/uploadedFiles/companies/Mining/2012_Mining_Report.PDF

Below is a list of the kinds of problems the BC Securities Commission finds with mining companies' reporting of sampling results. The findings clearly show a trend toward sampling results information that is not quite accurate, held back, or improperly validated. Despite the advent of NI 43-101, tighter regulations, and a more educated public, the difference between the actual potential of the mine and the results that are reported to entice investors, the public, and the government, is still apparent.

BCSC Common Findings
1. Failure to file current or fully compliant technical reports.
2. Failure to include the required cautionary statements for preliminary economic assessments (PEA), historical estimates, and exploration targets.
3. Disclosure of mineral resources and mineral reserves (MRMR) that do not fully comply with NI 43-101.
4. Restricted or misleading references to mining studies.
5. Failure to name the qualified person (QP).
6. Missing or altered statements in certificates and consents of QPs.
7. Prohibited disclaimers or statements of reliance on other experts.
8. Non-compliant disclosure of MRMR, historical estimates, and exploration targets.
9. Disclosure that is not based on industry best practices.
10. Anomalous pricing assumptions and sensitivity analyses of metals or commodities.
11. Technical reports that do not disclose the QP's assumptions regarding reasonable prospects of economic extraction.
12. Mineral resource estimates that are not based on an appropriate geological model or do not apply reasonable constraints on mineralization.
13. Disclosure of ongoing mining studies prior to establishing mineral resources.

MAPPING RESOURCES

National Topographic System (NTS)

Mapping System covering most of Canada, including B.C.

SIDE JOB	THE NTS
TASK	Learn the National Topographic map system
TOOLS	1. The NTS maps of your territory (1:50,000 scale) 2. The NTS web site 3. The BC Mineral Tenure web site
FOCUS LINK	1. Follow the link. http://www.nrcan.gc.ca/earth-sciences/geography-boundary/mapping/topographic-mapping/10807 2 . On the right hand side of the page are instructions on how to use an NTS map: click Finding UTM References. Provides a quick, clear lesson in using the NTS map. 3. When you visit the Mineral Tenure Online website and click to view any search function, you will notice the map of BC is based on the NTS.
OBJECT	Obtain the NTS maps of your territory. Join them together to make a large mosaic to hang on the wall. Reference this map for all your work.

The NTS divides Canada into six major indices:

1	British Columbia
2	Atlantic Provinces
3	Quebec
4	Ontario
5	Prairie Provinces
6	Northwest Territories and Yukon

While there are different map systems in use, we focus here on the NTS because it is the basis for almost all other maps in Canada, and the basis for the BC Mineral Tenure system.

NTS maps are available through local map dealers. They can be purchased over the counter OR online and sent by courier or mail.

BUY MULTIPLE COPIES of EACH

ONLINE RESOURCES

Acronym & Link	Full Name and Purpose
CEAR http://www.ceaa-acee.gc.ca/default.asp?lang=En&n=D-75FB358-1	Canadian Environmental Assessment Registry. The federal registry of documents related to environmental assessments.
INFOMINE http://www.infomine.com	Provides access to properties, projects, reports and results. Note: 'Infomine' allows basic searches but requires low-cost subscription for advanced use.
The MTO https://www.mtonline.gov.bc.ca/mtov/home.do See: Finding Claims - page 22	Mineral Tenure Online pinpoints claims on traditional land. Allows you to: 1) Examine company & claimant profiles and histories 2) Conduct a territorial cross-reference search for claims
MINFILE http://www.empr.gov.bc.ca/mining/geoscience/minfile/Pages/default.aspx	Lists the number of holes drilled and the results. Allows you to pinpoint and examine all registered geological and mineral discoveries in BC.
PID http://www.eao.gov.bc.ca/	Public Information Database. The provincial registry of documents related to BC environmental assessments.
SEDAR www.sedar.com You will find NI 43-101 reports here.	System for Electronic Document Analysis and Retrieval examines the records and reports of all publicly traded mining companies.

2	Gathering the Elements
TASK	Gather current and historical exploration sampling data on all your Background Checks. Combine these findings into your files from Job1.
TOOLS	Access SEDAR, MINFILE, and Infomine - see: Online Resources on page 35. Contact miners directly for their data & findings. Ask for technical reports (NI-43-101) Ask also for Induced Polarizaton (IP) & Aerial survey results. A *preliminary economic assessment* (PEA) of a mining property is the first sign that the company is serious about full-scale development. The PEA is an 'official' announcement to the public and investors of a mining project's viability
FOCUS	Study what minerals and conditions miners are seeking. Look for patterns and habits. Gain as much information as you can and keep it to use as a reference, so that when you do your field work, you will have a better understanding of who is doing what in terms of mining on your territory.
OBJECT	Build profiles of mining companies based on your findings. Learn how to discriminate between accurate information and "promotional" information provided by the mining company. Develop an understanding of how to act upon this information, on a case-by-case basis.

MMM	STATUTE
• Previous pages: 28 - 35 • Field Companion Site Visit Checklists • Appendix 3: Power Provisions	National Instrument 43-101

Note

The consequences of sampling errors (accidental or deliberate) during exploration are disastrous for all concerned. It is also one of the fastest ways for a mining exploration or development project to fail.

Reporting

Mineral exploration companies should disclose accurate sampling results. Try to obtain sampling results and compare what is reported on websites and in promotional information with what was actually found. The reporting of inaccurate or falsified data is everyone's responsibility. Please report errors and omissions to:

A. British Columbia Securities Commission
701 West Georgia Street
P.O. Box 10142, Pacific Centre
Vancouver, B.C. V7Y 1L2
Phone: 604-899-6500
1-800-373-6393 (toll free across Canada)
Fax: 604-899-6506
LINK Web: www.bcsc.bc.ca

B. Association for Mineral Exploration British Columbia
Suite 800 - 889 West Pender Street
Vancouver, BC V6C 3B2
Phone: 604-689-5271
Fax: 604-681-2363
Email: info@amebc.ca
LINK Web: www.amebc.ca

C. Canadian Institute of Mining, Metallurgy and Petroleum (CIM)
Phone: 514-939-2710
LINK Web: cim.org

18 POTENTIAL HARMS

Now that you have learned about mining, miners, and the minerals they seek, we pause to consider what this all means for your community by doing a short examination of the harms and benefits mining brings.

The next job is consultation and communication: with miners, your community, and with government; as the Manual shifts into the phases after Exploration: Development, Production, and Closure.

Impact	Issue	Response	Resource
Water	Drainage & seepage of pollutants 1 2 3 4	-Monitoring -Observation -Sampling	1. *HSRC* s 9.4.2 2. Water Sampling p 106
		Measure setbacks	MMM: pp 103-105
		Dig and maintain monitoring wells	Water Sampling
	Acid Mine Drainage / Neutral metal leaching (low-pH drainage - often invisible, but toxic)	Pre-construction tailings pond liners (NOT mandatory in BC)	*HSRC* s 10.7.17 for reclamation of tailings ponds
		Impoundment dam inspection	Impoundment Dam Checklists p 92
Land	Brushing / Clear-Cutting 1 2 3 4	Site visits. Check against NoW. Mine Plan or EA	Site Visit Checklists pp 85-89
	Roads 3 4	Site visits. Check against NoW. Mine Plan or EA	Road Checklist p 101
	Camps 2 3 4	Site visits. Check against NoW. Mine Plan or EA	Site Visit Checklists pp 85-89

<table>
<tr><th>Impact</th><th>Issue</th><th>Response</th><th>Resource</th></tr>
<tr><td>Cultural (Physical)</td><td>Destruction / Damage of ancient & sacred sites
1 2 3 4</td><td rowspan="2">-Mapping.
-Recording
-Animal Census
-Patrolling

Identify the Cultural Keystone Species</td><td rowspan="2">See: Sacred Sites - page 61.
Also: guide books to mapping traditional territories by Terry N. Tobias:
1.Chief Kerry's Moose

2. Living Proof

Published by Ecotrust Canada and the Union of BC Indian Chiefs.</td></tr>
<tr><td>Wildlife</td><td>Disturbance. (nesting / birthing areas, habitat & migration routes)
Trauma.
Deaths.
1 2 3 4</td></tr>
<tr><th>Impact</th><th>Issue</th><th colspan="2" rowspan="2">Community Driven Resources & Responses</th></tr>
<tr><td>Cultural (Intangible)</td><td>Individual & Family stress</td></tr>
<tr><td></td><td>Addictions: alcohol & drug abuse</td><td colspan="2" rowspan="2">Sudden influxes of money come with a cost. Staying true to cultural practices (drumming, pow-wow, ceremony, dance) can counteract the imbalances of an economic surge.</td></tr>
<tr><td>Economic</td><td>Uneven wealth can exacerbate class divisions.</td></tr>
<tr><td>Lasting</td><td>Cumulative Effects
(i.e. changing water levels, receding glaciers, invasive species)
1 2 3 4</td><td colspan="2">Keep running lists of all projects, (not only mines) present and past, in your territory. It is helpful to put these on a map. This mapping resource can be used for community education, and in negotiations.</td></tr>
</table>

19 POTENTIAL BENEFITS

Category		Opportunity
Main	Secondary	
Employment*	On-Site Jobs	Custodial, Maintenance, Labour, Operators, Drivers, Trades
	Off-Site Jobs	Geological, Design, Legal, Business, Accounting, Marketing, Engineering
	Entrepreneurial spin-offs	Transportation, Catering, Tourism, Servicing
Education	Local Schools	New construction, renovations
	Trades training and Certification	i.e. College of New Caledonia Mining Industry Certificate Program
Revenue	• Royalties - no 'industry standard' defines royalty agreements. Net Smelter Royalty (NSR) preferred - based on gross receipts of ore. No cost-deductions. Included in some IBAs with First Nations. • Equity - part ownership in company; stocks, dividends. • Profit Share - % of profits (less costs) also called a Net Profits Interest (NPI) royalty. • Guaranteed Base with Upside - % of profits plus a percentage of profits that exceed the expected profits. • Fixed Payments - lump sum, periodic (usually annual) - not preferred.	
Community Development	Infrastructure	Schools, housing, community centres, bighouses, cultural camps, sports arena / basketball courts, sports fields, etc.

Note

*Under sections 15 and 29 of the Mines Act, if an Inspector orders a mine closed to fix a hazard or clean up a mess, employees of the mine are entitled to compensation.

"Get involved, create jobs and meaningful jobs, not just window dressing for the ... companies."
- Chief Clarence Louie, Osoyoos First Nation

Things to Consider

Legacy vs. Benefits

Tough economies make it easier to believe a mine will be the answer to hard economic times. But mines have a short life-cycle compared to the long term environmental costs that they bring and leave behind. And it is not unlikely they will fail to deliver the promised benefits to a community - a community that has to bear the long lasting effects of the mine. Communities must press for remediation of long term effects. The Takla First Nation of northern BC has negotiated with the miner and the BC government to clean up the toxic leaching from the Bralorne mercury mine, abandoned for 70 years. While this is a positive step, making reclamation and remediation part of the original plan will avoid this problem in the future.

- **Docherty, et al, "Bearing the Burden - The Effects of Mining on First Nations of British Columbia" (Harvard Law School, 2010) at 12, 14, 15, 23, 81.**

See also: First Nations Women Advocating Responsible Mining (FNWARM) Fact Sheet:

http://www.fnwarm.com/media/Takla_Mining_Concerns_Backgrounder_Final_w_Map.pdf

Employment

It is true that mines create some local jobs but the promise of jobs, offered and controlled by the mining company, does not alone justify a mine. In the end, given the legacy that mines leave, the benefits do not outweigh the harms unless the community has some power and influence in owning the benefits and reducing or eliminating the harms.

Company Priorities

Mines attempt to minimize environmental effects, but this is second to making a profit in order to sustain the business. The greatest cost to a company is the paying of salaries and benefits. This undeniable fact is always present behind every promise of jobs. From 2003 - 2010 operating costs for mines increased 32%. Add to this the fact that one-third to half of all costs go to personnel and it means that while there may be a promise of jobs, or an increase in training opportunities, there is also a necessary push-back from mining companies to downsize the workforce and use innovations such as automation to save on human resource costs.

- Summary and data taken from Canadian Institute of Mining and Metallurgy (CIM) Magazine, Dec. 2012- Jan. 2013, pp. 53-62.

Overall, the promises of development can be inflated, resulting in the community being in shock from the chasm between promises and reality. The effects of mining are far deeper and more complicated than benefits alone represent.

CONSULTATION

... treat others as you would have them treat you, respectfully. Learn respect and learn balance. What goes up will come down. What you do for others will be done for you. What you give away will always come back to you in the One Circle.

Important Note on Legislation 44

1 Governance (British Columbia) 45
2 Miners 46
3 Rights 47
4 Colonial Law 48
Canada 48
British Columbia 49
5 Aboriginal Law 50
Job 3 *Assembling the Laws* 51
The Distortion of Aboriginal Law 52
6 Community Voice 54
Job 4 *Calling the Nation* 54
7 Outreach 55
Job 5 *Spreading the Word* 55
8 Notices of Work 56
Notice of Work Content /Action Chart 57
Tenure Overlap Reports 58
Statements of Work 58
Important Points 59
Referrals as Consultation 59
Job 6 *Into the NoW* 60
9 Sacred Sites 61
10 Agreements 62
The Market Factor in Agreements 63
Negotiations Web 64

Important Note on Legislation Regarding Consultation

At time of writing, unprecedented, wholesale changes have been made to several acts of Parliament, and new legislation is being passed that eliminates large portions of prior environmental legislation, and could alter the entire consultation process:

1. Bill C-45: Jobs and Growth Act (companion to Bill C-38, 2012) includes:
   - Land Surrenders
   - Navigable Waters Act
   - Environmental Assessment Act
2. Bill C-428: Indian Act Amendment and Replacement Act
3. Bill S-6: First Nations Elections Act
4. Bill S-8: Safe Drinking Water for First Nations
5. Bill S-212: First Nations Self-Government Recognition Bill

Some of these amendments will present challenges and changes to the common law duty to consult and accommodate aboriginal peoples in Canada over the coming years, as they shift the environmental principles for land and water, and alter the Indian Act band governance systems.

In this Manual, we present a list of some resources and concepts in place at the time of writing to aid in the Consultation process. The list is not exhaustive, and we offer no guarantee as to their current effectiveness in the present state of proposed legislative changes.

A description of the proposed changes is available on the Aboriginal and Northern Affairs Development website:

LINK

http://www.aadnc-aandc.gc.ca/eng/1350669181155/1350669219046

Consultation is ongoing – not limited to the initial stages of prospecting and exploration.

1 GOVERNANCE

BRITISH COLUMBIA

Ministry of Energy, Mines and Responsible for Core Review

Minster	Honourable Bill Bennett P.O. Box 9069 STN PROV GOVT Victoria BC t: 604 387 5896 f: 604 356 2965 website: **MEM.Minister@gov.bc.ca**
Deputy Minster	Dave Nikolejsin t: 250 952 0504 f: 250 952 0269 e: Dave.Nikolejsin@gov.bc.ca
Assistant Deputy Minister	David Morel t: 250 952 0473 f: 250 952 0491 e: David.Morel@gov.bc.ca
Chief Gold Commissioner	May Mah-Paulson t: 250 952 0335 f: 250 952 0541 e: May.Mah-Paulson@gov.bc.ca
Chief Inspector of Mines	Al Hoffman t: 250 952 0793 f: 250 952 0491 e: Al.Hoffman@gov.bc.ca
Deputy Chief Inspector of Mines (Permitting)	Diane Howe t: 250 952 0183 f: 250 952 0491 e: Diane.Howe@gov.bc.ca

2 MINERS

Who	What
Individuals	1. Hobbyists / General Public 2. Free Miners 3. Traders / Shareholders
Junior Companies	1. Perform Exploration only 2. Rely on market capital on unproven results (high risk) 3. Usually enter a Joint Venture Agreement with larger company as results dictate
Senior Companies	1. Take over an exploration project and develop into a major mine 2. Class of applicants who apply for a permit under Section 10 of the *HSRC*
Shareholders	1. All companies are publicly listed and traded on the TSX and TSX Venture Exchange in Canada, although not all junior companies use markets to capitalize their endeavours 2. Shareholder registers are property of companies and are usually available under certain conditions
Government	AKA 'The Crown' - Federal and Provincial actors - Ministries, agencies, and departments

A Note on This Section

The aim of this section is neither legal advice nor legal education. This section is meant as a comparison of two mindsets - two world-views. Laws are relative to the governments and societies of the nations that create them. The colonial legal perspective is represented alongside the aboriginal perspective. We acknowledge aboriginal laws, customs, and traditions - many of which are still very much in place, and perhaps more relevant now than they have ever been. This section is to get you started, and for you to keep as reference. How you use, reconcile, and piece together the information is up to you.

3 RIGHTS

The Canadian Perspective

In Canada, Aboriginal rights are legally defined as *sui generis* (one of a kind) inherent personal and communal rights, exercised by virtue of an individual's ancestrally-based membership in a present community. In the Canadian system these Aboriginal rights may include:

Rights to land (Aboriginal title)
Rights to hunt and fish
Rights to practice anything that was integral to the culture prior to contact
Special linguistic, cultural and religious rights
Rights held under customary systems of Aboriginal law
Rights of self-government

Two principles form the foundation of the source of Canadian law regarding aboriginal rights and title: 1) *Doctrine of Discovery* (DoD) that land was 'discovered' by European powers relative to other European powers, and if native nations were recognized (in the U.S. for example) they would still fall under the ultimate authority of the colonial government. 2) *Terra nullius* (Latin for 'no man's land'). which means that Turtle Island (North America) was empty and ready for colonization.

The Aboriginal Perspective

Established by Aboriginal people for millennia, Aboriginal laws, practices, customs and traditions are subordinate in the eyes of the Canadian system. Therefore, only certain portions of Aboriginal laws, practices, customs, and traditions are measured (and fewer meet) the legal test for Aboriginal rights in the Canadian system. In order to keep Aboriginal laws subordinate, Canada frames its interpretation of Aboriginal rights through an anthropological lens which does not envision native people capable of self-advancement, growth, evolution, adaptation, or innovation; or, if these societies do innovate and wish to use their land for purposes outside custom and ceremony, they must surrender their lands or convert them into non-title lands.

But despite this, looked at as a whole, Aboriginal title does not diminish or vanish. It has always existed and even flourishes. It is organic, inherent, sovereign, and has never been surrendered. When this is taken into consideration, and applied to mining, the Consultation perspective shifts.

4 COLONIAL LAW

CANADA

Canadian law originated in Great Britain and is called the Common Law. Based on the decisions of judges in courts, it has evolved into a system of rules created from precedent. Whenever a judge makes a legally-enforceable decision it becomes a precedent: a rule that will guide judges in making further decisions in similar cases. Court orders and declarations also become law. The law is also based on legislation; statutes supported by regulations and policies. Legislation is created and enacted by Parliament and provincial legislature, and interpreted by courts and sometimes by tribunals. The supreme law of Canada is the *Constitution Act, 1982.* The first 34 sections of the *Constitution* are called the *Charter of Rights and Freedoms.* The *Charter* guarantees certain rights for Canadians. Falling just outside the *Charter* is Section 35 of the *Constitution Act, 1982* which states:

35. (1) *The existing aboriginal and treaty rights of the aboriginal peoples of Canada are hereby recognized and affirmed.*

The question of whether any nation needs another to affirm its rights remains; but when it comes to mining in BC, the *Constitution Act, 1982* and the following list, are key:

STATUTES & LINKS
Canadian Environmental Assessment Act, 2012
Criminal Code of Canada
Canadian Environmental Protection Act, 1999
Metal Mining Effluent Regulations under the Fisheries Act
All statutes are available from the Queen's Printer or online.

Also, according to the Minister (at time of writing) of Indian Affairs "there are innumerable federal laws and regulations governing the activities of mining companies in Canada; depending on what activity, where, when, why, and how. Relevant federal departments include Natural Resources Canada, Transport Canada, Fisheries and Oceans, Environment Canada, etc. Canadian mining law is also commodity-dependent, with different laws applicable to hard rock minerals, coal, industrial minerals, petroleum and natural gas, uranium, etc." *

* Hon. John Duncan, Minister of Indian and Northern Affairs Development, January 25, 2011

BRITISH COLUMBIA

Mining is almost entirely governed in British Columbia by provincial laws. Some, like the *Mineral Tenure Act*, the *Health, Safety and Reclamation Code*, and the *Mines Act* have been mentioned.

An important feature, however, of British Columbia, is very little of it was established through treaties with First Nations. In fact, most of BC occupies the unceded, un-surrendered, and un-purchased lands of about 30 Aboriginal nations who were all present millenia prior to colonization. Yet at the time, no nation-to-nation treaties were ever offerred by the colonial government.

These are the major statutes of the Province of British Columbia that pertain to mining:

STATUTES & LINKS
BC Environmental Assessment Act
The Mines Act
Health, Safety and Reclamation Code
HSRC Handbook (non-binding)
The Mineral Tenure Act
The Mineral Tenure Act Regulations
Heritage Conservation Act
Mining Right of Way Act

Whether the 'Crown' is worn federally or provincially, the Aboriginal right to Consultation is entrenched in Canadian Law. The government has a duty to consult with Aboriginal peoples and accommodate their interests, which is grounded in the honour of the Crown. (See: Appendix 1: Haida Nation v. Attorney General (BC) 2005). This duty to consult means that provincial and federal governments must adequately address Aboriginal concerns in decision-making processes, including prior decisions relating to mining activities. This legal and constitutional duty to consult arises where:

1	the Crown knows of the potential existence of the Aboriginal title or right;
2	the Crown contemplates conduct or proposes a decision; AND
3	that conduct or decision may have an adverse impact on the claimed Aboriginal title or right.

But caution must be used, as flexibility is both the strength and the flaw of Common Law. Common Law can backfire on First Nations. Legal proceedings should never be commenced without a clear and complete understanding of the aboriginal cases in the Canadian courts.

5 ABORIGINAL LAW

The original nations across what is now called Canada have their own laws and codes dating back millennia (for example, the Iroquois Confederacy's Law of the Great Peace: *The Great Binding Law, Gayanashagowa*). In not recognizing these laws, colonial governments create a gulf, miss opportunities for healing and growth, and lose valuable ancient practices. And today, First Nations have created, enacted, and adopted Constitutions (for example, the Constitution Act, Tsawwassen First Nation, 2009; the Westbank First Nation Constitution; and the Selkirk First Nation Constitution, 2007) and statutes (including Land Use Plans) that are based on customary practices. All of these documents take the long view of responsible practice and care of the land and the people. The modern equivalent, the principle of *sustainability,* somewhat captures these practices, but diverges from traditional Aboriginal practices and becomes lost in the translation from the original teachings. The two world-views on the surface seem similar, but on the ground are often, very far apart. Meanwhile, the notion of giving power to, or incorporating Aboriginal law, is conspicuous by its absence in colonial statutes.

In BC, mine plans are not required to comply with (or even acknowledge) any other land use planning instrument that may exist for a particular area. As such, they may be developed and assessed in isolation from provincial, municipal, and First Nations' land use plans, and are particularly void of Aboriginal cultural wisdom and guiding principles.

Section 10.1.4(2)(l) of the *HSRC*, which requires miners to include "inhabited places in the vicinity of the mine" in their permit application is the only section that acknowledges that anyone may live on, or use the land. It does not even begin to take into account the deep personal relationship people have with the land, and it sees the rich history of that relationship along a short, linear timeline.

BC mining legislation does not directly acknowledge the existence of Aboriginal communities, but sees them instead, as another item to deal with in an abstract decision-making process centred on development goals.

FMP
Chapter 2
Chapter 3

3	Assembling the Laws
TASK	Build a legal library. Build a knowledge base and understanding of the colonial legal framework regarding Aboriginal rights and title. Familiarize yourself with the statutes. Learn and understand your own nation's legal frameworks, laws, constitutions, and declarations.
TOOLS	1. Your community documents may include: Constitution, Protocols, Declaration, Land Use Plan, Bylaws. 2. Appendix 3 - 'Power Provisions' - page 119. 3. The *Royal Proclamation 1763.* Excerpt in Appendix 1B on page 115 of this book. 4. Aboriginal rights & title cases starting with the Canadian ones listed in Appendix 1A. 5. *Royal Commission on Aboriginal Peoples*, (*RCAP 1996*). Key section: *RCAP 1996*, Appendix E, s. 1.16.2 Spot keywords and phrases here and in other readings: *sui generis* / inhabitants / use and occupy / discovery / pre-contact / *terra nullius*
FOCUS	Under Appendix 3 - 'Power Provisions' on page 119, are some of the governmental prohibitions, remedies, and punitive measures available in BC when prospectors, exploration companies, or mining companies fail to comply with the law.
OBJECT	Gain an understanding and familiarity with the most important legislation that regulates mining activities. Bookmark these documents and noted sections for future reference. Study what laws are in play and how they overlap, intersect, and contradict each other; with the focus on mining.

Whether or not it is written, our law is understood; handed down through generations. No amount of development can ever change this.

DISTORTION of ABORIGINAL LAW

Altered through colonial translation

Traditional Law	New Language in Statutes
Planning for Seven Generations to preserve a long-term future.	Intergenerational Equity
Interconnectedness of all life informs how we care for the land.	Environmental Sustainability
Taking only what is needed to preserve future resources.	Economic Sustainability
Health of the nation is tied to the land and is everyone's responsibility.	Social Sustainability
Cultural traditions are integral, and form the substance of land use and care.	Cultural Sustainability
Wisdom in deciding not to proceed when the damaging effects outweigh the benefits.	Precautionary Principle

This chart illustrates how traditional wisdom can fade and lose meaning in modern interpretation

Modern Expression

Investment for the future. Transfer of material wealth and assets to future generations.

Keeping some parts of the land free from economic exploitation.

Sustaining the economy above all else. Keeping a healthy tax base.

Keeping a healthy, viable tax base, an educated population, and trained work force.

Ensuring the continuation of communal practices and structures that sustain identity.

Legal onus on proponents to prove 'no-harm' even when science is divided.*

** Once present, now removed from federal and BC provincial legislation*

6 COMMUNITY VOICE

Consensus is not a situation where everyone agrees on the same thing for the same reasons. General agreement can be reached to enough of a degree to allow a community to move forward with some people in complete agreement, some with reservations and doubts, and some in disagreement. The closest thing to consensus is when those with reservations and doubts express those doubts but consent to go along with the plan for the time being. The two sides (pro and con) in a consensus will always exist. Nature, including human nature, loves diversity and creativity, so all consensus is temporary until the next thing comes along and a new consensus is needed. Consensus is a process, not a final, perfect solution.

Appendix 2 on page 116 is only one sample of many kinds of surveys. Data from responses can be used to identify and solidify community concerns and strengthen your community's voice at the negotiating table, keeping in mind that the community voice comes in many forms; from every person, home, assembly, and gathering.

4	Calling the Nation
TASK	Community Survey. This can take 1 survey taker around 2 weeks for every 50 citizens, depending on the questions.
TOOLS	1. Use Appendix 2 -page 116 2. Locate community member(s) 3. Organize: Facebook, Twitter, text message, e-mail, door-to-door, postage mail, community events, petitions, and any other methods you think of.
FOCUS	Possible uses of survey data: a) Rejection or support for projects b) Prioritizing issues for the community c) Getting eyewitness accounts of mining from the field d) Oral history, evidence of territorial claims e) Opinion poll data
OBJECT	Completed survey(s) Data revealed from the survey(s) will inform all you do insofar as community voice is concerned.

7 OUTREACH

When facing issues around mining it is important for a community to spread its message to the public. Greater public awareness of problems, issues, or concerns will make mining companies more accountable and transparent, and can empower your community's position. Here are some communications tools and an exercise to help define and spread a community's message:

TIP

To maximize media attention, send your community's message simultaneously to many different outlets.

LINK

Resource Media.org 'Media Relations Tips' 2012

Press Release
Print media
Online news agencies (e.g., the Tyee)
Radio and television
Social media (e.g., Facebook, Twitter).
Letters
The United Nations
The Prime Minister
Provincial premiers
Federal and provincial ministers
Financial lenders
Bonding agents
Shareholders
Company executives
Crown and industry public liaison reps
Exploration companies
Individual prospectors

5	**Spreading the Word**
TASK	Writing a letter and /or press release.
TOOLS	Samples of your chosen format; depending on the purpose, audience, and stage of the mining process.
FOCUS	Defining and pinpointing the **purpose** and the **audience** is crucial. Depending on who you want to read your letter, each letter is written in a slightly different style. A letter to a specific miner will be in a different voice and style than one written to gain international support from the United Nations.
OBJECT	A well-thought-out, well-crafted document that succinctly focusses and states the intent of the community.

8 NOTICES of WORK

The 'NoW'

From this point forward in the Manual the terms 'Notice of Work' and 'Referral' are used interchangeably.

A 'Referral' is a generic term for the document that First Nations receive describing the proposed work for any type of resource development.

The government's name for a mining referral in BC is 'Notice of Work.'

The Notice of Work application contains important information, but is also very broad, and lets the miner decide on the quantity and quality of information given. Recall from page 16 that the following list of activities do not require a Notice of Work under BC law. Any exploration activities falling outside this list (usually activities that involve more invasive and destructive methods) require a Notice of Work.

(i)	Prospecting using hand tools;
(ii)	geological/geochemical surveying;
(iii)	airborne geophysical surveying;
(iv)	ground geophysical surveying without the use of exposed, energized electrodes;
(v)	hand trenching without the use of explosives; or
(vi)	establishment of exploration grid lines that do not require the felling of trees, with the exception of trees and shrubs that create a hazard to safe passage and danger trees as defined in the Workers' Compensation Board Regulation.

LINK

http://www.frontcounterbc.gov.bc.ca/apps/now.html

Notice of Work Content / Action Chart

Here are some of the main sections proponents must submit in their Notice of Work applications. We included some suggested actions for each.

Section of NoW	Suggested Action
1. The contact information about the applicant / operator	Keep claimant contact info up to date as claims can change hands, forfeit, or convert to leases
2. Tenure information, land-use designation and resource inventory	Check age of claims (MTO) & number of cells. Check against other maps and land use designations. See - Tenure Overlap Report on page 58 and Finding Claims on page 22
3. Site location (including maps) and timeline (including schedules) of the exploration activity	Confirm location(s) Monitor schedule(s)
4. Description of the project and types of proposed exploration activities (such as blasting, trenching)	Note the instances of each activity. Compare proposed activities with the actual activities. See - Methods and Impacts on page 26
5. Identification of any cultural heritage resources / sites	Match miner's data against your own. Fill in missing cultural sites - submit to Ministry and the miner(s)
6. Confirmation of consultation with First Nations and the public	Check if miner's efforts match your criteria for consultation. If not, contact miner, make her aware, and seek legal advice
7. Details of actions designed to minimize any adverse impacts of the proposed activity	Requires in-depth analysis. Use FMC Code, Chapter 6, and the EA for the project (if applicable)
8. Any other information required by the Chief Inspector of Mines	Consider filling in missing information and submit it to the Ministry. You may also want to make the general public aware of any lack of transparency or missing information on the NoW

The Tenure Overlap Report

The BC government (Ministry of Energy, Mines and Responsible for Core Review) generates a Tenure Overlap Report (TOR) with every mining claim. This document is sent to the claimant(s) to acknowledge the government has received the claim(s); and it lists the type of claim(s), the expiry date, and area of the claim(s).

The TOR states:
"The First Nations interests section of the Tenure report provides tenure holders with preliminary contact information for First Nations with aboriginal interests identified within the tenure area. These areas are based on knowledge currently available to the Province."

The Province does not define the extent of its "knowledge" of or the nature of "aboriginal interests," and leaves the timeliness and level of contact with First Nations up to the claimant(s). The government merely encourages claimants to begin the process of contacting First Nations before a Notice of Work is filed; and gives a list of resources to help guide claimants in the process.

Ensure every claimant you find on your land has responded to you via a TOR, and check each TOR contains correct information.

The Statement of Work

Another document that is a valuable source of information is the Statement of Work. Not to be confused with the Notice of Work, the Statement of Work (SoW) is a periodic report each miner must file demonstrating exploration on the claim, or reasons for not exploring the claim. Statements of Work must be registered on the MTO. The recorded holder or agent then has 30 days to submit the physical work report or 90 days to submit a technical work report. In other words: Whoever made the claim is the one who wants to mine the land but someone else can hold the claim for them. Regardless, work has to be done on the claim to keep it, or , if no work can be done, the miner has to pay money to keep the claim.

All SoWs are to be submitted to the Vancouver Mineral Titles Branch.

Statements of Work are documents between government and industry, but obtaining them for review is helpful to keep track of which mining claims are dormant or abandoned, active, or 'heating up'.

MMM

Finding Claims on page 22 - Step 8 of the chart - the 'Tenure Detail' page

Notice of Work / Referral - Important Points

1	Since there is no requirement to use a standard form, sometimes the Crown and the proponent will each send letters describing the same project. At first glance it can appear that they are for different projects. A quick check of the Project name or map references will reveal if they are duplicates.
2	Referrals are jargon-heavy so it is vital to cultivate links to people who can help – tradespeople, lawyers, geologists, hydrologists, engineers, foresters, fellow resource managers.
3	As is apparent in the Action Chart on page 57, referrals often reveal limited information about scope of project. You will have to respond, even in light of this minimal information.
4	The clock on the NoW / Referral starts ticking from the start date on the notice / letter, not the day you receive it.

Referrals as Consultation

When the Ministry receives a Notice of Work from a miner it refers it to other affected government agencies and stakeholders, including First Nations. Whether it is a TOR or a NoW, the government often sees this as adequate consultation, and sets the time limit for a response at 30 days in most cases. While the legal basis for referring the Notice of Work to First Nations stems from the Crown's duty to consult, TORs and NoWs rarely fulfil the duty in the view of many First Nations. TORs are left to the claimant(s), and NoWs are sometimes forgotten, lost, or duplicated on different styles of documents before being forwarded to First Nations; if they are forwarded at all. The NoWs that are received differ in their substance and levels of consultation required. In almost all cases First Nations are given a short, 30-day time limit to respond.

FMP

Chapter 3
Chapter 7

Job 6	Into the NoW
TASK	Find the priority issues within each Notice of Work and respond accordingly.
TOOLS	• Action Chart on page 57 as a starting reference • Community Land Use Plan • *Health Safety and Reclamation Code* (HSRC) 1. Use *HSRC* Section 10 as a guide. It calls for the following community data and documents: a) Maps (10.1.4(1)) b) Baseline data (10.1.4(2)(a-l)) c) Mining Plan / Policy (10.1.4(3))
FOCUS	Search for discrepancies in the mine application. For example, information that does not comply with the Tools listed above. Check especially (as listed in the *HSRC*: Section 10.1.4(3) (c) Mining Methods (f) Impoundments (g) Waste disposal (i) Water volume balance
OBJECT 	Create a list and note mine development activity that: a) Violates, omits, or alters any permits, or agreements and community land use policies; b) Analyze these and take the company to task on the pertinent issues (call, write, e-mail, send legal notice) c) Send a copy of these actions to the office of the Chief Inspector of Mines and anyone else you see fit; and d) Make it a part of your Letters / Press Releases from Job 5 in order to keep the community cup to date.

We must do the responsible work.
It is one thing to dig the earth.
It is another to care for it.

9 SACRED SITES

Section 1 of the Mineral Tenure Act defines a sacred site as: "an object, a site or the location of a traditional societal practice that is of historical, cultural, or archaeological significance to British Columbia, a community or an aboriginal people".

Section 13 of the Heritage Conservation Act prohibits the removal of heritage objects that are protected by that Act except with a permit.

Heritage Conservation Act

The first step in the protection of sacred sites is to identify and map where those sites are. See Potential Harms on page 39 for helpful mapping resources.

Note: Archaeological Surveys can be lengthy, costly, and complex. The BC Archaeology Branch maintains the provincial archaeological site inventory in a database called the Heritage Resource Inventory Application (HRIA).

Forms and guides are available at:

LINK

www.tca.gov.bc.ca/archaeology.

Mineral Reserve Option

To make an area of land exempt from mining, citizens and communities can apply to have land set side as mineral reserve land.
The types of mineral reserves are:

No Registration Reserves	Prohibit the acquisition of a mineral and/or placer claim over a parcel of land
Conditional Registration Reserves	Stipulates the specific conditions or restrictions that apply to a claim registered within the reserve
Coal Land Reserves	Prohibits persons from applying for a coal license over a parcel of land

STATUTE

Mineral Tenure Act, s 22
Coal Act s 21

FMP

Chapter 4

The current Ministry website for Mineral Reserves is at the following link:

LINK

http://www.empr.gov.bc.ca/TITLES/MINERALTITLES/RESERVES/Pages/info.aspx

10 AGREEMENTS

Following is a list of the different types of agreements. Most agreements are with mining companies, but some are with other communities and other governments.

Check to see what agreements are in place in your community, the signatories, and any other important information like expiry dates, and renewal dates.

Type of Agreement	✓	*Signatories*	*Notes*
Agreement(s) with Adjacent Communities			
Socio-Economic Participation Agreements			
Traditional Knowledge Protocol			
Resource Funding Agreements			
Negotiation Agreement			
Access Agreement			
Exploration Agreement			
Accommodation Agreement			
Revenue Sharing / Impact Benefit Agreement			

Other Community Tools	✓
Land Use Plans	
Mining and Resource Policy	
Traditional Use Study	
Socio-Economic Baseline Study	
Environmental Baseline Study	
Community Meetings and Surveys	

LINKS

First Nations Energy and Mining Council of BC

For sample agreements:

http://fnbc.info/fnemc

Description of the different types of agreements:

http://fnbc.info/sites/default/files/documents/Sharing%20the%20Wealth%20v2.pdf

The Market Factor in Agreements

Mining companies promise many things: jobs, few environmental impacts, business opportunities and community support. However, these promises are subject to market forces. If the price for their product falls, they may lay off workers, close down, or make less environmentally responsible decisions. Metal and coal prices fluctuate for a number of reasons, as do most stock market products. This has an immediate impact on most mines.

Part of being diligent is asking, how can this mining company hold to its promise, or predict any event in the life of a mine, when everything about the mine is tied to the vulnerability of the market? What will this mining company agree to do - to be responsible for - should the market fall? Will it sign an agreement that accounts for this?

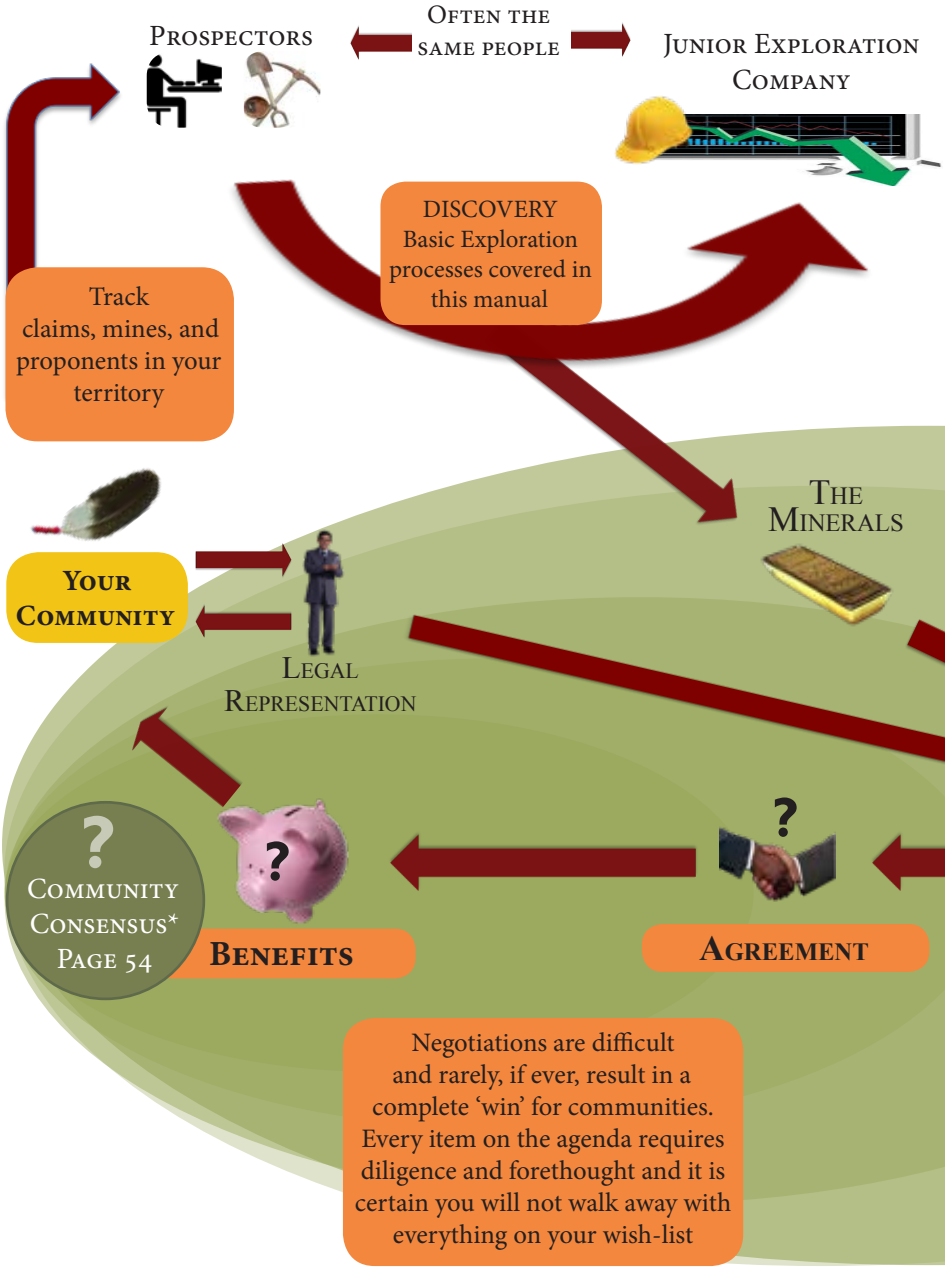
TIPS

1) Plan backwards. What are your ultimate goals? Plan your negotiation strategy from this point 'backwards' to the present day.
2) Do not negotiate yourself into a corner. Avoid agreeing to things that absolve the proponent from liability, leave you no alternative, or end one phase of the mine without providing for the next or considering the mine's legacy.
3) Be mindful of the mine's legacy. Once the mine is shut some effects will linger for centuries – see # 1 above.
4) Network with other communities that have negotiated agreements, especially with the same company.
5) Study examples of each agreement before entering into any.
6) Seek experienced legal advice before proceeding.

FMP

Chapter 1

The Negotiations Web



The Negotiations Web

Senior Mining Company

JOINT VENTURE AGREEMENT
Will often see the Jr. Co. 'bought out' under varying terms (not covered here)

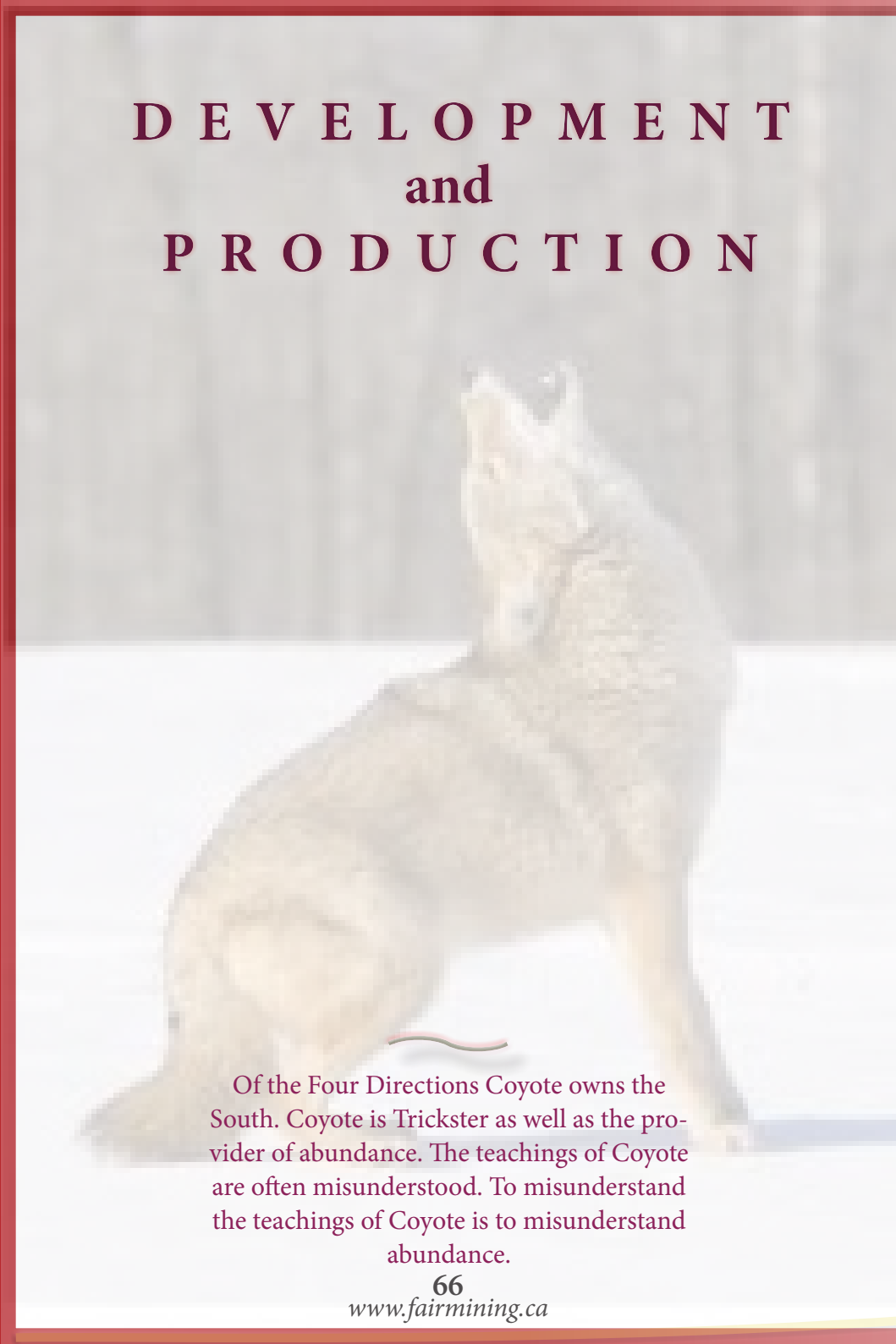
Company Lawyer(s)

Knowing what is at stake, and wishing to secure a deal as quickly as possible, companies will often finance the community's negotiations

Negotiations

Some of the negotiation tools and support covered in this Manual can help, but also please seek legal advice

DEVELOPMENT and PRODUCTION



Of the Four Directions Coyote owns the South. Coyote is Trickster as well as the provider of abundance. The teachings of Coyote are often misunderstood. To misunderstand the teachings of Coyote is to misunderstand abundance.

CONTENTS

1	Permits	68
2	Stages	69
	Overburden	
	Containment	
	Mine Site Access	
	No-Access Options	
3	Production	72
	Processing	
	Treatment & Recovery	

1 PERMITS

After the Exploration stage, 'free miners' may try to expand a viable exploration site based on sampling results and develop it into a producing mine. Mines that are in production can also undergo further expansion. Either way, these steps represent the next stages in a mine-life cycle: Development.

In BC, the office of the Chief Inspector of Mines can decide that a mine does not require a permit. He or she decides this based on the "nature of the proposed work." The power of the office of the Chief Inspector of Mines is such that large mines can be exempt from a permit for major development given the right circumstances. BC mining law mandates no guidance for these decisions. This is not to say the authorizing of permits is done carelessly or recklessly, but that there is so much discretionary power. That leaves a lot of room for other factors to influence decisions and that can result in everything from bad exemptions to double-standards. You may not be able to do much about this. But remember that you can control *how* you respond. That is the spirit of the *Mine Medicine Manual.*

Under BC's Mines Act, permits (mine permits) are usually required for:

surface or underground development or production
major expansions or modifications to existing producing mines
underground exploration requiring excavation, large pilot projects, bulk samples, trial cargos, or test shipments

Aboriginal communities do take part in some permit reviews, but their participation is not legally entrenched in BC mining laws. As well, in BC mining law, no requirement exists to include the recognition of the constitutional rights of Aboriginal people. Neither does the permitting process require any environmental study (another discretionary option) or inclusion of any aboriginal land use plan. Given this imbalance, we therefore must stress the importance of ensuring you have a land use plan, solid baseline data, and an organized and informed response system in place.

STATUTE

Mines Act ss 10(1) (2)

FMP

Chapter 7

2 STAGES

Open Pit Mines	
Stage	**Feature**
Drilling	Has a different meaning in Development than in Exploration. In Development, drilling is done either to expose rock, or to make holes to plant explosive charges.
Blasting	Extreme noise. Blasting is traumatic to wildlife. Produces: Shock waves, dust, and debris. Extremely hazardous explosive material is stored on site.
Loading	Occurs in the mining area / pit. Depending on the size of the operation and the type of material being trucked (ore / waste rock) different vehicles may be used.
Hauling	The creation of roads = truck traffic, noise, litter, air, water, and ground pollution. Roads leading into mine = wildlife disturbance, deaths, and habitat destruction.
Underground Mines	
Drilling	Same as above but takes place underground.
Ventilation	Vital necessity for underground mines. Noise is produced by the ventilation pumps above ground.
Blasting	Vibration on the ground comes in shock waves, depending on the depth. Extremely hazardous explosive material stored above ground.
Load /Muck Haul / Hoist	Ore pre-crushed underground (muck) is placed on conveyors then transferred to loaders which carry (haul and hoist) the ore to the crushers.
Rock Support	Done below ground to shore-up the excavations. Materials are shipped in and stored on site.
Since most of underground mining takes place out of sight, the greatest immediate disturbance occurs during development of the mine site which includes the headframe, production plant(s), tailings and settling ponds. Later, the operating of machinery and the hauling of ore for processing adds to the list of disturbances.	

Overburden

In any major exploration or development project, especially if a mine is planning an open pit, it has to remove the rock and soil on top of the mineral deposit. This rock and soil is called Overburden. Mining companies might overlook some important issues when it comes to overburden:

1. Overburden should be sampled, just like ore, to find out if it has any toxins that will be released when it is exposed to air and water.

2. If overburden is found to have toxins, it needs special handling.

3. Topsoil needs special care. BC law requires that mines save topsoils, and use them for reclamation "unless these objectives can be otherwise achieved in the basic mine permit requirement."

In some jurisdictions (Yukon) overburden must be preserved and replaced, even in the exploration phase.

STATUTE

Mines Act s 10.1.4(3)(h)

FMP

Chapter 9

The earth is never a burden. No part of her is unimportant or unnecessary. It is foundation of life. It holds our medicines and is part of who we are as human beings.

Containment

While containment and impoundment become greater issues during closure, construction and filling of dams starts during development and production. Mine tailing impoundments are built on the same principles as water dams. But that is where the similarity ends. Impoundment dams hold back massive quantities of processed waste rock. Sometimes the substances used in processing are still present in the rock tailings. These substances can leach through the dam, or penetrate the ground and contaminate the water table. Therefore impoundment areas and dams need to be built so that nothing leaks out.

Impoundments must also be built to control water flow. They must also consider rain accumulation, Dam covering, is, in itself, another branch of impoundment technology. When covering an impoundment, choices must be made between function, durability, absorption, and cost. A tailing impoundment has an unlimited life expectancy and will be an issue for generations.

STATUTE

HSRC s 10.6.7

MMM

pp 92-97

FMP

Chapter 9

Mine Site Access

You need mine site access not only to check impoundments, but for almost all field work after the development stage of a mine. Access to a mine site can be a very real and difficult issue. For safety and other reasons, mines are protected as private property. Access is obtained through permission, or a dispute & resolution process which is time-consuming and costly.
Some suggestions::

1	Negotiate access into agreements.
2	Develop a relationship with the mining company early.
3	If you get access, try to maintain regularity in your access schedule.
4	If denied: Use other ways & means to get information

TIPS

Write a letter of commendation and thanks to companies that are using care and due-diligence in their processing, doing everything by the book or going the extra mile.
Once a company is operating, a respectful relationship is best. Their response is out of your control, but respect will create positive energy.

No-Access Options

Without direct access doing a proper assessment of mining activities is more difficult. But the difficulty can be reduced by taking different courses of action, and seeing things from as many 'angles' as possible.
Some options include:

Boundary surveillance. Observing from as close a distance as possible; using magnification and video recording to assist.
2nd-hand reports. Workers, or others who have had direct access can report on their findings. Give personnel a list of things to look for each time they enter.
Aerial photos. Most companies have aerial photos of their operations; and in some cases the government may provide aerial shots.
Camera-ready, remote-control drones can be purchased at hobby stores for a few hundred dollars, and feed video directly to your PC.
Sampling of land, vegetation, and water can be done up-to-and-including the boundary of the mine site.

3 PRODUCTION

These charts are a basic description of production stages. While all ore is crushed and most is ground (except in Heap-Leaching) and all processing uses Gravity separation, the subsequent methods for processing gold (Au) and silver (Ag) are different than methods used for base metals.

Production uses a lot of energy and machinery, and introduces the use of large quantities of chemicals, many of which can end up in the tailings impoundment.

PRODUCTION & DEVELOPMENT CHECKLISTS
Page 98

A	Processing the Ore
	Crushing & Grinding
Stage	**Features**
Primary Crushing	Initial crushing of the ore. Pieces less than 15 cm.
Secondary Crushing	Crushes to smaller pieces 0.5 - 2.0 cm.
Grinding	Ore & water mix. Ball-grinding machine (most common) grinds into fine particles depending on the ore, and the size desired. Typically less than 0.2 mm.
B	**Recovering the Metal**
1	**All Metals (including Gold & Silver)**
Gravity	Gravity separates all metals of various densities from whatever medium is used to suspend them in the processing: air, water, or other liquid agents. The gold pan, and the sluice box, ancient designs still used today, are the most basic gravity separators. Massive centrifuges and concentrators are industrial-sized separators found in large scale processing.

LINK

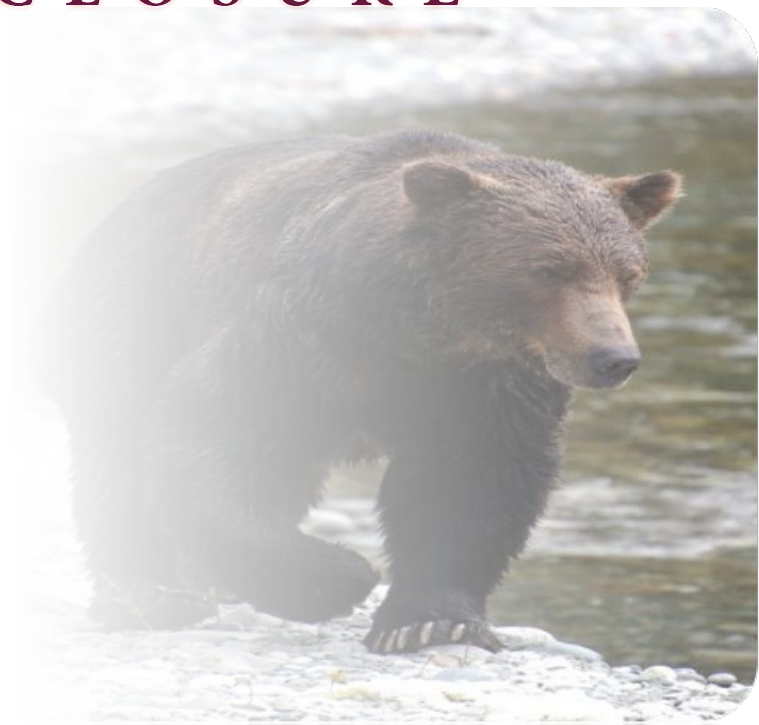
Mining companies who use cyanide should be signatories to the International Cyanide Code. Some Canadian gold and silver producers are not.

Processing of ores, can create potential acid generation by exposing rock to water and air, leading to acid mine drainage. Some older tailings impoundments were concentrated reservoirs of toxic soup. Today, acid-bearing rock is submerged in water to prevent acid rock drainage. See 'Harms' on pages 38-39, as well as the 'Development and Production Checklists' starting on page 98.

B	Recovering the Metal (cont ...)	
2	**Gold (Au) & Silver (Ag) (specifically)**	
Heap-Leach		Favoured because it is most economical. Simply put, it involves piling the ore and applying cyanide. Therefore it does not require crushing or grinding.
Carbon-in-Pulp (7 stages)		A 7-stage process that uses cyanide and activated carbon in a solution through a series of drop-tanks. Companies attempt to destroy or recover cyanide before the waste goes to tailings storage.
1	Thickening	Use of thickening agents and sedimentation.
2	Cyanide Leaching	Metal /cyanide solution diluted and agitated.
3	Carbon Absorption	Blended with carbon pulp that absorbs Au & Ag.
4	Carbon Stripping	Carbon stripped from gold in acid wash.
5	Electrowinning	Electrolysis attracts Au & Ag on steel wool or plates.
6	Smelting	Electrowinning melted into doré bars.
7	Tailings Disposal	'Empty' pulp (Au / Ag removed) sent to tailings storage. Should be cleaned of cyanide and the cyanide reused.

3	**For High Silver (Ag) Content**
Zinc Precipitation	Zinc powder used as it is more effective than carbon for obtaining silver.
4	**For Sulphide Base-Metal Ores**
Froth Floatation	For base metal ores. Chemical process using a chemical concentrate and a hydrophobic (water-repugnant) liquid film. Again: uses a floatation circuit of gravity tanks.

CLOSURE



Bear is elder kin who projects strength, wisdom, and mastery of the land. But bear answers to nature, and reminds us that mastery must still answer to the power of Mother Earth.

C O N T E N T S

1	Closure	76
	Closure Plans	
	Impoundments	
	Progressive Reclamation	
	Reclamation	
2	Decommissioning	78
	Orphaned Mines	
	Subsidence	
3	Security	79

1 CLOSURE

Closure is not a phase of mining that occurs at the end of a linear timeline. Closure is a distinct part of mining that is always present regardless of the phase of operation. A good miner is one who has an exit strategy before digging starts. Whether it is a prospector, a small exploration company, or a full scale, major production - a poor closure plan, or lack of a closure plan up front, is cause for serious alarm. Having a plan, however, is only the beginning. Closure is distinct because it includes the final legacy of the mine and serious questions need asking: What will it cost? What will it look like? How much damage will be irreparable? What sorts of toxins will leach into the lands and waters? Will wildlife ever return? What will the community be like? Will things in and around the site even be close to original condition?

The answer to the last question, is 'no.' Things will never be the same once a mine has come and gone.
If temporarily closed, a mine may re-open, depending on the severity and duration of the stoppage. Miners must file a notice to close no later than 7 days prior to closing. Temporary closures longer than 1 year require an application to amend the permit.

Closure can occur for the following reasons (and likely many more not on this list):

Failed inspection see 'Note' page 41
Work stoppage
Drop in metal prices
'Bre-X style' - see page 31
Cave-in / explosion / disaster
End of mine's life

Closure Plans

Some of the key things every closure plan should contain:

Post-closure land use
Monitoring
Water treatment
Re-vegetation
Post-closure community development (long term)

Notice how the closure plan is dependent on the methods used during exploration, development, and production. How a mine is built and is operated will directly affect how it closes. It is all tied together.

Major Dumps & Impoundments

The Health, Safety and Reclamation Code states that tailings impoundment dams must conform to the *Canadian Dam Association* guidelines. Although the guidelines are concerned largely with the operation of hydro-electric dams, and other dams that contain water flow control, they also apply to impoundments. Also, Schedules 1 and 2 of the *British Columbia Dam Safety Regulations* (B.C. Reg. 44/2000) of the *Water Act* are helpful in determining inspection routines and protocols. See also: Containment page 70, and Impoundment Dam Checklists page 91. Dumps and slopes on waste rock piles follow the industry standard also found in: the *Interim Guidelines of the British Columbia Waste Rock Pile Research Committee.*

Progressive Reclamation

"A mine begins to close the day it opens" is the idea of Progressive Reclamation. But events change and closure plans need to be amended or altered. As mined land is exhausted of viable ore, a mining company should, where possible, begin closure and reclamation on that land. Progressive reclamation is part of any mine plan. A miner requires authorization to divert from a mine plan or reclamation program.

Reclamation

If closure is a distinct part of mining, then reclamation is a distinct part of Closure. Reclamation is the word for returning the land to nature. But mining can cause permanent changes to the environment. The key to reclamation is a good closure plan that includes engaging in practices from the start of the mine that will make closure and reclamation easier. The plan must also include forward-looking provisions that will attend to the long-term effects with a robust monitoring program. The science of reclamation has evolved in the modern age, and industry is more aware, and making some genuine efforts to mitigate lasting effects through better reclamation plans. Chapter 9 of *Fair Mining Practices: A New Code for British Columbia*, sets out in extensive detail the laws and policies where reclamation is lacking in BC and offers some remedies for these deficiencies.

STATUTE	FMP
HSRC s 10	Chapter 9

2 DECOMMISSIONING

Decommissioning

Decommissioning means much more than just the dismantling of a mine's infrastructure. Not only do headframes, plants, and buildings need to be removed, but all underground workings, shafts, adits, and tunnels need filling and sealing. If you are viewing a mine plan in the development phase, check item-by-item to ensure the decommissioning of each item is on the agenda.

Orphaned Mines

An orphaned mine is a closed or abandoned mine without an owner. Orphaned mines revert back to the government, which is another way of saying they become everyone's responsibility. Despite shared responsibility, it is likely that your community will have to spearhead a response. Treat orphaned mines as you would any other mine site: approach with caution; adhere to strict safety guidelines (see Site Visit Pre-Check - page 84); and keep it on your radar. Orphaned mines still have very live and real issues such as acid mine drainage (AMD).

Subsidence

Subsidence is what happens when the earth over an underground opening collapses. Such openings were either not filled correctly, or left empty entirely. Over time, the weight of the ground and the effects of moisture and gravity become too great, and sink-holes develop to varying degrees: from minor depressions to massive landslide catastrophes. It is important that any closure plan provides full protection from subsidence by including a comprehensive backfilling plan at the end of life for every underground section of the mine. Repacking the holes with solid concrete is the best alternative. Rock, dirt, and sand may also work. Organic materials are insufficient because they will rot. Underground openings should not become waste dumps for chemicals, effluents, and garbage as deleterious materials will contaminate the groundwater. Subsidence is a very real issue in the State of Pennsylvania where millions of homes sit on top of hundreds of old coal mine tunnels. Pennsylvania has an excellent resource that illustrates the causes, effects, and solutions around subsidence:

LINK

http://www.dep.state.pa.us/msi/

3 SECURITY

It is absolutely critical that a closure plan include a robust and easily-accessible amount of cash to perform the required actions through the closure and reclamation processes. Yet, for all its importance, financial security for reclamation and closure is another area left to the discretionary power of the office of the Chief Inspector of Mines and/or the Minster of Energy and Mines. BC law currently mandates no requirement to post, and sets no standard for any amount posted. It raises the question for your community: What are the possible courses of action?

First, ensure that adequate security is posted as part of the Impact Benefit, or Socio-Economic Agreement. This will require gaining knowledge of the proponent's closure plan (which you should have) and assessing it against the security to determine if enough money will be available.

Second, have community contingencies in place, not only for an overall closure, but also for sudden work stoppages, mine abandonment, toxic spills, accidents, and disasters. When such unforeseen things occur, mining companies, and the government may be slow to respond, or fail to adequately respond. Security for your community, therefore, is more than just a monetary issue in the hands of the miners - it is a comprehensive plan against any negative future circumstances. As you work, you will find areas where your community needs to be secure against detrimental circumstances and events. Have discussions and create plans around such events. Revisit them and update them annually.

Assessing the securities for mine reclamation funds requires professional expertise. Please seek legal advice.

Only when the last tree has been cut down, the last river has been poisoned and the last fish has been caught will we realize that we cannot eat money.

- Cree Proverb

STATUTE

Mines Act s 10.4(a)

FMP

Chapter 10

Field

Companion

Do not waste.
Use all things wisely.
Never take more than
you need and always
give away that which
you do not use.

A word on the Field Companion ...

The Field Companion supplements the Mine Medicine Manual by providing a set of checklists and appendices to copy, download, and print to help users document mining activities on their territory. It is our hope that this will enable communities to reinforce their ability to negotiate, monitor, enforce, and protect themselves against the negative effects of mining, and benefit from the positive effects.

Checklists

The checklists do not assume the user is a trained, professional engineer, geologist, resource manager, or other professional. The checklists are offered as another set of tools in this toolkit. Parts of some lists, and in some cases entire lists (i.e. Dam Safety Checklist) are borrowed from the same documentation used by industry and government.

Portions of the checklists may seem self-explanatory to some and complex to others. Fair Mining Collaborative is available to help, but we also encourage the user to do the necessary research and self-teaching to master the checklists.

Legal Case Citations

The case citations are for personal use, study, and reference, and are by no means exhaustive. They are not offered as legal advice, nor do the notes and summaries express the full legal depth of each case. Law is complex and requires professional expertise to interpret.

Survey

The Survey contains suggested questions. Please feel free to alter, delete, or add your own. Use, but please do not rely, on social media. Social media is effective but community consensus must be documented. Face-to-face contact, and community assemblies are still the most powerful tools for informing a community, for airing concerns or grievances, or for building, achieving, and maintaining consensus - see **page 54**.

CONTENTS

	Site Visit Pre-Check	84
	Checklist Terminology Guide	85
E	Exploration Checklists	
	1E - Exploration Site Visit	87
	2E - Drill Site Visit	88
	3E - Abandoned / Orphaned Site	89
	Mineral Tenure Act, Section59	90
ID	Impoundment Dam Checklists	
	1D - Dam Safety Checklist	92
	2D - Dam Slope	94
	3D - Dam Crest	96
PD	Production and Development Checklists	
	1P - Dust	99
	2P - Noise	100
	3P - Airborne Toxins	100
	4P - Roads	101
W	Water Regulations	
	1W - Riparian (Water) Setbacks	104
	2W - Allowed Setback Activities	105
	3W - Water Sampling	106
	Soil Sampling	107
	Job 7 Covering the Field	108

"If we don't say it, who will? As keepers of the knowledge, it is our responsibility to share what has been passed on to us. Lessons learned are gifts and we have the responsibility to share these in order to teach about living in harmony, balance and respect with each other and with nature and its biodiversity."

- Pauline Waterfall (2009)

Site Visit Pre-Check

Item	✓
Fuel (if going by vehicle)	
Spare Fuel	
Adequate Gear for Weather & Conditions	
Emergency Kit	
Radio or Communications with community (if not … what is the contingency?)	
Emergency First Aid Kit	
Return Plan Filed with Office	
GPS	
Compass	
Map (NTS / Backroad Map Book / other)	
NoW / Referral (Copies of original documents)	
Camera / Binoculars	
Personal Protective Gear	
Rubber Gloves (for water sampling)	
Work Gloves (for soil sampling & general work)	
Dust mask	
Respirator (gas mask) with chemical cartridges (see TIPS below) Store properly and regularly TEST for leaks. Receive proper training on use.	
100' Measuring Tape	
Excellent Boots	

TIPS

NEVER go alone.
In the presence of GAS: 1) Don respirator. 2) Check your partner - assist them if they have trouble putting their mask on. 3) Evacuate area immediately.
Do not take unnecessary risks. Use common sense.
Watch out for physical hazards on site such as rusted and abandoned equipment, and barrels of hazardous materials.
Avoid contaminated areas.
Except for soil and water samples DO NOT, under ANY circumstances, move or remove any materials.

Item	Procedure(s)
Referral / NoW #	Referral or Notice of Work Number. Use same document type for all visits if possible
Time IN / OUT	Use 24-hr clock.
Company / Claimant	Name of mining company or claimant
Mine Type	M=Mineral / P=Placer / O=Open Pit / U=Underground / A=Abandoned OR=Orphaned
Stage	P=Prospecting / Expl. 1=Low-level (pre-NoW) / Expl. 2= post-NoW
Mineral or Metal type (use Periodic Table of Elements symbols):	Ag = Silver / Al = Aluminium / Au = Gold / Cu = Copper / Fe = Iron / K = Potassium / Mb = Molybdenum / Mg = Magnesium / Ni = Nickel / Pb = Lead / Pt = Platinum / Zn = Zinc
Map Reference	Recommend using NTS grid system
RS Violation (Riparian Setback Violation)	Is the activity violating the riparian set-backs? Ensure you compare activities to the Allowable Activities chart.
Water Samples Taken **a) Take water samples** **b) Label & secure the containers**	Visible contamination? Odour? Benthic (aquatic) organisms? Dead or sick fish / animals / birds?
Physical Description	Describe the topography & local markers, GPS co-ordinates if possible
Notes (use more pages if needed and attach)	Wildlife Fish Disturbance Dead animals Scattered wildlife Absent wildlife Trails & routes conditions
	Land Brush cutting / clearing Roads & trails Camp clean-up / legacy Contamination Spills Litter

E	Exploration Checklists

1E	Exploration Site Checklist

Date: _____ _____ **20** _____
Day Month Year

Referral / NoW#

Time IN

OUT

Mining Company

Mine Type

Exploration Stage

Minerals Sought

NTS Map Reference

Miners Present?

Contact?

Use separate sheet to record conversation

Riparian Setback Violation(s)

(describe)

Notes

Water Samples

2E	Drill Site Checklist

Week of _____ to _____ 20 _____

Your Name			
Date & Time			
NTS(or other) Map Reference			
Claim, NoW, Referral #		**Area (Size)**	**# Shafts**
Type of Mine (Surface / Underground)			
Metal Type(s)			
Drill Phase (D / E / I)		#Today	# Total
MMM	**Bags**		
29	**Cores**		
Riparian Setback Violation Y / N		**Details**	
Water Samples Taken Y / N		**Quantity & Location**	

3E	Abandoned / Orphaned Site Checklist

Week of _____ to _____ 20 _____

Your Name				
Date & Time				
NoW / Referral #				
Company / Claimant				
Last Date of Operation				
NTS (or other) Map Reference				
TYPE of MINE • **Surface** • **Surface (Placer)** • **Underground** • **Open Pit**	**Area (Size)**	**# Pits**	**# Shafts**	**#Adits**
Condition of Area	**Damaged**	**Remediated**	**Abandoned Machinery**	
Description of Area & Apparent Dangers				
Riparian Setback Violation(s) Y / N	**Details**			
• **Water Samples** • **Soil Samples** **(Yes / No)**	**Describe**			

Historically, closed mines were simply abandoned. This led to toxic contamination of ecosystems, local and widespread. The common practice today is the day a mine opens, it begins to close. See page 77.

Mines undergo closure as their production lives end but mines can also close due to work stoppages, and shut-downs for safety under various conditions or market fluctuations in their product.

Note on the removal of property from Abandoned Sites & Mines:
Under Section 59 of the Mineral Tenure Act ...

> 59 (1) If a mineral title is abandoned, cancelled or forfeited, or escheats to the government, it is the duty of the last recorded holder to remove all property within the boundaries of that title within one year after the abandonment, cancellation, forfeiture or escheat, or a longer period that may be set by the chief gold commissioner.
>
> *In other words, the last miner on the site has 1 year to remove everything ever brought to the mine site unless the miner has an extension from the Chief Gold Commissioner.*

ID | Impoundment Dam Checklists

The construction, maintenance, and life of an impoundment dam must follow the same guidelines as any other dam. These guidelines are set out in British Columbia law which follows the Canadian Dam Association Guidelines. The following checklists, are taken directly from the Dam Inspection Checklist for Dam Safety Review (BC) and reformatted for the Manual.

Name of Dam (Impoundment)	
Inspection Date	
Current Weather	
Owner's Name	
Address / City / Postal Code / Telephone / Email	
Inspection Participants	
Who did the last Formal Annual Inspection?	
When?	
Any Prior problems requiring follow-up?	
Repairs or Modifications? (where, when)	
Past Failures/Incidents/Breach?	
Is the mine currently operating?	
Design report & plans available?	
Dam Material Known?	
Foundation	
Design Engineering Consultant	
Construction Date	
Dam construction details	

LINK http://www.env.gov.bc.ca/wsd/public_safety/dam_safety/

Impoundments will be within the mine site property - see 'Mine Site Access' - page 71. It is very likely that you will need more room to write during your inspections. Consider creating an *Impoundment Record Book* that you can use as a written record, and pass on others.

Previous Dam Safety Review	
Last Date of Review	
Reservoir Storage Volume	
Licensed Storage Volume	
Dam Environment	
Reservoir Area	
Site Access - is site access adequate for safe operation and maintenance?	
Any other concerns in the watershed that could impact the dam?	
Any operational constraints that impact dam safety?	
Comments on Public Safety:	

Required Action	None	Monitor	Maintenance	Repair	N/A
UNUSUAL CRACKS					
New					
Type					
Efflorescence (mineral deposits appearing as white particles - minerals left behind from seepage. Can cause deterioration)					
Displacement (have things shifted?)					
UNUSUAL LEAKAGE					
Increase					
Is it Clear or Stained ?					

VEGETATION Yes/No	
Type	
Location	
Recommendations	
SLOPE PROTECTION	
Type none / grass / riprap / other	
Notes	
EROSION Yes/No	
Type wave / runoff / unknown	
Location	
Length	
Width	
Notes	
SLIDES Yes / No / Could not Inspect	
Length	
Width	
Location	
Notes/Causes	

CRACKS Yes/No	
Transverse/Longitudinal/ Other	
Quantity	
Length	
Width	
Location	
Notes/Causes	
ANOMALIES	
Bulges / Depressions / Hummocky (Describe)	
Size	
Height	
Depth	
Location	
Notes/Causes	
OTHER	
Burrows, Ruts, Other Concerns	
Location	
Notes/Causes	

Is there public access to the crest? Yes / No	
Is the crest marked or signed? Yes / No	
Is vehicle access to the crest restricted? Yes / No	
VEGETATION	
Trees Yes / No	
Location (of trees)	
Notes	
Brush none / sparse / dense	
Notes	
Quantity of Brush bare / sparse / adequate / dense	
Appearance of Brush too tall / too short / good	
Notes	
EROSION Yes/No	
Location	
Type wave / runoff / unknown	
Length	
Width	
Causes	
Notes	

SETTLEMENT	
Notes/Causes	
INSTABILITIES	
Cracks Transverse/Longitudinal/Other	
Quantity	
Length(s)	
Width(s)	
Location	
Notes/Causes	
ACCESS	
Location	
Ground Cover bare / grass / other	
Location	
Notes	
OTHER	
Burrows, Ruts, Other Concerns	

PD | Production and Development Checklists

PD1	Dust

	Are the following Dust Abatement protocols in place ?	YES	NO
	Covering roads and other work areas with water or sealants?		
	Permit obtained for the withdrawal of water from a watercourse?		
	Is a copy of applicable permits available on the work site and are field staff familiar with the requirements?		
WATER	Water trucks shall not be driven into a watercourse/wetland.		
WATER	Water trucks shall not be driven down to the edge of the water course/wetland unless the area is firm enough so that this action does not cause rutting and erosion.		
WATER	Ensure that the amount of water withdrawn from the water source is not excessive.		
WATER	Ensure that the intake hose is properly screened.		
WATER	If a petroleum leak occurs, does company have a spill kit available?		
WATER	Ensure that the water truck is not leaking petroleum product and is not refuelling or getting services within 30m of a watercourse/wetland.		
WATER	The water trucks shall have a method of controlling the application rate, so that no excess water flows into a watercourse/wetland.		
WATER	Ensure that water (runoff) does not directly enter any watercourse / wetland.		
CHEMICAL	Ensure that chemical dust suppressant will not directly runoff and enter a watercourse/wetland.		
CHEMICAL	Ensure that the proper application rates are followed.		
CHEMICAL	Chemical dust suppressant shall not be applied within 30m of a watercourse/wetland.		
CHEMICAL	Ensure that calcium chloride, magnesium chloride, or any lignosulphonates used are within the **Environment Canada Best Practices for Use and Storage of Chloride Based Suppressants, 2007.**		
CHEMICAL	Tankers used in the application of liquid calcium chloride shall not be washed out within 30m of a watercourse, wetland or other environmentally sensitive area.		
CHEMICAL	Application shall be restricted to the driving surface only.		

PD2	Noise

Noise Control		
Are the following Noise Abatement protocols in place ?	YES	NO
Noise reduction filters on heavy fans, and generators?		
Ventilation fans below the surface (underground mines)?		
The entire site surrounded by a berm?		
Plan for timing blasting to lessen community & wildlife disturbance (complete with a schedule and consultation process)?		
Protocol or plan for subsequent fly-overs during expansion operations?		

PD3	Airborne Toxins

Airborne Toxin Control		
Are the following Airborne Toxin Controls in place?	YES	NO
Is tailing storage area underwater?		
Waste rock piles sprayed with sealants? (SEE: Chart 2B 'DUST' on previous page for chemical sealant guideline protocol)		
Ventilation fans below the surface (underground mines)?		
Is crushed ore stored in enclosed structures?		
Is reclamation and /or re-vegetation of waste piles and tailings piles undertaken immediately upon completion?		
Are filters installed and maintained on all exhaust systems (heavy equipment, generators, etc.)?		
Are scrubbers and filters on all smokestacks and gas-emitting exhausts ?		

Have the routes been located such that, wherever possible, they blend in with the topography?	
Have the routes been located, and the alignment been selected to avoid and / or minimize the environmental effects on the following items, taking into consideration the overall costs of the road project:	
Watercourses, wetlands, estuaries, tidal zones, and marine shore areas	
Historic sites	
Agricultural land	
Fish and fish habitat	
Wildlife and wildlife habitat	
Species at risk and their habitat	

W

Riparian Checklists

Exploration activities must maintain a specified distance (called **setbacks)** from streams, creeks, ponds, lakes, and any and all watercourses, wetlands, aquifers, and reservoirs - natural and man-made. But water bodies are sometimes neglected or setbacks violated. BC regulations are only somewhat concerned with water quality and will allow the contamination or alteration of water in some situations.

Part 9, Table 9.1 of the *HSRC* (2 pages ahead) allows miners to infringe on setback limits to reasonably access and service sites.

As discussed on page 105, section 9.5.1 (2) of the *HSRC,* allows for any unspecified activities to take place and violate the setbacks; leaving it to the discretion of the miner(s) to decided what is reasonable. And no guidelines exist to define what is an acceptable reduction in risk to health, safety, and the environment. The following job for the resource manager is to ensure miners are not taking advantage of this provision, violating the regulations, and threatening or contaminating water, when alternative methods exist but are discounted for inadequate reasons like convenience and cost-cutting.

Further, when it comes to discharge of waste into the environment, BC sets out an application requirement to support a Mines Act (MA) permit and a waste discharge permit under the Environmental Management Act (EMA) for a proposed mining project.

LINK

http://www.env.gov.bc.ca/epd/industrial/mining/pdf/effluent_permitting_guidance_doc_mining_proponents_apr2013.pdf

Table 9.1
From the *Health and Safety Reclamation Code* (HSRC) for Mines in British Columbia, 2008.

(Riparian setbacks are measured horizontally from the top of the bank)

Riparian Type	Dimensions of Riparian Type	Drilling (m)	Exploration Access (m)
Stream	**Stream widths (m)**		
	20 +	50	70
	5 to 20	30	50
	1.5 to 5	20	40
	less than 1.5	5	30
	under 0.5 in alpine areas above timberline	5	15
Wetland	**Wetland Size (ha)**		
	5 +	10	30
	1.0 to 5.0	10	20
	0.25 to 1.0	10	10
Lake		10	30

(1) The following activities may be carried out within the setback distances noted in Table 9.1:

(a) construction, maintenance, deactivation, and reclamation of stream crossings;
(b) access from water landings for the purpose of servicing exploration camps and equipment;
(c) access to set up and service water supply pumps and lines; and
(d) access to service drill sites.

(2) Exploration activities in addition to those in (1) may occur within the riparian setback distances noted in Table 9.1 when one or more of the following conditions apply:

(a) no other practicable option exists;
(b) risk to health and safety can be reduced; or
(c) risk of adverse impact to the environment can be reduced.

From the *Health, Safety and Reclamation Code* (HSRC) for Mines in British Columbia, 2008. Table 9.1

STATUTE

HSRC Part 9, Table 9.1

FMP

Chapter	Pages
1	24
4	28
5	24,25,26,32
6	25
9	59

Procedure

1. Keep all equipment clean. Alcohol or boiling water will sterilize most equipment.
2. Store in an airtight compartment when clean.
   a. Keep sterile until used.
   b. Rinse with de-ionized (distilled) water before use.
   c. Rinse water sample bottle 3 times before taking final sample.
   d. Keep detailed notes of each sample:
      i. Precise location
      ii. Who took sample
      iii. Time & date
      iv. Weather
      v. Temperature (air & water)
3. Seal and label the sample immediately.
4. Store samples in a locked cooler.
5. Maintain control over samples to prevent tampering.
6. Choose a reliable lab for testing.

Test For:

pH	- use strips
Metals	- use strips
Conductivity	- use hand-held meter
Temperature	- use thermometer

Note: Meters are more accurate for measuring pH than strips

Equipment for Water & Soil Sampling

- beakers (250ml and 500ml)
- scoops (range of sizes 65ml, 200ml)
- stainless steel trowel or soil auger
- 5mm screens or sieve
- rinse bottle using deionized water (distilled water)
- conductivity metre and standard solutions
- pH metre and standard solutions
- test strips (pH, metals, cyanide)
- hand-held thermometer
- preservatives - sodium hydroxide and 10% HC1
- cooler with lock
- large plastic re-sealable bags (durable)
- sample bottles
- gloves, mask, sturdy boots
- pvc tubing (optional, for siphoning samples out of barrels)
- knife
- notebook
- pencils, marker, grease pencil
- camera and film
- maps
- first aid kit
- axe

Procedure

Field testing is good for detecting rapidly soluble metals and short-term pH. However, it will not detect the slow-leaching metals. Important parameters like solid-phase sulphide will not be detected in the field. Most sampling studies are best referred to a lab. However, if you choose to do your own field work and analyze samples on-site, prepare a paste solution and use the same on-site sample analysis techniques as for water samples. Prepare a paste solution as follows:

1. Use a stainless steel trowel to pick up samples and sift them in a 5mm screen.
2. Sift into a clean, clear plastic bag with label.
3. Clean trowel and screen with de-ionized water BEFORE TAKING NEXT SAMPLE.
4. Measure 65 ml of sifted soil sample into beaker.
5. Add 100ml of de-ionized water.
6. Stir with stainless steel spatula.
7. Allow to settle 10 minutes before testing.

Reference

Pages 106 and 107 (Water and Soil Sampling) from:

Mine Monitoring Manual - A Resource Guide for Community Members

by Sue Moodie, Yukon Conservation Society, June, 2001. An excellent field guide to help community members deal with metal mine contamination.

7	Covering the Field
TASK	Using what you have learned, select the most applicable Checklist from the Field Companion based on a situation you are facing in your community as it deals with mining. Use the Pre-Check preparation and go and perform a field visit.
TOOLS	The *Mine Medicine Manual*. Your knowledge and talents. Your community's strength. Your elders' wisdom.
FOCUS	Your selected Checklist.
OBJECT	This site visit may be your first, or one of many in your experience. It is part of an overall program. From now on, when responding to mining on your territory, you will be able to address the situation with the appropriate tools at the relevant time.

"Forget litigation. It's a waste of time and money." *

* Professor Robert Williams is a member of the Lumbee Nation, Arizona, and is co-counsel with Robert Morales in the Hul'qumi'num Treaty Group's case before the Organization of American States. The Hul'qumi'num-speaking peoples have lived on the southern portion of what is also called Vancouver Island, and the south coast of BC since time immemorial. The case has won the right to be heard on the basis of human rights and international law by showing the Canadian legal system does not follow due process of law when assessing aboriginal title. Professor Williams' statement refers to the cost, unpredictability, and flaws inherent in the Canadian legal system with respect to aboriginal title.

APPENDICES

C O N T E N T S

1a - Five Major Cases	110	
1b - Other Significant Cases	112	
1c - Royal Proclamation, 1763	114	
2 - Community Survey	116	
3 - Power Provisions	118	
Glossary	120	
Writers & Reviewers / Works Cited	126	
Image Credits	127	

Citation	Date	Issue(s)	Reasoning	Appeal
Haida Nation v. British Columbia (Minister of Forests), 2004 SCC 73.	18/11/04	What duty, if any, is owed to FN (unsettled) claims on land?	Crown owes a duty prior to proof of rights and title. It cannot be interpreted narrowly. Varies with circumstances & arises when a Crown actor has knowledge of the potential existence of the Aboriginal right or title, and contemplates conduct that might adversely affect it. Consultation means good faith and reasonableness by Province and Aboriginal people. Not a veto for FN. Companies do not have a duty to consult.	n/a (no appeal exists past the Supreme Court of Canada)
Taku River Tlingit First Nation v. British Columbia (Project Assessment Director), 2004 SCC 74.	18/11/04	Was the accommodation engaged in by Province prior to issuing project approval certificate adequate to satisfy honour of Crown?	YES. Even though the Crown owes duty - in this case the TRTFN were adequately consulted.	None further

West Moberly First Nations v. British Columbia (Chief Inspector of Mines), 2011 BCCA 247	05/25/11	Does the duty to consult apply when the provincial government decides to amend an existing permit to allow the proponent to expand exploration activities?	The court held that the government had a duty to consult the West Moberly First Nation before amending the permit on the grounds that the expansion may adversely affect their Aboriginal right to hunt caribou.	None further
Neskonlith Indian Band v. Salmon Arm (City), 2012 BCCA 379	04/04/12	Do municipalities have a constitutional obligation to consult with FNs before making decisions that could adversely affect aboriginal rights or title?	NO. Under Haida, the duty lies at all times with the Crown, not with municipalities.	None further
Ross River Dena Council v. Government of Yukon, 2012 YKCA 14	27/12/12	Is the "free entry" mining regime (Yukon Quartz Mining Act) subject to consultation requirements?	YES. Consultation must take place prior to the recording (staking) of a mineral claim. (Yukon Court of Appeal) [YKCA]	Leave to appeal sought at the Supreme Court of Canada. Denied, September 2013. YKCA ruling stands.

CAUTION !

Care must be taken interpreting and using these and other cases. These cases are presented here as reference only - to illustrate a body of Canadian law. We strongly recommend that you obtain legal advice.

APPENDIX 1b*

Citation	Summary
Calder v. British Columbia (Attorney General), [1973] S.C.R. 313	First time that Canadian law acknowledged that Aboriginal title to land existed prior to the colonization of the continent; that it was not merely derived from statutory law.
Guerin v. The Queen [1984] 2 S.C.R. 335	The government has a fiduciary duty towards the First Nations of Canada. It confirms that Aboriginal title is a *sui generis* right.
R. v. Sparrow, [1990] 1 S.C.R. 1075	Aboriginal rights that were in existence in 1982 are protected under the Constitution of Canada and cannot be infringed without justification because of the government's fiduciary duty to the Aboriginal peoples of Canada.
Native Women's Association of Canada v Canada, [1994] 3 S.C.R. 627	Court decides against the claim that the government of Canada has an obligation to financially support an 'interest group' in constitutional negotiations - to allow the group to speak for its people.
R. v. Badger, [1996] 1 S.C.R. 771	Sets out a number of principles regarding the interpretation of treaties between the Crown and Aboriginal people of Canada.
R. v. Gladstone, [1996] 2 S.C.R. 723	Heiltsuk First Nation proved an aboriginal right to sell herring roe on kelp.
R. v. Pamajewon, [1996] 2 S.C.R. 821	The right to self-government is subject to reasonable limitations and excludes the right to control gambling.

* Most of theses cases and summaries are courtesy the University of Toronto, Online: **http://guides.library.utoronto.ca/aboriginallaw?hs=a**

Other Significant Cases

Citation	Summary
R. v. Van der Peet, [1996] 2 S.C.R. 507	Stó:lô First Nation failed to meet the test for commercial selling of fish. Established the 'Van der Peet test' for determining if an aboriginal right exists. Took the 1st step of the 4-part 'Sparrow Test' and fragmented into 10 separate micro-tests. Seen by some as a step backwards.
Delgamuukw v. British Columbia [1997] 3 S.C.R. 1010	Even though this case is cited as the precursor to aboriginal title, and while it recognized oral history as admissible, it was sent back for a trial that never happened.
Chippewas of Sarnia Band v. Attorney General of Canada, 51 O.R. (3d) 641 [2000] O.J. No. 4804	First time an 'Aboriginal group' was claiming ownership of privately held land. Denied by Ontario Court of Appeal
Paul v. British Columbia, 2003 SCC 55	A provincial administrative actor is granted the power to determine questions of law, and may adjudicate matters within federal legislative competence, including s. 35 aboriginal rights matters.
Liidlii Kue First Nation v. Canada (Attorney General), [2004] 4 CNLR 123 (Fed TD).	"When test drilling on unoccupied Crown land may affect an Aboriginal right to hunt, trap or fish on the land, there is a constitutional obligation to consult with the affected party."
R. v. Marshall; R. v. Bernard [2005] SCC 43	Drew mainly from the tests in *Delgamuukw* and denied the Miq'maq of Nova Scotia and New Brunswick the claim of title, and logging rights that would have flowed from title.

APPENDIX 1c

Royal Proclamation, October 7th, 1763

And whereas it is just and reasonable, and essential to our Interest, and the Security of our Colonies, that the several Nations or Tribes of Indians with whom We are connected, and who live under our Protection, should not be molested or disturbed in the Possession of such Parts of Our Dominions and Territories as, not having been ceded to or purchased by Us, are reserved to them, or any of them, as their Hunting Grounds. We do therefore, with the Advice of our Privy Council, declare it to be our Royal Will and Pleasure, that no Governor or Commander in Chief in any of our Colonies of Quebec, East Florida, or West Florida, do presume, upon any Pretence whatever, to grant Warrants of Survey, or pass any Patents for Lands beyond the Bounds of their respective Governments, as described in their Commissions:

as also that no Governor or Commander in Chief in any of our other Colonies or Plantations in America do presume for the present, and until our further Pleasure be known, to grant Warrants of Survey, or pass Patents for any Lands beyond the Heads or Sources of any of the Rivers which fall into the Atlantic Ocean from the West and North West, or upon any Lands whatever, which, not having been ceded to or purchased by Us as aforesaid, are reserved to the said Indians, or any of them.

And We do further declare it to be Our Royal Will and Pleasure, for the present as aforesaid, to reserve under our Sovereignty, Protection, and Dominion, for the use of the said Indians, all the Lands and Territories not included within the Limits of Our said Three new Governments, or within the Limits of the Territory granted to the Hudson's Bay Company, as also all the Lands and Territories lying to the Westward of the Sources of the Rivers which fall into the Sea from the West and North West as aforesaid.

LINK

Excerpt of the Proclamation:
http://indigenousfoundations.arts.ubc.ca/home/government-policy/royal-proclamation-1763.html

YES

Are you aware of the mining development in your community?

NO

What mining developments can you name on your territory?

What effects of mining have you witnessed?

Are you or any of your family involved with mining ?

If so ... how?

What social, economic, or environmental changes have you seen from mining ?

Overall, what is your opinion of the mining development(s) of which you are aware?

Would you like more information?

YES NO

What miners are on the land?

What effects is mining having?

I am specifically interested in ...

How do I get involved?

I can offer the following ...

Contact me

Name
Phone
e-mail
Facebook
Mailing Address

Best time to call :

Thank you for your attention. We hope for your support.
Please e-mail us at *info@fairmining.ca*

APPENDIX 3 POWER PROVISIONS

LINKED

Statute	Section(s)	Purpose
Canadian Environmental Assessment Act, 2012	5 5(1)(c)	Narrows the definition of environmental effects. Now, only effects on fish habitat or aquatic species-at-risk will be assessed. Excludes any assessment of land-based species-at-risk, such as Woodland Caribou, Section 5(1)(c) contemplates effects on Aboriginal peoples.
British Columbia Environmental Assessment Act	8 and 10	Requirements for environmental assessment certificate
	41 - 45	Governs offences, penalties, remedies, compliance orders
Criminal Code of Canada	396. (1)	Punitive measures for tampering with samples and giving fraudulent results See: - NI 43-101 on page 31
Mines Act	2 - 6	Grants power to the Chief Inspector of Mines
	10	Governs permits
	10(8)	Remedies for failure to comply with permit conditions
	11	Grants power to Minister equal to that of Chief Inspector of Mines
Health, Safety and Reclamation Code (HSRC)	10.1.2 - 10.6.15	Application, Permits, Mine Plan, Security requirements
HSR Code Handbook (non-binding)		Written by industry for use as a procedure manual for exploration, and to comply with the HSRC

APPENDIX 3 POWER PROVISIONS

LINKED

Statute	Section(s)	Purpose
Mineral Tenure Act (MTA)	10	Mandates Free Mining Certificates accord with: 1) Mineral Tenure Act (MTA), 2) MTA Regulations, 3) Criminal Code, 4) Heritage Conservation Act, 5) Mines Act, 6) Mining Right of Way Act, 7) Health, Safety and Reclamation Code
Mineral Tenure Act (MTA)	18	Authority to suspend or cancel mining operations or claims
	29 and 33	Mandate the reporting of work on a claim to maintain the claim
MTA Regulations	15	Regulates the physical reports on exploration and development work
MTA Regulations	16	Regulates the technical reports on exploration and development work
Mining Right of Way Act	2	Power to take necessary right of way on private land (building road access) **without the consent of the owner**
Heritage Conservation Act	All	Identification, protection, and exemption from resource development for heritage sites See: Sacred Sites on page 61

The listing of these provisions does not constitute legal advice. It is merely a quick-reference list to help the reader pinpoint the statute that governs the area of their interest. Readers are cautioned, and reminded to seek professional legal advice before acting on any of the provisions listed here.

Glossary

Abandoned Mine	"A mine for which all permit obligations under this Act have been satisfied and in respect of which the mineral claims have reverted to the government." - *Mines Act* - Definitions
Acid Mine Drainage (AMD) **Also called Acid Rock Drainage (ARD)**	When sulfide-bearing rocks (sulfide is like a dry ingredient) are exposed to air, water, and biological activity the seepage is called AMD. Heavy metals such as copper, mercury, lead, selenium etc. dissolve in the sulphuric acid and contaminate runoff and groundwater. Must be contained. Processes for neutralizing and cleaning AMD mine water must be maintained for centuries.
Advanced Exploration	Exploration involving drilling, blasting, major ground disturbance, and the erection of major camps.
Advanced Property	Industry term for property undergoing advanced exploration. Has mineral reserves, and is supported by a Preliminary Economic Assessment (PEA) Pre-Feasibility Study (PFS) or a Feasibility Study (FS).
Assaying	Chemical analysis of samples. Done in a laboratory.
CIM	The Canadian Institute of Mining (Metallurgy and Petroleum) "Founded in 1898, … leading technical society of professionals in the Canadian Minerals, Metals, Materials and Energy Industries." - **http://www.cim.org/en/About-CIM.aspx**
Claim Staking	Original process for prospectors to possess land for mining exploration. Now done online in BC. Physical 'stakes' or 'marks' are rarely used now in BC.
Closed Mine	"A mine at which all mining activities have ceased but in respect of which the owner, agent, manager or permittee remains responsible for compliance with this Act (the *Mines Act*), the regulations, the code and that person's obligations under the permit for that mine" - *Mines Act,* s 1, Definitions.

Closure	Planned for at all phases, a vital link and distinct phase in the entire process from permitting to reclamation.
Consultation	An informal and formal process. A legal duty of the Crown (see: Appendix 1a - Five Major Cases on page 110). Should be maintained through the entire life of the mine. Communication, dialogue, and negotiation are the core elements of consultation.
Crown	Standard term for the government – Federal and / or Provincial. Officially means 'Her Majesty the Queen in Right of Canada'.
Dam Safety Review (DSR)	The assessment process for assessing the safety of a dam or impoundment. Found in the Canadian Dam Association Safety Guidelines and elsewhere.
Deep Mine	Natural Resources Canada definition: • ore is extracted at depths greater than 1000 m, • encountering issues of increased ground pressures, such as seismicity and/or wall convergence, • encountering issues related to increased ambient temperatures. i.e. risk of heat stress in the workers.
Development	A distinct phase of mining occurring after exploration, feasibility studies, approvals, and financing are in place for a mine to go ahead and be built with the aim of production. Development is decided on one major point: projected profit based on the cost of mineral retrieval.
Diamond Drilling	Diamond-inset cutting heads on drill bits are used to extract cylinders of rock. Cylinders are cross-sections that reveal fairly precise indications of the composition of the material and the location of minerals.

Escheat	A legal term meaning when someone dies without heirs or property is left in 'limbo', it reverts (escheats) to the government.
Exploration	A distinct phase of mining between prospecting and development. Encompasses preliminary & advanced exploration.
Feasibility Study (FS)	"A comprehensive technical and economic study of the selected development option for a mineral project … results … may serve as the basis for a final decision to proceed with, or finance, the development of the project. The confidence level … higher than that of a Pre-Feasibility Study." - CIM definition.
Free Miner	Archaic term still used to describe the role of one who has obtained a permit to explore for minerals.
Free Miner Certificate	B.C. Permit allowing a person to stake and explore claims for a one-year period. (Cost $25 as of 2012).
Haul	General term for moving ore, waste rock, overburden, and soil. Has specific reference to the stage of moving the ore in underground mining.
Hoist	Term for moving ore from underground (lifting to the surface).
Hostings	Bodies of earth, rock, and ore that contain desired minerals.
Impoundment	Area built of earth to contain hazardous waste water and solids used in mineral processing at mine sites and processing facilities.
Indicator Elements	Elements that occur naturally in conjunction with desired minerals but ALSO CONTAIN traces of the desired element(s). Evidence that further exploration is warranted.
Induced Polarization (IP)	Geophysical exploration method that charges the ground with electric current. Current is read back and reveals indicator elements that hold electric charges (like sulphides and graphite).

Map Cell	The smallest map section on a mineral tenure claim map.
Mineral	Inorganic element or compound with structure, chemical composition, and crystal form.
Mineral Reserve (The 'mineral')	The 'mineable' part of a resource that has been economically demonstrated, measured and indicated by, at minimum, a Pre-Feasibility Study.
Mineral Reserve (The 'area of land')	In BC a reserve is established by a regulation of the Chief Gold Commissioner under section 22 of the Mineral Tenure Act or section 21 of the Coal Act. It is the legal instrument used to prevent or restrict access to mineral, placer, and coal lands.
Mineral Tenure	The legal system for obtaining rights to access and explore land for mineral exploration and exploitation.
Muck	Term for the rock broken out by blasting. 'Mucking Out' means moving or 'Hauling' the blasted debris out for processing or storage.
National Instrument 43-101	Canadian legislation (latest version enacted 30 June, 2011) sets out the "Standards of Disclosure for Mineral Projects" to certify (among other things) the results of the geological reports, and the credentials of the geologists.
Neutral Metal Leaching	Low-pH (7-8) drainage. Can contain invisible toxic metals. Common to all mines including salt mines, coal mines, potash mines, etc.
Ore	The material containing the economically viable minerals.
Orphaned Mines	Abandoned mine(s) for which no owner can be located, or the owner is broke.

Pathfinder Elements	Trace elements that occur naturally near desired mineral deposit revealing a rough direction or proximity to the desired mineral(s).
Placer	Mineral deposits commonly showing in stream gravel and beach sand formed by separation during sedimentation.
Porphyry	Type of igneous rock showing quartz crystals.
Pre-Feasibility Study (PFS)	"A comprehensive study of a range of options for the technical and economic viability of a mineral project that has advanced to a stage where a preferred mining method, in the case of underground mining, or the pit configuration, in the case of an open pit, is established and an effective method of mineral processing is determined." - CIM definition.
Preliminary Economic Assessment (PEA)	A conceptual economic analysis of a project. A PEA is generally the first signal to the public that a mineral project has potential viability. A milestone in the evolution of any mineral project. Viewed by the market as important information. CANNOT be called a PFS or FS.
Production	A distinct phase of mining occurring after Development.
Proponent	Term for Prospector / Mining Company / Exploration Company / … anyone who supports and /or undertakes mining activity. NOT the Crown.
Reverse Circulation (RC) Drilling	Heavy duty Exploration performed by flushing a drill hole with water and pumping the water (with sample rock fragments) back to the surface for analysis. Generally considered messy and unreliable as the fragments are scattered and do not reveal pinpoint depth-analysis of minerals since they are scattered in a mass collection. Necessary in some situations.

Riprap	Rock piled along slopes to protect them from erosion and collapse.
Showings	Visible mineral deposits.
sui generis	Latin term meaning 'one of a kind' - used in Canadian law to try and describe the nature of aboriginal rights and title in the eyes of colonial law.
Surface Mine (Open Pit or Placer)	Self-explanatory term for any mine above ground.
Target Elements	The desired minerals or elements that reveal with certainty the presence of the desired mineral(s).
terra nullius	Latin term meaning 'no man's land' - used to support the Doctrine of Discovery: the idea that North America was 'empty' upon 'discovery' by Europeans.
UTM (map reference)	Stands for 'Universal Transverse Mercator' - the map system developed by the U.S. Army in 1940 divides the earth into 60 zones of 6 degrees latitude each. An alternative to the Longitude / Latitude system.
Underground Mine	Self explanatory term for any mine below ground.
Waste rock	Rocks that host, contain, or surround the deposit. Once the pile of waste rock reaches its limits for a particular area the waste rock can be re-contoured and reclaimed by adding soil and planting vegetation. Should be tested. May be acid-producing or not. If not, it may be laden with potential future acid-producing sulphides and must be monitored.

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Supporting Community Priorities in BC Mining

FAIRMINING COLLABORATIVE

Mining activity across British Columbia affects water, wildlife, hunting, harvest, recreation, access, economies, culture, and land rights. **Fair Mining Collaborative** assists communities to build knowledge of mining impacts and benefits so they can fully participate in fair land-use decision making processes that affect their future. We assist communities with reaching their intended outcomes.

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Fair Mining Collaborative provides values based, credible technical and strategic guidance to communities, First Nation Leadership groups, and political decision makers with the intention of building capacity to make informed land-use decisions that foster healthy sustainable communities and ecosystems. Our focus is to build long-term respectful relationships with communities, through information sharing, matching strategies to local priorities, and building community capacity and resilience to handle the full mining lifecycle, from claim staking through closure and after.

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Mining policies for cultural, social, and environmental concerns: Develop land use and mining policy based on traditional use and best practices worldwide.

Resources & Toolkit

Fair Mining Practices: A New Mining Code for British Columbia is a thorough compilation of the best mining practices gathered from around the world where Indigenous rights are honored and laws and policies protect the environment. This document will assist communities in creating their own best practices mining policies.

The Mine Medicine Manual: A Community Resource is a step-by-step guide, field manual, and training resource to assist communities with their navigation of complex government regulations, mining proposals, and the many facets of community negotiation.

Both are available at ***www.fairmining.ca***

Fair Mining Collaborative ♦ 250.871.3627 ♦ www.fairmining.ca

omnia infra et supra

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