



INDEPENDENT ENVIRONMENTAL MONITORING AGENCY

A PUBLIC WATCHDOG FOR ENVIRONMENTAL
MANAGEMENT AT EKATI DIAMOND MINE

PLAIN LANGUAGE **ANNUAL REPORT 2014-15**

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GLOSSARY (A listing of all italicized words used
in this report except the names of laws,
policies and publications.)



INDEPENDENT
ENVIRONMENTAL
MONITORING AGENCY

A PUBLIC WATCHDOG FOR ENVIRONMENTAL
MANAGEMENT AT EKATI DIAMOND MINE



MESSAGE FROM THE CHAIR 2015

This past year has, once again, been one of great change both for Ekati and for the Agency. The proposed major expansion of the mine, the Jay pipe, is now actively being reviewed. Should the Jay Project proceed, the Agency believes great care will be needed to properly manage negative effects.

Changes were proposed to the *Environmental Agreement* in early 2014. Canada would no longer be part of it. But the changes have not been made. It is not clear if the Government of Canada is still part of it now.

Two long-serving Agency directors, Laura Johnston and Kim Poole, have been replaced. The new directors are Doug Doan and Emery Paquin. My own appointment was

extended until December of this year. We thank Laura and Kim for excellent service and welcome Doug and Emery to the Agency. Our Communications and Environmental Specialist, Jessica Simpson, has gone on parental leave. Tee Lim is filling the role during her absence.

Financial security is held by governments under the Water Licence. The amount is now enough to pay for closing the mine according to the approved plan. We are pleased with this. Security under the *Environmental Agreement* has not yet been decided. This should be done and the security posted soon.

I remain pleased to report that Dominion Diamond Ekati Corporation is still doing a good job of environmental protection at Ekati. We will continue to watch to ensure this good work continues for the life of the mine.

There are major uncertainties before us. What changes will be made to the Ekati *Environmental Agreement*? When will *financial security* under the *Environmental Agreement* be decided? What will happen with the

environmental assessment for the proposed Jay expansion?

This is my twelfth and last message from the Chair. I am proud of the good work the Agency has done over its 18 years. I have every reason to expect the good work to continue. It feels good to be part of effective environmental management. The directors and staff of the Agency are of high quality and are pleasant to work with. It has been my pleasure to serve on the Agency with such fine people.

William A. Ross, Chairperson
March 31, 2015

MINING AT EKATI

Dominion Diamond Ekati Corporation (DDEC) is mining diamonds using large open pits and underground tunnels to remove the *kimberlite* rock that contains the diamonds.



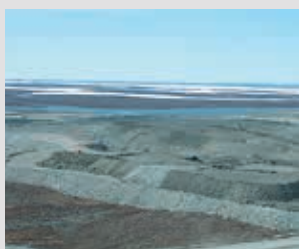
1 Long Lake Containment Facility

The Long Lake Containment Facility (*tailings* pond) holds the crushed wet *kimberlite* that remains after diamonds are removed. It is a lake divided into five sections (cells A to E) by dykes (rock walls) so the *processed kimberlite* can settle. Water is eventually released into lakes downstream when it is clean and pollutants are below the amounts set in the water licence.



2 Main Camp

This area includes an accommodation building for hundreds of workers, a power plant, a truck shop and a processing plant where the diamonds are removed from the *kimberlite*.



3 Waste Rock Piles

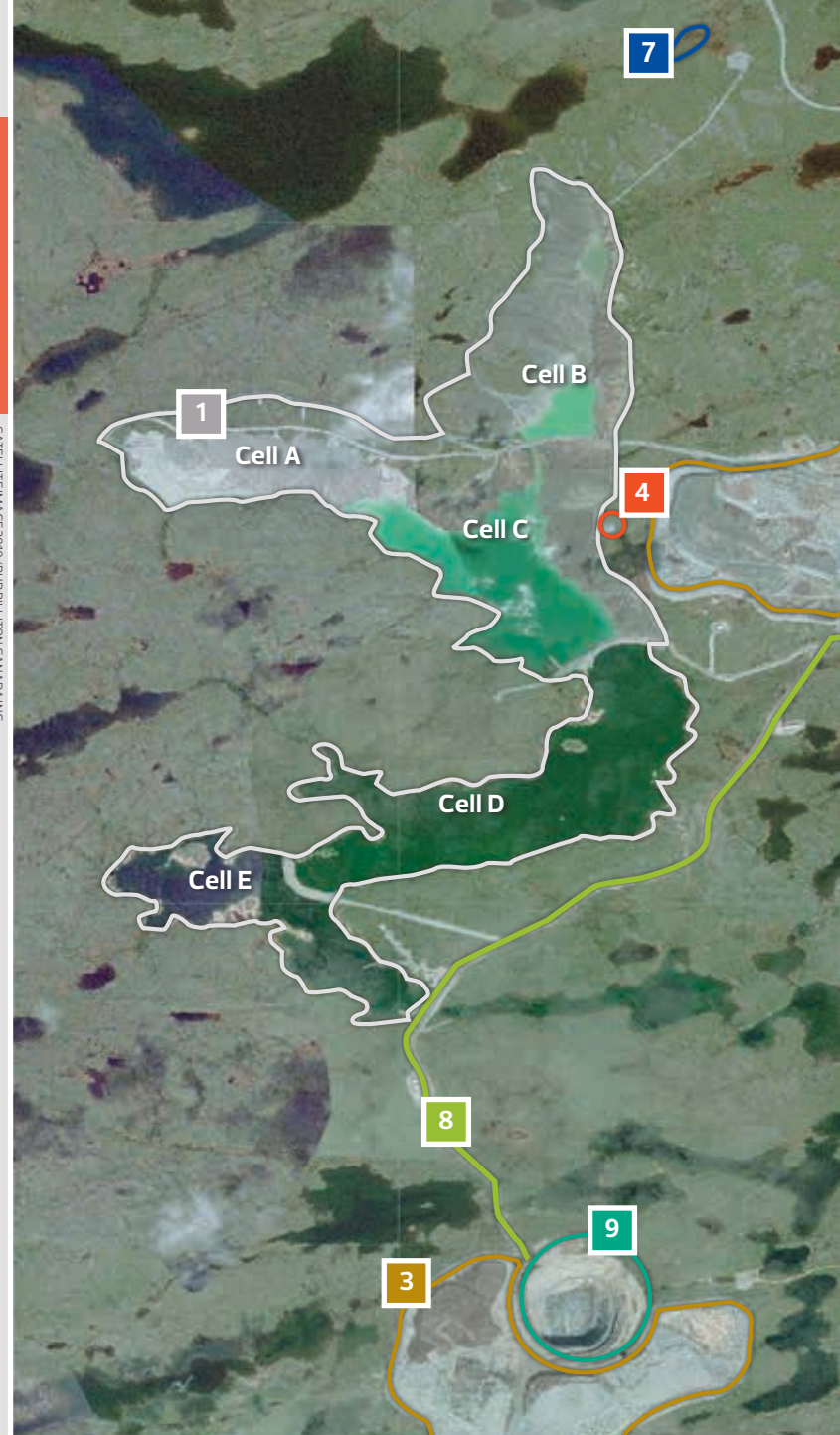
Rock that does not contain diamonds is piled in layers up to 50 metres high.

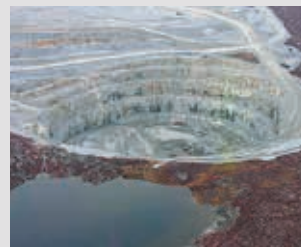


4 Incinerator

The building where garbage is taken to be burned.

SATELLITE IMAGE 2010/BHP BILLITON CANADA INC.





5 Beartooth Pit

DDEC has finished mining Beartooth Pit. The company currently stores water from underground mining in the pit. Beginning in 2012, DDEC has also used Beartooth pit for *processed kimberlite*.



6 Panda and Koala Pits

Open pit mining has finished here. Underground mining is finished at Panda, but is still happening at Koala. DDEC has built an underground tunnel (located between Panda and Koala pits) to provide access to the bottoms of the pits. A conveyor belt system takes the *kimberlite* rock to the processing plant.



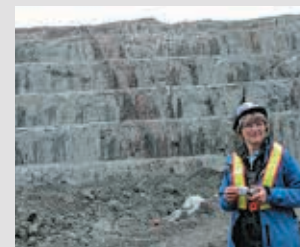
7 Panda Diversion Channel and Pigeon Stream Diversion

The Panda Diversion Channel and Pigeon Stream Diversion are man-made streams diverting water that would otherwise flow into the pits. Fish, mostly grayling, use the new channels for travel and spawning. The Pigeon Stream Diversion was opened in 2014.



8 Haul Roads

DDEC has built all-weather roads to connect the pits to Main Camp. DDEC carefully applies chemicals to reduce dust on the roads. They apply to try to make sure that chemicals do not seep into the lakes and streams near the roads.



9 Fox Pit

This is the biggest pit at Ekati and most diamonds are found in here. Mining was finished in early 2015.



10 Misery Pit

DDEC stopped mining at Misery Pit in 2005. The company has begun work to push back the walls and mine deeper in the pit.



Site visit.

HIGHLIGHTS

- Four Board meetings, annual general meeting, environmental workshop and a community visit to Łutsel K'e.
- Took part in the Jay Project environmental assessment.
- Site visits to Ekati Mine.

HOW WE DO OUR WORK

ACTIVITIES 2014-15

In 2014-15, we held three board meetings in Yellowknife and one in Łutsel K'e. We also had our workshop and annual general meeting in December 2014.

We visited the mine in June 2014. We saw areas like Cell B of the Long Lake Containment Facility. We also took a helicopter tour of the Lac du Sauvage and Lac de Gras areas. Our staff also went to the mine in June and September 2014.

Technical Reviews and Input

We spent much time on the proposals for the Lynx and Jay Projects. We are taking part in the Jay Project environmental assessment. We gave many comments on changes to the document that set out how the review will be done. We made over 50 Information Requests to Dominion Diamond Ekati Corporation (DDEC) and government agencies about the Jay Project. We also answered two Information Requests sent out by the Review Board.



Agency visit to Łutsel K'e.



Jay Project information session.

Many of our meetings were about *financial security* for and *reclamation* of the Ekati Mine. *Financial security* under the water licence has been resolved and posted. We do not know when posting of security under the *Environmental Agreement* will be done.

We also took part in the review of the '2013 Interim Closure and Reclamation Plan Annual Progress Report'. The company proposed major changes to the *closure* activities at the mine and less *financial security*. We raised concerns and asked for more information. The Wek'ëezhii Land and Water Board (WLWB) largely supported our requests. So far, the company has not answered all of our questions.

We reviewed the 'Nitrogen Response Plan' proposed by DDEC. It tries to better track and manage explosive residues that are entering the water. We said better tracking is needed. DDEC also should fully respond to an independent review of blasting practices. The WLWB agreed with us. The plan has now been improved.

We also reviewed two drafts of the WLWB's 'Aquatic Response Framework'. The WLWB accepted most of our recommendations. Responses from the company are still outstanding today.

For wildlife monitoring, we were part of a working group on Zone of Influence (the area around the mine where caribou are less likely

to be found) monitoring and management. What actions are needed to reduce the impact of the mines on caribou? We also gave comments to DDEC on its wildlife camera monitoring program and grizzly bear hair snagging work.

Agency Communications and Collaboration

In December 2014, we hosted a workshop on wildlife monitoring and dust control. DDEC gave its wildlife camera results. The company also gave results for the grizzly bear hair snagging program. People attended from DDEC's environment department, Government of the Northwest Territories (GNWT), and our Society Members. The Agency made a presentation on best practices for dust control at mines.

On September 24–25, 2014, we visited Łutsel K'e to hold a board meeting and to talk with people about the Ekati Mine and our work. At night, we held a Community Open House. About 20 community members took part. They told us their concerns about the Jay and Lynx Projects, the need for better dust control at Ekati, and how there are not as many caribou.



Agency at Jay Project meeting.

The parties that signed the *Environmental Agreement* meet with the Agency twice a year. These meetings improve how we work and talk together. We reported on expenses and future plans.

In June and September 2014, site visits were made by the Inter-Agency Coordinating Team (IACT). IACT consists of the Agency and a group of government regulators.

We worked with Tamarack Computers to improve communications among directors and staff. We also automated our computer file back-up system and have off-site storage. We will start to put our reference library on the website.

We use social media to tell about current activities and events. See our page at www.facebook.com/monitoringagency. Our newsletters from June and October 2014 were sent out on paper and on the website.

ASSESSING THE AGENCY

We were pleased that we were able to hold a board meeting, Open House, and school visit in Łutsel K'e. The events were well attended. They provide us with useful feedback on issues and priorities.

We are pleased that most of the recommendations we made last year seem to have been accepted. We believe they improved environmental management and performance at Ekati.

We continue to work with GNWT, DDEC and Canada on future plans for the *Environmental Agreement* and the need to consult with Aboriginal governments. ■



Ekati Main Camp and Panda, Koala, and Beartooth waste rock pile.

HIGHLIGHTS

- DDEC did three special studies on the future of *waste rock* piles.
- Fox and Misery *waste rock* piles still not freezing properly.

WASTE ROCK MANAGEMENT

Mining activities underway at Ekati in 2014:

- underground operations at the Koala and Koala North pipes.
- end of open pit mining at Fox pipe (with more underground assessment work in the deeper parts of Fox).
- start construction of the Pigeon clean rock pad to go underneath the *waste rock*. Also roads and water diversion berms to prepare for mining.

- Panda, Koala, and Koala North open pits were reclaimed to prepare for flooding.
- Beartooth pit continued to receive fine *processed kimberlite tailings* and underground mine water.

SEEPAGE MONITORING

Sampling of water leaving the *waste rock* piles is done twice a year. For the most part, drips from the rock piles are seasonal, small and not steady. However, monitoring data and lab tests show a chance of acid coming from the *waste rock* piles after a long time.

WASTE WATER AND WASTE ROCK

As we said last year, this water contains metals. This comes from weathering of both granite and *kimberlite* waste. As time passes, Dominion Diamond Ekati Corporation (DDEC) expects water leaving the *waste rock* piles to show some minor increases in many metals plus ammonia and sulphate.

Since the start, the company's *closure* plan for the *waste rock* piles has relied on the idea that permafrost forming inside will keep them frozen. The frozen rock is expected to stop water and oxygen from coming in. This should reduce acid and metals coming out of the *waste rock* piles. Design of the piles includes steps on the side slopes and a flat top. These stop snow build-up and encourage permafrost inside.

So far permafrost has risen into some of the rock piles, but not always. For example, the plan hasn't worked well in the Coarse Kimberlite Rejects Storage pile and the Fox and Misery rock piles.

In 2014 the Wek'ëezhii Land and Water Board (WLWB) responded to our concerns about the *waste rock* piles after the mine has closed. The Board directed the company to update its predictions of the long-term behaviour of chemicals in the *waste rock* piles. So DDEC did more work and in September 2014 the company reported the early results of three studies.

RISK ASSESSMENT

DDEC did a study to look at the risk to land, water and wildlife from water seeping out of the rock piles. It concluded there is no likely harm in the future to water, birds or land animals. The Agency and others are still reviewing this work by the company. DDEC will do a similar study to look at the potential for long-term harm after the mine is closed.



Misery waste rock pile.

TEMPERATURE IN THE ROCK PILES

It seems that the four rock piles at Ekati are not all freezing at the same rate. Many of the special thermometers inside the rock pile are broken. DDEC thinks the reason for the slow freezing in the Misery rock pile may be that heat is being produced by small amounts of sulphur in the rocks reacting with air and water.

Fox rock pile is of most concern as 'large portions' are still not frozen. DDEC says it is studying the problem to better understand what is happening.

DDEC is predicting that most of the waste rock piles will freeze even with climate change.

EVALUATION OF ROCK TYPES FOR SEEPAGE

DDEC is studying water from small test samples of the same rock as in the large rock piles. The company found:

- In general higher amounts of individual chemicals were found in the rock pile water rather than the test sample water.
- Water leaking from the actual waste rock piles was a bit more acidic, with more sulphate, than the test samples.
- Kimberlite ore is not acidic but the metals aluminium, arsenic, copper, nickel and iron can leak out.
- Test samples from Misery show less aluminium than the seepage from the actual waste rock pile.



Pigeon waste rock pile construction.

AGENCY ASSESSMENT

A lot of mined rock will be left on the surface when the mine closes. It is important to plan how to handle the chance of long-term contaminant release.

Last year we reported that it is urgent for the company to better understand the 'freeze-back' of the waste rock dumps. We recommended that DDEC needs to get on with studying why some waste rock piles are not freezing. The company needs to develop good alternate plans if the piles are not well-frozen at closure.

Progress on this issue was mixed in 2014. DDEC did a good job reporting on waste rock and kimberlite tailings management at the Ekati Mine. The three special studies conducted this year have added useful

information for the long-term management of the rock piles.

Studies of waste rock seepage were done by the former owner of the Ekati Mine, BHP Billiton. The company concluded that weakly acidic conditions in seepage was partly a result of interaction with tundra soils. This is not mentioned in the 2014 seepage risk assessment.

Most of the ground temperature cables in the Misery and Fox piles have been broken the past few years. This means valuable information for closure planning is being lost. DDEC should move quickly to install new cables. This is important, since the closure of these facilities is almost upon us.

DDEC notes that it is developing a workplan for the Fox waste rock pile that will "enable

completion of thermal modeling in 2015."

Although not stated in DDEC's 2014 report, we trust that the plan includes reinstalling the ground temperature cables to provide results to better understand what is happening.

The WLWB has continued to exercise thorough oversight on this aspect of the mine operations. We liked the directions that the Board provided to DDEC in 2014 to do several more studies to get more up-to-date information about the waste rock freezing and geochemical behaviour needed for closure planning.

The currently scheduled mine closure in 2019 is fast approaching. We find a growing urgency to get on with solving the long-term freezing issues with Ekati's waste rock piles. ■



Agency Directors at Panda Diversion Channel.

HIGHLIGHTS

- Water licence security has been posted.
- *Environmental Agreement* security review is not done.
- Delays in *reclamation* research are a serious concern.

CLOSURE PLANNING

CLOSURE PLAN

The *closure* plan for Ekati is to flood the 7 open pits and underground mines to make pit lakes. Three lakes have been chosen as sources of water, for flooding that is expected to take 35 years. Berms will be built on the edge of pits to deter wildlife during the flooding. Research to find the best way to do flooding is being done. For example, is it possible to put *Processed Kimberlite* (PK) into the Panda and Koala pits during operations?

The Long Lake Containment Facility (LLCF) will be covered with rocks and plants. Then it will be joined with the surrounding lakes and streams. All dikes and dams in the LLCF will be broken at *closure*.

The Panda Dam will still send water through the Panda Diversion Channel (PDC). It will have a spillway to allow water to flow to the Panda and Koala pit lakes. The PDC will still be good fish habitat. The Pigeon Stream Diversion will also stay in place. It will send water from the upper Pigeon stream to Fay Lake.

Waste rock disposal areas will be covered by 4–5 m of rock. Plants will be allowed to grow naturally.

2014 ADDITIONS TO THE PLAN

Dominion Diamond Ekati Corporation (DDEC) asked for changes to the Interim Closure and Reclamation Plan. Some changes have been approved by the WLWB, while some other changes are still being reviewed.

- Fox Pit will be filled using water from the LLCF;
- Lynx *waste rock* to be added to the nearby Misery Waste Rock Storage Area (WRSA);
- DDEC will be using a 3 m glacial till plus 1 m of granite cover for the Pigeon *waste rock* pile instead of 5 m of granite. Some of the Pigeon rock has the potential to make acid when exposed to air and water;
- changing caribou access ramps to flatter slopes on the future Pigeon WRSA. This will be safer for caribou;
- removing the power line when it is no longer needed; and
- a change in the *closure* cover plan to 'physical stabilization'.



Revegetation and rock cover at Long Lake Containment Facility.

RECLAMATION WORK IN 2014–15

Old Camp

Reclamation of Old Camp started.

- Sent clean Phase 1 pond water into the lowland area flowing into Larry Lake. Water that is not clean enough is pumped out and sent to the LLCF.
- Move the old *tailings* to the Coarse Rejects Storage Area (CRSA).
- Move liner materials from the Phase 1 pond to Ekati landfill.

- Remove PK. Then place clean esker material to cover some leftover PK that could not be moved.
- Break the south berm of the South Pond.

Panda Diversion Channel

Final work to stabilize the channel was completed.

Koala Underground

Underground mining of the Koala pipe goes on but some areas closed and cleaned up. DDEC says all hazards, garbage, and other materials were removed. Barricades control access.

Re-planting and Saving Topsoil

More seedlings were planted at Pigeon Stream Diversion. Earlier plantings were checked. Topsoil from Pigeon Pit was saved and added to the soil stockpile.

RECLAMATION RESEARCH AND PLANNING

There are about 21 planned projects to study *reclamation*. Thirteen of the projects have had some tasks delayed.

ACTIVITIES OF DDEC, BOARDS AND GOVERNMENTS

Wek'èezhìi Land and Water Board (WLWB)

After its review of the '2013 CRP Progress Report' and the amount of security held, the Board:

- approved the use of Exeter Lake as a water source to fill the pits;
- did not approve DDEC's proposed changes to the *closure* goals, cover design, or security for the operation and demolition of dumps;
- required better tracking of delays in *reclamation* studies;
- required DDEC to study impacts from lower water flows;
- asked about flooding time for Fox Pit;
- delayed a decision on changes to security until new results are received; and
- asked that future ICRP reports include security adjustments needed for proposed changes to the ICRP.

Government of the Northwest Territories

Since April 1, 2014, the Government of the Northwest Territories (GNWT) is in charge of financial securities. There is to be a public review in 2015 of GNWT's much-needed policy for mine *closure*.

FINANCIAL SECURITY

Water Licence Security

Last year we were concerned about the large gap between *financial security* needed and security held under the water licence.



Revegetation plot on Long Lake tailings.

We said that the security held should be quickly increased to the proper amount. This has now been done. Because the type of security changed, we asked for a meeting with the GNWT. We wanted them to explain the change and reassure us that it is suitable. GNWT insisted the money set aside by the company would be “absolute, unconditional and irrevocable”.

Environmental Agreement Security Deposit

Last year, we recommended DDEC submit a proposal for security under the *Environmental Agreement*. It did so and this resulted in many meetings and exchanges of information.

So far, DDEC and the Agency are rather far apart – by \$38 million or so. Our view is based on obligations under the *Environmental Agreement* and their costs.

GNWT had agreed to give its draft position for comments to both DDEC and the Agency. GNWT has since told us that it would give the draft only to DDEC. We believe it unfortunate that transparency has been lost.

AGENCY'S ASSESSMENT

We are pleased that DDEC made good progress on the *reclamation* of Old Camp and the widening of the PDC. We note that some parts of Old Camp are not yet completed. We hope to see these finished in 2015.

WLWB's review of 2013 CRP Annual Report was complete. It asked for more information. It responded carefully by not approving some change requests.

We know that GNWT has inherited a *financial security* system that needs more accountability and transparency. We think:

- DDEC did not fully respond with information we asked for during the *Environmental Agreement* security review. It would help if there were a formal information request process.
 - GNWT should consider a public registry system for answers given during *financial security* talks. It should post final decisions.
 - It would be very helpful if all interested parties could learn to use RECLAIM. It is a tool for estimating *reclamation* costs.
 - It would help to have a “lessons learned” meeting after this *Environmental Agreement* security review is done.
 - The Mackenzie Valley Land and Water Board Working Group on Securities completed its work but that report has not yet been made public.
- We are concerned that key questions about *reclamation* have not been solved.
- The end of mine life for Ekati is fast approaching. Good *closure* plans for some important parts are behind schedule.
- The delay in *reclamation* research is a very serious problem. DDEC needs to make greater effort toward getting the research and planning done on time.
- The company should be moving toward a final Closure and Reclamation Plan by the end of 2016. If the Jay Project is approved, an updated interim Closure and Reclamation Plan is needed by the same date. ■



Long Lake Containment Facility revegetation area.



Fish box at Pigeon Stream Diversion.

HIGHLIGHTS

- Water quality results from the north arm of Lac de Gras show that more monitoring sites are needed.
- Some major ions, nutrients and metals are still high, below the Long Lake Containment Facility. Potassium is of special concern.
- Lac du Sauvage remains unchanged by mining.
- The Aquatic Effects Monitoring Program will be re-evaluated in the next reporting period.

Each year Dominion Diamond Ekati Corporation (DDEC) carries out programs and studies to see if the mine is causing changes in the water downstream. There are three watersheds that could be affected by the mine. Lakes and streams in these three areas are sampled as part of DDEC's Water Licence. From this data, any changes in water or fish can be seen.

Total rain and snow in the Ekati area during the 2013–14 year was a lot below average.

ACTIVITIES 2014–15

Processed kimberlite tailings (PK), treated sewage and surface mine sump water were sent into the Long Lake Containment Facility (LLCF). Underground minewater and PK were pumped to the Beartooth Pit. More than 1.3 million cubic metres of water was released from the LLCF between July and November. It entered the Koala watershed through Leslie Lake. It was diluted as it flowed downstream through Moose Lake and other lakes before flowing into Lac de Gras. The LLCF is the main source of water contamination from Ekati.

WATER AND FISH

A second source of *contaminants* is dirty minewater from the Misery site. Water collected from Desperation Pond was pumped to the King Pond Settling Facility during July 2014.

The Pigeon Stream Diversion (PSD) was completed. It was connected to the natural Pigeon Stream. The last phase of the Panda Diversion Channel construction project was started in January 2014.

AQUATIC EFFECTS MONITORING PROGRAM (AEMP) MONITORING RESULTS

Water Quality Sampling and Results

Each year DDEC reports the results of its AEMP to the Wek'èezhì Land and Water Board (WLWB). The company provides the highlights in the Environmental Agreement and Water Licence Annual Report.

This is the 17th year of monitoring for the Koala–Lac De Gras system. It's the 14th year for the King–Cujo system.

Water quality gets better the farther you go downstream from the mine. This means that changes in water quality still come from the discharge of dirty water from Ekati operations.

In Lac de Gras, eight water quality chemical measurements still measure higher than they do at other lakes. This trend shows that more monitoring sites are needed on Lac de Gras in

order to find out how far into that lake water quality changes. None of the things measured in Lac de Gras exceed the Site Specific Water Quality Objective (SSWQO) or the Canadian government guidelines.

Monitoring results show that total ammonia is still high in lakes downstream of the LLCF as far as Slipper Lake. Total phosphates, a nutrient that makes plants grow, have also increased in lakes downstream of the LLCF as far as Moose Lake but it has increased in lakes untouched by the mine too.

Potassium, a salt, is still increasing a bit above levels set for this mine. DDEC predicted the total amount of potassium in lakes will peak by 2020, but it has already happened in 2013 and 2014. The computer model is wrong about current levels.

Sediment Quality

Eleven things were measured in the lakebeds in 2014. Several of the chemicals have increased through the years, but the levels are still safe for drinking and for fish. Most of those changes are caused by mining. The causes of change in nitrogen and molybdenum are not clear.

Sampling of Tiny Water Plants and Bugs

Changes have been seen in the tiny plants and bugs in the sampled lakes, with previously dominant species being replaced by other

species that were formerly fewer in number. This shows water quality changes are affecting the life in lakes downstream of the mine all the way to Lac de Gras.

OTHER STUDIES AND PLANS

Three special effects studies (two continued from 2013) and two Response Plans were done in 2014:

Lac de Gras Water Quality Monitoring Stations

In 2012, mine effects were found downstream of the LLCF. In 2013 samples were taken all down the north arm of Lac de Gras to see how far into that lake water changes occur. This should help decide if more water quality monitoring stations are needed there.

DDEC has said that water quality and lake study data will be part of the 2015 AEMP Re-evaluation. It will include the question of adding sampling sites in 2016.

Grizzly Lake

Tiny water plants and bugs in Grizzly Lake (where the mine gets its drinking water) were counted in August 2013 and in 2014. There has been an increase of one type of bug, but no change in tiny plants. There will be one more year of study to check the results.

Hydrocarbon Study

DDEC paid for a university student to study sources of petroleum *contaminants* at Ekati. The study found that the use of DL-10 dust suppressant on mine roads is likely the main source of *hydrocarbons* in water. Ekati uses a 30 m buffer where roads cross water. The study said this may not be large enough.

Also, more *hydrocarbons* were found near the power plant than near the incinerator but they don't appear to be the same type as found in Ekati streams tested.

Nitrogen Response Plan

The Nitrogen Response Plan aims to reduce the amount of nitrogen entering the environment at Ekati Mine. Too much nitrogen, mostly in the form of *nitrates*, can feed so much water plant growth that too many uneaten plants eventually die and decay which uses up oxygen needed by fish. As a result of the plan, the company has changed types of explosives.

A major source of nitrogen in water was reduced when pumping of minewater from Misery Pit and Fox Pit stopped in March 2014.

Work by DDEC on the Nitrogen Response Plan continues. Any new versions of the plan will be part of the Aquatic Response Framework.

Potassium Response Plan

An Aquatic Response Plan for Potassium was sent to the WLWB for approval in March 2015. An updated version will be sent by November 30, 2015.

Aquatic Response Framework

In May 2014 we sent to the WLWB a number of comments on the Ekati Aquatic Response Framework. This Framework is an early warning system to alert the company that it needs to correct a possible pollution problem in lakes before it gets to a point that kills fish and bugs. Our comments included:

- How can the mine reduce its waste to have less impact on the environment;
- Set the Action Levels (amount of water contamination at which something should be done to reduce it) so there is enough time to put the responses in place;
- It is better to take careful actions now than to wait for scientific proof of bad effects; and
- There need to be Action Levels developed for contamination more than a minimum and less than maximum needed to respond to by the company to protect fish and bugs.

We recommended having a workshop to compare aquatic response frameworks for all of the NWT diamond mines. The WLWB will be leading a workshop in June 2015 on outstanding issues with the framework.

AGENCY ASSESSMENT

We support the DDEC study of new water quality sampling sites in the north arm of Lac de Gras. More sites would make it easier to find any mine-related effects in that lake.

We are pleased with early news that the Nitrogen Response Plan may be reducing nitrogen in the LLCF system. We will be interested in future results.

Phosphorus is increasing in lakes both downstream of LLCF and in other lakes. We are concerned that the increase is greater in the lakes downstream of LLCF.

The 2014 results on ammonia and phosphate show that more monitoring is needed.

We are concerned that the high amount of potassium may be bad for sensitive bugs in the lakes. DDEC should conduct a special study to find out how changes to the bugs that fish eat may affect fish health. Since potassium amounts are above the level set by the company to protect the environment, we support DDEC doing tests that could give information about impacts on the water environment in lakes.

We are concerned that, for the first time, more than one type of bug is declining in lakes downstream of the LLCF. We will watch that situation closely, as this change may affect the food web.

The importance of monitoring of water and lakebeds will grow in future years. It should give vital pre-development baseline information if the Jay Project is approved. ■



Lynx Lake.



Water truck on Misery Road.

HIGHLIGHTS

- 2014 Air Quality Monitoring Program Report sent out by the company.
- Agency concerned over lack of work to improve dust control

The Ekati Air Quality Monitoring Program (AQMP) started in 1998. Results are reported every three years. Snow and lichen sampling are also reported. The 2014 AQMP report gives the results of air quality around Ekati from 2012 to 2014.

ACTIVITIES 2014-15

Air Emissions

Every year Dominion Diamond Ekati Corporation (DDEC) calculates air pollution from diesel fuel use. The company reports the results to the National Pollutant Release

Inventory (NPRI) and the Greenhouse Gas (GHG) Emissions Reporting Program. From 2012 to 2014 the GHG emissions were 20% more than in the previous AQMP report. DDEC said this may come from using more fuel during hauling and building work. Ekati Mine has about 12% of the total GHG emissions in the NWT. DDEC says it is looking for new ways to make the mine more energy efficient and to lower emissions.

Weather Stations

Weather data at Ekati is collected every day from weather stations and the airport

AIR QUALITY

when staff are there. The company notes temperature, humidity, rain or snow, and wind speed and direction. New equipment is in use for better results that are reported each year as part of the Aquatic Effects Monitoring Program.

Average winds at Ekati range from 11 to 18 km/hr. They are mostly from the east or east-northeast. Ekati had a warmer May to September in 2012 and 2013 and a cooler November to April in 2013 and 2014. The three past years were warmer than normal by 1 to 2°C. Snow and rain are also increasing, but in 2014, they were below average.

Air Samplers

In the past the High Volume Air Samplers (HVAS) had problems and gave bad data. In June 2012 new *Total Suspended Particulates* (TSP or dust) samplers called Partisol samplers were placed at Grizzly Lake and Cell B. One more air sampler was placed at the Continuous Air Monitoring Building. The older HVAS were removed in June 2013.

The samplers run for 24 hours every 6 days. There were still some problems. There were three days where TSP exceeded the Government of the Northwest Territories (GNWT) standard. One very windy day it was likely due to dust. Two days were due to distant



Hercules on Ekati airstrip.



Cornstarch cutlery at Ekati main camp cafeteria.

forest fire smoke. The data shows that Ekati air quality results mostly meet the guidelines.

Continuous Air Monitoring (CAM)

A Continuous Air Monitoring (CAM) station is located at the site where explosives are stored. The CAM results from 2012 to 2014 show that some monthly amounts have a slight decreasing trend. Amounts are higher in the winter than the summer because of heating fuel.

Dust Monitoring Program

The dust monitoring program started in 2006 to find the patterns for dust coming from haul roads. There are 17 sampling locations. Samples are collected between June–September.

In 2012, three temporary dust sampling stations were set up downwind of the Fox Pit waste rock area. These stations found low dust amounts. Because of those results, monitoring was not done in 2013 or 2014. Because of comments on the dust program, in August 2014 three more dust monitors were set up downwind of Misery Road.

The NWT does not have dust guidelines, so DDEC uses those from British Columbia (BC) to assess results. Within 90 m downwind of the Misery and Fox roads, dust amounts were mostly higher than the BC guidelines. At 300 m downwind of the road, measured dust amounts were below the BC guideline. At 1,000 m downwind, all dust amounts were the same as at background dust stations.

Average dust levels at the 3 airport stations and two at the Long Lake Containment Facility (LLCF) were higher in 2013 and 2014 compared to 2012. Results show a lot of dust is being blown from the LLCF and from the airstrip.

Snow Chemistry Sampling

Snow chemistry samples are taken every three years. There are 33 sampling sites in a radial pattern away from the mine site. Most snow sampling sites are close to the place where lichen is sampled. 12 of these are also next to soil samples. At each site, three snow samples were taken. They are tested for the same chemical elements as water.

The 2014 snow chemistry numbers show there is a winter loading of a number of metals likely from dust.

Lichen Sampling

Lichens tell us about air quality. They are often used to monitor dust and metals. Two kinds of lichen are sampled every three years. Thirty-nine lichen places were sampled using helicopter access in August 2014. Soil samples were also taken at 19 sites. Road dust was sampled from three places.

Tests results of lichen are the same as snow chemistry data. The two lichens show that mine dust is found within 10 to 30 km of the mine. Many of the highest amounts came from within 1 kilometre of roads.

Our Activities

At our community visits and meetings, we heard concerns about dust and its effect on caribou. We met with DDEC, GNWT and Environment Canada in April to talk about incinerator testing. We met again in May. In July we wrote a letter to DDEC urging more study of other ways to keep dust down.

In December we held a workshop and talked on dust control and best management. We focused on the ways used now, including the use of water and chemicals on roads. Then we talked about other choices. These included less traffic, lower speeds, better road design, and windbreaks.

AGENCY ASSESSMENT

In this reporting period, DDEC has made good improvements to its AQMP:

- updating its written methods of air quality testing;
- ensuring staff do good quality assurance and quality control checks of equipment; and
- having regular maintenance schedules for resetting equipment.

Many new activities are being suggested for the southern half of the Ekati area. We are concerned with the dust from construction and operation. DDEC said it will update its Air Quality Monitoring and Management Plan to take in the new projects. Updates should be done before the activities start.

Dust is still a concern for the Agency. We worry most about the caribou, who might be avoiding the mine because of the dust. We have urged DDEC to do more study on the cause of caribou staying away from the mine.

In a January 2014 letter to the Agency, DDEC promised to analyze how good the dust control has been. We are disappointed that there has been little progress so far on a dust control study. ■



Caribou crossing ramp on Misery Road.

HIGHLIGHTS

- More monitoring to be done because of building the Misery power line.
- Report on the use of remote cameras to document caribou movement at the mine.
- Summary report on the grizzly bear DNA survey.
- Jay Project concerns over roads and caribou.

ACTIVITIES 2014–15

The Dominion Diamond Ekati Corporation (DDEC) Wildlife Effects Monitoring Program (WEMP) looks for wildlife changes from mining activities. It tests if work on reducing the changes has succeeded. The 2014 WEMP focused on effects on areas used by wildlife including caribou, grizzly bear, and wolverine. Information comes from incident reports, counts, watching, and DNA samples. Extra monitoring will have to be done because of the new power line by Misery Road that was

started in 2014. The caribou program now uses remote cameras to count caribou and watch movements. A three-year report on the camera study was sent out in 2014. DDEC and Diavik did a grizzly bear DNA study in 2011 and 2012. The results were written up and sent out in 2014.

The Government of the Northwest Territory's (GNWT's) Department of Environment and Natural Resources (ENR) held meetings on a Bathurst Caribou Range Plan. The Plan will include watching for and managing effects of development on the land.

WILDLIFE

It will later be part of a larger plan for caribou. The Range Plan process is slow. It may take two more years to finish.

The new Wildlife Act became law in November 2014. GNWT is starting work on rules and policy. Draft guidelines were sent out for comment in December 2014. We gave comments in January 2015.

Ekati Mine Footprint

The physical footprint of the mine increased by 52 hectares during 2014. The total footprint of the mine site now covers 3,294 hectares (33 km²) or about the size of Yellowknife.

Wildlife Incidents

DDEC continues its efforts to improve its waste management:

- less food waste at dumps;
- fewer wildlife incidents; and
- keep wildlife away from areas of danger (like the airstrip, truck traffic).

Getting staff to follow good waste disposal habits is a challenge for the company. They did better in 2014 than in 2012 and 2013, but were still far worse than the earlier years. Wildlife sightings, tracks and scat at the dump were less in 2014.

In 2014, there were seven site-wide notices about caribou. One caused a one-hour stop of work on the Misery power line. Another meant

a 45-minute road closing so caribou could cross. There were 31 site-wide notices about grizzly bears.

Nineteen vehicle-related animal deaths happened in 2014. None of them were of caribou or grizzly bears. Two foxes who might have had rabies were killed.

Misery Power Line

In fall 2014, building the power line included wildlife monitoring. Work was stopped if more than 12 caribou were seen near the work area and were showing signs of stress. Only 2 delays were recorded. During review of the land use permit, DDEC promised to monitor after construction, as we recommended.

Caribou Monitoring

DDEC used to do air and ground surveys to study caribou. No air counts have been done since 2009, except one by Diavik in 2012. In 2014, 1,508 caribou were seen in the Ekati area. This is the second lowest number since counts began in 2006. Most caribou were seen by the western half of Misery Road. The land there is poor for caribou. Ekati staff did 3 behaviour studies in 2014.

The main goals of the remote camera program are to count caribou and see how they act. Do the tundra roads stop caribou from crossing? About 60 cameras were placed on the mine property in 2014. A 3-year report on the camera study was sent out in fall 2014.

It shows that the number of caribou was lowest along the Misery Road and highest in the northern areas. The report says that the steepness and rocks at the edge of a road determine if caribou will try to cross. It says that caribou chose not to cross the roads only one time out of 100.

Grizzly Bear Monitoring

There aren't too many grizzly bears on the barrens. In 2012 and 2013, DDEC and Diavik worked together to count grizzly bears in a large area around the two mines by snagging hair. The results tell us that there are about 9 to 11 grizzly bears per 1,000 km². The southern part of this joint study was led by DeBeers and run by the University of Calgary. It was done in 2014, but the results are not out yet.

Other Animals

Wolf: Each year there is a study of wolf den sites. Of the seven dens checked by ENR, two were being used in June and had pups there in August. Five pups were successfully raised at a den located 250 m from the Misery Road. This is the highest output of pups since 2006.

Wolverine: DNA sampling was done at Ekati, Diavik and Daring Lake in April 2005, 2006, 2010, and 2011. DNA sampling at Ekati was also done in April 2015.

Birds: Rough-legged hawks, peregrine falcons and ravens nested successfully in several of the pits. Nests at Misery Pit were not wanted as there is blasting and mining taking place. Bear bangers, cannon, call playback devices, and netting were used over 100 times to keep birds from nesting there. The North American Breeding Bird Survey was done for the 12th year. The numbers of birds are about the same as in other years.

AGENCY ASSESSMENT

Review of Reports

Results of the 2014 WEMP programs are well presented, but some of the content is outdated.

We commend DDEC for their leadership on the grizzly bear DNA study. However, we think the grizzly bear density estimate is too high.

We think the 1% rate of caribou not crossing roads is far too low. The cameras are limited in how far they can see. Spring snow track surveys from 2002 to 2011 show that caribou chose not to cross Misery Road about 57% of the time. This shows the road was an important partial barrier to caribou movement.

DDEC is not clear on details of watching roads for caribou. The ways used now deal with physical injury to caribou. What about caribou behaviour? What about how the roads may act as barriers? What about access and use of the land? At this time, company monitoring only reports groups if they are right next to the road. The rules for the Misery power line project (more than 12 caribou near the work area and showing stress) are arbitrary and vague. They do not consider that groups with calves are more easily upset. Being able to cross Misery Road is important now. It will be a bigger concern if the Jay Project is approved. Then there will be much more traffic, especially in February and March. We hope the Jay assessment process will improve the wildlife rules. A Traffic

Management Plan has been promised by May 2015. We are eager to see it.

WILDLIFE MONITORING AND MANAGEMENT

The Ekati Wildlife Management Plan (WMP) was last updated in 2001. This is the Plan that should discuss how to protect wildlife and how to measure the effectiveness of that protection. We have been unsuccessful in pushing for an updated Plan. In Jay-related talks of spring 2015, DDEC said it will produce a Wildlife and Wildlife Habitat Protection Plan (WWHPP) and updated WEMP by June 2015. These documents will replace the Wildlife Management Plan. We look forward to the chance to review these documents. We wait for direction from GNWT on WWHPP and WEMP (of December 2014). They would help us look at the Jay Project and better understand its impacts. ■



Wildlife cameras with geese in the background.

ZONE OF INFLUENCE MONITORING

In March 2015 the Caribou Zone of Influence Technical Task Group sent out a draft paper for comment. It deals with ways to monitor caribou Zone of Influence (ZOI). This is the area around the mine where caribou are less likely to be found. The aim is best quality data, when monitoring is the right thing to do. This small group of people from ENR, industry (including DDEC), consultants, and the Agency met 3 times to make guides for when ZOI monitoring is right, study design, and other ways to find caribou ZOI besides air surveys. The group made a good list of reports and studies about ZOI. Of special interest was new ways to find ZOI from fewer surveys. We look forward to more progress on this important task.



Lynx Lake covered in ice.

HIGHLIGHTS

- Lynx Project approved and Jay Project under review.
- Concern over water management and caribou.

LYNX PROJECT

The Lynx *kimberlite* pipe is a small deposit about 5 km southwest of the Misery pipe. It is under Lynx Lake and has about 4 to 5 months of ore. Approval to mine the Lynx pipe was given by putting it under the existing water licence. Site preparation is planned for 2015. This means dewatering and fish-out plus an all-weather road to the Misery Road.

Dominion Diamond Ekati Corporation (DDEC) said that no changes were needed to the Aquatic Effects Monitoring Program. The Wek'ëezhii Land and Water Board (WLWB) told DDEC to develop a way to keep Lac de Gras safe from blasting and road traffic dust. The company was also required to submit caribou road-crossing plans for the Lynx access road. DDEC used Traditional Knowledge, collaring, and air survey data on caribou movements to find places for crossings.

LYNX AND JAY EXPANSION PROJECTS

JAY PROJECT

DDEC dropped the Cardinal pipe from the Jay-Cardinal Project in May 2014. Ore at Cardinal was less valuable than expected. There were also community concerns about the size of the project and its impacts. The Mackenzie Valley Review Board changed the Terms of Reference for the environmental assessment in July 2014. We made comments on the changes. Most were accepted by the Review Board.

DDEC sent in the Developer's Assessment Report (DAR) in October 2014. The Review Board did a review and asked for more information. This more detailed review was a new step. The company held a very helpful information session on the DAR in Yellowknife in December 2014.

After the extra information was sent in and studied by the Review Board, other people were invited to send in Information Requests. Over 500 Information Requests were made to DDEC, government agencies and others. We sent in 52 Information Requests. At this time, Technical Sessions have been planned for April 2015 to talk about the company's answers. We will take part in the environmental assessment.



Jay Project meeting in Yellowknife.

To date our major concerns with the Jay Project include:

- effects on caribou (barriers to migration, habitat loss);
- water quality and aquatic life (possible impacts on Lac du Sauvage);
- air quality (road and blasting dust);
- *cumulative effects* (the Project does not consider the current status of the Bathurst herd); and
- the company's determination that there will be no major bad impacts. ■



Grizzly Bear.

HIGHLIGHTS

- We urge better collaboration on grizzly bear hair snagging.
- GNWT is making progress on management for caribou using a population model and better monitoring guidance.

REGIONAL MONITORING AND CUMULATIVE EFFECTS

ACTIVITIES 2014–15

The Government of the Northwest Territories (GNWT) Department of Environment and Natural Resources (ENR) hosted a Slave Geological Province Regional Wildlife Monitoring Workshop in March 2014. We took part as did people from the diamond mines.

Dominion Diamond Ekati Corporation (DDEC) reported on its two-year grizzly bear hair-snagging program in October 2014. We urge DDEC to work with Diavik and De Beers to do a regional analysis of the study areas. This will help to figure out where and how many grizzly bears there are across the central NWT. It can lead to better management.

GNWT has made some progress on understanding long-term effects of human activities on caribou. There is a work group to study the Zone of Influence for caribou or why caribou stay away from diamond mines. This work can give useful data. An Agency Director took part in the study. GNWT has also hired a caribou expert to build a population model for the Bathurst caribou herd. That should be a good planning tool.

In October 2010, the Wek'èezhii Renewable Resources Board recommended that AANDC and ENR work together on best practices for helping caribou during calving and after. We are not aware of any progress.

The Cumulative Impact Monitoring Program (CIMP) should tell us about the state of the environment for the Mackenzie Valley. It should also tell us if the integrated resource management system is working. As part of government *devolution*, CIMP is now managed by GNWT–ENR. We are waiting for a study on water *cumulative effects* for Lac de Gras and the Coppermine River. ■



Exploration camp.



Agency visit to Łutsel K'e.

HIGHLIGHTS

- Both elders and youth have been part of environmental monitoring work.
- Dominion Diamond Ekati Corporation needs to improve its reporting of concerns from community meetings.
- Greater use of Traditional Knowledge in *reclamation* planning is needed.

ACTIVITIES 2014–15

Community Traditional Knowledge (TK) Projects

Wolverine DNA Program. To find where and how many wolverine are in the study area, and show Ekati environmental monitoring to Aboriginal youth. This program was cancelled due to safety issues. It has been planned again for 2015.

Misery Pit Raptor Surveillance Team.

Aboriginal people watched for birds trying to build nests close to the Misery Pit project.

Tłıchų What'aa Project–Jay Project.

Tłıchų elders shared what they know about how natural eskers act. This may be used for work on waste rock piles. Elders were also to go to Ekati to provide information to help with developing and fixing up the mine site including the Jay Project.

TRADITIONAL KNOWLEDGE AND COMMUNITY ENGAGEMENT



Open house in Łutsel K'e.

Yellowknives Dene First Nation (YKDFN) Archaeological Tour–Jay Project. YKDFN elders learned how the Jay pipe archaeological work has been done over the last two years in the Lac du Sauvage region.

Wildlife Monitoring Misery Road Power Line Project. Community wildlife monitoring during the installation of power line poles along the Misery Road. To show the Ekati environmental monitoring to Aboriginal youth.

Traditional Knowledge Archive Project. For reasons we do not know, the ongoing community TK database project of Łutsel K'e was not renewed by DDEC in 2014. Łutsel K'e has again applied for funding in 2015 to complete that project.

EKATI-BASED COMMUNITY ENGAGEMENT PROGRAMS

Caribou Monitoring Community Engagement Program. TK holders from the Tłıchų and the YKDFN were invited to view caribou in their natural habitat. They added community information and Traditional Knowledge about caribou to scientific monitoring.

In 2014, Dominion Diamond Ekati Corporation (DDEC) held Community Engagement Workshops with the Kitikmeot Inuit Association, Łutsel K'e Dene First Nation, North Slave Métis Alliance, Tłıchų Government, and Yellowknives Dene First Nation.

The Traditional Land Use and Traditional Knowledge Baseline Report in the Developer's Assessment Report for the Jay Project gives a good picture of information shared by communities. It tells about land use and resources near Ekati and the Jay Project.

An Agency director and staff took part in the ǀǀàà kati Traditional Knowledge Festival held in Yellowknife Sept 20–21. It was sponsored by the Tłıchʼo Government, Canadian Polar Commission and the Prince of Wales Northern Heritage Center. The event was about Northern Canadian ideas of Traditional Knowledge, its value and uses.

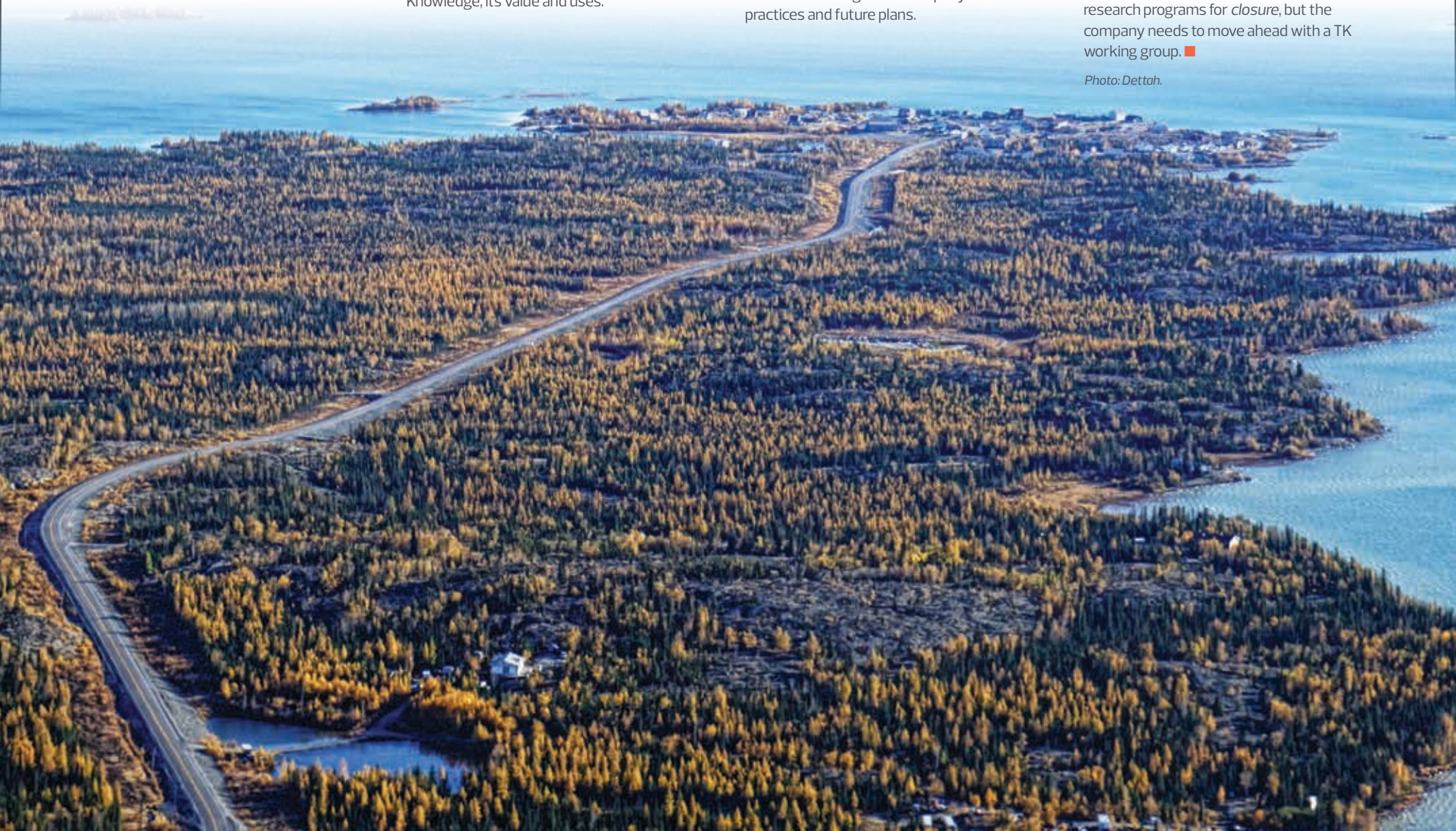
AGENCY ASSESSMENT

DDEC has senior managers meet with the communities to tell them about the mine. This is good and we hope it continues. We would like to see more reports on concerns raised or lessons learned in the meetings and how these have changed the company's current practices and future plans.

We also urge DDEC to continue to work with communities. Provide workshops and hands-on experience for community people. Listen to them talk about changes to the land and wildlife.

DDEC has been trying to speak with communities who want to take part in environmental projects, and in *reclamation* research programs for *closure*, but the company needs to move ahead with a TK working group. ■

Photo: Dettah.





Government and regulator site visit.

HIGHLIGHTS

- The Government of the Northwest Territories responded to our recommendation on posting of water licence security. GNWT has not finalized the Environmental Agreement security deposit.
- After *devolution*, Aboriginal Affairs and Northern Development staff moved over to GNWT and continue to do a good job.
- Wek'èezhii Land and Water Board is regulating Ekati well.
- Review Board has done well in its assessment of the Jay Project.

HOW ARE THE GOVERNMENT REGULATORS DOING?

AGENCY ASSESSMENT

As before, the regulators are still good at making sure Dominion Diamond Ekati Corporation (DDEC) operates an environmentally sound mine. At times we felt regulators did well and at times they could have done better. We were pleased with how well all the regulators work together.

Aboriginal Affairs and Northern Development Canada (AANDC)

The AANDC inspector joined the Government of the Northwest Territories (GNWT) at *devolution* on April 1, 2014, and is still responsible for Ekati. Water resources staff were also moved. After *devolution*, AANDC has had no dealings with us except at our Annual General Meeting in December 2014. AANDC has not shown leadership with the *Environmental Agreement*. It is not clear to us which department is now acting for the federal government in the Agreement.

Department of Fisheries and Oceans (DFO)

Changes to the *Fisheries Act* are still being made. DFO used to give good input on some of the regulatory papers sent in by DDEC. There has been less done over the last year. This may be caused by fewer staff at the Department of Fisheries and Oceans Canada (DFO) in Yellowknife. We hope the level of DFO

work on Ekati will increase, mainly with the proposed Jay Project.

Government of the Northwest Territories

We are pleased that regular inspections have been done of the Ekati Mine. The GNWT inspector for Ekati has done a very good job.

Environment and Natural Resources (ENR) has made strong comments on DDEC's regulatory papers. ENR work on wildlife has been promising. Progress has been made with wildlife monitoring guides and the Zone of Influence group. A meeting is to be held on Misery Power Line monitoring.

GNWT Lands is now in charge of holding *financial security*. The review of security under the *Environmental Agreement* has not been finished. We were told we would have a chance to see the position of GNWT on this security, but the process was changed. GNWT is now negotiating directly with DDEC. We are concerned with this change and the lack of openness. We will report on the decision next year.

There has been no more talk of changes to the *Environmental Agreement*. There may be some meetings with Aboriginal governments in the future.



Government and regulators visit to Pigeon Stream Diversion.

Finally, the changes to Agency Directors came as a surprise. There was no warning. In the future, it would be more helpful if we were consulted, especially about skills that might be useful to maintain our job performance.

Environment Canada (EC)

EC technical advice this last year was less than before. We expected EC comments on the Aquatic Response Framework. There has been no progress on rules for *effluent* from diamond mines. We look forward to more work from EC on air and water quality.

Wek'èezhii Land and Water Board (WLWB)

We were satisfied with the water licence and land use permit issued by the WLWB for the Lynx Project. We think there could have been more work on a road traffic management plan.

We were pleased with WLWB's review of the two drafts of the Aquatic Response Framework. There is to be a meeting in June 2015 to talk about improvements before the final review of this important document. We urge more

work and more supporting documents for putting in place the Water and Effluent Quality Management Policy of the WLWB.

The WLWB was to be abolished effective April 1, 2015. The Tłıchǫ Government successfully challenged those changes at the Supreme Court of the NWT and got an interim injunction on February 27, 2015. The WLWB continues to exist.

Mackenzie Valley Environmental Impact Review Board (Review Board)

We find that the Review Board has done a good job in managing the Jay Project Environmental Assessment. They did a complete adequacy review and hired outside experts. We look forward to the end of the public process around September 2015. ■



Spill clean up on Misery Road.

HIGHLIGHTS

- Dominion Diamond Ekati Corporation operates Ekati Mine in an environmentally sound manner.
- *Progressive reclamation* under way at Old Camp and Panda Diversion Channel.
- Dust suppression needs work.

The most important thing we can say is that Dominion Diamond Ekati Corporation (DDEC) is running Ekati in an environmentally sound way. This is the same thing we have said for years. We work well with DDEC staff.

The company does good work in studying changes in Ekati lakes. A study of sources of petroleum in water is most welcome. It will help DDEC to pinpoint and fix ways that *hydrocarbons* enter the land and air.

We do have some concerns about the work being done to ensure good results into the future. We are even more concerned than last year with the delay in *reclamation* research. However, we are pleased with the major *reclamation* work done at Ekati over the last year at Old Camp. We are also glad that the Panda Diversion Channel was made wider at the steep-sided canyon section.

HOW IS DOMINION DIAMOND EKATI CORPORATION DOING?



Misery Pit.

The WLWB had to ask twice for more information about the Misery Power Line land use permit application. We feel it is important to give good and full information for the best decisions. This will be very important for the Jay Project review. The Jay Project information session held by the company in December 2014 was very helpful.

We and other people have for some years been concerned about dust. Why is there no progress in studying dust control at Ekati? See our recommendation in the Air Quality section of this report.

We are pleased DDEC responded to us last year by sending in a proposal for the Environmental Agreement security deposit in the summer. We hope this will be resolved soon.

We wrote a strong letter of support for DDEC's application for a "Towards Sustainable Mining" award, from the Mining Association of Canada. We congratulate DDEC and Diavik for winning this award for the joint grizzly bear program.

We know that DDEC's work with communities goes on, but there is a clear need to write down and respond to the concerns raised. People need to know how DDEC has addressed these issues. ■

AGENCY RECOMMENDATIONS 2014–15

1 RECOMMENDATION

RECLAMATION AND CLOSURE

The Agency recommends that the GNWT update the terms and determine the amount of the Environmental Agreement security deposit no later than July 1, 2015, and provide reasons for its decision.

GNWT RESPONSE: Over the last number of months the GNWT and DDEC, in *consultation* with the Agency, have been participating in a review of the Environmental Agreement security deposit, per Article 13.2(b) of the Agreement. This review is near completion and the results and rationale will be shared with the Agency.

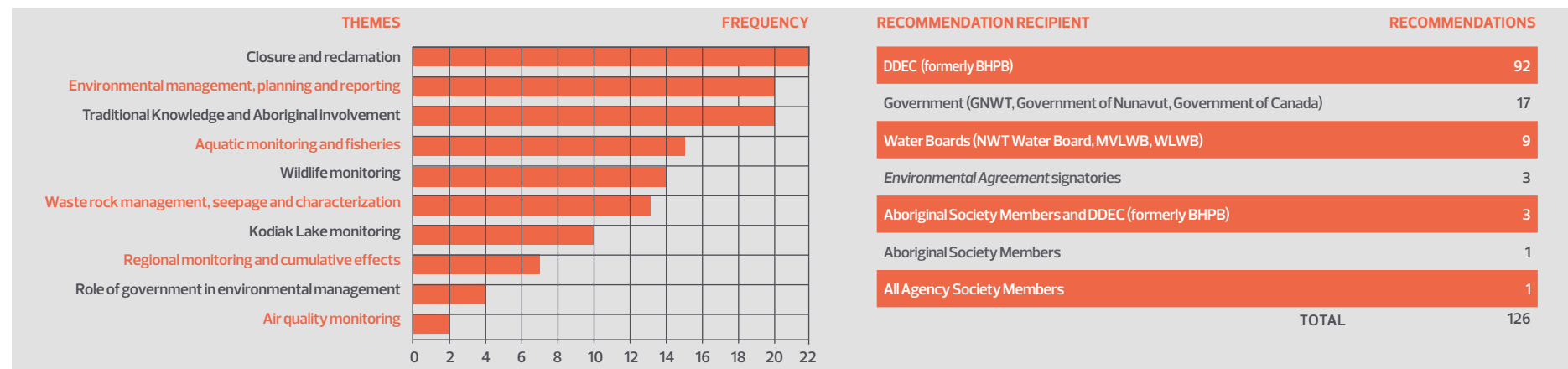
2 RECOMMENDATION

AIR QUALITY

The Agency recommends that DDEC investigate and test different dust prevention and suppression methods and evaluate their effectiveness at the Ekati mine. The Agency encourages DDEC to consult with GNWT Environment and Natural Resources, GNWT Transportation, Environment Canada, and others in the design of the testing and evaluation.

DDEC RESPONSE: DDEC is currently evaluating our dust suppression and monitoring program. DDEC continues to engage with ENR and other regulatory agencies on the use of other chemical dust suppressants. DDEC intends to trial a new dust suppression product (EnviroKleen) in 2015 and a test project is currently in development.

FIGURE 1: AGENCY RECOMMENDATION THEMES 1997–2015



GLOSSARY

Adaptive Management — Learning from environmental monitoring results and using the results to change and improve operations and monitoring.

Closure — Act of ceasing mining, processing and other production activities (final closure of the mining operation).

Consultation — (i) The party to be consulted has enough notice on a matter to allow for the party to prepare its view on the matter. (ii) Opportunity to present these views to the decision making body. (iii) Full and fair consideration be given to any party that presents their views to the decision making body.

Contaminant — A substance not naturally present in the environment or present in amounts that can negatively affect the environment.

Cumulative Effects — Environmental changes or impacts from past, present and future human land use activities (e.g., exploration and mining) combined with natural factors (e.g., fires, climate change).

Devolution — A transfer of responsibility from the federal government to a provincial or territorial government.

Effluent — Wastewater that flows into a receiving body of water.

Environmental Agreement — Signed by BHPB and the federal and territorial governments in 1997 to provide environmental monitoring for the Ekati Mine not covered by other licences and permits. The Tłı̨chǫ Government, Akaı̨tchǫ Treaty 8 First Nations (LKDFN and YKDFN), KIA and NSMA were involved in the negotiations.

Financial Security — Money that is required for the reclamation of the mine.

Hydrocarbons — Elements made of only hydrogen and carbon. Hydrocarbons are found in oil products.

Kimberlite — A rare type of rock rich in iron and magnesium that sometimes contains diamonds. Created deep below the earth's surface, kimberlites are usually found in long pipe-shaped forms.

Nitrate — A nutrient formed from nitrogen. Nitrate can affect the growth of baby fish.

Processed Kimberlite — The crushed rock and water mixture that is left over after kimberlite ore has been processed by the mill to collect diamonds. Also called "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). See also "Reclamation".

Reclamation — The process of returning areas of land and water to healthy ecosystems after being disturbed by mining or other human activities.

Tailings — See "Processed Kimberlite".

Total Suspended Particulates — Portion of dust released into the air that remains in the air.

Waste Rock — Rock that must be removed to access kimberlite pipes, or rock that contains diamonds but that is not worth mining or processing.

Wastewater — Water that contains wastes from the mining process (e.g., sewage and chemicals from explosives).





INDEPENDENT ENVIRONMENTAL MONITORING AGENCY

A PUBLIC WATCHDOG FOR ENVIRONMENTAL
MANAGEMENT AT EKATI DIAMOND MINE

PLAIN LANGUAGE ANNUAL REPORT 2014-15

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OR VISIT OUR WEBSITE:

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OFFICE HOURS

Monday to Friday
9:00 a.m.—12:00 p.m.
1:00 p.m.—5:00 p.m.

OFFICE STAFF

KEVIN O'REILLY

Executive Director

TEELIM

Communications and
Environmental Specialist



*POSITION
ONLY
To be replaced
by Printing
Company*