

INDEPENDENT ENVIRONMENTAL MONITORING AGENCY



A PUBLIC WATCHDOG FOR ENVIRONMENTAL MANAGEMENT AT EKATI DIAMOND MINE

2015-16

Annual Report

Technical Language

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INDEPENDENT ENVIRONMENTAL MONITORING AGENCY



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MESSAGE FROM THE CHAIR 2016

I am pleased to present the 2015-16 Annual Report of the Independent Environmental Monitoring Agency (Agency). The report summarises the Agency's activities and offers recommendations for Dominion Diamonds Ekati Corporation (DDEC) and for the regulators.

Major changes took place at the Agency last year as two key Directors, Bill Ross, our Chairperson, was replaced, and Tony Pearce retired. Both were long-standing Directors, the only remaining original ones serving since the Agency's inception in 1997. Kevin O'Reilly, our Executive Director, also left the Agency after over 10 years of service, to serve as an MLA for the Government of the Northwest Territories. I would like to take this opportunity to thank all of them for their extremely valuable contributions to the Agency and to ensuring that there is good environmental management at Ekati Mine.

I would also like to welcome back Kim Poole to the Agency as the Tłı̨chǫ appointed Director and Jesse Jasper as a newly appointed Director. Additionally, I am pleased to introduce our new Executive Director Marc Casas, and would like to thank Tee Lim for his hard work over the past year filling in as our Communications and Environmental Specialist.

The major focus for the Agency over the past year has been the environmental assessment process for the Jay Project. This included participating in workshops and reviewing the company's Developer's Assessment Report, highlighting issues, and making recommendations and suggested measures to the Mackenzie Valley Environmental Impact Review Board (Review Board) in our technical report. We also presented at the public hearing in Yellowknife, and attended the community sessions in Behchokǫ, Łutsel K'e and Kugluktuk. In February 1st,



Jaida Ohokannoak at The Narrows

the Review Board issued its Report of Environmental Assessment to the GNWT Minister of Lands, which incorporated many of the Agency's recommendations and measures. We look forward to the Minister's decision on whether the project can proceed.

The financial security being held under the Environmental Agreement has now been posted to close the mine. The Agency was disappointed with both the process established by the GNWT and in the value of the security held. We believe an opportunity to ensure procedural fairness and transparency was lost when the Agency's participation was prematurely curtailed by the GNWT.

An issue that still remains unresolved is the proposed changes to the Environmental Agreement (Canada ceasing to be a party). We continue to engage GNWT, DDEC and INAC on the issue and we hope the next year will bring some clarity to this.

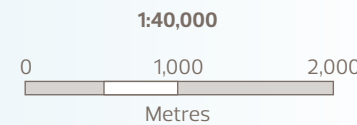
DDEC continues to be effective at environmental protection at Ekati Mine and the Agency will continue to work to ensure these good environmental practices are maintained and enhanced.

Jaida Ohokannoak
March 31, 2016

EKATI DIAMOND MINE

SATELLITE IMAGE 2010 BY PHILIP LUTON/CANADIAN

- | | |
|--|---------------------------|
| 1 PIGEON STREAM DIVERSION | 9 PANDA DIVERSION CHANNEL |
| 2 PIGEON PIPE | 10 MAIN CAMP |
| 3 LONG LAKE CONTAINMENT FACILITY (CELLS A–E) | 11 HAUL ROADS |
| 4 INCINERATORS | 12 AIRSTRIP |
| 5 WASTE ROCK PILES | 13 FOX PIT |
| 6 BEARTOOTH PIT | 14 MISERY CAMP |
| 7 PANDA PIT | 15 MISERY PIT |
| 8 KOALA AND KOALA NORTH PIT | 16 OLD CAMP |



DIRECTOR BIOGRAPHIES



JAIDA OHOKANNOAK CHAIRPERSON
APPOINTED DECEMBER 2003
Appointed by Kitikmeot Inuit Association.

Jaida Ohokannoak lives in Cambridge Bay, Nunavut, and has lived and worked in small northern communities for 20 years. She is experienced in environmental assessment, renewable resource management, research and monitoring studies. Jaida believes mining can be conducted in an environmentally responsible manner that benefits both industry and local people. Jaida served as the Agency's Secretary-Treasurer from 2004 to December, 2014, and was elected Vice-Chairperson in December, 2014.



EMERY PAQUIN VICE CHAIRPERSON
APPOINTED MARCH 2015
Appointed by Dominion Diamond, Government of the Northwest Territories and Government of Canada (in consultation with the Aboriginal governments).

Emery Paquin is an independent environmental consultant living in Yellowknife. He has more than 35 years of environmental management experience with the northern mining industry and territorial government, and served six years as a member on the Inuvialuit Water Board.



KIM POOLE SECRETARY/TREASURER
APPOINTED JULY 2015
Appointed by the Government.

Kim Poole is an independent wildlife biologist with over 30 years of experience in the Northwest Territories, Nunavut and British Columbia in the areas of wildlife research and assessment of impacts due to forestry, mining and tourism. Kim also served as an Agency Director from 2006 – 2015, and was reappointed by the Tłı̨chǫ Government in 2015.



JESSE JASPER
APPOINTED APRIL 2016
Appointed by Dominion Diamond, Government of the Northwest Territories and Government of Canada (in consultation with the Aboriginal governments).

Jesse retired in 2011 from the Government of Canada after 39 years of service. Since 1971 he has worked exclusively in northern Canada, focusing on land and water resource development, water monitoring studies to evaluate impacts on development. He coordinated a number of reviews and technical presentations for environmental impact assessments, including NWT Diamonds Project, which is now the Ekati Diamond Mine. Jesse represented INAC and EC on a number of boards including the Mackenzie River Basin Board, the NWT Water Board and Mackenzie Gas Project.



TIM BYERS
APPOINTED MAY 2001
Appointed by Akaitcho Treaty 8 First Nations (Lutsel K'e Dene First Nation and Yellowknives Dene First Nation).

Tim Byers is an independent consultant living in Manitoba who has been working on projects in the Canadian Arctic since 1980. He specializes in studies of fish, Arctic seabirds and marine invertebrates and has assisted Aboriginal communities in documenting their indigenous environmental knowledge. Tim would like to see more Aboriginal youth engaged in the environmental sciences and Traditional Knowledge used more effectively in environmental monitoring, research and impact assessments. Tim served as the Agency's Vice-Chairperson from 2004 to December, 2014.



ARNOLD ENGE
APPOINTED SEPTEMBER 2012
Appointed by North Slave Métis Alliance.

Arnold has 30 years of experience working in the North with the federal and territorial governments as well as Rio Tinto. Arnold is of North Slave Métis ancestry and represents the North Slave Métis on several Boards monitoring the environmental impacts of northern projects. Arnold was elected Agency's Secretary Treasurer in December, 2014.



DOUG DOAN
APPOINTED MARCH 2015
Appointed by Dominion Diamond, Government of the Northwest Territories and Government of Canada (in consultation with the Aboriginal governments).

Doug Doan retired from the Government of the Northwest Territories after 25 years of service, working in the field of economic and resource development. During his career Doug has worked in virtually every community in the Northwest Territories and has resided in Behchokǫ, Inuvik and Yellowknife. Doug believes that resource development can be undertaken in an environmentally responsible manner while providing employment and economic opportunities for residents of the Northwest Territories.

ACRONYMS & GLOSSARY

AEMP – Aquatic Effects Monitoring Program
AQMP – Air Quality Monitoring Program
AQEMMP – Air Quality and Emissions Monitoring and Management Plan
CAM – Continuous Air Monitoring
CCME – Canadian Council of Ministers of the Environment
CIMP – Cumulative Impact Monitoring Program
CPI – Consumer Price Index
DAR – Developers Assessment Report
DDEC – Dominion Diamond Ekati Corporation (“the company”)
DFO – Fisheries and Oceans Canada (also known as “Department of Fisheries and Oceans”)
DNA – deoxyribonucleic acid
EC – Environment Canada
EIR – Environmental Impact Report
ENR – Department of Environment and Natural Resources (NWT)
FPK – Fine processed kimberlite
GNWT – Government of the Northwest Territories
HVAS – High Volume Air Samplers
IACCT – Inter-Agency Coordinating Team
ICRP – Interim Closure and Reclamation Plan
KIA – Kitikmeot Inuit Association
KPSF – King Pond Settling Facility
LKDFN – Łutsel K'e Dene First Nation
LLCF – Long Lake Containment Facility
MVEIRB – Mackenzie Valley Environmental Impact Review Board
PAG – Potential Acid Generating
PDC – Panda Diversion Channel
PK – processed kimberlite
PM – particulate matter

PSD – Pigeon Stream Diversion
QA/QC – Quality Assurance/Quality Control
SNP – Surveillance Network Program
SSWGO – Site-Specific Water Quality Objective
TK – Traditional Knowledge
TDS – Total dissolved solids
TSP – total suspended particulates
WEMP – Wildlife Effects Monitoring Program
WLWB – Wek'èezhii Land and Water Board
WPKMP – Wastewater and Processed Kimberlite Management Plan
WROMP – Waste Rock and Ore Storage Management Plan
WRRB – Wek'èezhii Renewable Resources Board
WRSA – Waste Rock Storage Area
YKDFN – Yellowknives Dene First Nation
ZOI – Zone of Influence

Action Levels – A predetermined change, to a monitored variable or other qualitative or quantitative measure that requires the Licensee to take appropriate actions that may include, but that are not limited to: further investigations, changes to operations, or enhanced mitigation measures.

Adaptive Management – A management system with continual monitoring so that if initial mitigation measures are ineffective, additional or alternative mitigation is applied to keep the impact within acceptable levels.

Benthos – The sediments and mud at the bottom of rivers, lakes and ponds that can contain living organisms. Benthic invertebrates such as mosquito larvae are an important food source for small fish.

Chloride – Salt resulting from the combination of the gas chlorine with a metal. Fish and aquatic communities cannot survive in water with high levels of chlorides.

Cladocera – An order of small crustaceans (i.e., zooplankton) that live in water (commonly called water fleas).

Consultation – (i) The provision, to the party to be consulted, of notice of a matter to be decided in sufficient form and detail to allow that party to prepare its views on the matter;

(ii) The provision of a reasonable period of time in which the party to be consulted may prepare its views on the matter, and provision of an opportunity to present such views to the party obliged to consult; and

(iii) Full and fair consideration by the party obliged to consult of any views presented.

Environmental Agreement – Created as a legally binding instrument to provide monitoring and input into management practices not covered by other authorizations. Parties include BHPB and the federal and territorial governments. Akaitcho Treaty 8 First Nations (LKDFN and YKDFN), Kitikmeot Inuit Association, North Slave Métis Alliance and Tłı̨chǫ Government were involved in the negotiations.

Hydrocarbons – Organic compounds which contain only hydrogen and carbon. This includes fossil fuels (i.e., coal, petroleum and natural gas) as well as their derivatives, such as plastics, solvents and oils.

Kimberlite – A rare, potentially diamond bearing iron and magnesium rich rock from deep in the earth's mantle. Kimberlites are generally found as vertical pipe-like structures.

Molybdenum – A metal that can affect trout just after they hatch.

Nitrate – A nutrient, like a fertilizer, derived from nitrogen. Nitrate can affect the growth of baby fish if it gets too high.

Phytoplankton – Microscopic plants (e.g., algae) found in freshwater and ocean environments. They are an important food source for zooplankton.

Processed Kimberlite – The waste material and water mixture that is left over after the mill removes the diamonds from the ore. Also referred to as “tailings”.

Progressive Reclamation – Reclamation that can be carried out during the construction and operation phases of a mine prior to final closure (e.g., rock waste dumps).

Reclamation – The recovery to viable ecosystems of areas of land and water bodies that have been disturbed during mining.

Schist – A large group of coarse-grained metamorphic rocks which readily split into thin plates or slabs as a result of alignment of lamellar or prismatic minerals.

Slave Geological Province – Area between the City of Yellowknife and the Arctic coast.

Tailings – See “Processed Kimberlite”.

Total Suspended Particulates – The fraction of airborne particulates that will remain airborne after their release in the atmosphere.

Valued Ecosystem Component – Environmental element of an ecosystem that is identified as having scientific, social, cultural, economic, historical, archaeological or aesthetic importance.

Waste Rock – Rock containing diamonds but too low in grade to be mined or processed economically. Also other rock that must be removed to access kimberlite pipes.

Waste Rock Seepage – Water that drains through the waste rock piles. This water may pick up contaminants as it touches the waste rock and may enter the receiving environment.

Wastewater – Water that contains wastes from the mining process, including sewage and chemicals from explosives.

Zone of Influence – Area of reduced caribou occupancy.

Zooplankton – The small, mostly microscopic animals that live suspended in freshwater (and ocean) environments. Zooplankton feed on phytoplankton and small particles in the water. They are an important food source for small fish.

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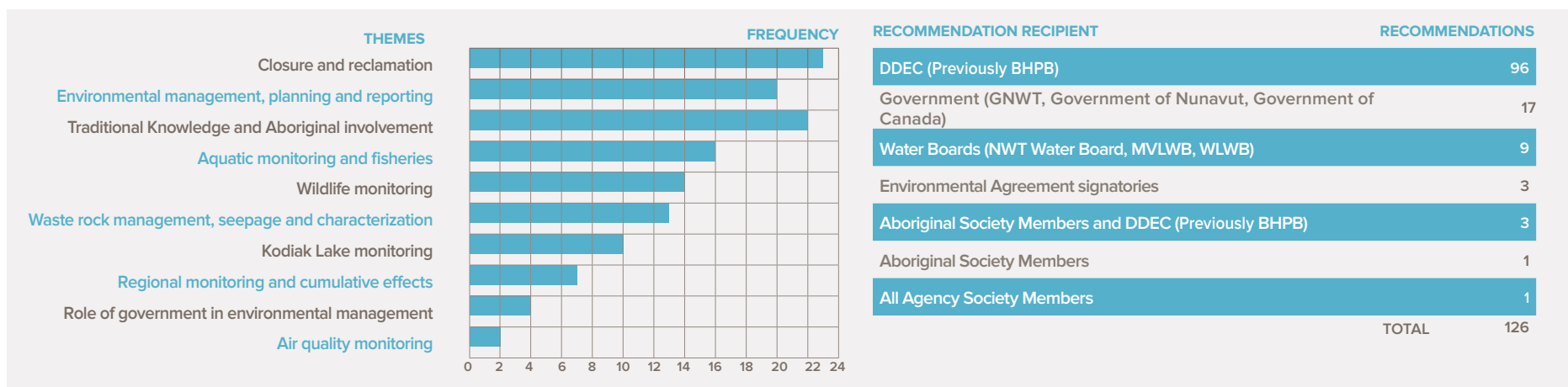
AGENCY RECOMMENDATIONS 2015-16

1 RECOMMENDATION

The Agency recommends that, following the Minister of Lands' decision on the Jay Project environmental assessment, DDEC develop a single, integrated Interim Closure and Reclamation Plan for Ekati Mine that incorporates all major developments that have commenced since ICRP Version 2.4 was approved in August 2011.

DDEC Response: DDEC has committed to providing an updated closure and reclamation plan for the Ekati Diamond Mine following the approval of the Water Licence and Land Use Permit Applications for the Jay Project. The updated closure and reclamation plan will include the Jay Project and all developments that have been initiated since the last version of the ICRP.

FIGURE 1: AGENCY RECOMMENDATION THEMES 1997-2015



2 RECOMMENDATION

The Agency recommends that DDEC increase the use of Traditional Knowledge into aquatic monitoring and report on its usage in these activities.

DDEC Response: DDEC strives to incorporate Traditional Knowledge (TK) into all aspects of environmental monitoring. Historically, the AEMP has primarily benefited from TK through the involvement of community members in large bodied fish

sampling and fish-out programs (e.g., Lynx Lake), especially with respect to assessments of fish health. These efforts will continue in 2016, when community members will be invited to participate in the Sable Lake fish salvage. During the fish salvage, community members will work with DDEC personnel to inform our understanding of fish populations and fish health in Sable and Two Rock lakes.

3 RECOMMENDATION

The Agency recommends DDEC document the implementation, successes, and lessons learned from Traditional Knowledge studies and how it is incorporated into environmental management at Ekati Mine.

DDEC Response: DDEC has recently submitted an Engagement Plan version 3.0 to the WLWB for approval, which outlines how Traditional Knowledge is incorporated into environmental monitoring and management at the Ekati Diamond Mine.

4 RECOMMENDATION

The Agency recommends that DDEC expand water quality monitoring further into the north arm of Lac de Gras by incorporating sampling sites S4, S5 and S6 as permanent AEMP stations.

DDEC Response: A recommendation to incorporate water quality sampling as far as site S6 in Lac de Gras into the annual Aquatic Effects Monitoring Program (AEMP) has been included in the 2015 AEMP Re-evaluation, which will be submitted to the WLWB on June 30th, 2016.



Behchokò

Highlights:

- Four Board Meetings, annual general meeting, environmental workshop, visit to Behchokò.
- Participation in the Jay Project environmental assessment.
- Site visits to Ekati Mine.
- New Directors appointed and staff change.

Activities 2015-16

The Agency holds four board meetings each year, one of which is held in a community as part of the Agency's community visit initiative. This year, the Agency visited Behchokò, but due to logistics the Agency held the board meeting portion in Yellowknife.

The Agency held its annual general meeting (AGM) in December, where several important items were discussed. The Agency and our Society Members discussed and approved changes to the Society By-Laws. Other discussions of importance were the Agency's involvement in the settling of security under the Environmental Agreement; the roads at the mine act as partial barriers to wildlife, especially caribou movement and migration; and incorporating Traditional Knowledge (TK) into monitoring. Although a lot of TK work has been done, the Agency still has concerns about how that work is incorporated into Dominion Diamond Ekati (DDEC) monitoring programs.

Directors and staff visited the mine on two occasions, in June 2015 as part of the Agency's annual visit and in July, 2015 as part of the Inter-Agency Coordinating Team (IACT). Directors were particularly interested in seeing the compost and incinerator operations, the Panda Diversion Channel, Pigeon Stream Diversion, Old camp reclamation, Long Lake Containment Facility (LLCF) revegetation and took the opportunity to helicopter over the Narrows between Lac du Sauvage and Lac de Gras and the proposed Jay Project site.

This past year, the Agency also experienced a number of staff and Director changes. For Agency staff, Jessica Simpson returned from maternity leave while Tee Lim filled in. Kevin O'Reilly, after 10 years serving as the Agency's Executive Director, was elected as the Member of the Legislative Assembly to represent Frame Lake South. In his place, the Agency welcomes Marc Casas to the position of Executive Director. As for the Agency's Directors, Tony Pearce, a Tł̨chq appointee since 1998 retired and Bill Ross's appointment ended in

**TABLE 1: AGENCY INCOMING
CORRESPONDENCE 2015-16**

SENDER	# OF PIECES
INAC	0
AGENCY SOCIETY MEMBERS	0
DDEC	11
ECCC	0
EMAB AND/OR SLEMA	0
DFO	2
GNWT	16
WLWB	11
OTHERS	44
TOTAL	84
SUBJECT	# OF PIECES
Administration	37
Air quality	1
Aquatics, including AEMP, PSD, PDC widening and monitoring, SNP monitoring, pumping	12
Closure and reclamation (including ICRP, draft guidelines and policies and financial security)	3
Community engagement and consultation	2
Environmental Agreement and Water Licence Annual Report, EIR	5
PK and waste rock management, including WPKMP, WROMP, PK deposition plan and seepage reports	1
Traditional knowledge	0
Water licence (including inspections, approvals and renewals)	18
Wildlife (including WEMP, grizzly bear monitoring program)	5
Other	0
TOTAL	84

**TABLE 2: AGENCY OUTGOING
CORRESPONDENCE 2015-16**

RECIPIENT	# OF PIECES
INAC	1
AGENCY SOCIETY MEMBERS	3
DDEC	5
GNWT	4
WLWB	6
OTHER INTERESTED PARTIES	5
TOTAL:	24
SUBJECT	# OF PIECES
Administration	2
Aquatics, including AEMP	6
Community consultation	1
Water licence renewal	5
Traditional knowledge	0
Wildlife	0
Waste rock management, including WPKMP and WROMP	1
EIR	0
Closure and reclamation including Environmental Agreement	3
Other	2
TOTAL:	20

December 2015. Kim Poole was reappointed to the Agency by the Tłıchǫ Government in August and Jesse Jasper was appointed by DDEC, GNWT and Canada on April 1, 2016.

TECHNICAL REVIEW AND INPUT

Over the last year, the Agency has been involved in a number of technical reviews, but most of the efforts were geared toward the Jay Project environmental assessment (EA), coordinated and reviewed by the Mackenzie Valley Environmental Impact Review Board. Directors were involved in all stages of the EA, including Information Requests, technical meetings and reviews; Public Hearings and the Closing Submission. The Agency is pleased that many of the recommendations made in our Closing Arguments were incorporated into measures in the Review Board's Report of Environmental Assessment (REA).

The Agency continued its participation and review of the Aquatic Response Framework (ARF) originally submitted to the Wek'èzhìi Land and Water Board (WLWB) in 2014. In 2015, the Agency attended the ARF workshop, and commented on the ARF version 1.2. The objective of the ARF is to ensure that water and aquatic life monitoring results are analysed as part of an early warning system so that potential impacts can be identified early on and mitigated before impacts become significant or irreversible. The ARF version 1.2 was approved by the WLWB in December 2015. The Agency provided comments on the need for setting of medium action levels and including in the ARF the following: sediment quality, parasite and contaminant loads in fish, uptake of contaminants in lake water by waterfowl and nutritional value of zooplankton to fish.

The Agency was involved in the review of the Potassium Response Plan (PRP). Although potassium is within the water licence limits,

monitoring results show that potassium levels are increasing faster and higher than initially predicted. As a result, the WLWB required DDEC to submit a PRP to assess the implications of the elevated levels. In its review the Agency recommended a feasibility study be done on water treatment for potassium. The Agency also expressed concerns over the effects on zooplankton downstream of the LLCF, noting that the density of some types of zooplankton is decreasing and suggesting that these species could be used in toxicity testing.

The Agency provided comments on the DDEC's Fish Offsetting Plan to compensate fish production lost to the Lynx development. These centered around possible underestimation of total Lynx fish biomass lost, appropriate species to compensate and whether production of fish in renewed fish habitat in excess of what was lost in Lynx can be "banked" to put toward offsetting future mine projects.

The majority of the Agency's focus on wildlife related to the Jay Project EA. The Agency actively participated in the Wildlife Road Mitigation Plan Workshops. The workshops looked at ways to reduce impact of road developments on caribou and other wildlife. The Agency also attended a Caribou Compensatory Mitigation workshop and a teleconference held by DDEC to discuss how to offset impacts to caribou.

The Agency reviewed the 2015 Interim Closure and Reclamation Plan (ICRP) Progress Report, where DDEC provided reclamation updates and proposed a number of financial security updates, in particular the return of funds for the completion of the Panda Diversion Channel stabilization. The Agency argued that security should not be returned until all closure criteria have been met.

DDEC has improved their waste management practices, in particular with the commissioning of an in-vessel composter. In acknowledgement of this initiative the Agency provided a letter of support for DDEC's nomination for The Mining Society of Canada's – Toward Sustainable Mining- Environmental Excellence Award.

AGENCY COMMUNICATIONS AND COLLABORATION

The Agency held a one-day environmental workshop on water quality December, 2015. In attendance were representatives from the Tłıchǫ Government, Yellowknives Dene First Nation, North Slave Métis Alliance, and the Kitikmeot Inuit Association. Several areas of water quality were addressed, such as the Water and Effluent Management Policy, the inspection and enforcement of water quality, Canadian Council of Ministers of the Environment (CCME) Aquatic Life Guidelines, and guidelines for Aquatic Effects Monitoring Programs.

The Agency held an informative and successful community visit to Behchokǫ in March 2016. The Agency started with a school visit to the Chief Jimmy Bruneau School in Edzo where the students were both receptive and inquisitive about the Agency's work. The Agency also visited with Community Action Research Team (CART) and the Tłıchǫ Government's Land and Environment Department. These meet-and-greets were a very good opportunity for the Agency's staff and Directors to learn more about how the diamond mines have changed communities and families. Close to 30 community members attended the Open House in the evening. Throughout these activities, the Agency heard concerns expressed about the

TABLE 3: MAIN AGENCY ACTIVITIES 2015-16

DATE AND LOCATION	PURPOSE	MAIN ISSUE
APRIL 20 – 24, 2015 <i>Yellowknife</i>	Jay Technical Sessions	The technical sessions were spaced out over a few days with sessions focusing on a variety of topics such as wildlife, caribou, water, fish and fish habitat, and air.
MAY 22, 2015 <i>Yellowknife</i>	Wildlife Road Mitigation Plan Workshop	Workshop was a part of the Jay Project technical sessions. The road plans for Jay and Misery haul roads were reviewed and discussed mitigation measures that would impact road designs, road signage, caribou and other wildlife crossings and monitoring of the roads.
MAY 26-27, 2015 <i>Yellowknife</i>	Bathurst Caribou Range Plan Meeting	The working group met to achieve a number of objectives, such as: finalizing a steering committee report, review regional traditional knowledge, learn how recommendations can be incorporated into environmental assessment, and learn about GNWT wildfire management priorities and procedures.
JUNE 12, 2015 <i>Yellowknife</i>	Environmental Agreement Implementation Meeting	DDEC, GNWT and the Agency met to discuss the Agency's draft recommendations from the 2014-15 Annual Report. Some discussion on DDEC's planned community communications for 2015.
JUNE 18, 2015 <i>Yellowknife</i>	Agency teleconference	The Agency discussed their participation in the upcoming Jay Project's technical meetings.
JUNE 19, 2015 <i>Yellowknife</i>	Aquatic Response Framework Workshop	Hosted by the WLWB to facilitate a discussion between affected parties and DDEC about the ARF. The focus of the workshop was to discuss the identified remaining uncertainties in DDEC's ARF, identified in the WLWB January 30, 2015 directive.
JUNE 22-23, 2015 <i>Ekati Diamond Mine</i>	Agency Site Visit	Directors visited a number of sites, including Beartooth Pit, the new incinerator building, and composter.
JUNE 24, 2015 <i>Yellowknife</i>	Board Meeting/Conference Call	Directors reviewed the Society by-laws, the Agency's participation in the Jay Project environmental assessment, the Jay Project environmental management plan and preparation for technical reports related to the Jay Project and the Agency's participation in the Jay Project's upcoming public and community hearings.
JUNE 25, 2015 <i>Yellowknife</i>	WEMP and Caribou Roads Mitigation Plan Workshop	The purpose was to discuss the plans to see if there was any missing information. This was part of the Jay Project environmental assessment.
JUNE 26, 2015 <i>Yellowknife</i>	Jay Project Management Plans workshop	DDEC presented four conceptual plans for the Jay Project for feedback: Air Quality and Emissions Monitoring and Management Plan; Aquatics Effects Monitoring Program; Wastewater and Processed Kimberlite Management Plan; and Waste Rock and Ore Storage Management Plan. DDEC is looking for broad high level feedback on these plans to guide where DDEC is going with the Jay Project.
JULY 10, 2015 <i>Yellowknife</i>	Agency teleconference	The Agency discussed proposed changes to the Environmental Agreement and prepared for the upcoming Jay Project review.
JULY 15, 2015 <i>Ekati Diamond Mine</i>	IACT Site Visit	The Agency and regulators visited several areas of Ekati Mine, including a helicopter ride to view Misery, Jay and Lynx areas. They also saw the Pigeon Stream Diversion, the new composter, Cell B revegetation, and rock cover test area.
JULY 20, 2015 <i>Yellowknife</i>	Air Quality Workshop	The 2014 Air Quality Management Plan Report results and the adaptive management response aspects of the conceptual Air Quality and Emissions Monitoring and Management Plan design plan were discussed as part of the Jay Project environment assessment.
JULY 30, 2015 <i>Yellowknife</i>	Agency teleconference	Directors discussed the Agency's final draft of their technical report to the Jay Project environmental assessment.
AUGUST 5, 2015 <i>Yellowknife</i>	Jay Project – Pre-Hearing Conference	Parties to the environmental assessment met to discuss and confirm hearing logistics such as review the rules of procedure, the agenda and allot presentation times.
AUGUST 11, 2015 <i>Yellowknife</i>	Agency Teleconference	The Agency discussed their Jay Project public hearing presentation.

MAIN AGENCY ACTIVITIES 2015-16		
DATE AND LOCATION	PURPOSE	MAIN ISSUE
SEPTEMBER 14-16, 2015 <i>Yellowknife</i>	Jay Project – Community Hearing	This was a formal public hearing to hear arguments from intervenors and the developer concerning the project along with the opportunity for questioning.
SEPTEMBER 17, 2015 <i>Behchokq</i>	Jay Project – Community Hearing	An Agency Director attended the community hearing. Community hearings are informal and are an opportunity for the Review Board to listen to the views and opinions of potentially impacted communities. Members of the public attended and had the opportunity to speak.
SEPTEMBER 19, 2015 <i>Lutselk'e</i>	Jay Project – Community Hearing	An Agency Director attended the community hearing. Community hearings are informal and are an opportunity for the Review Board to listen to the views and opinions of potentially impacted communities. Members of the public attended and had the opportunity to speak.
SEPTEMBER 21, 2015 <i>Kugluktuk, NU</i>	Jay Project – Community Hearing	An Agency Director attended the community hearing. Community hearings are informal and are an opportunity for the Review Board to listen to the views and opinions of potentially impacted communities. Members of the public attended and had the opportunity to speak.
OCTOBER 1, 2015 <i>Yellowknife</i>	Caribou Compensatory Mitigation Meeting	Hosted by DDEC and attended by the Agency, GNWT and the Aboriginal communities to discuss how DDEC can positively offset impacts to caribou.
OCTOBER 8, 2015	Agency teleconference	Discussed the Agency's closing arguments for the Jay Project environmental assessment.
DECEMBER 8, 2015 <i>Yellowknife</i>	Agency Board Meeting	Directors discussed logistics for staff hiring and the Agency's comments on the GNWT on the Ekati Environmental Agreement financial security decision.
DECEMBER 9, 2015 <i>Yellowknife</i>	Agency Environmental Workshop	Society Members representatives and other government staff participated in an Agency sponsored workshop on Ekati. This year, the workshop focused on water and water quality.
DECEMBER 10, 2015 <i>Yellowknife</i>	Annual General Meeting	Agency discussed with its Society Members changes to the Society by-laws.
DECEMBER 11, 2015 <i>Yellowknife</i>	Jay Project AEMP Workshop	The purpose of the workshop was to provide the opportunity for reviewers to discuss the proposed AEMP prior to DDEC's submission to the WLWB.
JANUARY 21, 2016 <i>Yellowknife</i>	EIR Process Meeting	DDEC presented the timeline for the 2016 EIR, including the dates for technical sessions and the final report.
FEBRUARY 3, 2016 <i>Yellowknife</i>	Kwe Be Working Group	Staff met with the Tłıchǫ Government's Kwe Be Working Group and presented on the work of the Agency.
MARCH 2, 2016 <i>Yellowknife</i>	Gahcho Kue Closure and Reclamation Workshop	Attended to observe the Ni Hadi Xa workshop on closure and reclamation.
MARCH 2, 2015 <i>Behchokq, NT</i>	Community Visit	Agency staff and Directors visited Behchokq and conducted a school visit, held a community information session and met with the Tłıchǫ Government's Department of Lands Protection and CART.
MARCH 1 – 3, 2016 <i>Yellowknife</i>	Agency Board Meeting	Agency Board and staff discussed the Agency's business, focusing on the work plan and core budget for the next 2 years. EMAB, SLEMA, Ni Hadi Xa, and DDEC also gave updates.
MARCH 3, 2016 <i>Yellowknife</i>	Environmental Agreement Implementation Meeting	GNWT, DDEC and the Agency met to discuss the Agency's 2 year work plan and budget for 2016-18.
MARCH 24, 2016 <i>Yellowknife</i>	Jay Project - Present of Report of EA significance findings and measures	The Review Board presented the findings of significance and how the report's measures address them. It was also an opportunity for parties to better understand the Review Board's conclusion and final measures.

caribou the impacts of dust, and closure of the mine, specifically, how the large pits will be reclaimed. The Agency also heard that the community feels that they are not given all of the information, such that much of what they hear from DDEC has a positive spin, and they would like to be told all of the good and the bad about the mine and its operations.

The Agency heard that it would be helpful for community members, especially those who have never been to any of the diamond mines, if they could see a video about the mine and its operations. This comment is consistent with an Agency communications initiative; over the coming year, the Agency is looking to produce a video about Ekati Mine and have it translated into the Aboriginal languages.

Environmental Agreement Implementation Meetings are held biannually between the three signatories to the Environmental Agreement and the Agency. This year the meetings were held in February and June 2015. These meetings improve the coordination and communication between the Agency and the signatories and provide each party with opportunities to give an update on its activities. The Agency also reports on financial expenditures and future plans and signatories are offered an opportunity to respond to formal recommendations made by the Agency in its annual report.

In July, the Agency participated in a site visit to meet with the Inter-Agency Coordinating Team (IACT). IACT consists of the Agency and a group of government regulators, including the GNWT, INAC, Fisheries and Oceans Canada and Environment and Climate Change Canada. ■

WASTE ROCK & PROCESSED KIMBERLITE MANAGEMENT



Beartooth Pit

HIGHLIGHTS:

- Permafrost is being established in the Panda/Koala/Beartooth waste rock storage area.
- Additional geotechnical studies commenced on the Fox waste rock storage area.

WASTE ROCK MANAGEMENT

Mining activities under way at Ekati in 2015 comprised of:

- Underground operations at the Koala and Koala North pits.
- Open pit operations at Misery and Pigeon pits.
- Pre-stripping of Lynx Pit waste rock.
- Beartooth Pit continues to receive fine processed kimberlite and underground mine water.

SEEPAGE MONITORING

Seepage along the perimeter of the waste rock storage areas (WRSAs) was sampled during spring freshet (June 11-16), in the fall (Sept 1-8), and following summer rain events (July 9-10 and August 10-12). For the most part, seepage from the rock piles is seasonal, sporadic, and generally of low volume.

During the monitoring and sampling program, 6 new seeps were identified and incorporated into the annual sampling program; three from the Coarse Kimberlite Rejects Storage Area (CKRSA), one from the Beartooth WRSA and two from the Fox WRSA. A total of 56 existing and new seeps were sampled. The 2015 data are consistent with the existing trend of increased major ion concentrations



that correlates well with increased biotite schist in the waste rock piles (e.g., Fox and Misery). The composition of CKRSA continues to have sufficient neutralizing potential for any possible acid rock drainage.

WASTE ROCK STORAGE AREAS

The Waste Rock and Ore Storage Management Plan includes the sampling and geochemical analysis of waste rock being placed in active storage areas including Panda/ Koala/ Beartooth, Misery and Pigeon. The geochemical analysis of the waste rock samples is similar to previous results – largely because there are no new waste rock types being deposited into the waste rock piles. Lynx waste rock was excluded from the plan as it is granite.

The Wek'èezhì Land and Water Board (WLWB) approved several changes to the WRSAs in 2015. The Misery waste rock pile will increase the area of exposed metasediments during operations from 3.5 ha to 6.0 ha and will have a slightly increased footprint resulting from the lessening of the slopes of the toe berms. The CKRSA expansion was approved for a 15% increase to cover a total area of 114 ha.

WASTE ROCK STORAGE AREAS RESEARCH

WRSA Risk Framework

Due to concerns raised from the 2012 Waste Rock Storage Areas Seepage Survey Final Report, DDEC proposed a WRSA seepage risk

framework to assess any implications for water quality during operations and post closure. In support of the WRSA risk framework DDEC submitted the following studies:

- A screening level risk assessment of WRSA seepage;
- A thermal modeling of the WRSAs to better understand timeframes and conditions for freezing; and,
- An evaluation of waste rock geochemistry and seep monitoring data.

The purpose of these studies was to establish the current conditions of the WRSAs. These studies were completed and submitted in March 2015, the results of which were reported by the Agency in the 2014-15 Annual Report.

Essentially, the study concluded that there is currently no unacceptable health risks to aquatic and terrestrial wildlife as a result of exposure to seepage from the WRSAs. The risk assessment and geochemistry evaluation did not have any continuing activities during the 2015-16 season. Ongoing work on the thermal modeling is summarized below. A second study, to be submitted in 2016, will use the current conditions study to assess potential impacts post-closure.

Thermal Modeling

Thermal modeling of WRSAs was undertaken for Panda/Koala/Beartooth and Misery WRSAs and the CKRSA to determine the rate of permafrost growth. While the Panda/Koala/Beartooth WRSA is freezing as expected, other waste rock piles are not.

A preliminary study of the Fox WRSA thermal characteristics confirmed that there are unique factors affecting the freezing of the Fox WRSA. In order to investigate these factors, five new ground temperature cables were installed in the Fox WRSA in 2015, for a total of eight functional ground temperature cables. Current results indicate the cover is thicker than the active layer and the toe berm remains frozen. However, buried and centrally located areas within the rock pile are measurably warmer than other areas, warranting further investigation.

Due to on-going operations there are currently only three functioning ground temperature cables at the Misery WRSA, all of which are located at the edge of the pile. Therefore, there is very little information regarding the thermal conditions within the main portions of the pile. The Misery WRSA will require a thermal profile, similar to the work being undertaken at Fox WRSA, as areas reach closure heights and operational conditions allow safe access. Until new ground temperature cables are installed throughout the pile, existing thermal conditions of the Misery WRSA remain uncertain.

The CKRSA has not had any functioning ground temperature cables since the spring of 2014. Therefore, all conclusions are drawn from limited data. The April 2, 2015 Tetra Tech Inc. ‘2015 Summary of Ground Temperature Cables’ report concluded that the CKRSA is likely unfrozen due to high water content and salinity of the pore water. The report states that freezing should ultimately occur, and that there are no immediate concerns. DDEC does not plan on placing additional ground temperature cables in the CKRSA.

Additional Studies

Continuing studies have confirmed that kimberlite has the neutralizing potential to



Misery wasterock pile

minimize any potential acid rock seepage. However, further investigation is needed to determine the possible extent of metal ion leachate in near neutral pH conditions.

Agency Assessment

The Agency commends the WLWB’s continuing diligence in overseeing the environmental practices of DDEC at Ekati Mine. At the request of WLWB, DDEC undertook an ecological risk assessment of WRSAs and the CKRSA. Analysis of the data will better inform the decisions required to minimize the long term effect WRSAs will have on the environment.

The initiation of the thermal modeling program for the Fox WRSA is an important research study. The quarterly data from the addition of five ground temperature cables will inform future decisions regarding the long term environmental stability of the Fox WRSA.

The Agency is concerned by the lack of ground temperature cables and amount of current data for both the Misery WRSA and the CKRSA. The Misery WRSA has limited current thermal information and has no centrally located ground temperature cables. The CKRSA does

not appear to be frozen, and DDEC has stated that they will not be installing any new cables. The Agency encourages DDEC to initiate thermal characteristics studies similar to Fox WRSA for the Misery WRSA and CKRSA. ■



Revegetation in cell B of the Long Lake Containment Facility

HIGHLIGHTS:

- Delays in reclamation research remain a serious concern.
- A timeline for submission of the next Interim Closure and Reclamation Plan has not been established.
- An opportunity to ensure procedural fairness and transparency during review of the financial security held under the Environmental Agreement was lost when the Agency's participation was curtailed by the GNWT.

CLOSURE AND RECLAMATION

CURRENT CLOSURE PLAN

Dominion Diamond Ekati Corporation (DDEC) is required to have in place an approved Interim Closure and Reclamation Plan (ICRP) during active mining operations and to periodically report on and update the Plan. The current ICRP was approved in 2011 and anticipates active mining operations until at least 2020.

Reclamation planning is guided by the overall goal of returning the Ekati Mine site to a viable and self-sustaining ecosystem that is compatible with a healthy environment and human activities.

The current plan is to flood the open pits and connecting underground mines to create pit lakes connected with their surrounding watersheds. Ursula Lake, Upper Exeter Lake

and Lac de Gras are identified as potential water sources for flooding, which is expected to take approximately 35 years. Berms will be constructed around the perimeter of the pits to deter wildlife during the flooding process.

The Sable, Pigeon, Panda/Koala/Beartooth, Fox and Misery waste rock storage areas (WRSA) will remain in place after mining operations have ceased. They will be covered with granite and/or glacial till and allowed to revegetate naturally. Their design takes into account their permanency by including a stepped profile and a flat top that prevents snow build-up and encourages growth and maintenance of permafrost over the long term.

The Long Lake Containment Facility (LLCF) processed kimberlite tailings will be re-contoured and capped with a combination of rock and vegetation, and reconnected with the surrounding watershed through a system of drainage channels and ponds. All dikes and dams within the LLCF will eventually be breached to allow water to flow through.

The Panda Dam will continue to divert water through the Panda Diversion Channel (PDC) and will have a spillway to allow freshet to flow to Panda and Koala pit lakes. The Pigeon Stream Diversion will also remain in place to divert stream flow from the Upper Pigeon Stream to Fay Lake.

All buildings, storage tanks, power lines and other physical structures will be removed and either buried in a landfill or shipped off site. Roads, lay down pads and the airstrip will remain in place and decommissioned so they are safe for human and wildlife use after the mine is closed.

RECLAMATION AND CLOSURE