

Pages 1 through 2 redacted for the following reasons:

Not Responsive - Outside the Date Range

From: Hupman, C Bruce MEM:EX
Sent: Monday, August 15, 2011 1:26 PM
To: Stewart, Rodger W FLNR:EX
Subject: RE: Outstanding Safety Issue

Ok, I will investigate this and take the necessary steps to rectify the problem(s)

From: Stewart, Rodger W FLNR:EX
Sent: Monday, August 15, 2011 12:21 PM
To: Hupman, C Bruce MEM:EX; Arcand, Michelle X FLNR:EX
Cc: Seguin, Joe MEM:EX; Youds, John A FLNR:EX; McLeod, Joanne FLNR:EX
Subject: RE: Outstanding Safety Issue

Bruce, you might take care to know that this inspection was carried out without need to set foot on the mine. You should not assume that just because an inspection was carried out that entry was gained to a mine without authorisation. There are means to carry out required observations in cases where either an inspector is not available to accompany, or a mine manager is not available or does not grant approval to access.

When a publicly accessible and actively used forest road passes through the site, as is the case below, it is easy to carry out the required observations from the road right of way. It is not at all difficult to accurately differentiate old from new placer workings, particularly at this specific mine site.

By the way, we continue to receive public complaints about this specific operation. I trust you will response to our requests respecting what might be done about the alleged non-compliance being observed by the public.

We await your promised engagement on the placer report, or at least the comments you had more recently promised to John Youds.

Rodger Stewart
 Director, Resource Management
 Ministry of Natural Resource Operations
 Cariboo Region
 400 - 640 Borland Street
 Williams Lake, BC
 V2G 4T1
 cell (250) 305 8536, desk (250) 398 4549
 fax (250) 398 4214

From: Hupman, C Bruce MEM:EX
Sent: Friday, August 12, 2011 11:43 AM
To: Arcand, Michelle X FLNR:EX
Cc: Seguin, Joe MEM:EX; Stewart, Rodger W FLNR:EX; Youds, John A FLNR:EX; McLeod, Joanne FLNR:EX
Subject: Outstanding Safety Issue
Importance: High

Michelle,

Please consider this quote from section 37 of the *Mines Act*, R.S.B.C. 1996, c.293 [Updated to 2007]
A person who contravenes a provision of this Act, the regulations, the code or an order made under any of them commits an offence

As mines are an industrial site, they can pose different industrial safety issues than those you are accustom to.

The Health, Safety and Reclamation Code for Mines in British Columbia is a Provincial Regulation and looks to protect workers, public and the environment. To this means, the *Code* is clear regarding entry to a mine site and states:

Other than an inspector, only persons authorized by the manager shall enter or be permitted to enter a mine.

I have provided this information to you prior to your August 8, 2011 inspection of mine # 1101292 which you refer to as placer lease 362505 . As part of the responsibilities assigned to me as an Inspector of Mines, I am serving you written notice that by entering a mine site without authority, you are in contravention of the *Code*. By way of this e-mail I am also alerting your co-workers/supervisors of your continuing contravention of the *Code*.

I am concerned that you continue to place yourself in situations where you are at risk of injury and instruct you to cease entering a mine site at once unless authorized by the mine manager to do so.

Bruce Hupman
Senior Mines Inspector

From: Arcand, Michelle X FLNR:EX
Sent: Thursday, August 11, 2011 4:19 PM
To: MMD Kamloops EMPR:EX; Hupman, C Bruce MEM:EX; Feldinger, Grant M MEM:EX
Cc: Seguin, Joe MEM:EX; Stewart, Rodger W FLNR:EX; Youds, John A FLNR:EX; McLeod, Joanne FLNR:EX
Subject: placer mining continues in wetland

Greetings,

On August 8, 2011 I did a follow-up inspection of placer lease 362505 to view reclamation work which was ordered as a result of an MOE inspection conducted last summer.

Last summer works included excavation, deposit of material, and discharge into watercourses and excavation of a wetland. The proponent did not hold a current work permit at the time. He was subsequently ordered by MEMPR to stop work and reclaim the present disturbance. (See attached email correspondence).

During my follow-up inspection I found that the reclamation undertaken was inadequate, as the "reclaimed area" was simply levelled and grass seeded but is so compacted and lacking in topsoil it will take likely take decades to recover and support vegetation.

The wetland area which was excavated last year has not been reclaimed at all and the proponent is continuing work in the wetlands. I have reviewed the NOW submitted this year and see that the proponent plan is to continue excavating this wetland area over the next 3 years. This is unacceptable. Wetlands provide high value wildlife habitat and ecosystem services. Mining in wetlands is not in keeping with the Placer Mining Activities in Riparian Ecosystems MOU which required a minimum 10 m setback from riparian ecosystems nor is it in accordance with guidance regarding placer standards provided to MEMPR by our Section last spring (draft attached).

I would like to know how MEM intends to address this situation.

Regards,
Michelle Arcand
Habitat Biologist

phone: 250-991-7252

mailing address: 322 Johnston Ave. Quesnel BC V2J 3M5

From: Hupman, C Bruce MEM:EX
Sent: Tuesday, July 26, 2011 10:50 AM
To: MacDougall, Gerry L FLNR:EX; Seguin, Joe MEM:EX
Subject: Response to MoE Audit
Attachments: Response to MoE audit.docx

Hi Gerry and Joe

I have crafted a response to the 2010 MoE audit of placer operations in the Quesnel Area. Please review the attached and if possible provide feedback. I have not forwarded this document beyond you and await your response.

Thanks

Bruce

From: MacDougall, Gerry L FLNR:EX
Sent: Tuesday, June 28, 2011 4:55 PM
To: Stewart, Rodger W FLNR:EX; Hupman, C Bruce MEM:EX
Subject: RE: Actions respecting the 2010 placer inspection report.

Thanks for assembling this Rodger.

There are some elements of the MoU between FLNRO and MEM concerning placer and aggregates that I need to brief you on – that would impinge on Action 2. I'll check in with you in the morning.

The first step to complete is action 1. With good dialogue between the Quesnel District, your staff and MEM we can work through the other actions in turn.

Thank you,

Gerry

From: Stewart, Rodger W FLNR:EX
Sent: Tuesday, June 28, 2011 2:56 PM
To: Hupman, C Bruce MEM:EX; Youds, John A FLNR:EX
Cc: Vanderburgh, Ken FLNR:EX; MacDougall, Gerry L FLNR:EX; Arcand, Michelle X FLNR:EX; McLeod, Joanne FLNR:EX
Subject: Actions respecting the 2010 placer inspection report.

I was reminded to share with you the written summary of the actions from our meeting on 31 May, as I had promised. One of these actions is growing in urgency. There is increased demand from FN and from the federal Department of Fisheries and Oceans for release of the report. We would be prudent to carry out Action 1 below as soon as we can, in order to ensure the document is finalised in advance of any FOI initiative that could get launched.

During our conversation on the 31st we resolved to:

Action 1: URGENT - Review and edit the inspection report to resolve any questions of accuracy, and to indicate where there may be specific differences in interpretation of outcomes, and identification of natural resource features. To the fullest extent practicable, respecting the lead responsibility of MEM, we will document the means by which the non-compliant outcomes identified in the inspection report will be addressed.

NOTE: We need to nail down the time when this task will be completed without further delay. I believe the review and edit work can get done in a morning's focussed enterprise,

Action 2: Resolve challenges in sustaining the ability of FLNRO staff to conduct inspections of placer mine operations. Possible seek agreement from mine managers to enable inspections for specified purposes. MEM regional staff to join FLNRO regional representatives in enquiring of the Chief Inspector of Mines as to means of authorising FLNRO staff to carry out inspections of placer mine that would be pertinent to environmental stewardship standards.

Action 3: MEM and Cariboo Region FLNRO will collaborate in:

- advising the placer mining sector of the standards applicable to their activities,
- orienting the sector to their environmental stewardship responsibilities,
- devising means to influence selection of practices by the placer mining sector, and
- establishing means by which the outcome of applied practices will be monitored.

Action 4: Examine the administrative process for placer mining permits and Notices of Work authorisations to

identify where clear, enforceable environmental stewardship standards will be set in those documents.

Action 5: Confirm progress on the development of a placer mining BMP guidebook. Determine means by which parts of the MX Code will be established as legal standards in permits and NOW. Confirm the means by which MEM and FLNRO will seek formal, public commitment from the placer mining sector respecting standards for placer mining operations.

Rodger Stewart
Director, Resource Management
Ministry of Forests, Lands and Natural Resource Operations
Cariboo Region
400 - 640 Borland Street
Williams Lake, BC
V2G 4T1
cell (250) 305 8536, desk (250) 398 4549
fax (250) 398 4214

Ministry of Energy and Mines

Response to 2010 Placer AUDIT conducted by Ministry
of Environment Ecosystem staff-Williams Lake

Bruce Hupman PAg - Senior Inspector of Mines

7/26/2011

Executive Summary

In the 2009 operational year, the BC government realigned operational boundaries of Ministries regulating the natural resource sector. As a result of this realignment the Ministry of Environment (now MFLNRO) - Cariboo Region experienced a substantial increase in the number of placer Notices of Work referred to them from the Ministry of Energy, Mines and Petroleum Resources – South-Central Region. The rationale for these referrals was twofold; to seek out local information not readily available in existing documents and to cultivate a positive working relationship with Environment in another region.

As a result of this perceived increase in activity and the potential environmental impacts associated with placer mining, staff from the Ministry of Environment-Ecosystems conducted site visits during the summer of 2010 and summarized their findings in a placer audit. The study area was within the Cottonwood and Quesnel Rivers watersheds.

Very tight constraints were applied during this exercise and as a result of these constraints there is limited value in the conclusions and recommendations delivered. Ecosystems Branch staff relied only on the supplied Notice of Works. Their opinions were formed without conducting file reviews, consulting with a Mine Inspector or the Mines Act, seeking advice on mining methods, having mine site reclamation experience and others.

The *Health, Safety and Reclamation Code for Mines in British Columbia* states that...."Other than an inspector, only persons authorized by the manager shall enter or be permitted to enter a mine". Some of the authors of the MoE audit were informed of the authority needed to enter a mine site several months prior to any field work being conducted. Not only did staff neglect Regulation, they placed themselves and their guests in harm's way in doing so. As neither they nor their guests from local First Nation communities have any authority or the necessary training to enter a mine site, these inspections un-necessarily placed all attendees at risk.

Some of the noted offenses within the MoE audit go beyond the authority of the Mines Act. For example the spread and control of noxious weeds at the mine site is a permit condition and a requirement of the Mine Act permit. The audit notes the occurrence of noxious weeds on site, yet failed to mention that the weeds could be tracked from the forest roads to the mine site indicating the invasion route and seed source.

Adding another layer of complexity to the MoE audit report was the referring to non-permitted works within the report and works conducted prior to the acceptance of certain standards. Clearly any mechanical disturbance made without approval for the intent of mineral exploration is not in compliance with regulations. Works which were permitted prior to the Forest Practices Code (FPC) clearly cannot meet those requirements and the FPC was never intended to be applied to placer mining. Inclusion of these findings into the reports created bias. The

corporate image of the BC government is impacted by uninformed comments; resolution of this issue requires full commitment and teamwork by agencies within and outside of government.

As demonstrated during a meeting with members of the Caribou Managers Committee not all assumptions made by the Ecosystems team were accurate. It was understood that the report required adjustments before being discussed or released to the public. The May 31, 2011 meeting and this document are part of that established agreement.

Notwithstanding this agreement, First Nation communities continue to demand meetings with the Ministry of Energy and Mines (MEM), quoting compliance numbers derived within the original draft MoE audit. Ongoing and new consultations related to mineral exploration and development within the Williams Lake Indian Band asserted traditional territory are being influenced by statements contained within the original draft MoE audit.

When considering the impact of mineral exploration and development in the Cottonwood and Quesnel Rivers watersheds, we must separate the historical practices from those permitted under current regulations. Indeed the damming of streams for and the use of hydraulic mining, dredging of water channels, diversion of streams and other outdated practices did impact riparian zones, fish habitat and hydrology of streams. Today none of these activities would likely be authorized, or if so under considerable review and oversight.

It cannot be argued that placer mining does not contribute to the cumulative effects on the environment. However one must consider that permitted operations must, maintain riparian setbacks, have zero discharge and reclaim the site. Provincially the footprint of mining is around 0.5% of the landmass within British Columbia and is concentrated around localized outcroppings of mineralization.

1.0 Background

The MEM was supplied a draft of the MoE Placer Audit May 2009 after it was presented and discussed at the Caribou Managers Committee. As a draft, the report was an internal document not for distribution.

Referrals continue to Ministry of Environment, Williams Lake seeking improved inter-government co-operation thus strengthening the Crown's commitment to enhanced stewardship of the natural resources.

As a result of these referrals, Ministry of Environment-Ecosystems staff continues to provide comments on placer applications. Not all comments submitted by MoE are developed into permit conditions. Some issues such as, the control of noxious weeds, are not solely specific to MoE, but are Code requirements under the *Mines Act* and are often included in responses from

the Ministry of Forests. Comments such as these are included without prompting from MoE. Other suggested permit conditions go beyond existing regulations or are not supported by regulation. When considering these MoE suggestions an Inspector may have to mitigate the issue without creating a provincial standard. Riparian setbacks are a prime example of this management of issue and regulation. Rather than neglecting regulation and placing staff at risk by conducting on site inspections it is suggested that a discussion with MEM staff on whether the MoE suggested condition was applicable to a Mines Act permit could remain the simplest method to assess whether MoE recommendations were being passed on to proponents or incorporated into permit conditions.

A recent request made to a Mines Inspector was for the proponent to manage and replace the old growth timber "logged" by a mineral exploration company. The area in question had been harvested by a forest company the previous winter. As companies conducting mineral exploration and development are generally small scale operators on a landscape and do not control the harvesting of timber, requests such as this cannot be entertained. An important point should be noted; miners typically see timber and the disposal of the trees and stumps as a liability and generally attempt to avoid any timber extraction.

The definition of "mine" includes; a place where mechanical disturbance of the ground or any excavation is made to explore for or to produce coal, mineral bearing substances, placer minerals, rock, limestone, earth, clay, sand or gravel, all cleared areas, machinery and equipment for use in servicing a mine or for use in connection with a mine and buildings other than bunkhouses, cook houses and related residential facilities, all activities including exploratory drilling, excavation, processing, concentrating, waste disposal and site reclamation, closed and abandoned mines, and a place designated by the chief inspector as a mine. A "mining activity" means any activity related to, the exploration and development of a mineral, a placer mineral, coal, sand, gravel or rock, or the production of a mineral, a placer mineral, coal, sand, gravel or rock, and includes the reclamation of a mine. The Inspector of Mines applies the *Mines Act*, the *Health, Safety and Reclamation Code For Mines in British Columbia* and other documents like the *Handbook for Mineral and Coal Exploration in British Columbia* to manage impacts of exploration activities on other resource values including timber, fish and wildlife and their habitat; water quality and cultural heritage resources. Placer mines are not exempted from the Mines Act or its related regulation.

The General Wildlife Measures (GWMs) associated with the Wildlife Habitat Areas (WHAs) apply to forestry activities. The Crown has recognized that mineral exploration and development cover a limited area of the landbase, and therefore, in keeping with the two-zone land use system for mineral exploration and mining, the GWMs do not apply for the purpose of exploration, development and production activities when those activities have been authorized

under the Mineral Tenure Act, Coal Act, the Mines Act, the Petroleum and Natural Gas Act or the Geothermal Resources Act.

This concept is further enhanced within the Quesnel Sustainable Resource Management Plan. This resource management plan is one of seven resource management plans developed to support the Cariboo-Chilcotin Land Use Plan. The QSRMP ensures access to 100 percent of the plan area for mineral and aggregate exploration and potential development, excluding protected areas and Goal 2 areas within the plan. This is consistent with government's two-zone approach to mineral exploration and development. The comprehensive nature of the QSRMP objectives will assist the mineral sector in making informed choices. Mine development is addressed under the Environmental Assessment Process. In general developed mines are a very small part of any strategic planning area; they are however an important economic driver for the province.

2.0 Observations:

The on-site inspections were:

- 1) Conducted by people without the necessary training and experience to enter a mine site,
- 2) Skewed due to very limited familiarity with mining operations,
- 3) Did not acknowledge time lines and the introduction and repeal of Acts/Regulations,
- 4) Did not consider other resource values. The core values and mandates of the two Ministries' may appear opposing as the "audit" appears to favour one value above another
- 5) Performed with at least one Mines Act regulation violated

General observations conclude:

- Non-permitted works are occurring on Crown land,
- Some contraventions of the *Mines Act* are occurring,
- Of the 26 sites reviewed and the 14 possible contraventions sent to MEM for decisions; 5 resulted in actions by MEM,
- Of the 90+ concerns expressed in Appendix 1, only 5 have resulted in orders (implies 94% compliance rate),
- Although the audit highlights the destruction of fish habitat, it also comments on fish accessing mine associated workings.

3.0 Recommendations:

MEM continues to outreach to our client group. As part of the extension, we have approached the Williams Lake MoE group to join us in one of our sessions with the Caribou Placer Miners. During this brief introduction of the regulations concerning placer miners, MoE staff are requested to listen to other presentations and then to present a brief overview of their issues to the placer miners. It is expected that this interaction will begin to remove the; *us and them* situation which appears to be part of the issue here.

MEM provides a "Protecting Values above and below the WaterLine" training sessions to our client groups

MoE staff in the Kamloops and Penticton areas has experience with mines and mines inspectors. Perhaps a temporary assignment for staff from one region to another might help in information flow, applications on the ground, and crafting permitting suggestions in a manner acceptable under the Mines Act.

As MEM has developed a Placer Best Management Handbook, perhaps the MoE audit may speed up its review, acceptance and release.

MEM is preparing to develop and deliver a training package for various groups. Staff from the Ministry of Environment-Ecosystems could be included in this training. The training component could include site visits to placer operations, mineral exploration and sand and gravel operations.



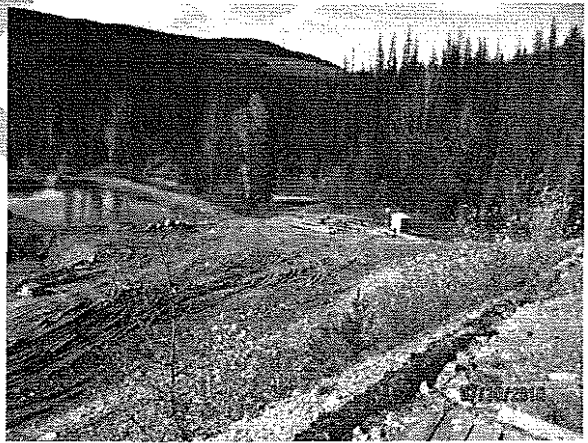
Man made channel



1980's un reclaimed workings



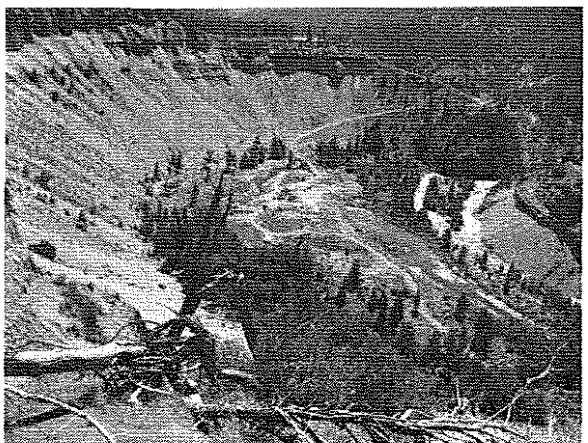
Ephemeral Channel



Permitted Works pre 1995



Permitted Works pre 1970



Placer mining creating habitat

From: Stewart, Rodger W FLNR:EX
Sent: Friday, August 12, 2011 12:36 PM
To: Hupman, C Bruce MEM:EX; Arcand, Michelle X FLNR:EX
Cc: Seguin, Joe MEM:EX; Youds, John A FLNR:EX; McLeod, Joanne FLNR:EX
Subject: RE: Outstanding safety and apparent non-compliance issues

Bruce, we have urgent need to know the manner in which this apparent non-compliance issue is being addressed.

I appreciate your concern for safety of my staff, and thanks for the communication. That said, there is a substantive and continuing concern that this regulatory provision is being used to prevent monitoring of placer mines, which are seeming to be the source of increasing challenge respecting appropriate stewardship practices.

But at the same time, I have an equal concern that the safety matter is deflecting you from the substance of this and other non-compliance issues. There is growing concern that you remain silent on this apparent non-compliance issue.

Further, you have yet to engage with us respecting the placer inspection report, as you committed to do last spring.

Joe, you did not yet let me know if you had time for a call before I leave on Tuesday next week.....

Rodger Stewart
 Director, Resource Management
 Ministry of Natural Resource Operations
 Cariboo Region
 400 - 640 Borland Street
 Williams Lake, BC
 V2G 4T1
 cell (250) 305 8536, desk (250) 398 4549
 fax (250) 398 4214

From: Hupman, C Bruce MEM:EX
Sent: Friday, August 12, 2011 11:43 AM
To: Arcand, Michelle X FLNR:EX
Cc: Seguin, Joe MEM:EX; Stewart, Rodger W FLNR:EX; Youds, John A FLNR:EX; McLeod, Joanne FLNR:EX
Subject: Outstanding Safety Issue
Importance: High

Michelle,

Please consider this quote from section 37 of the *Mines Act*, R.S.B.C. 1996, c.293 [Updated to 2007]
A person who contravenes a provision of this Act, the regulations, the code or an order made under any of them commits an offence

As mines are an industrial site, they can pose different industrial safety issues than those you are accustomed to. The Health, Safety and Reclamation Code for Mines in British Columbia is a Provincial Regulation and looks to protect workers, public and the environment. To this means, the *Code* is clear regarding entry to a mine site and states:

Other than an inspector, only persons authorized by the manager shall enter or be permitted to enter a mine.

I have provided this information to you prior to your August 8, 2011 inspection of mine # 1101292 which you

refer to as placer lease 362505 . As part of the responsibilities assigned to me as an Inspector of Mines, I am serving you written notice that by entering a mine site without authority, you are in contravention of the *Code*. By way of this e-mail I am also alerting your co-workers/supervisors of your continuing contravention of the *Code*.

I am concerned that you continue to place yourself in situations where you are at risk of injury and instruct you to cease entering a mine site at once unless authorized by the mine manager to do so.

Bruce Hupman
Senior Mines Inspector

From: Arcand, Michelle X FLNR:EX
Sent: Thursday, August 11, 2011 4:19 PM
To: MMD Kamloops EMPR:EX; Hupman, C Bruce MEM:EX; Feldinger, Grant M MEM:EX
Cc: Seguin, Joe MEM:EX; Stewart, Rodger W FLNR:EX; Youds, John A FLNR:EX; McLeod, Joanne FLNR:EX
Subject: placer mining continues in wetland

Greetings,

On August 8, 2011 I did a follow-up inspection of placer lease 362505 to view reclamation work which was ordered as a result of an MOE inspection conducted last summer.

Last summer works included excavation, deposit of material, and discharge into watercourses and excavation of a wetland. The proponent did not hold a current work permit at the time. He was subsequently ordered by MEMPR to stop work and reclaim the present disturbance. (See attached email correspondence).

During my follow-up inspection I found that the reclamation undertaken was inadequate, as the "reclaimed area" was simply levelled and grass seeded but is so compacted and lacking in topsoil it will take likely take decades to recover and support vegetation.

The wetland area which was excavated last year has not been reclaimed at all and the proponent is continuing work in the wetlands. I have reviewed the NOW submitted this year and see that the proponent plan is to continue excavating this wetland area over the next 3 years. This is unacceptable. Wetlands provide high value wildlife habitat and ecosystem services. Mining in wetlands is not in keeping with the Placer Mining Activities in Riparian Ecosystems MOU which required a minimum 10 m setback from riparian ecosystems nor is it in accordance with guidance regarding placer standards provided to MEMPR by our Section last spring (draft attached).

I would like to know how MEM intends to address this situation.

Regards,
Michelle Arcand
Habitat Biologist
phone: 250-991-7252
mailing address: 322 Johnston Ave. Quesnel BC V2J 3M5

From: Stewart, Rodger W ENV:EX
Sent: Wednesday, November 3, 2010 3:01 PM
To: Hupman, C Bruce EMPR:EX
Cc: Youds, John A ENV:EX
Subject: RE: Inspections on Mine Sites

Thanks Bruce. Note that we DO NOT get all NOW for this part of the province. Not certain why that is, but in some cases, we only learn of the works through other agencies or by happening upon it in the field. We are likely going to need to be checking with you when we find we do not have file information for certain operations, or have need to confirm information when it appears our file information is out of date, which seems to frequently be the case.

Rodger Stewart
Regional Manager
Resource Stewardship and Parks Division
Ministry of Environment
400 - 640 Borland Street
Williams Lake, BC
V2G 4T1
cell (250) 305 8536, desk (250) 398 4549
fax (250) 398 4214

From: Hupman, C Bruce EMPR:EX
Sent: Wednesday, November 3, 2010 2:43 PM
To: Stewart, Rodger W ENV:EX
Subject: Inspections on Mine Sites

Hi Rodger

I understand that you are not directly involved in reviewing the Notice of Work (NoW) sent to your staff during the referral process and this may be creating confusion. The NoW identifies the operator, mine manager, the tenure holder and if required the agent working on behalf of the operator and their contact information is provided on the NoW. The NoW also includes a description of the activity, a rough time line for conducting the works, access maps and so forth.

I doubt your staff venture out in to the field without a plan on which sites they intend to review. When developing their inspection plan I suggest your staff seek out the identified mine manager acknowledged on the NoW. Failing to contact the mine manager directly it would seem appropriate to contact the tenure holder to obtain the contact information for the mine manager. The Code is clear the authorization to enter a mine site must come from the mine manager (many times this is the tenure holder).

I cannot comment upon how your staff files and tracks this information within your office; I can say that they do have the same information as MEMPR.

I respect the fact that your office have safety procedures; these are required under WorkSafe BC regulations. There are safety requirements that are specialized to mining, thus Work Safe Procedures are only a part of a safety plan on a mine site. Safety on a Mine Site is the responsibility of the Mine

Manager so their authorization to enter a mine is mandatory. The onus to create your staffs inspection plan and thus obtaining the authority to enter a mine site lies within your organization. Without authorization from the mine manager, you or your staff may be putting themselves at risk when entering a mine site.

Hope this helps.
Bruce

From: Stewart, Rodger W ENV:EX
Sent: Wednesday, November 3, 2010 12:44 PM
To: Hupman, C Bruce EMPR:EX
Cc: Seguin, Joe EMPR:EX; Youds, John A ENV:EX
Subject: RE: Amarc Newton drill permit inspection

Bruce, evidently I have to ask you more clearly. What do we do if there is no representation on the site? I must ask again.... practicably, when no one is there to act as "mine manager" and we cannot identify who that is, what shall we do? We are not about to fail in our job functions simply because there isn't anyone we can identify as the "mine manager" for all the types of sites your reference. There must be a means for practicable application of the safety provisions under such circumstances.

Example, for cases where there are no active mining or exploration operations nobody present nor identifiable as the mine manager..... who does staff engage with? Seems to me that you could assist us by informing this office of the "mine manager" who is designated for each and every operation in this land area that we might choose to inspect or monitor. My staff do not have access to the files or administrative systems that are required to confirm such designations, but we presume that your team does know who these people are for the sites we intend to inspect and monitor.

I consider it incumbent upon you to ensure we have current information on the contact for each operation in order that we can continue to do our job. Otherwise I fear that we will be considering a situation where staff are actively being prevented from carrying out their job functions.

Please be assured that I am in no way debating the safety requirements that you have specified. Rather, I am seeking business efficiency in support of the job functions of my staff. Please also respect that we are not without our own safety procedures.

Rodger Stewart
Regional Manager
Resource Stewardship and Parks Division
Ministry of Environment
400 - 640 Borland Street
Williams Lake, BC
V2G 4T1
cell (250) 305 8536, desk (250) 398 4549
fax (250) 398 4214

From: Hupman, C Bruce EMPR:EX
Sent: Wednesday, November 3, 2010 10:48 AM
To: Stewart, Rodger W ENV:EX
Subject: RE: Amarc Newton drill permit inspection

Hi Rodger

A mine site also (besides exploration sites) includes placer activity, sand-gravel-quarry operations, open pit and underground mining. Entering a mine site whether there is someone on site or not still requires the authorization of the mine manager. Seeking and receiving this authority from the mine manager is required prior to conducting inspections, so I suggest that your staff plan their activities in consultation with the mine manager. Also note each mine site and/or visit may require different safety training, timing of visits, and safety gear.

Please consider that my first priority is the safety of your staff. I ask that you inform your entire staff of the legal and potential safety issues regarding entering a mine site.

Bruce Hupman PAg
Senior Inspector of Mines
Mining and Minerals Division
South Central Region
(250) 371-6067

From: Stewart, Rodger W ENV:EX
Sent: Wednesday, November 3, 2010 8:10 AM
To: Hupman, C Bruce EMPR:EX; McLeod, Joanne ENV:EX
Cc: Youds, John A ENV:EX; Seguin, Joe EMPR:EX
Subject: RE: Amarc Newton drill permit inspection

So, Bruce..... what if there is nobody on the exploration site? Government staff need to do their job, but how logistically is that going to happen if the company is not represented on the exploration site, which may be definition be a "mine" but in reality is a long way (if ever) from actually becoming one as the public knows mines?

I am quite wary of the potential that my staff will be prevented from being able to carry out their job no matter what diligence they may demonstrate in complying with safety provisions. How are you and I going to work together to ensure that my staff can continue to carry out their duties in a timely and efficient manner?

Rodger Stewart
Regional Manager
Resource Stewardship and Parks Division
Ministry of Environment
400 - 640 Borland Street
Williams Lake, BC

V2G 4T1
cell (250) 305 8536, desk (250) 398 4549
fax (250) 398 4214

From: Hupman, C Bruce EMPR:EX
Sent: Tuesday, November 2, 2010 11:24 AM
To: McLeod, Joanne ENV:EX; 'Diane S. Nicolson'
Cc: Youds, John A ENV:EX; Stewart, Rodger W ENV:EX
Subject: RE: Amarc Newton drill permit inspection

Hi Joanne,

I have include a quote from the Health, Safety and Reclamation Code for Mines in BC for your information. The code is written to protect the health and safety of workers and the environment. The Code makes the mine manager responsible for both. As they are responsible for your H&S, they may require you to have special training, travel with a worker appointed by the manager and require advance notice as this may impact their staffing level. At the minimum requirement you will need steel toe boots, hard hats and a safety vest as well as other requirements of the mine manager.

Authority to Enter a Mine Authorization

1.3.1 Other than an inspector, only persons authorized by the manager shall enter or be permitted to enter a mine.

1.3.2 Notice to this effect shall be posted at all road entrances to the mine.

1.3.3 Unless authorized by the manager, no persons shall enter or leave a mine except by a recognized means of entry or exit.

This regulation requires you to contact the mine manager and get their authorization prior to entering the site. The Code does not distinguish between mines so this requirement applies to all mines or mine related activities.

From the *Mines Act*

"mine" includes

- (a) a place where mechanical disturbance of the ground or any excavation is made to explore for or to produce coal, mineral bearing substances, placer minerals, rock, limestone, earth, clay, sand or gravel,
- (b) all cleared areas, machinery and equipment for use in servicing a mine or for use in connection with a mine and buildings other than bunkhouses, cook houses and related residential facilities,
- (c) all activities including exploratory drilling, excavation, processing, concentrating, waste disposal and site reclamation,
- (d) closed and abandoned mines, and
- (e) a place designated by the chief inspector as a mine;

"mining activity" means any activity related to

- (a) the exploration and development of a mineral, a placer mineral, coal, sand, gravel or rock, or

(b) the production of a mineral, a placer mineral, coal, sand, gravel or rock, and includes the reclamation of a mine;

Bruce Hupman PAg
Senior Inspector of Mines
Mining and Minerals Division
South Central Region
(250) 371-6067

From: McLeod, Joanne ENV:EX
Sent: Tuesday, November 2, 2010 10:32 AM
To: Hupman, C Bruce EMPR:EX; 'Diane S. Nicolson'
Cc: Youds, John A ENV:EX
Subject: Amarc Newton drill permit inspection

Becky Bings and I are planning to do an inspection of the Amarc Newton drill permit this Thursday, November 4, 2010. It shouldn't matter if the work is finished; we have a copy of the permit and Notice of Work and should be able to locate the drill holes from these. If you need to contact me I'll be in the office today but in the field tomorrow. Thanks!

Joanne McLeod
Habitat Officer
Fish, Wildlife and Habitat Management
Ministry of Natural Resources Operations
400-640 Borland Street
Williams Lake, BC V2G 4T1
Ph: (250) 398-4256
Fx: (250) 398-4214

Metcalf, Megan MEM:EX

From: Seguin, Joe MEM:EX
Sent: Wednesday, August 10, 2011 1:36 PM
To: Currie, Anne MEM:EX; Hoffman, Al MEM:EX
Subject: MoE Placer Audit
Attachments: 2011-05-11 RMT MEETING AGENDA (Placer Audit Final Draft).docx

Please have a look, we need to discuss the above asap

Joe Seguin
Regional Director
Ministry of Energy and Mines
P: (250) 828-4448
C: (250) 318-7003



2010 Placer Mining Audit

July & August 2010

Conducted by Ministry of Environment Ecosystem staff

Prepared May 4, 2011



Executive Summary

An audit of placer mining operations in the Cariboo Region was undertaken by Ecosystems staff from the Ministry of Environment (now MFLNRO) during the summer of 2010. The study was initiated in response to a substantial increase in the number of placer Notices of Work being received by government, and concern over potential environmental impacts associated with this industry. During the audit, a sample of twenty-six placer tenures were inspected and assessed for compliance with submitted Notice of Works. The audit sample was distributed throughout much of the area of placer activity in the region, within the major watersheds of the Cottonwood and Quesnel Rivers, encompassing ten watershed basins with both anadromous salmon and resident trout populations. Parameters assessed during inspections related to potential habitat impacts and specifically included: vicinity of works to watercourses and areas designated as Critical Fish Habitat; size and extent of disturbance areas; disturbance to designated wildlife habitat and ungulate winter range areas; operations in Old Growth Management Areas; and adequacy of reclamation.

Of the twenty-three active tenures inspected, 74% were found to be in non-compliance with their Notices of Work. The results of this audit highlight the risk of aquatic, fish, and riparian habitat impacts, occurring in high value fisheries watersheds with inherent hydrological sensitivity. Works within the 10m placer riparian reserve setback were observed at more than half (57%) of the active tenures, while unauthorized instream works had occurred at 43% of tenures, and evidence of wastewater discharge into waterbodies was observed at 30% of the tenures. Inadequate reclamation and unreported disturbance areas on placer mine tenures were also key findings of the audit. The audit revealed that placer Notices of Works did not accurately reflect the works that were undertaken on the ground, and that the size and types of disturbance associated with placer mining are much greater than perceived or reported.

Recommendations are made for regionally stepping up compliance and enforcement on placer mine operations; implementing regional environmental protection standards through the placer mine permitting process; locally developing basic guidance information on acceptable practices for dissemination to placer miners active in this area; renewal of the Horsefly River Watershed placer No-staking Reserve; and development of provincial environmental protection standards specific to the placer mining industry.

1.0 Introduction

Placer mining is the process of recovering unconsolidated mineral ores (most commonly fine gold) found in sand, gravel, and loose earth. In contrast to hard rock mining, which requires fracturing of bedrock to recover embedded ores, placer mining occurs in areas of alluvial deposits where water has historically eroded, deposited and reshaped minerals in loose or unconsolidated deposits. Hence by its very nature, placer mining is associated with historic or modern streams and rivers which have carried these precious minerals in their bedload.

Placer mining activity in the Cariboo region of BC has a history dating back to the Cariboo gold rush of the 1860's. For those with little capital to invest, placer mining (which includes prospecting, panning and surface sluicing of sandbars or surface gravels) has long been a relatively low cost mining technology. In areas where deeper subsurface placer deposits are uncovered, larger scale placer mine operations can be undertaken. Historically, larger placer operations often utilized hydraulic mining technologies (using high pressure water) to separate unconsolidated materials and remove precious material (Newell, 2011).

In the Cariboo region, small and large scale placer mining has continued since the time of the gold rush, with the amount of resources dedicated to the industry generally proportional to the relative price of gold at any given time. The nature of the typical Cariboo placer operation has been influenced by increased utilization of mechanized equipment (backhoes, excavators etc) which allows even the smallest one man placer operations to uncover increasingly larger areas and process considerable volumes of material in a season. Changes in policy and regulations have also impacted placer operations over time, as the laws regulating work in and around water courses and fish habitat have become more stringent. For instance dredging and sniping (section dredging) of river and stream beds, a common practice in placer mining not so long ago, is now considered an unacceptable practice in fish bearing waters.

Placer mining activity is not evenly distributed throughout the province but is concentrated in a relatively small number of areas of BC. The level of placer activity in the Cariboo region east of Quesnel is unprecedented in any other region of the province (see Appendix 1. Map 1). This concentration of placer mine activity is focused along rivers and creeks which also provide some of our highest value salmon and trout fisheries, including the Quesnel River, Cariboo river, Cottonwood River, Little Swift River, Lightning Creek, Willow River, Antler creek, Bowron River and others (Appendix 1. Map 2). This concentration of placer activity also happens to be strongly correlated with areas which have been identified as Critical Fish Habitat through the Cariboo Chilcotin Land Use Planning (CCLUP) implementation process and are now designated as such under a Land Act Order which protects the riparian areas from forest harvesting(see Appendix 1. Map 3).

In addition to being highly sensitive watersheds for both resident and anadromous fish species, the Quesnel and Cottonwood watershed units have the highest hydrology hazard scores in the Cariboo Region, rated as part of Fisheries Sensitive Watershed assessments currently underway (Youds, personal communication, May 4, 2011). The CCLUP set a target to "manage the Cariboo (and Horsefly) and Cottonwood River Watersheds for hydrologic stability through watershed assessment, restoration work

and monitoring programs” (Government of British Columbia, 1995). The Horsefly, Bowron, Quesnel, Cottonwood and Cariboo Rivers were all targeted in the CCLUP to be managed for salmon stocks through riparian area protection and controls on the rate of harvest.

Numerous riparian, fish habitat and hydrologic assessments have been carried out for these watersheds and placer mining is commonly identified as having an extensive and significant impact on the stream systems. In *An Inventory of the Watershed Conditions Affecting Risks to Fish Habitat in the Cottonwood, Cariboo and Horsefly Watersheds* (Chapman Geoscience Ltd. & Dobson Engineering Ltd., 1997, p. iv, x) a key finding common among these three watersheds was that,

“Where placer mining had occurred, stream channels have been disturbed resulting in increased sediment supply that overwhelmed the potential effects from other land use activities. Channel re-stabilization was observed and the supply of coarse sediment was reduced at locations where mining had been abandoned.”

It was also noted that “Channel disturbances from placer mining activity are common in many tributary channels of the Cariboo River system...If fish habitat is to be improved in these systems many stream channels will require rehabilitation. Unless there is a change in the way that placer mining is undertaken, any channel rehabilitation will be unsuccessful.”

2.0 Background

Over the past five years, as the market value of gold has soared, there has been a dramatic increase in the number of placer Notice's of Work being referred to Ministry of Environment (MoE)¹ in the Cariboo region. In the past, MoE Ecosystems staff reviewed and commented on individual placer Notice's of Work (NoW's), providing written recommendations to Ministry of Energy Mines and Petroleum Resources within 30 days.

With desktop mapping available for identifying habitat values and land use planning information, as well as orthophotomosaic imagery (such as on Google Earth) it has become increasingly possible to carry out a relatively thorough office review of NoW's without actually field visiting the sites. Field visits to placer operations have generally been undertaken in an ad hoc manner and for a variety of reasons including: to verify habitat values or potential impacts identified in the office review; in response to questions raised by placer miners or MEMPR; in response to external complaints; incidentally in the course of field visits related to other duties; or in the course of investigations.

With the increased number of placer referrals being received by Ecosystems staff in the Cariboo region it became apparent in 2010 that Ecosystems staff lacked the capacity to continue with individual reviews.

¹ Prior to autumn 2010, Ecosystems staff were part of Ministry of Environment and Mines Inspectors were with the Ministry of Energy, Mines and Petroleum Resources; now all staff are part of the Ministry of Forests, Lands and Natural Resource Operations

In deliberating on how best to assess and address the level of environmental risks associated with placer operations the following issues were taken into account:

1. Although considerable time was being taken by Ecosystems staff in review and comment on placer NoW's we were uncertain whether our recommendations were being passed on to proponents or incorporated into permit conditions. Furthermore we had little indication of whether our review was actually influencing operations, reducing environmental impacts or improving the protection of identified habitat values.
2. Individual review of placer NoW's generally resulted in commonly identified habitat values and a number of commonly made recommendations related to environmental risks and deficiencies with the NoW's.
3. There were no government endorsed best management practices specific to placer operations and legislation in British Columbia. The *Handbook for Mineral Exploration* (Energy and Mines, 2009), though an excellent resource on mineral exploration best practices, is a very detailed and extensive reference document, but not tailored for, or entirely applicable to placer mining.
4. Placer operations are specifically exempted from *exploration activities* as defined in Part 9 of the *Health, Safety and Reclamation Code*. Hence, this section of the Code which provides the mine regulations for many of the important environmental aspects of mining activities including, riparian setbacks, soil conservation, terrain stability, water management, and reclamation does not apply to placer mining.
5. A Memorandum of Understanding (MoU) was established in 1997 between the provincial ministries responsible for mining, forests and environment with respect to placer mining activities in riparian ecosystems intended to "form an interim agreement for management of placer activities, until replaced by a placer mining regulation under the *Mines Act*" (Employment and Investment, 1997). As yet a placer mining regulation has not replaced this MoU and it remains the only endorsed source of guidance for regulating placer operations in riparian areas. The MoU establishes for placer operations a 10m setback from the highwater mark of rivers, streams, lakes or wetlands. A clause in the MoU allows for a modification of the 10 metre setback if jointly agreed to for site-specific areas with aquatic protection concerns. Although this clause exists, there are several examples in the Cariboo Region where a larger reserve was requested but declined.
6. Although placer mining often requires authorization for harvesting timber from areas to be mined, the rules which apply to other holders of forest tenures including commitments to uphold land use plan objectives are not applied for placer mining activities. Consequently areas designated under FRPA or Land Act orders as ungulate winter ranges, riparian management zones, wildlife habitat areas, old growth management areas, and critical fish habitat are often not managed accordingly for placer mining.

7. A placer mine No Staking Reserve established over the Horsefly River Watershed in 1988 was up for review and consideration was being given to removing the reserve. The reserve was originally established recognizing the temperature and hydrologic sensitivity of the watershed which provides one of the most significant salmonid fisheries in the province.

In the spring of 2010, MoE made a decision to cease individual review of placer NoW's. To support this initiative we collated all of the mapped habitat values that we typically considered in review of placer NoW's and compiled a compendium of our comments. We used these to formulate a guidance letter addressed to MEMPR, outlining our recommendations for protection of habitat values related to mapped attributes, with an explanation that we would no longer be individually responding on placer NoW referrals (Appendix 2. Letter to MEMPR). We also outlined our intention to reallocate available staffing resources to field inspection of placer operations. This report summarizes the placer mine monitoring audit that we undertook during the summer of 2010.

3.0 Methods

Inspections of a sample of placer mines were undertaken by Cariboo region MoE staff, Michelle Arcand and Joanne McLeod, from July 7 to September 9, 2010. We were accompanied on inspections at different times by Conservation Officer Service staff, the Ecosystems Section Head, Williams Lake Indian Band staff, and DFO officers and habitat staff. Selection of the sample was non-random. Placer tenures associated with high fish and wildlife habitat values or which appeared to have large areas of surface disturbance were prioritized for site inspections. In order to maximize the number of sites and watersheds visited, effort was made to cluster site inspections along a particular road network during any given field day, and also to visit sites from a variety of geographic locations over the course of the season. Hence not all placer sites visited were rated as highest priority and it was beyond the scope of our resources to inspect every site that we prioritized as a high potential for impacts.

Advance notice of inspections was not given to tenure holders, but when we arrived at mine sites we always made any personnel on site aware of our presence and intentions. At each inspection, we made an effort to view the entire area of the claim where works were identified in the NoW, as well as any other areas of apparent disturbance. We compared what we observed on site to what was reported in the referred NoW.

During inspections we measured the distance of works (disturbance) from watercourses; we looked for potential discharge or diversion of watercourses; we identified potential impacts to fish and wildlife habitat; and we looked for evidence of reclamation and soil conservation. We did not attempt to assess timber volumes removed, or look at health and safety compliance, as these issues were outside the scope of this audit. Inspection results for each site were recorded on an individual field form developed for the audit (Appendix 3).

4.0 Results

Throughout the 2010 calendar year Ministry of Environment received one hundred and thirty-five NoW referrals for placer operations within the Cariboo region. During our audit we inspected twenty-six

placer mine sites. There were no works initiated at three of the inspected sites. Results of the audit for all of the placer sites are summarized in Table 1.

- Seventeen (74%) of the placer operations inspected were not in compliance with their NoW; meaning that some aspect of the reporting on their NoW was inaccurate.
- Of the six operations that were considered to be in compliance with their NoW's, one lacked a fish screen on their pump, so was out of compliance with DFO's fish screening directive.
- Two of the operating placer mines were working without an approved NoW permit from MEMPR.



4.1 Riparian, stream and fish habitat related results

Placer tenures were inspected in the following watersheds: Willow River, Ketcham Creek, Big Valley Creek, Summit Creek, Antler Creek, Swift River, Cottonwood River, Lightning Creek, Cariboo River, and Quesnel River (upstream of Quesnelle Forks). All of these watersheds provide habitat for both anadromous salmon and resident fish populations.

- Thirteen inspected placer operations had works within the 10m placer riparian setback reserve.
- At ten sites instream works had occurred. Unauthorized instream works included: excavated stream beds; diversion of natural streams into constructed channels to settling ponds; roads constructed through seasonal streams and floodplains; filling in stream channels and recontouring sites hence eradicating the natural channel and dispersing stream flow; excavating and /or dumping material in wetlands and beaver ponds.
- At eight placer sites there was discharge of wastewater from mine operations into a watercourse.
- In two cases fish were observed in mine settling ponds.
- Ten of the audited placer tenures were in areas identified as Critical Fish Habitat under the CCLUP and Land Act Order; one of these tenures was not active. Six sites inspected with identified Critical Fish Habitat had works occurring less than 30m from the high water mark. And

at four of these sites with Critical Fish Habitat, operators were working less than 10m from the associated stream. In one of these cases the mine permit specifically required a minimum riparian setback of 30m.



4.2 Reclamation, disturbance areas and Old Growth Management Areas

- Only one of the placer tenures (4%) had adequate reclamation consistent with that reported in the NoW.
- Thirteen of the placer sites (57%) had little or no reclamation observed, and the extent of disturbance was notably more extensive than indicated on the NoW.
- It was commonly stated on the placer NoW's that reclamation would be concurrent with mining or would be conducted at the end of the season, however this was not observed to be occurring.
- Ten placer tenures (43%) had disturbance areas ranging from 2.5 hectares to over 28 hectares; while 13 tenures had disturbance areas of approximately 1ha or less.
- Soil conservation for reclamation was only recorded at three of the sites visited, though this parameter was not consistently recorded on the field form.
- Eleven of the 26 tenures (42%) overlapped with areas designated as Old Growth Management Areas (OGMA's). One of these tenures was not active. In five of the active tenures with OGMA's the disturbance recorded was quite small (<1 ha each) or outside the OGMA, but the other four had disturbed areas ranging from 3ha to 28 ha.
- The invasive plant species knapweed was identified in disturbed areas at one of the tenures.

4.3 Wildlife Habitat Areas and Ungulate Winter Ranges

- Three of the 26 tenures (12%) were identified as overlapping with Wildlife Habitat Areas (WHA's) or Ungulate Winter Ranges (UWR's).

- Two tenures overlapped with designated Mule Deer Winter Ranges (MDWR). One of these tenures did not have placer works within the winter range; in the one tenure with works within the MDWR the reclamation of placer mining disturbance was inadequate.
- Two tenures overlapped with no-harvest WHA's designated for mountain caribou. Only one tenure overlapping with a caribou WHA was active, and there was no activity in that area of the claim.

4.4 Non-compliance results

- We forwarded by email the results of inspections and issues of non-compliance to MEMPR for fourteen of the placer sites.
- We received responses and were notified of follow-up action by MEMPR in regard to five of these inspections.
- MEMPR follow-up actions included stop work orders, letters of reprimand, reclamation orders, and orders to undertake other site specific remediation action including removal of fish from settling ponds and engineering reports for settling pond stability. To our knowledge these actions were taken based on our reported inspections results, not on inspections undertaken by the mines inspectors.



Table 1: Summary of individual placer inspection results, sampled during the summer 2010 in the Quesnel and Cottonwood River watersheds

Inspection #	Likely/2010-1	Likely/2010-2	Likely/2010-3	Likely/2010-4	Likely/2010-5	Likely/2010-6	Likely/2010-7	Quesnel/2010-1	Quesnel/2010-2	Quesnel/2010-3	Quesnel/2010-4	Quesnel/2010-5	Quesnel/2010-6	Quesnel/2010-7	Quesnel/2010-8	Quesnel/2010-9	Quesnel/2010-10	Quesnel/2010-11	Quesnel/2010-13	Quesnel/2010-14	Quesnel/2010-15	Quesnel/2010-16	Quesnel/2010-17	Quesnel/2010-18	Quesnel/2010-19	Quesnel/2010-20	% non-compliance
NoW compliance	N	Y	N	N	NA	N	N	N	N	N	N	N	N	Y	Y	N	NA	N	N	Y	NA	N	N	Y	N	Y	74
Disturbance > indicated on NoW	Y	N	Y	N	NA	Y	N	Y	Y	Y	Y	Y	N	N	N	Y	NA	Y	Y	N	NA	Y	Y	N	Y	N	61
Works within 10 m. riparian reserve	N	N	Y	Y	NA	Y	Y	Y	Y	N	Y	Y	N	N	Y	NA	Y	N	N	NA	Y	Y	N	N	N	N	57
- authorized?	na	na	N	N	na	N	N	N	N	na	N	N	N	na	na	N	na	N	na	na	na	N	N	na	na	na	100
Critical fish habitat	Y	Y	N	Y	Y	N	Y	N	N	Y	N	N	N	Y	Y	N	N	Y	N	N	N	Y	N	N	N	N	na
Works < 30m of CFH	N	N	na	Y	NA	na	Y	na	na	Y	na	na	na	Y	N	NA	NA	Y	na	na	NA	Y	na	na	na	na	60
Discharge to watercourse	N	N	Y	N	NA	Y	N	Y	Y	N	Y	N	Y	N	N	Y	NA	N	Y	N	NA	N	N	N	Y ¹	N	35
Unauthorized in-stream works	N	N	N	N	NA	Y	Y	Y	Y	N	Y	Y	Y	N	N	Y	NA	Y	N	N	NA	Y	N	N	N	N	43
Fish screen	Y	Y	NR	Y	na	NR	N	NR	NR	N	NR	N	N	N	NR	NR	na	na	na	na	na	na	N	na	NR	na	67
Reclamation as indicated on NoW	N	X	N	N	N	N	N	X	NR	X	N	N	X	Y	na	N	na	N	Y ²	na	na	N	N	na	N	X	61
WHA or UWR	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	Y	Y	N	N	N	N	N	N	N	N	na
OGMA	N	Y	N	Y	N	N	Y	N	N	N	N	N	N	Y	N	N	Y	Y	Y	Y	N	Y	Y	Y	N	N	na
Disturbance area	~1ha	small	11ha	8h	small	17ha	3ha	<1ha	~1ha	~1ha	small	small	1.4ha	<1h	<1ha	>1ha	None	4ha	15ha	28.5ha	None	>1ha	small	<1ha	~6ha	2.5ha	na

¹ - historic ponds connect

² - insufficient

NA - not active

na - not applicable

NR - not required

X - reclamation to be complete at end of season

5.0 Discussion

In a large proportion of the inspected placer sites the submitted NoW's did not accurately reflect the works that were undertaken on the ground. Seventy-four percent of the audited active tenures were not in compliance with their submitted NoW. These results suggest disregard or indifference among the audited placer operators with regard to NoW reporting requirements. These results indicate that individual office review and comment by MoE staff was not an effective means of assessing potential impacts from these operations.

Based on the results of this audit the highest risk of environmental impacts associated with placer operations in the Cariboo is to aquatic, fish, and riparian habitats. This is not entirely surprising given the inherent association between placer deposits and watercourses. To fully appreciate the gravity of these threats, the values provided by healthy riparian areas and areas designated as Critical Fish Habitat need to be recognized.

Riparian zones are a complex, dynamic interface between aquatic and terrestrial environments involved in the transfer of water, sediment, nutrients, organic matter, and heat both vertically and horizontally over different time scales. Riparian zones are particularly sensitive to disturbance and they support many highly valued resources. Healthy riparian areas have high species richness; provide wildlife habitat and travel corridors, as well as supporting aquatic ecosystems through several functions. Riparian vegetation contributes to bank stability, influences factors that contribute to microclimate such as air temperature, solar radiation and wind speed. It maintains water quality by intercepting sediment and nutrients, regulates water temperatures, and contributes organic matter that provides the primary form of energy for stream food webs (Pike et al, 2010).

Critical Fish Habitat areas are designated areas of exceptional habitat determined by regional fisheries experts to have particular value for spawning or rearing of anadromous salmon, kokanee, bull trout and rainbow trout (Hoffos, personal communication, April 22, 2011). These areas have been identified as requiring additional riparian protection for maintenance of water quality, base flows, channel morphology, stream temperature and organic inputs. Areas designated as Critical Fish Habitat include specific watercourses adjacent to main channels within floodplains, as well as backchannels, oxbows, wetlands, and ground water sources connected to the main watercourse, which provide exceptional habitat for juvenile salmonids (Integrated Land Management Bureau, 2007)).

The audit results show a low rate of compliance (43%) with the 10m placer riparian setback reserve. At more than half of the placer operations inspected (57%) works had been conducted within 10m of the high water mark of a stream. These works included: removal of riparian vegetation; blading of trails; deposit of excavated materials; and road and camp construction. On some tenures these infringements into the riparian reserve area extended along several hundred meters of stream bank, significantly and permanently altering the structure and function of the riparian corridor within the mine area. It

generally appeared that the 10m setback boundary was recognized by operators but that they were often tempted to push the limits. Rather than the 10m reserve being considered by operators as a minimum setback it appears to be used as a target to aim for (and not always meet).

The high incidence of unauthorized in-stream works on ten of the twenty-three active placer tenures (43%) is also of high concern, particularly given that every one of these tenure holders specifically checked off **NO** in Section 9 of their NOW application where it asks *Are you proposing changes in or about a stream (bridges, culverts, pipelines, dams, stream diversions, etc)?* Although it was apparent in some cases that instream and riparian works have occurred historically at these sites, this does not justify or lessen the impacts of undertaking such works under current conditions and regulations.

The discharge of wastewater from 35% of the active placer operations is also cause for concern particularly given that in Section 10 of the NoW it specifically asks: *Is your operation planned for zero discharge*, and all of these tenure holders checked off **YES**. Furthermore, the NoW explicitly defines that *zero discharge means no water is released back into a stream either through a pipe, an overflow, by pumping, or by visible seepage through an impoundment*.

These results are of even higher concern considering that 43% of the active tenures inspected in the audit occupied areas designated as Critical Fish Habitat. Although many of the areas occupied by placer tenures may have been mined in the past, the recurring disturbance to riparian areas and watercourses precludes the natural recovery of historically impacted streams, and diminishes their potential to provide fish and wildlife habitat components and ecosystem services.

At two operations fish were observed in settling ponds and at two more placer sites settling ponds were connected with fish bearing streams making it highly likely that fish would be present in these as well. Instances of fish inhabiting placer mine ponds are not particularly unusual, as fish have been noted in placer ponds at several other operations within the region in recent years. The presence of fish in settling ponds indicates a lack of understanding among placer operators in regard to fish habitat and fish passage. There appears to be a lack of understanding or acceptance within the placer mining community that areas of seasonal inundation provide important fish habitat.

Inadequate reclamation and unreported disturbance areas on placer mine tenures were also key findings of the audit. It was not possible to thoroughly assess reclamation of the current years work on tenures where the NoW indicated it was to occur at the end of the season. However the recurrent trend was that previously disturbed areas including trenches, test pits, access trails, roads, and settling ponds were not adequately reclaimed. Large (sometimes massive) unreclaimed piles of coarse rock and gravel were common at the larger placer operations. We also found that there was often ongoing or new disturbance in areas recorded on NoW's as previously reclaimed. Similarly it was common for exploration work, sampling, and trail clearing to occur in areas where it was not reported on the NoW. Often these unreported works were undertaken in areas of high environmental sensitivity such as riparian areas, ephemeral stream beds, wetlands, or along steep slopes.

A lack of topsoil conservation was noted at several placer sites, though this was not specifically assessed during all inspections. Without organic matter and nutrients from conserved soil, reclamation of

denuded and excavated tracts of land will be ineffective and revegetation will take decades longer. The cumulative impacts of large disturbance areas associated with unreclaimed placer operations and a lack of topsoil conservation, present a long term loss of wildlife habitat and potential chronic sediment sources. This is of particular concern in areas where specific habitat values have been identified such as in UWR's, WHA's, and critical fish habitat.

A placer inspection in the Likely area was conducted by Fisheries and Oceans Canada and Ministry of Environment in 2001 with results reported by Fisheries and Oceans Canada to MEMPR and MoE (see Appendix 4). Similar issues raised in that inspection were also identified in the 2010 audit; including unauthorized in-stream works, works within fish habitat, discharge to water courses, large disturbance areas, and encroachment into the 10 metre riparian reserve. The 2001 inspection also noted many claims lacked any or effective reclamation. In comparing the results of our 2010 audit inspections with the Fisheries and Oceans Canada 2001 inspection and 1995 file information we noted a recurrence of the same compliance issues at the same placer sites and among the same operators.

- At one site removal of riparian vegetation and encroachment within the 10 m. riparian reserve continued to occur under the same operator in 1995, 2001 and 2010 (Fisheries and Oceans Canada, 1995a)
- A separate proponent had been warned by Fisheries and Oceans Canada about working within the 10 m riparian reserve in 1995 (Fisheries and Oceans, 1995b) and yet was found to be operating equipment within 5 metres of the Cariboo River in 2010 and created a skid trail within 10 metres of the river for a distance of 75 metres.
- At this same site, Fisheries and Oceans Canada had requested a 50 metre setback in 2001 (Pow, e-mail communication, January 31, 2002), and Ministry of Environment had requested a 50 metre setback in 2010 (Ludwig, e-mail communication, March 23, 2010), and both requests were turned down by MEMPR.
- At another site, the proponent was warned about removing riparian vegetation and operating within the 10 metre riparian reserve in 2001, yet had excavated a wetland in 2010.
- On another site fish had gained access to a settling pond in 2001 and again in 2010 (Fisheries and Oceans Canada, 2001).

6.0 Conclusions and Recommendations

Placer mining is often considered a low priority, low risk industry due to what has been cited as a very small environmental footprint associated with these "Ma and Pop" operations. Within the Cariboo region, this is not an accurate assessment of the placer mining industry. The results of this audit provide evidence that placer mining in the Cariboo region is often undertaken in high value riparian areas and that environmental risks are considerable. The potential cumulative effects on aquatic resources are particularly concerning, especially where placer mines interface with large, salmon bearing waters such as the Cariboo, Quesnel and Swift Rivers. Furthermore, the size and types of disturbance associated with placer mining are greater than perceived or reported.

The practices of placer miners observed during this audit indicate that there is significant potential for cumulative impacts to watercourses, and riparian habitat associated with placer mining in the Cariboo region. This is particularly concerning given the extensiveness of placer mining along major salmonid producing streams in this region of the province. Potential impacts include: increased sedimentation; altered water quality; reduced contributory flows; increased water temperatures; as well as reductions in riparian vegetation providing shade, litter, invertebrate habitat and long term large woody debris contributions. Fish and aquatic habitat alterations resulting from unauthorized instream works are also of concern given the high number of these occurrences uncovered in this audit.

Currently there is very little environmental regulation for placer operations outside of specific permit conditions which are at the discretion of the permitting agency, and which are only enforceable by Mines Inspectors. Government officials not designated as Mines Inspectors do not have the authority to enter placer tenures without permission of the mine manager. The results of this audit (and the previous Fisheries and Oceans Canada inspection from 2001) indicate that placer mine compliance with NoWs is very poor and that environmental impacts are ongoing.

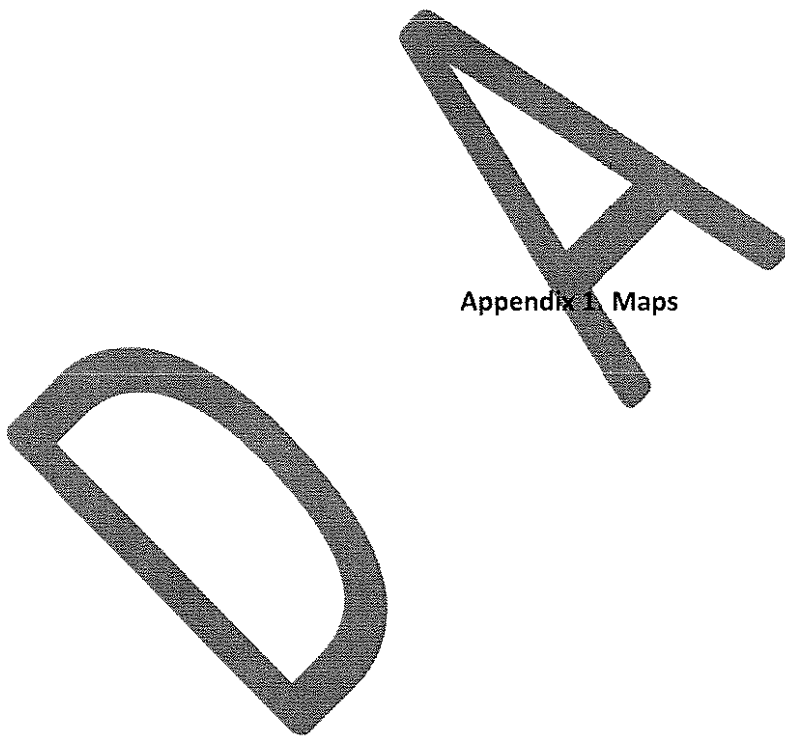
There must be a coordinated and cooperative approach among resource agencies to address the impacts of placer mining within the Cariboo region. The first step will be a common recognition among resource agencies that current placer mining practices have the potential to seriously impact high value habitats and important resources, and it is therefore in the public interest to improve industry practices. Provincial regulation of placer mining needs to be brought up to standards that are comparable for other permitted resource users on the land base, and are consistent with all provincial and federal legislation.

To address the current and potential impacts of placer mining it is recommended that the following measures be implemented:

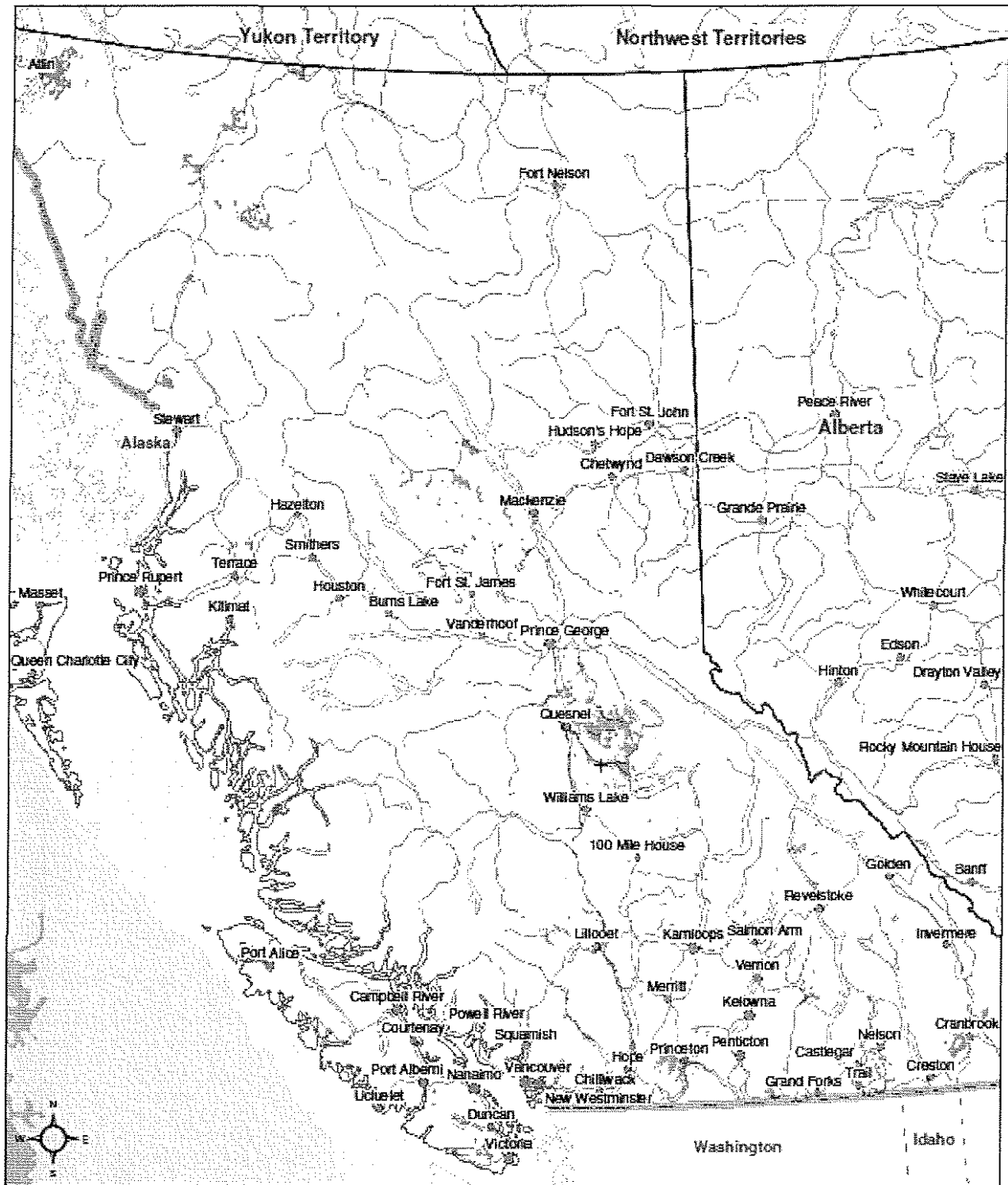
1. Develop a coordinated interagency compliance and enforcement plan for monitoring placer tenures in regard to fish and riparian resources, wildlife habitat restoration, Water Act compliance, reclamation, soil conservation and invasive weed control.
2. Establish authorities to enable enforcement of placer mining standards by other agencies including the Conservation Officer Service and FLNR Compliance and Enforcement staff.
3. Ensure the standards previously provided regionally by Ministry of Environment to Mines staff in the May 26, 2010 letter (Appendix 2.) are incorporated into placer mining permit conditions.
4. Develop simple BMPs and guidance regionally for distribution and outreach to placer miners by Mines Inspectors and compliance and enforcement staff.
5. Apply for renewal of the placer No-Staking Reserve within the Horsefly River Watershed for a minimum of ten years.
6. Recommend the development of provincial standards and guidelines for the placer mining industry, in conjunction with Fisheries and Oceans Canada.


6.0 References

- Chapman Geoscience Ltd., Dobson Engineering Ltd. (1997) An Inventory of Watershed Conditions Affecting Risks to Fish Habitat in the Cottonwood, Cariboo and Horsefly Watersheds. Prepared for Cariboo Region Interagency Committee by Chapman Geoscience Ltd. And Dobson Engineering Ltd, November 1997. URL: <https://a100.gov.bc.ca/pub/acat/public/viewReport.do?reportId=8420>
- Ministry of Employment and Investment (1997) Memorandum of Understanding between the Ministry of Employment and Investment, the Ministry of Forests and the Ministry of Environment, Lands and Parks respecting Placer Mining Activities in Riparian Ecosystems on Crown granted claims and tenures administered by the Ministry of Employment and Investment. July 21, 1997.
- Ministry of Energy and Mines (2009) Handbook for Mineral and Coal Exploration in British Columbia: A Working Field Guide. 2008/2009 Edition. URL: <http://www.offshore-oil-and-gas.gov.bc.ca/Mining/Exploration/Pages/Handbook.aspx>
- Fisheries and Oceans Canada (1995a) Inspection report from, October, 1995; letter November 10, 1995. File # 8450-6-5/Placer Mine, Keithley Creek.
- Fisheries and Oceans Canada (1995b) File notes, reference 264926. File # 8450-6-10, Placer Mine, Cariboo River.
- Fisheries and Oceans Canada (2001) Placer Mining Inspection Report, May 15, 2001. File 366386 Joseph Naychuk
- Government of British Columbia (1995) The Cariboo-Chilcotin Land-Use Plan: 90-Day Implementation Process Final Report. February 15, 1995.
- Integrated Land Management Bureau (2007) Cariboo Chilcotin Land Use Plan: Quesnel Sustainable Resource Management Plan. Retrieved April 28, 2011. URL: <http://www.ilmb.gov.bc.ca/slrp/srmp/north/quesnel/index.html>
- Newell (2011) The Canadian Encyclopedia: Gold Rushes & Cariboo Gold Rush. Retrieved April 14, 2011. URL: <http://www.thecanadianencyclopedia.com/index.cfm?PgNm=TCE&Params=A1ARTA0003299>
- Pike, R.G., T.E. Redding, R.D. Moore, R.D. Winker and K.D. Bladon, editors (2010) Compendium of forest hydrology and geomorphology in British Columbia. B.C. Ministry of Forests and Range, Forest Science Program, Victoria, B.C. and FORREX Forum for Research and Extension in Natural Resources, Kamloops, B.C. Land Manager. Handbook. 66. URL: <http://www.for.gov.bc.ca/hfd/pubs/Docs/Lmh/Lmh66.htm>



Map 1 - Provincial Distribution of Placer Tenures

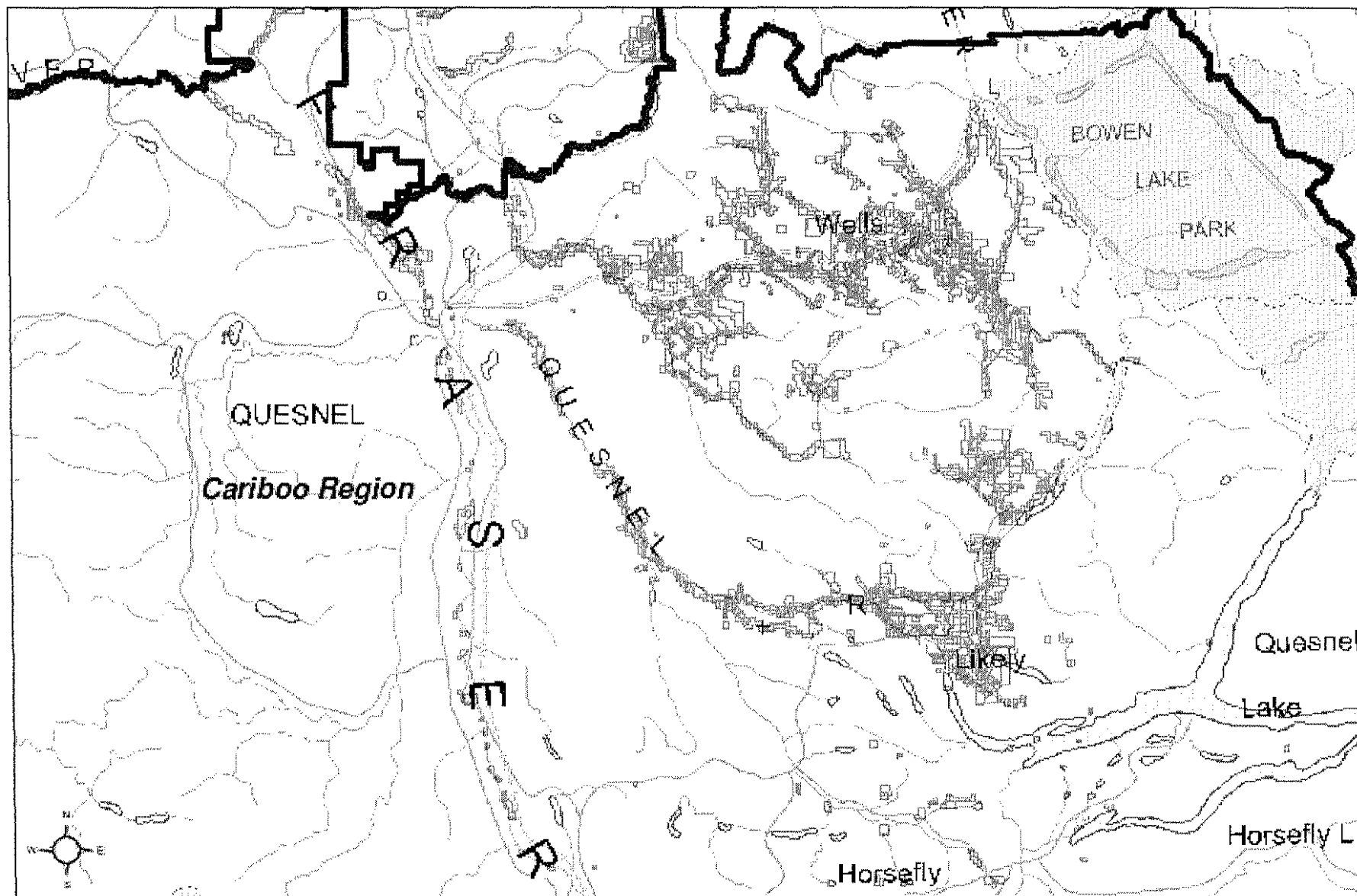


 Placer Tenures

1:5,839,055
 0 47,500 95,000 190,000 285,000 380,000
 Meters

Map prepared by:
 Joanne McLeod, Habitat Biologist
 FLNR, Habitat Management
 April 28, 2011

Map 2 - Placer Tenures within the Cariboo Region



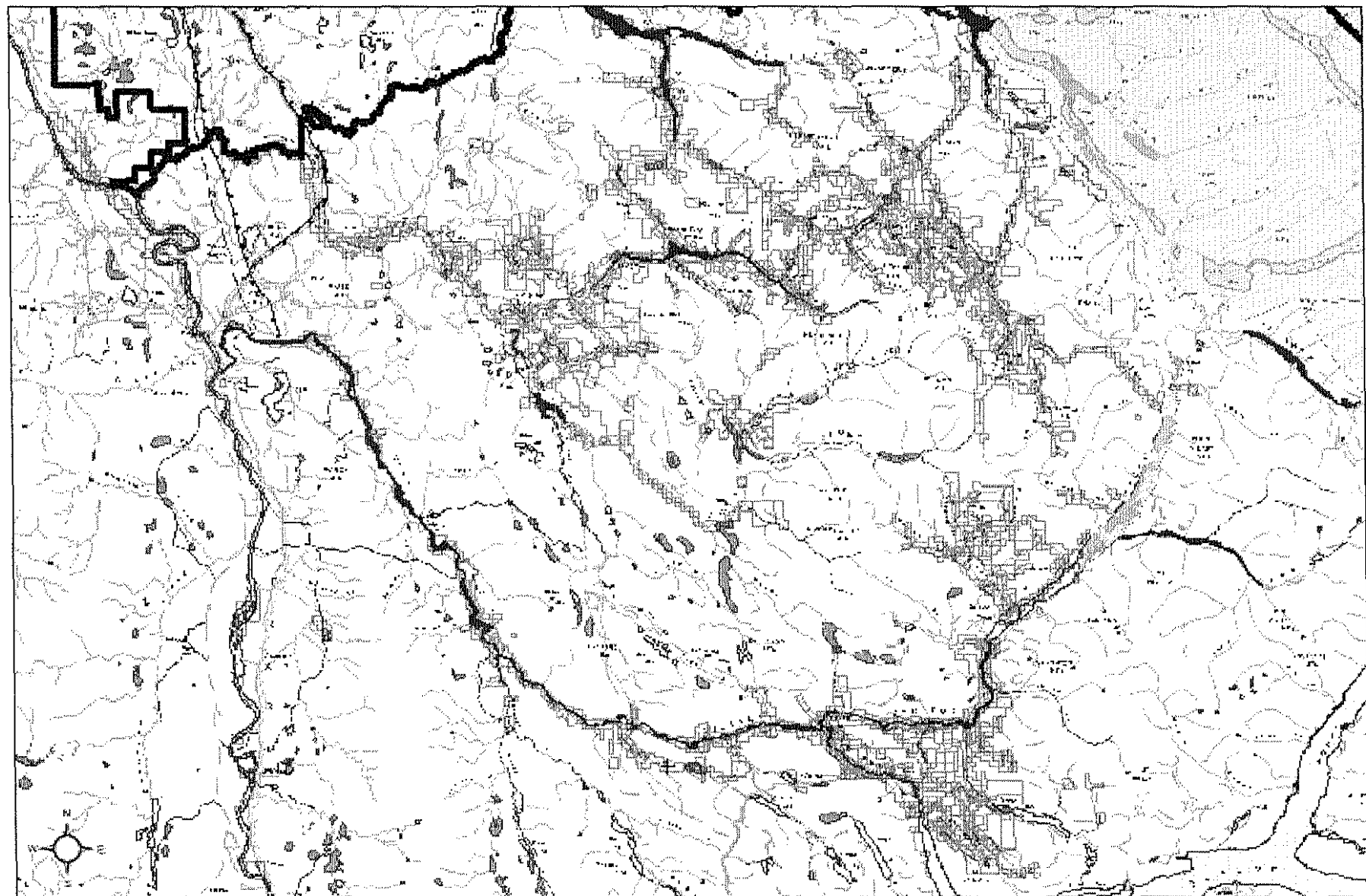
- Placer Tenures
- Ministry of FLNR Cariboo Region

1:673,390

0 6,500 13,000 26,000 39,000 52,000
Meters

Map prepared by:
Joanne McLeod, Habitat Biologist
FLNR, Habitat Management
April 28, 2011

Map 3 - Placer Tenures within the Cariboo Region overlapping with Critical Fish Habitat



-  Placer Tenures
-  Critical Habitat for Fish

1:476,752

0 4,450 8,900 17,800 26,700 35,600
Meters

Map prepared by:
Joanne McLeod, Habitat Biologist
FLNR, Habitat Management
April 28, 2011

Appendix 2. Letter to MEMPR

May 26, 2010

Regional Director
Ministry of Energy, Mines and Petroleum Resources
162 Oriole Road
Kamloops BC V2C 4N7

Dear Joe Seguin:

As a result of decreased staffing capacity within the Cariboo Region Ecosystems Section, in conjunction with the increase in placer mine referrals that are being received at our office, we will no longer be able to review and respond to all placer NOW referrals. We are expecting that MEMPR will continue to refer placer NOWs to our office for information purposes. It is our intention to allocate available resources this field season to monitoring and reporting out on placer activities within the region.

In order to reduce impacts to high value habitats that we consider to be at greatest risk from placer operations it is our expectation that the following minimum standards be followed:

Ungulate Winter Ranges and Wildlife Habitat Areas

Placer tenure operations located within Wildlife Habitat Areas (including Caribou WHAs) or Ungulate Winter Ranges should conduct activities consistent with the General Wildlife Measures designated by GAR Order under FRPA. Where activities are proposed in an UWR or WHA that are not consistent with the GWMs, placer tenure holders are required to apply for an exemption from the Ministry of Environment, and should provide such an exemption to Ministry of Mines prior to issuance of a work permit.

Riparian, Old Growth, and Fish Habitat Protection

All placer mine activities must comply with the *Federal Fisheries Act* and the *Water Act*. In stream works and works less than 10 m from the high water mark of any watercourse (including seasonal streams, wetlands, lakes and rivers) should not be permitted. For water bodies which

provide fish habitat, greater setback distances may be required in order to ensure compliance with the *Fisheries Act*.

Camps, road access, and settling ponds should be developed at least 30 m from the high water mark of watercourses, to minimize long-term disturbance and impacts within riparian areas.

Areas designated as Critical Fish Habitat under the Cariboo-Chilcotin Land Use Plan have been identified in consultation with Ministry of Environment and Fisheries and Oceans Canada, as requiring additional riparian setbacks to adequately protect valuable fish habitat. This should be reflected in the placer permit conditions for operations in these areas. At a minimum, 30 m setbacks from the high water mark should be required in these areas.

Timber harvesting should be avoided in areas identified in the CCLUP as Critical Fish Habitat or Old Growth Management Areas. These digitally mapped layers are available through the Land and Resource Data Warehouse.

Mining activities must not result in sediment delivery into fish bearing waters, or harmful alteration, destruction, or disruption to fish habitat. This includes sediment delivery resulting directly from mining activities, or indirectly such as from runoff erosion on disturbed areas or roads.

Settling ponds must not be allowed to connect or discharge into natural waterbodies at any time, as this may result in fish migration into settling ponds. Where there is any indication that settling ponds have been breached or that fish may be present in settling ponds, an assessment and fish salvage conducted by appropriately qualified environmental professionals should be required prior to allowing further works.

In the absence of complete fish inventory data, streams should be considered fish bearing unless proven otherwise by an accepted methodology conducted by appropriately qualified professionals.

Stream crossings utilized for access to placer operations must be constructed and maintained consistent with the *Federal Fisheries Act*, the *Water Act*, and *FRPA*. The Forest Practices Code *Fish Stream Crossing Guidebook*

(<http://www.for.gov.bc.ca/tasb/legsregs/fpc/FPCGUIDE/FishStreamCrossing/FSCGdBk.pdf>)

must be utilized for best management practices regarding construction of stream crossings.

Stream crossing structures must provide for fish passage during all flow conditions. In general, only open bottomed structures should be utilized for crossing fish streams. Where stream crossings are required, a Notification for Changes In or About a Stream application must be submitted to MOE (available at

http://www.env.gov.bc.ca/wsd/water_rights/licence_application/section9/index.html).

Given the vicinity of many placer tenures to fish bearing lakes and streams, bald eagle and osprey nests may be present. Bald eagle, osprey nests and any occupied bird nest are protected under the BC *Wildlife Act* and should not be removed or disrupted.

Site Disturbance and Reclamation

Site disturbance should be limited to the minimum area required to carry out placer activities and topsoil and organic matter should be stockpiled for reclamation. Reclamation activities should be carried out promptly and effectively utilizing conserved topsoil to establish site stability, minimize surface erosion, and prevent sediment delivery.

Reclamation activities should include recontouring of disturbed areas similar to pre-disturbance shapes with re-establishment of natural gullies and swales so that surface drainage patterns are re-established. Compacted surfaces should be ripped to allow normal water infiltration and growth of vegetation.

Once the disturbed sites have been regraded, soil materials salvaged prior to the construction of the site should be replaced. Applied soils should:

- be rough and loose with many microsites (small depressions) for seeds to lodge in and germinate;
- be keyed into the materials under the soils so that they do not slide or slump off;
- incorporate roots, stumps and other woody debris to reduce erosion and create greater biological diversity; and
- be revegetated promptly.

Revegetation should include grass seeding with a non-sod forming seed mix to establish a quick ground cover, and prevent erosion and weed invasion. In addition, native trees and shrubs should be planted to establish a suitable, self-sustaining vegetation cover such as existed prior to disturbance.

General

For general guidance and best management practices regarding mining activities we recommend that placer operators refer to the *Handbook for Mineral and Coal Exploration in British Columbia*.

http://www.em.gov.bc.ca/Subwebs/mining/Exploration/MX_Handbook_April_12_06%20ver.pdf

Yours truly,

John Youds, section head
Ecosystems Branch
Cariboo Region

Cc: Rodger Stewart, Regional Manager, Cariboo, Thompson, Okanagan
Bruce Hupman, Ministry of Energy, Mines and Petroleum, Kamloops Region
Byron Nutton, Fisheries and Oceans, Prince George

Appendix 3. Field Inspection Form

Inspection Date:
Inspected by:

Inspection #:

Placer Claim or lease #:
Road Location:
Tenure holder:

UTM: 10 U
Present at inspection: Yes No

Identified Values

Watercourses in vicinity:

Fish:

Designated Critical fish habitat?: Yes No

Wildlife Habitat Area: Yes No

Ungulate Winter Range: Yes No

OGMA: Yes No

Inspection Findings

NOW is accurate: Yes No

What is differing from NOW:

-
-

Area of disturbance:

Reclamation:

Timber harvesting: Yes No

Distance of works from watercourses:

Fish screens?:

Issues identified:

MEMPR notified:

Appendix 4. Fisheries and Oceans 2001 Inspection

Fisheries
and Oceans

Pêches
et Océans

Pacific Region

Habitat and Enhancement Branch
Fisheries and Oceans Canada
310A -North Broadway
Williams Lake, B.C V2G 2Y7



August 14, 2002

Mr. Ken MacDonald
Inspector of Mines
Ministry of Energy and Mines
Mines Branch
3990 22nd Ave
Prince George, B.C.
V2N 3A1

File No: 8450-6

Dear Mr. MacDonald:

Subject: Regulatory Action Update Request - Placer Mining Operations in the Cariboo Region

As a follow-up to the joint agency Placer Inspection which occurred in the spring and summer of 2001 Ministry of Energy and Mines provided our office with copies of *"Report of Inspector of Mines"* inspection forms. Each Mines Inspection Report requires that the site's owner respond in writing how they will address the issues of concern as identified by the Mines Inspector. Of

the 9 inspection reports received, the Department of Fisheries and Oceans Canada (DFO) has specific fish and fish habitat concerns (specifically Fisheries Act sections 35(1), harmful alteration, disruption, destruction and 36(3), deposit of a deleterious deposit) for the 5 inspected sites listed below. We request that a written follow-up report be provided which details how each concern related to the protection of fish and fish habitat was/is being adequately addressed.

Name of Mine Tenure #	Owner or Operator	Manager	Locality	Inspection Number/Date
	s.22		Quesnel River	#1 June 18, 01
339642 (BV#1)	Big Valley Resources Inc.	s.22	Cariboo River	NA June 20, 01
(restaked as S22)	s.22		Cariboo River	#8 June 20, 01
s.22	s.22		Morehead Creek	#4 June 18, 01
s.22	s.22		Luce Creek	#5 June 19, 01

In addition, DFO continues to have concerns (based on the 2001 field monitoring inspections) associated with impacts to fish and fish habitat on the additional sites listed below (some of which were previously identified to Ministry of Energy and Mines in the winter of 2000 via a DFO report titled *"Inventory 2000 of Placer Site Concerns In the Williams Lake DFO Area"*). Written comments with respect to how the Ministry of Energy and Mines will be addressing DFO concerns (specifically Sections 35(1) and 36(3) of the Fisheries Act) should be provided for the sites identified in the attached table (Appendix 1). Any updates you can make to the tenure number and owner/operator information would be appreciated.

We look forward to being involved in the continued evaluation of proposed works and future remedial action items as required. If you wish to discuss proposed mitigation options, or you have any other questions, please contact the undersigned at telephone # 250-305-4018.

Sincerely yours;

Guy Scharf
Fisheries Technologist
Fisheries and Oceans Canada, Williams Lake

Cc: Jim Michie, Conservation and Protection DFO Williams Lake
Don Lawrence, Fisheries Technologist DFO Williams Lake
Rob Dolighan, Ministry of Water, Land and Air Protection Williams Lake (via email)
Bill Klopp, Land & Water B.C. Inc Williams Lake (via email)
Andrew Anaka, Ministry of Water, Land and Air Protection Conservation Services
Williams Lake (via email)

Appendix 1:

Placer Mining Sites Requiring Remedial Action to Comply

With Habitat Protection Sections of the Federal Fisheries Act

Name of Mine, Tenure #, Owner/Operator	Watershed	Locality	UTM's	DFO Concerns (based on 2001 field inspections)
Several (Historic Hydraulic Activity)	Quesnel River	Bullion Pit, tributary to Quesnel River	10 592000E 5831500N	<ul style="list-style-type: none"> - Deposition of sediment into fish habitat from eroding upslope areas and ineffective drainage on access road - Instream settling ponds - Access road/mining activity within 10m riparian reserve zone - Evidence of historic hydraulic placer mining - Appears to be an in-active site at time of inspection
s.22	Quesnel River	Quesnel River, downstream of hatchery property south side	10 594000E 5831000N	<ul style="list-style-type: none"> - Removal of riparian vegetation - Access road within 10m riparian reserve zone - Construction of a cabin within 10 m of high water mark - Improper fuel containment
s.22 Site #11 for 2001 Joint Agency Inspection	Quesnel River	Quesnel River, downstream of hatchery property north side	10 594188E 5830969N	<ul style="list-style-type: none"> - Large disturbance next to Quesnel River - Mining related works with 10m riparian reserve - Appears to be an in-active site at time of inspection
s.22	Cariboo River	Immediately adjacent to Cariboo River	10 595736E 5835333N	<ul style="list-style-type: none"> - Workings in the Cariboo River flood plain - Improper fuel containment - Leaking settling ponds - Workings within the 10m riparian reserve

<p>s.22</p> <p>Possibly</p> <p>s.22 or Big Valley Resources</p> <p>(aka: Red Gate Site)</p> <p>(Historic Hydraulic Activity)</p>	Cariboo River	Immediately adjacent to Cariboo River	10 600636 5835004	<ul style="list-style-type: none"> - Deposition of sediment into fish habitat from upslope disturbances - Instream settling ponds - Poorly maintained settling ponds with extreme risk of failure into fish habitat - Access road/mining activity within 10m riparian reserve zone - Appears to be an in-active site at time of inspection - Works within 10m riparian reserve
	Cariboo River	Immediately adjacent to Cariboo River	10 602124E 5835616N	<ul style="list-style-type: none"> - Abandoned settling ponds (one is directly above Cariboo River), suspect high risk of failure into river - Stream has been diverted into breached abandoned settling pond causing erosion of materials into lower settling pond above the river increasing risk - Workings within the 10m riparian reserve - Appears to be an in-active site at time of inspection
	Cariboo River	Unnamed tributary to Cariboo River	10 599042E 5835366N	<ul style="list-style-type: none"> - Large settling ponds with flowing water and beaver activity, beaver/activity should be removed to ensure pond stability - Appears to be an in-active site at time of inspection
Site #9 for 2001 Joint				

Agency Tour					
s.22	Site #10 for 2001 Joint Agency Tour	Cariboo River	Unnamed tributary to Cariboo River	10 600054E 5835800N	<ul style="list-style-type: none">- Requires follow-up inspection to ensure identified concerns are identified below have been adequately addressed prior to works beginning again- Deposition of sediment into fish habitat from upslope disturbances- Instream settling ponds- Works within 10m riparian reserve
s.22		Cariboo River	Frank Creek, Tributary to Cariboo Lake	10 610500E 584600N	<ul style="list-style-type: none">- Possible deposition of sediment into fish habitat from upslope disturbances- Removal of riparian vegetation- Access road/mining activity within 10m riparian reserve zone- Required monitoring to ensure previously identified concerns are addressed
s.22		Cariboo River	Pine Creek, Tributary to Cariboo Lake	10 612341E 5851338N	<ul style="list-style-type: none">- Deposition of sediment into fish habitat from upslope disturbances- Removal of riparian vegetation- Mining activity within 10m riparian reserve zone- Evidence of historic hydraulic activity- Appears to be an in-active site at time of inspection
s.22		Cariboo River	Keithley Creek, Tributary to Cariboo Lake Kitchener Pit	10 606300E 5847000N	<ul style="list-style-type: none">- Deposition of sediment into fish habitat from upslope disturbances- Poorly maintained settling pond(s) with risk of failure into fish habitat- Removal of riparian vegetation- Access road/mining activity within 10m riparian reserve zone- In-active site at time of inspection- Works within 10m riparian reserve
s.22		Cariboo	Keithley	10	<ul style="list-style-type: none">- Deposition of sediment into fish habitat from upslope disturbances

s.22 (Historic Hydraulic Activity)	River	Creek, Tributary to Cariboo Lake Onward Pit	605300E 5848300N	<ul style="list-style-type: none"> - Mined stream flowing through centre of site - Removal of riparian vegetation - Access road/mining activity within 10m riparian reserve zone - In-active site at time of inspection - Works within 10m riparian reserve
s.22 (Historic Hydraulic Activity)	Cariboo River	Keithley Creek, Four Mile Creek, Cariboo Lake	10 605375E 5848300N	<ul style="list-style-type: none"> - Deposition of sediment into fish habitat from upslope disturbances - Poorly maintained settling pond(s) with risk of failure into fish habitat - Removal of riparian vegetation - Instream settling ponds - Access road/mining activity within 10m riparian reserve zone - In-active site at time of inspection
s.22	Cariboo River	Keithley Creek, Weaver Creek, Cariboo Lake	10 604038E 5849859N	<ul style="list-style-type: none"> - Deposition of sediment into fish habitat from upslope disturbances - Poorly maintained settling pond(s) with risk of failure into fish habitat - Access road/mining activity within 10m riparian reserve zone - Removal of riparian vegetation - Instream settling ponds
262768 Noble Metals	Cariboo River	Keithley Creek, Weaver Creek, Cariboo Lake immediately upstream of 361177	Directly upstream s.22	<ul style="list-style-type: none"> - Possible deposition of sediment into fish habitat from upslope disturbances - Possible settling pond(s) with risk of failure into fish habitat - Removal of riparian vegetation - Possible Instream settling ponds - In-active site - Works within 10m riparian reserve
365488	Cariboo	Keithley	10	<ul style="list-style-type: none"> - Deposition of sediment into fish habitat from upslope disturbances

337015 337016 Noble Metals Main Site	River	Creek, Cariboo Lake	603094E 5851490N	<ul style="list-style-type: none"> - Settling pond overflow pipe below 0.5m freeboard - Removal of riparian vegetation - Access road/mining activity within 10m riparian reserve zone
s.22	Quesnel River	Upslope of Quesnel River	10 573400E 5835140N	<ul style="list-style-type: none"> - <0.5m freeboard on settling pond(s) - Very large upslope disturbance, monitor for associated impacts - Inspect river intake for compliance - Large and extensive equipment remaining on site - In-active site at time of inspection
s.22	Quesnel River	Upslope of Quesnel River Jack Pine Creek	10 580421E 5834583N	<ul style="list-style-type: none"> - Access road within 10m of Quesnel River - Settling pond collecting ground water that flows on surface - Improper fuel storage - Appears to be an in-active site at time of inspection
Lease #'s 1489 + 8272 (taken from a posted sign)	Quesnel River	Upslope of Quesnel River	10 586063E 5835070N	<ul style="list-style-type: none"> - Active slide in mined area eroding sediments into fish habitat - Access road contributing to slide area problems - In-active site at time of inspection
s.22	Cariboo River	Black Bear Creek	10 605207E 5832626N	<ul style="list-style-type: none"> - Possible deposition of sediment into fish habitat from upslope disturbances - Access road/mining activity within 10m riparian reserve zone - Fording of stream
s.22	Cariboo River	Cariboo River Mainstem	10 589338E 5835822N	<ul style="list-style-type: none"> - Unauthorized stream diversion works around active site - Historic settling pond in stream, barrier to fish passage - Improper fuel storage (tank on boat in Cariboo River)

Not Responsive

From: Hupman, C Bruce MEM:EX

Sent: Thursday, July 7, 2011 2:06 PM

To: Charles, Tom MEM:EX; Feldinger, Grant M MEM:EX; Rothman, Stephen MEM:EX; Cox, John MEM:EX

Cc: Seguin, Joe MEM:EX

Subject: Review of the MoE Audit

We are my course, un sensitive words. I did not dispute each photo or finding as each shot is only a small representation of site conditions.

Please feel free to add, but track your changes please or they will be lost.

I will likely add more but its a start.....

Pages 61 through 64 redacted for the following reasons:

Not Responsive - Outside the Date Range

Metcalf, Megan MEM:EX

Not Responsive

From: Hupman, C Bruce MEM:EX

Sent: Wednesday, July 6, 2011 11:27 AM

To: Feldinger, Grant M MEM:EX; Charles, Tom MEM:EX; Rothman, Stephen MEM:EX; Cox, John MEM:EX

Cc: Seguin, Joe MEM:EX

Subject: MoE placer report

Please review the attached and your comments before Friday this week if possible

Pages 66 through 101 redacted for the following reasons:

Not Responsive - Outside the Date Range

Metcalfe, Megan MEM:EX

Not Responsive

From: Hupman, C Bruce MEM:EX
Sent: Wednesday, June 22, 2011 1:00 PM
To: Seguin, Joe MEM:EX
Cc: Feldinger, Grant M MEM:EX
Subject: FW: Williams Lake Indian Band - possible meeting with MoEM mining inspectors.

From: Stewart, Rodger W FLNR:EX
Sent: Wednesday, June 22, 2011 12:58 PM
To: Hupman, C Bruce MEM:EX
Subject: Williams Lake Indian Band - possible meeting with MoEM mining inspectors.

Bruce, I left a message on Monday. This is what I hope to discuss with you. Below is a message I shared with staff and the Band upon learning of the proposed meeting.

We have an agreement with the Northern Secwepmec communities respecting communications, including ministry referrals. We meet quarterly and transact business on an on-going basis. Our quarterly meetings include a discussion of progress on key ministry initiatives, and a summary of the activities that business teams in the ministry will be carrying out over the next quarter. During the past 2 years the topic of placer mining has been discussed in our quarterly meetings. Early last year we shared information on our plans to carry out the inspections that lead to the draft report we have discussed. The Northern Secwepmec communities have always demonstrated a deep interest in mining, and particularly placer operations due to their typical close proximity to fish bearing waters. It was of no surprise to us that during the last meeting, the communities requested an update from staff on last summer's work.

Before the meeting, staff asked me about sharing the report. I responded that it was not ready for release. But I did feel it appropriate to authorise staff discussing the general results with the communities. John Youds used a table during our meeting to summarise the findings. The report has not been released, and will not be until we have completed our collective work.

Meanwhile, the Northern Secwepmec communities have been aware of our activities all along, and will sustain their pressure toward obtaining a copy of the report in reasonable time.

Rodger Stewart
Director, Resource Management
Ministry of Forests, Lands and Natural Resource Operations

Cariboo Region
400 - 640 Borland Street
Williams Lake, BC
V2G 4T1
cell (250) 305 8536, desk (250) 398 4549
fax (250) 398 4214

From: Stewart, Rodger W FLNR:EX
Sent: Friday, June 17, 2011 8:28 AM

The report on the inspection of placer operations is not yet complete. Our Regional Executive Director and myself have reviewed the document with the Ministry of Energy and Mines (MEM) which has started a process of detailed examination of the document. This work needs to be complete before the document can be released. Part of the reasons for the examination is to confirm interpretation of our findings relative to applicable standards, and most importantly to establish the specific means by which our ministry and MEM will direct the placer mining sector to deliver more appropriate outcomes respecting environmental stewardship.

It is important to respect that the table used to support the discussion at our quarterly meeting is still in draft form. While it may well be useful as a basis for discussion, I would not at this time attempt to get involved in dealing with any specific site-specific indications of non-compliance. It is appropriate at this time to open dialogue with MEM on the general theme that there is a high degree of apparent non-compliance, and we must implement means to ensure that this trend is effectively reversed.

It is important that all of us build and maintain effective lines of communication and business relationships in matters such as this. Engagement of the WLIB with FLNRO and MEM will ensure that we clearly understand, and respond to, the deep concerns of First Nations communities in protection of environmental values, which is very closely related to protection of aboriginal rights.

Rodger Stewart
Director, Resource Management
Ministry of Forests, Lands and Natural Resource Operations
Cariboo Region
400 - 640 Borland Street
Williams Lake, BC
V2G 4T1
cell (250) 305 8536, desk (250) 398 4549
fax (250) 398 4214

Not Responsive

From: Hupman, C Bruce MEM:EX
Sent: Wednesday, June 22, 2011 1:00 PM
To: Seguin, Joe MEM:EX
Cc: Feldinger, Grant M MEM:EX
Subject: FW: Williams Lake Indian Band - possible meeting with MoEM mining inspectors.

From: Stewart, Rodger W FLNR:EX
Sent: Wednesday, June 22, 2011 12:58 PM
To: Hupman, C Bruce MEM:EX
Subject: Williams Lake Indian Band - possible meeting with MoEM mining inspectors.

Bruce, I left a message on Monday. This is what I hope to discuss with you. Below is a message I shared with staff and the Band upon learning of the proposed meeting.

We have an agreement with the Northern Secwepmec communities respecting communications, including ministry referrals. We meet quarterly and transact business on an on-going basis. Our quarterly meetings include a discussion of progress on key ministry initiatives, and a summary of the activities that business teams in the ministry will be carrying out over the next quarter. During the past 2 years the topic of placer mining has been discussed in our quarterly meetings. Early last year we shared information on our plans to carry out the inspections that lead to the draft report we have discussed. The Northern Secwepmec communities have always demonstrated a deep interest in mining, and particularly placer operations due to their typical close proximity to fish bearing waters. It was of no surprise to us that during the last meeting, the communities requested an update from staff on last summer's work.

Before the meeting, staff asked me about sharing the report. I responded that it was not ready for release. But I did feel it appropriate to authorise staff discussing the general results with the communities. John Youds used a table during our meeting to summarise the findings. The report has not been released, and will not be until we have completed our collective work.

Meanwhile, the Northern Secwepmec communities have been aware of our activities all along, and will sustain their pressure toward obtaining a copy of the report in reasonable time.

Rodger Stewart
Director, Resource Management
Ministry of Forests, Lands and Natural Resource Operations

Cariboo Region
400 - 640 Borland Street
Williams Lake, BC
V2G 4T1
cell (250) 305 8536, desk (250) 398 4549
fax (250) 398 4214

From: Stewart, Rodger W FLNR:EX
Sent: Friday, June 17, 2011 8:28 AM

The report on the inspection of placer operations is not yet complete. Our Regional Executive Director and myself have reviewed the document with the Ministry of Energy and Mines (MEM) which has started a process of detailed examination of the document. This work needs to be complete before the document can be released. Part of the reasons for the examination is to confirm interpretation of our findings relative to applicable standards, and most importantly to establish the specific means by which our ministry and MEM will direct the placer mining sector to deliver more appropriate outcomes respecting environmental stewardship.

It is important to respect that the table used to support the discussion at our quarterly meeting is still in draft form. While it may well be useful as a basis for discussion, I would not at this time attempt to get involved in dealing with any specific site-specific indications of non-compliance. It is appropriate at this time to open dialogue with MEM on the general theme that there is a high degree of apparent non-compliance, and we must implement means to ensure that this trend is effectively reversed.

It is important that all of us build and maintain effective lines of communication and business relationships in matters such as this. Engagement of the WLIB with FLNRO and MEM will ensure that we clearly understand, and respond to, the deep concerns of First Nations communities in protection of environmental values, which is very closely related to protection of aboriginal rights.

Rodger Stewart
Director, Resource Management
Ministry of Forests, Lands and Natural Resource Operations
Cariboo Region
400 - 640 Borland Street
Williams Lake, BC
V2G 4T1
cell (250) 305 8536, desk (250) 398 4549
fax (250) 398 4214

Not Responsive

From: Feldinger, Grant M MEM:EX
Sent: Thursday, July 7, 2011 3:14 PM
To: Hupman, C Bruce MEM:EX
Subject: RE: MoE placer report

Here you go – hope this will help. Got started typing this out and then was working on other stuff.... then your email arrived.... hopefully still relevant.

- In order to analyze the results of the report and possibly raise objections – one would have to revisit each of the sites that were inspected by MOE staff or at least review the individual reports. For the sites that MEM staff did revisit, it would be good for our staff to go through the table for that site and see if we agreed with the rating given by MOE and then compare the results for those sites.

For each of the criteria in the summary table here are comments:

- Disturbance > indicated on the NOW: the magnitude of the amount of extra disturbance is important. What is the total area impacted? Many of the sites have disturbance areas less than or equal to 1 hectare so the total amount of extra disturbance is limited. The location of the extra disturbance is also important – would we have authorized this extra disturbance if the mapping and area calculations had been more accurate? It appears that it would be better if the placer miners overestimated their disturbance areas. I noted that half of the larger operations(> 1 ha of disturbance) had less disturbance than indicated in their NOW.
- Works within 10 meter riparian reserve: again actual magnitude(whole area, 1 meter into reserve, etc) is important and type of damage(long lasting effect or temporary(portion of growing season). Is measurement of the distance an issue and determination of high water mark?
- Critical fish habitat: from Cariboo-Chilcotin Land Use Plan – suspect that they are not applicable to mining. MOE placer standards say that “At a minimum, 30 m setbacks from the high water mark should be required in these areas”
- Works < 30 m of CFH: If there is no condition in the permit restricting operations within 30 m of highwater mark in CFH, then it does not seem to be a compliance issue.
- Discharge to water course: magnitude is again important (continuous discharge, overland flow prior to water course, related to settling pond or road works?).
- Unauthorized instream works: are all the streams actually streams?
- Fish screen: no comment
- Reclamation as indicated on the NOW: may be tough to differentiate pre-existing disturbance from disturbance proposed in the NOW. The miners will always have a workable amount of unreclaimed ground open at any one

time especially if the area being mined is deep into the ground. I wonder if most of the reclamation is done at the end of the season.

- WHA or UWR/OGMA : most do not apply to mining or to FUPs or OLTCs (only major timber tenures requiring a FSP).

Grant Feldinger, R.P.F.
Inspector of Mines
Ministry of Energy and Mines,
Alexis Creek Office - Phone 250 394-4727 Fax 250 394-4515
Kamloops Office - Phone 250 371-3755 Fax 250 828-4154
Blackberry s.17

From: Hupman, C Bruce MEM:EX
Sent: Wednesday, July 6, 2011 11:27 AM
To: Feldinger, Grant M MEM:EX; Charles, Tom MEM:EX; Rothman, Stephen MEM:EX; Cox, John MEM:EX
Cc: Seguin, Joe MEM:EX
Subject: MoE placer report

Please review the attached and your comments before Friday this week if possible

Metcalf, Megan MEM:EX

Not Responsive

From: Feldinger, Grant M MEM:EX
Sent: Tuesday, June 21, 2011 9:05 AM
To: Hupman, C Bruce MEM:EX
Subject: RE: Meeting Agenda - June 23, 2011.

Please call to discuss.

Grant Feldinger, R.P.F.
Inspector of Mines
Ministry of Energy and Mines,
Alexis Creek Office - Phone 250 394-4727 Fax 250 394-4515
Kamloops Office - Phone 250 371-3755 Fax 250 828-4154
Blackberry s.17

From: Hupman, C Bruce MEM:EX
Sent: Monday, June 20, 2011 10:19 PM
To: Feldinger, Grant M MEM:EX; Henry, Larry ABR:EX
Cc: Seguin, Joe MEM:EX
Subject: Fw: Meeting Agenda - June 23, 2011.

I understood that Larry could not make this meeting

From: Feldinger, Grant M MEM:EX
Sent: Monday, June 20, 2011 08:26 AM
To: Hupman, C Bruce MEM:EX
Subject: FW: Meeting Agenda - June 23, 2011.

Here is the agenda for the meeting with Williams Lake Indian Band and Soda Creek Band. I'll need to discuss this with you.

Grant Feldinger, R.P.F.
Inspector of Mines
Ministry of Energy and Mines,
Alexis Creek Office - Phone 250 394-4727 Fax 250 394-4515
Kamloops Office - Phone 250 371-3755 Fax 250 828-4154
Blackberry s.17

From: Warren Fortier [<mailto:Warren.Fortier@williamslakeband.ca>]

Sent: Friday, June 17, 2011 2:16 PM

To: Feldinger, Grant M MEM:EX; Henry, Larry ABR:EX; Aaron Higginbottom; Sally Sellars

Subject: Meeting Agenda - June 23, 2011.

I have attached an agenda here for the meeting; if you have any additions, questions or concerns please send them along.

Thanks,

Warren.

**Warren C. Fortier; BNRS
Natural Resource Coordinator
Ph: 250-296-3507 (ext. 130)
Fax: 250-296-4750**

**Williams Lake Indian Band
2627 Indian Drive,
Williams Lake, BC
V2G 5K9**

Web: www.williamslakeband.ca

Metcalfe, Megan MEM:EX

Not Responsive

From: Feldinger, Grant M MEM:EX
Sent: Monday, June 20, 2011 8:27 AM
To: Hupman, C Bruce MEM:EX
Subject: FW: Meeting Agenda - June 23, 2011.

Here is the agenda for the meeting with Williams Lake Indian Band and Soda Creek Band. I'll need to discuss this with you.

Grant Feldinger, R.P.F.
Inspector of Mines
Ministry of Energy and Mines,
Alexis Creek Office - Phone 250 394-4727 Fax 250 394-4515
Kamloops Office - Phone 250 371-3755 Fax 250 828-4154
Blackberry s.17

From: Warren Fortier [<mailto:Warren.Fortier@williamslakeband.ca>]
Sent: Friday, June 17, 2011 2:16 PM
To: Feldinger, Grant M MEM:EX; Henry, Larry ABR:EX; Aaron Higginbottom; Sally Sellars
Subject: Meeting Agenda - June 23, 2011.

I have attached an agenda here for the meeting; if you have any additions, questions or concerns please send them along.

Thanks,

Warren.

Warren C. Fortier; BNRS
Natural Resource Coordinator
Ph: 250-296-3507 (ext. 130)
Fax: 250-296-4750

Williams Lake Indian Band
2627 Indian Drive,
Williams Lake, BC

V2G 5K9

Web: www.williamslakeband.ca

MEM

AGENDA

JUNE 23, 2011

LOCATION: CJL Boardroom

TIME: 10:00 AM

CHAIR: Aaron Higginbottom

AGENDA

1. Welcome
2. Introductions
3. Additions/Deletions Agenda last meeting
4. Discussion Topics:
 - a. History – Placer Mines
 - b. Notice of work (is this the legal document of owning a placer mine?) i.e. is this the legal document that states how the owner must keep it in good standing?
 - c. Present-day Application & Ownership
 - d. Length of ownership/maintenance and conditions to keep in good standing
 - e. Inspection of notice of work requirements
 - f. Steps after MOE MEM placer mine is not in compliance
5. WLIB Request the following;

s.16

6. NStQ MoE Quarterly meeting update;
 - a. Concerns on draft presentation regarding non-compliance on visited placer mines;
 - b. Schedule site visits to confirm compliance;
 - c. s.16
7. Next steps?
8. Next meeting?

Not Responsive

From: Feldinger, Grant M MEM:EX
Sent: Thursday, June 16, 2011 11:09 AM
To: Hupman, C Bruce MEM:EX
Subject: FW: Placer Exploration - Mine Application Permits

Here is the email I mentioned. I have tentatively set up a meeting with the WLIB for the 23rd of June at 10 am to discuss.

Grant Feldinger, R.P.F.
Inspector of Mines
Ministry of Energy and Mines,
Alexis Creek Office - Phone 250 394-4727 Fax 250 394-4515
Kamloops Office - Phone 250 371-3755 Fax 250 828-4154
Blackberry s.17

From: Warren Fortier [<mailto:Warren.Fortier@williamslakeband.ca>]
Sent: Wednesday, June 15, 2011 4:40 PM
To: Henry, Larry ABR:EX; Feldinger, Grant M MEM:EX
Cc: Aaron Higginbottom
Subject: RE: Placer Exploration - Mine Application Permits

Hello Larry and Grant:

I am contacting you to request a meeting as soon as possible to discuss the placer exploration permits and projects.

s.16

I look forward to your response,

Warren.

Warren C. Fortier; BNRS
Natural Resource Coordinator
Ph: 250-296-3507 (ext. 130)

Fax: 250-296-4750

**Williams Lake Indian Band
2627 Indian Drive,
Williams Lake, BC
V2G 5K9**

Web: www.williamslakeband.ca