



SECTION 1

INTRODUCTION

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Section 1 Abbreviations

Abbreviation	Definition
#	number
AANDC	Aboriginal Affairs and Northern Development Canada (formerly DIAND and INAC)
AEMP	Aquatic Effects Monitoring Program
BHP	Broken Hill Proprietary Company
BHP Billiton	BHP Billiton Canada Inc.
DAR	Developer's Assessment Report
DDC	Dominion Diamond Corporation
DFO	Fisheries and Oceans Canada
DIAND	Department of Indian Affairs and Northern Development Canada (now referred to as AANDC)
Diavik Mine	Diavik Diamond Mine
DNA	deoxyribonucleic acid
Dominion Diamond	Dominion Diamond Ekati Corporation
EA	Environmental Assessment
e.g.	for example
EIS	Environmental Impact Statement
Ekati Mine	Ekati Diamond Mine
ENR	Environment and Natural Resources (GNWT)
et al.	and more than one additional author
GNWT	Government of the Northwest Territories
ICRP	Interim Closure and Reclamation Plan
i.e.	that is
ISO	International Organization for Standardization
KLOI	Key Line of Inquiry
LLCF	Long Lake Containment Facility
MAC	Mining Association of Canada
MVRB	Mackenzie Valley Review Board
MVLWB	Mackenzie Valley Land and Water Board
NWT	Northwest Territories
OHSAS	Occupational Health and Safety Assessment Series
PK	processed kimberlite
PM _{2.5}	particulate matter with diameter of 2.5 micrometres or less also referred to as fine particles
Project	Jay Project
SNP	Surveillance Network Program
SON	Subject of Note
TOR	Terms of Reference
TK	traditional knowledge
TSM	Towards Sustainable Mining
Water Licence	Class A Water Licence W2012L2-0001
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
WRSA	waste rock storage area

Section 1 Units of Measure

Unit	Definition
%	percent
°C	degrees Celsius
ha	hectare
km	kilometre
km ²	square kilometre
L	litre
m	metre
m ³	cubic metre
Mt	million tonnes

1 INTRODUCTION

1.1 Purpose

In October 2013, Dominion Diamond Ekati Corporation (Dominion Diamond) submitted an application to the Wek'èezhìi Land and Water Board (WLWB) requesting a Land Use Permit and Class A Water Licence to enable mining of the Jay kimberlite pipe (Jay pipe) as an extension project of the Ekati Diamond Mine (Ekati Mine). The Ekati Mine is located approximately 200 kilometres (km) south of the Arctic Circle, 300 km northeast of Yellowknife in the Northwest Territories (NWT), Canada, and within the headwaters of the Coppermine River drainage basin, which flows north to the Arctic Ocean. The Ekati Mine is within Wek'èezhìi management area of the Tłı̄chǫ settlement area, traditionally defined as the Mòwhì Gogha De Niitlee area. It was the first surface diamond mine and the first underground diamond mine established in Canada.

The Ekati Mine has been operating for 16 years. Production began in October 1998. During the early years, production focused on open-pit mining. However, during the last 11 years of operation, kimberlite has also been sourced by underground mining. The current Ekati mine plan predicts a further five years of production to 2019. The extension project referred to as the Jay Project (Project) could extend the life of the mine by an additional 10 years or more.

In Dominion Diamond's initial submissions for the Project, the community engagement for the Project's pre-application indicated that the Project "might cause significant public concern" and, because of these potential concerns, it was concluded that the Project would be appropriate for referral to the Mackenzie Valley Review Board (MVRB) for an Environmental Assessment (EA). In November 2013, the Project was referred to the MVRB for an EA by Aboriginal Affairs and Northern Development Canada (AANDC), under paragraph 126(2)(a) of the *Mackenzie Valley Resource Management Act* (S.C. 1988, c.25).

The MVRB issued Terms of Reference (TOR) for the Jay-Cardinal Project Environmental Assessment in February 2014 (MVRB 2014). Dominion Diamond submitted an addendum to the initial Project Description in June 2014, and the MVRB issued the revised TOR for the Jay Project in July 2014 (Appendix 1A). The TOR outline the potential issues that the Developer's Assessment Report (DAR) needs to address to provide sufficient information to the MVRB for them to make informed decisions and subsequent recommendations regarding the Project. The purpose of the DAR is to address the requirements stipulated in the TOR to support Dominion Diamond's application for the Jay Project.

1.2 Developer

1.2.1 Corporate History

Dominion Diamond is a Canadian-owned and NWT-based mining company that mines, processes, and markets Canadian diamonds. Dominion Diamond Corporation (DDC), the ultimate parent company of Dominion Diamond, is the third largest diamond producer by value globally and the largest diamond mining company by market capitalization listed on the Toronto and New York stock exchanges. Dominion Diamond Corporation is actively pursuing options to extend its operations in the NWT and, therefore, the economic benefits it provides in the NWT.

On November 13, 2012, DDC (formerly Harry Winston Diamond Corporation) and its wholly owned subsidiary, Dominion Diamond Holdings Ltd., entered into share purchase agreements with BHP Billiton Canada Incorporated (BHP Billiton), and various affiliates, to purchase all of BHP Billiton's diamond assets. This purchase included the controlling interest in the Ekati Mine, which is located in the Lac de Gras area of the NWT, and associated diamond sorting and sales facilities, which are located in Yellowknife (Canada) and Antwerp (Belgium). The Ekati Mine acquisition was completed April 10, 2013, and consists of two joint ventures: the Core Zone and the Buffer Zone joint ventures.

Dominion Diamond Holding Limited's interest in the Ekati Mine includes 88.9 percent (%) of the Core Zone (current operations and other permitted kimberlite pipes), and 65.3% of the Buffer Zone (development and exploration potential). The remaining 11.1% of the Core Zone is held by geologist Dr. Stewart Blusson, and the remaining 34.7% of the Buffer Zone is held by Archon Minerals Limited. The Core Zone encompasses 176 mining leases totalling 173,024 hectares (ha). The Buffer Zone contains 106 mining leases totalling 89,151.6 ha.

Dominion Diamond Holdings Ltd. also owns 40% of the Diavik Diamond Mine (Diavik Mine) and acts as a non-operating partner. The Diavik Mine is also located in the Lac de Gras area of the NWT. The Diavik Joint Venture is an unincorporated joint arrangement between Diavik Diamonds Mines (2012) Inc. (a wholly owned subsidiary of Rio Tinto PLC [Public Limited Company] of London, United Kingdom) and Dominion Diamond Diavik Limited Partnership (formerly known as Harry Winston Diamond Limited Partnership).

During the fourth calendar quarter (October through December) of 2013, the Ekati Mine produced (on a 100% basis) 0.4 million carats from the processing of 0.9 million tonnes (Mt) of kimberlite. Development was focused on the Fox open-pit operation, and the Koala and Koala North underground operations. A further 0.1 million carats were recovered from processing 0.1 Mt of coarse ore rejects and diamond-bearing kimberlite that were excavated from satellite deposits in the Misery open-pit operation.

Dominion Diamond has initiated a review of options to extend the operating life of the Ekati Mine beyond its currently scheduled closure in 2019. The anticipated 2019 closure date represents the end of operational activities, when no additional economic resources will be available to be mined or processed, and the Ekati Mine transitions into the reclamation phase for the site. Reclamation will be completed before final closure of the Ekati Mine.

The Project is a cornerstone of Dominion Diamond's vision of building a long-term diamond business in the Canadian North that continues to deliver Northern benefits well into the future. This vision is aligned with the *Northwest Territories Mineral Development Strategy* (GNWT 2013a), whose overall goal is to realize, responsibly and sustainably, the full potential of the NWT's rich mineral resources to ensure lasting prosperity for residents and communities.

Dominion Diamond is fully committed to maintaining and advancing the principles and practices of sustainable development, while making best use of the resources mined. This commitment includes respect for the natural and social environments, sharing economic benefits, and diligently reducing adverse effects or outcomes resulting from mining. Dominion Diamond maintains a high standard of environmental stewardship throughout all phases of its operations. The Ekati Mine meets its environmental protection commitments through its Sustainable Development Policy and its comprehensive environmental management system, which is International Organization for Standardization (ISO) accredited (ISO14001:2004 certified).

1.2.2 Experience in Canada and the Northwest Territories

Minerals that indicate the presence of kimberlite were first discovered in the Lac de Gras area in 1989. The first diamonds in this area were discovered in the fall of 1991.

Data to provide information about the baseline environment were first collected between 1993 and 1996. These data were used to prepare the original Environmental Impact Statement (EIS), which outlined the predicted environmental effects from the Ekati Mine. The EIS was submitted to an Environmental Assessment Review Panel (the Panel) in 1996. The Panel was convened under the provisions of Environmental Assessment and Review Process Guidelines Order SOR/84-467, which was promulgated under the *Canadian Environmental Assessment Act* (S.C. 1992, c.37). The purpose of the Panel was to provide a recommendation to the Minister of the Department of Indian Affairs and Northern Development (DIAND, a predecessor of AANDC) on whether the Ekati Mine should proceed. After public hearings were held by the Panel, approval for the Ekati Mine was granted in November 1996. Effects monitoring began during construction of the Ekati Mine in 1997.

Production at the Ekati Mine began in August 1998 after the implementation of the licensing and permitting process. Since the start of production, the Ekati Mine has included operations at six separate open pits and one underground development:

- **Panda Pit** – Open-pit mining started in August 1998 at the Panda Pit and was completed in June 2003 when underground mining began.
- **Koala Pit** – Open-pit operation started in 2003 at the Koala Pit and was completed in 2007 when underground mining began.
- **Koala North Pit** – A test pit was completed at Koala North in 2002 to confirm diamond grade and quality. Given the small pipe size, underground mining method was selected and the Koala North pipe was used as a trial mine for sub-level retreat.
- **Misery Pit** – Open-pit operation started in 2002 at the Misery Pit and was initially terminated in 2006. Production from the Misery stockpiles continued until 2007. Pre-stripping at Misery for a pushback pit started in 2011. The operation at the Misery Pit remains active.
- **Fox Pit** – Open-pit operation started in 2005 at the Fox Pit. The Fox open-pit was mined out in early 2014. Processing of mining stockpiles is still underway.
- **Beartooth Pit** – Open-pit operation started in 2004 at the Beartooth Pit and was completed in 2008. The open pit is currently being used for storage of underground minewater and the deposition of fine processed kimberlite as authorized under the Ekati Mine Water Licence.
- **Panda, Koala, and Koala North Underground** – Underground mining methods have been used to extract kimberlite below the Panda, Koala, and Koala North pits. The Koala North underground development was originally developed from 2003 to 2004 as a test mine to determine whether the sub-level retreat mining method was appropriate for use at the Ekati Mine. The Panda pipe was then successfully mined by sub-level retreat. Underground production from the Panda pipe began in June 2005 and was completed in 2010. The Panda pipe is fully depleted and the open pit and underground workings have been decommissioned. In 2007, underground production started at the Koala pipe. A hybrid sub-level cave or block cave mining method known as incline caving is employed at Koala and the operation is currently active. In 2010, commercial production from the Koala North underground using sub-level retreat started and remains active.

The current extent of the Ekati Mine is shown in Map 1.2-1. The Pigeon open pit development is now underway and the Lynx pipe development is scheduled to begin in 2015. The Sable pipe is not presently scheduled for development. These developments are all authorized under the Ekati Mine operating permits.

Assuming production from the Misery, Pigeon, and Lynx open pits, and the Koala North and Koala underground operations, the Ekati Mine operating life currently extends into 2019.

Dominion Diamond (through Dominion Diamond Holdings Ltd.) has been involved in the Diavik Mine since construction began in 2000. In addition, the team developing the Project possesses a wealth of experience and expertise in diamond mining in the NWT and the Arctic in general. Many of the key personnel have been involved with the operation of the Ekati Mine. Brief biographies for a selection of key personnel involved in the planning and execution of the Project are provided in Section 1.2.2.1.

1.2.2.1 Key Personnel

1.2.2.1.1 Bob Gannicott

Bob Gannicott is a geologist with more than four decades of experience in the mining industry. Bob has been a director of DDC since the company's inception in 1992, and currently serves as the company's Chief Executive Officer (appointed September 1999) and Chairman (appointed June 2004). Tapping into his extensive experience in the NWT and Greenland, he chaired the Ontario Securities Commission / Canadian Institute of Mining and Metallurgy Diamond Exploration Disclosure Committee with the goal of establishing reporting guidelines for the diamond industry. Currently, he serves on the board of the Canadian Polar Commission and Capricorn Minerals Limited (wholly owned subsidiary of Cairn Energy plc).

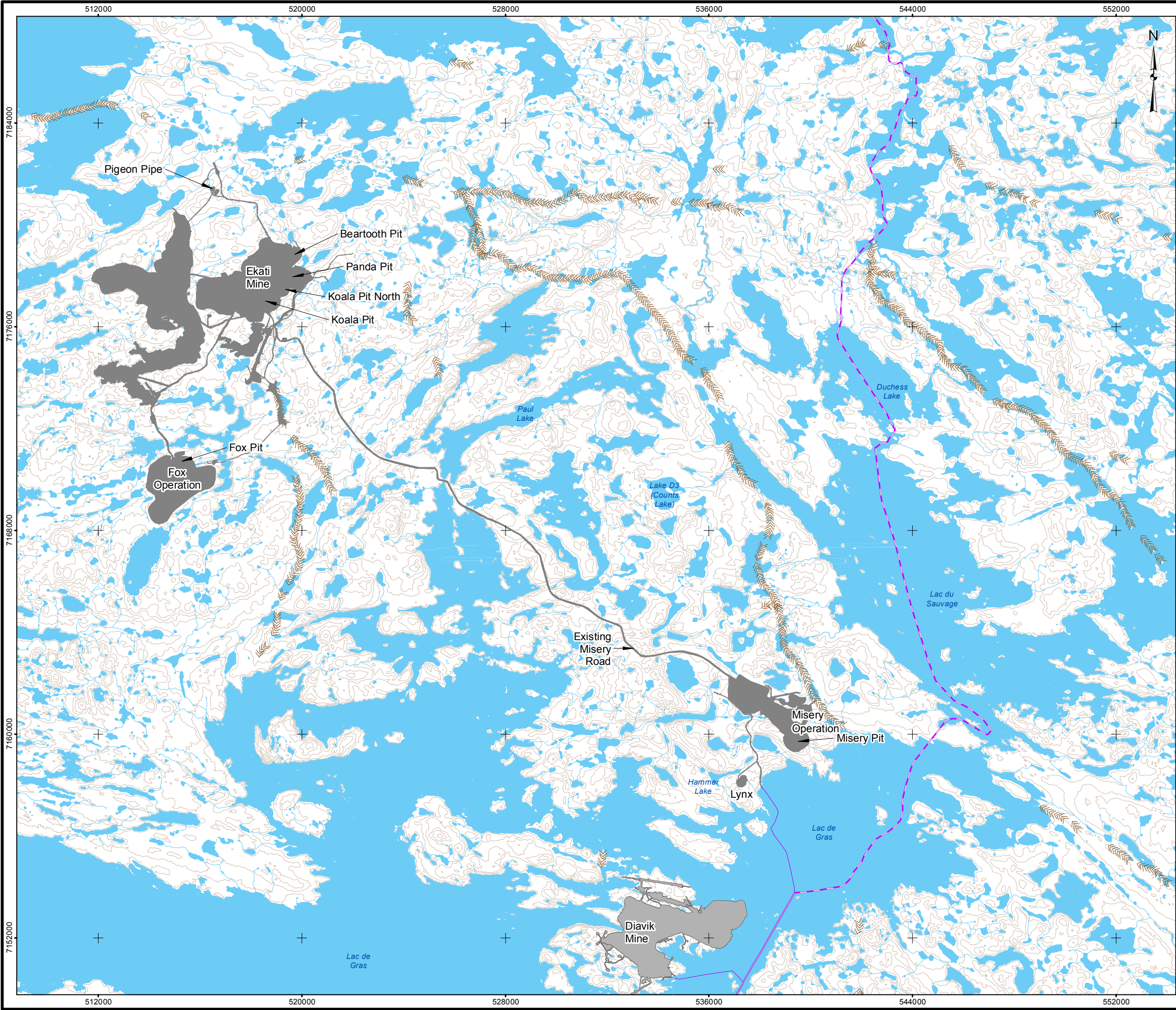
1.2.2.1.2 Brendan Bell

Brendan Bell is President of the Company's wholly owned subsidiary, Dominion Diamond Holdings Ltd. of Dominion Diamond Corporation. Prior to joining Dominion Diamond in 2013, Mr. Bell was the President of Northern Strategy Group, a consultancy that represented many northern clients. His vast northern experience includes eight years as a Member of the Northwest Territories Legislative Assembly including terms as Minister Responsible for Energy and Mines, Minister Responsible for the Environment and Minister of Justice and Attorney General in the Government of the Northwest Territories.

1.2.2.1.3 Mats Heimersson

Mats Heimersson has been in the mining industry for 41 years and has been a Registered Professional Engineer since 1988. Throughout his career, he has worked at numerous Arctic mines, including Stekenjokk, The Black Angel, Nanisivik, Polaris, Lupin, and Diavik. Mats' career has progressed from a due diligence role, to the supervision of feasibility evaluations, mine engineering, and mine design. Mats has been a consulting engineer with Dominion Diamond since 2011 and was appointed to Vice President, Consulting Engineer in 2013.

G:\CLIENTS\DOMINION\DEC_Jay and Lynx\EADAR\Other\DAR_Intro_001_GIS.mxd



LEGEND

- EKATI MINE FOOTPRINT
- DIAMIK MINE FOOTPRINT
- WINTER ROAD
- TIBBITT TO CONTWOYTO WINTER ROAD
- NORTHERN PORTION OF TIBBITT TO CONTWOYTO WINTER ROAD
- ELEVATION CONTOUR (10 m INTERVAL)
- ESKER
- WATERCOURSE
- WATERBODY

REFERENCE

CANVEC © NATURAL RESOURCES CANADA, 2012
NATURAL RESOURCES CANADA, CENTRE FOR TOPOGRAPHIC INFORMATION, 2012
DATUM: NAD83 PROJECTION: UTM ZONE 12N

DOCUMENT

DEVELOPER'S ASSESSMENT REPORT

SCALE 1:150,000

PROJECT		13-1328-0041		FILE No. DAR_Intro_001_GIS	
DESIGN	RK	17/06/14		SCALE AS SHOWN	REV 0
GIS	ANK	16/10/14			
CHECK	JV	16/10/14			
REVIEW	JV	16/10/14			

Golder Associates

MAP 1.2-1

DOMINION DIAMOND

JAY PROJECT
NORTHWEST TERRITORIES, CANADA

EKATI DIAMOND MINE

1.2.2.1.4 Jon Carlson

As project geologist for CF Mineral Research in 1992, Jon Carlson coordinated exploration drilling programs to define a cluster of kimberlites, which would be developed as the Ekati Mine. In 1994, he transferred to Dia Met Minerals as Chief Geologist, before joining the Broken Hill Proprietary Company (BHP) team in 1996. He worked along with John Gurney's Mineral Services group in developing criteria for rating new Ekati discoveries based on petrography, mineral chemistry and microdiamond characteristics. This systematic approach was used to prioritize more than 30 kimberlites for advanced testing. He has been directly associated with Ekati for more than 20 years and is currently the Manager, Strategic Planning for Dominion Diamond.

1.2.2.1.5 Keith Sangris

Keith Sangris began working at the Ekati Mine as a contractor for BHP during mine construction in 1996. Following construction, Keith stayed on at site as a contractor providing security services, which lead to a full-time job working with the head of Ekati security. Seeking more challenges, Keith moved into a role as an equipment operator, where he quickly advanced to Team Leader with Mine Operations. Keith's job progression has continued on from Mine Operations to Camp Services, to Asset Recovery, where his legacy left a positive effect on waste management practices at site, and ultimately to Superintendent, Surface Mining and now as Project Manager for the Jay Project.

1.2.2.1.6 Robert Overvold

Robert Overvold served as the Band Manager for the Dene Community Council from 1980 to 1983. Robert acted as the Chief Negotiator for the Dene/Métis Negotiations Secretariat from 1983 to 1988. He was Deputy Minister, Intergovernmental and Aboriginal Affairs of the Government of the Northwest Territories (GNWT) from 1991 to 1997, and Regional Director General for the NWT in the DIAND from 1997 to 2007. Robert has served the people of the NWT in a senior capacity at the federal, territorial, and community level, and has over 18 years of experience in regional government. Currently, he is the Head of Environment and Communities for Dominion Diamond.

1.2.2.1.7 Richard Bargery

Richard Bargery is a long-time northerner with over 25 years of experience in intergovernmental affairs. During his career with the Government of the Northwest Territories, Mr. Bargery served as Principal Secretary to two NWT Premiers and held numerous senior positions including Deputy Minister of Aboriginal Affairs and Assistant Deputy Minister overseeing the division of the Northwest Territories. Before joining Dominion Diamond in January, 2014 as the Manager of Permitting, Mr. Bargery operated his own consultancy for the past seven years serving many northern clients.

1.2.2.1.8 Eric Denholm

Eric Denholm is a registered Professional Engineer with 28 years of experience in northern Canadian mine operations and projects. His experience in the mining industry and consulting encompasses new, operating, and closed mines in the three Northern Territories, Northern Ontario and British Columbia. Eric has worked on exploration, mine engineering, mine reclamation, environmental management, and mine permitting. His primary focus in recent years has been environmental management and mine permitting. Eric joined the Ekati Mine in 2007 and is currently the Superintendent, Traditional Knowledge and Permitting for Dominion Diamond.

1.2.3 Corporate and Social Responsibility

Activities at the Ekati Mine are overseen through an Environmental Agreement (January 6, 1997), which is a contractual agreement between Dominion Diamond, the Queen in Right of Canada (represented by the Minister of AANDC), and the GNWT (represented by the Minister of Resources, Wildlife and Economic Development, presently known as Environment and Natural Resources [GNWT-ENR]). Activities at the Ekati Mine are also governed by regulatory requirements, such as those set out in permits, which are discussed further in Section 1.4.

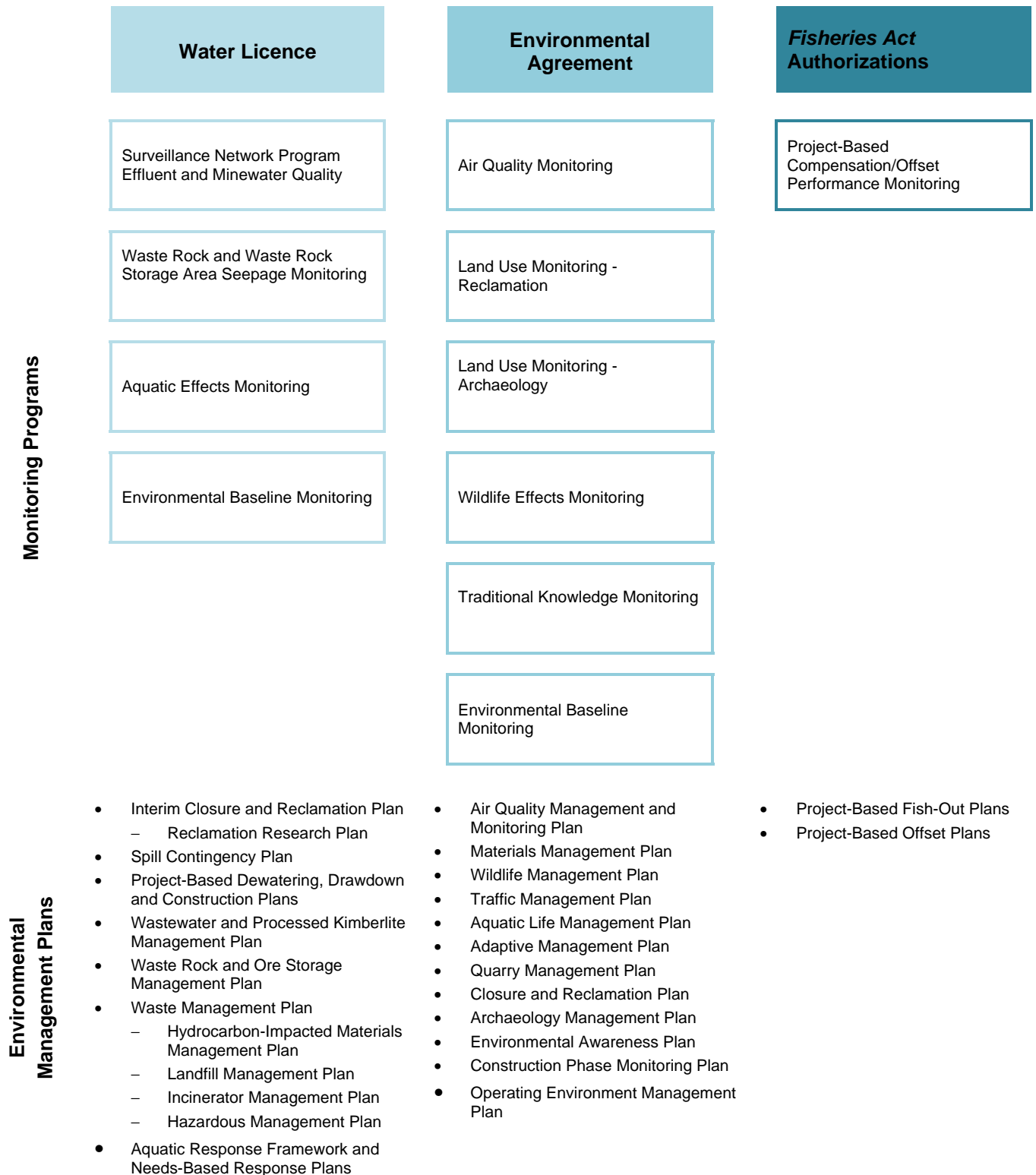
The Ekati Mine has also made commitments to responsible Northern resource development and community development. These commitments are expressed through Impact Benefit Agreements with Aboriginal communities, and a Socio-Economic Agreement with the GNWT.

The regulatory and corporate responsibility that governs and guides activities at the Ekati Mine is detailed in the following sub-sections. The Ekati Mine operates on the basis of the permits, licences, and agreements it has with relevant regulatory agencies and potentially impacted communities.

1.2.3.1 Existing Environmental Management Framework

The existing environmental management framework at the Ekati Mine is founded on the conditions outlined in the Environmental Agreement, and the Water Licence and other regulatory instruments (e.g., *Fisheries Act* [Section 35], Fisheries Authorizations). These regulatory instruments are held with the following key agencies: the GNWT, the WLWB, and Fisheries and Oceans Canada (DFO). The bulk of the existing plans and programs that will govern the Project have been previously developed and implemented as part of the requirements set out in *Class A Water Licence W2012L2-0001* (WLWB 2014) and the Environmental Agreement. The overall environmental management framework for the Ekati Mine, based on the Environmental Agreement, Water Licence, and *Fisheries Act* Authorizations, is shown in Figure 1.2-1.

Figure 1.2-1 Environmental Management Framework



1.2.3.1.1 *Environmental Agreement*

The overall goal of the Environmental Agreement is to provide for the review and monitoring of project-related environmental effects that are not governed by existing legislation and regulations.

The Environmental Agreement also documents a range of guiding principles for work to be undertaken under the Environmental Agreement. These principles include adaptive management, full consideration of traditional knowledge (TK), and the precautionary principle. In the context of this report, precautionary is defined as “where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing reasonable measures to prevent environmental degradation” (MVLWB 2011a). This definition aligns with the intent expressed in the Environmental Agreement as well as subsequent regulatory submissions.

The Environmental Agreement requires the following:

- environmental management plans for construction and operations;
- plans for closure and reclamation;
- archaeological surveys;
- inclusion of TK in environmental plans and programs;
- annual reporting on environmental compliance, monitoring programs, research, present operations, future activities, and remedial and mitigative actions; and,
- an environmental impact report, which is prepared every three years, and compares the monitoring data to the predicted effects that were presented in the 1995 EIS and subsequent EIS.

The Environmental Agreement continues in effect until full and final reclamation of the Ekati Mine is completed.

1.2.3.1.2 *Class A Water Licence*

The Ekati Mine currently operates under Water Licence #W2012L2-0001 (WLWB 2014). This licence was issued to enable water use and deposition of waste, contingent on compliance with the environmental commitments set out in the Water Licence. As part of the requirements of the Water Licence, water that will be released into the receiving environment must meet discharge criteria, seepage from waste rock storage areas must be monitored, and reclamation plans must be developed (WLWB 2014). Class A Water Licences for the Ekati Mine have been issued or renewed on five occasions since 1997. The current Water Licence expires in August 2021.

1.2.3.1.3 *Fisheries Authorizations*

Fisheries (SOR/2013-191) Authorizations permit the Ekati Mine to alter fish habitat under specified, approved circumstances. The Ekati Mine has the following four existing Fisheries Authorizations, which were issued before the recent amendments to the *Fisheries Act* (R.S.C., 1985, c.F-14) in November 2013:

- SCA96021 (with Fish Habitat Compensation Agreement), which covers all Ekati Mine areas except Sable, Pigeon, Beartooth, and Misery;

- SCO111, which covers the Desperation and Carrie ponds (Misery area);
- SC00028, which covers the King Pond and Cujo Stream (Misery area); and,
- SC99037, which covers the Sable, Pigeon, and Beartooth areas.

The compensation work completed for the first Authorization listed above (i.e., fisheries use of the Panda Diversion Channel) has been deemed successful by DFO. This Authorization is acknowledged as able to be closed upon Dominion Diamond's installation of relatively minor enhancements to the fish habitat features.

A fifth Authorization, issued in 2001 for the Fox haul road crossing of Nero-Nema Stream, was closed in 2011 after successful completion of the compensation works.

1.2.3.1.4 Navigable Waters Protection Act Approvals

The Ekati Mine operates under two *Navigable Waters Protection Act* (SOR/2009-202) approvals for structures interfering with navigation, which were issued before the recent amendment to the *Navigation Protection Act* (R.S.C., 1985, c.N-22) in April 2014:

- 8200-T 12313.1 Ekati Water Works (bridges, crossings, dikes, intakes, disposal); and,
- 8200-97-6112 Sable, Pigeon, and Beartooth Water Works (intakes, dewatering, dams, jetty, diversions, habitat structure, tailings).

The Ekati Water Works Approval expires December 16, 2021. The Sable, Pigeon, and Beartooth Water Works Approval expires July 17, 2027.

1.2.3.2 Existing Environmental Monitoring Programs and Management Plans

Because the Ekati Mine has been operating for 16 years, multiple environmental monitoring programs and management plans are in place, and have been effectively improved over time through adaptive management. The key Ekati Mine monitoring programs and management plans that will be expanded to apply to the Jay Project are described below.

1.2.3.2.1 Surveillance Network Program

The Surveillance Network Program (SNP) is a requirement of the Water Licence to collect water quality and other environmental data related to minewater and final effluent water that is released to the receiving environment. Minewater quality is monitored in open pits, underground workings, kimberlite containment areas, lake dewatering and drawdown areas, and in final effluent discharges to assess compliance with the discharge criteria set out in the Water Licence (WLWB 2014).

The SNP data are reported monthly, and an annual summary is provided yearly to the WLWB. The SNP would be expanded to incorporate the Jay Project as part of the Water Licence issuance process following completion of the EA process.

1.2.3.2.2 Aquatic Effects Monitoring Program

The Water Licence requires an Aquatic Effects Monitoring Program (AEMP) to detect changes in the aquatic receiving environment that could potentially be caused by the Ekati Mine (WLWB 2014). Aquatic effects are monitored every year at 14 lakes and 8 streams, including reference locations. The AEMP evaluates the physical, chemical, and biological components of the aquatic ecosystem.

Routine AEMP monitoring can and has resulted in special studies to assess the environmental significance of changes in the receiving environment and their relationship to the Ekati Mine. An annual report is provided to the WLWB. Additionally, the Water Licence requires that the program is evaluated every three years and that necessary or desired changes are proposed to the WLWB for review and approval.

The Water Licence requires that an Aquatic Response Framework accompany the AEMP. The Response Framework lists early-warning thresholds for adaptive management responses that would prevent negative impacts in the receiving environment.

The AEMP and Response Framework would be expanded to incorporate the Jay Project as part of the Water Licence issuance process following completion of the EA process.

1.2.3.2.3 Fish Habitat Compensation Monitoring

The Panda Diversion Channel was constructed in 1997 to divert stream water around the Panda and Koala mining areas, and to provide compensation for stream habitat that was lost for construction of the Ekati Mine. The channel was monitored under the Fisheries Authorization and reported on annually until 2012, at which time it was determined with DFO that the channel had been demonstrated as successfully providing fish habitat as intended. Monitoring under the Fisheries Authorization was no longer necessary after that time.

The Pigeon Stream Diversion was constructed in 2014 to divert stream water around the Pigeon mining area, and to provide compensation for stream habitat that was lost for construction of the Pigeon site. Fish habitat features for the Pigeon channel were constructed using lessons learned from the Panda Diversion Channel. A 10-year monitoring program, as approved by DFO, was initiated at the Pigeon Stream Diversion in 2014 to gather information on fisheries performance. This monitoring work will continue into the timeframe of the Jay Project.

A previous Fisheries Authorization addressed the loss of fish habitat from construction of an open-span bridge for the Fox Access Road over Nero-Nema Stream. The Nero-Nema Stream is a short, wide stream that flows from Nero Lake to Nema Lake in the Koala watershed. Construction of the bridge resulted in a loss of fish habitat, specifically spawning habitat for Arctic Grayling. From 2005 to 2007, eight gravel enhancement pads were installed upstream and downstream of the bridge to compensate for the lost habitat. Through monitoring activities, these gravel enhancement pads were determined to be successful. Accordingly, this Fisheries Authorization was fully satisfied and terminated in 2011.

1.2.3.2.4 *Waste Rock and Ore Storage Management Plan*

The Waste Rock and Ore Storage Management Plan (WROMP) is a requirement under the Water Licence to provide for the disposal of mine waste (WLWB 2014). The WROMP provides information on the following:

- the current conditions at the Ekati Mine including geology, production history, and descriptions of the existing waste rock storage facilities;
- existing geochemical characterizations of waste rock and the coarse processed kimberlite including acid/alkaline drainage potential;
- current temperature trends in the waste rock storage area (WRSA); and,
- existing drainage, seepage monitoring methods, and seepage water quality.

The relevant aspects of a previously separate Environmental Management Plan, the Geochemical Characterization and Metal Leaching Management Plan, was amalgamated into the WROMP in 2011.

The WROMP would be expanded to incorporate the Jay Project as part of the Water Licence issuance process following completion of the EA process.

1.2.3.2.5 *Waste Rock and Waste Rock Storage Area Seepage Survey Program*

As a condition of the Water Licence, annual monitoring and reporting of WRSA seepage quality and ongoing validation of waste rock geochemical characterization are required (WLWB 2014). An interpretive report is required every three years.

The Waste Rock and WRSA Seepage Monitoring Program would be expanded to incorporate the Jay Project as part of the Water Licence issuance process following completion of the EA process.

1.2.3.2.6 *Wastewater and Processed Kimberlite Management Plan*

The Wastewater and Processed Kimberlite Management Plan (WPKMP), required by the Water Licence, describes the management of wastewater and fine processed kimberlite (WLWB 2014). As part of the WPKMP, the fine processed kimberlite is geochemically characterized. The WPKMP describes the use of the Long Lake Containment Facility (LLCF) and Beartooth pit for kimberlite deposition, and the use of the minewater management facilities to maintain compliance with the Water Licence. The relevant aspects of a previously separate Environmental Management Plan, the Geochemical Characterization and Metal Leaching Management Plan, was amalgamated into the WPKMP in 2011.

The WPKMP would be expanded to incorporate the Jay Project as part of the Water Licence issuance process following completion of the EA process.

1.2.3.2.7 *Air Quality Management and Monitoring Program*

The Air Quality Management and Monitoring Program is a requirement of the Environmental Agreement. It is designed to monitor air quality annually, with an increased program every third year. The program includes the following components: annual air emission and greenhouse gas calculations, air sampling (total suspended particulate), continuous air monitoring (oxides of nitrogen, oxides of sulphur, total suspended particulate, and particulate matter [PM_{2.5}]), and dustfall monitoring. Every three years, snow chemistry monitoring and lichen tissue monitoring are conducted on a widespread basis. Results are publicly reported annually and an interpretive report is prepared every third year. The Air Quality Management and Monitoring Program would be expanded to incorporate the Jay Project during the regulatory processes following completion of the EA process.

1.2.3.2.8 *Wildlife Effects Monitoring Program/Wildlife Management Plan*

The Wildlife Effects Monitoring Program (WEMP) and Wildlife Management Plan are requirements of the Environmental Agreement. The WEMP is reported annually. The WEMP was developed and has evolved through extensive consultation with regulators, scientists, and Aboriginal communities. The WEMP documents wildlife effects resulting from mining activities, and assesses the effectiveness of wildlife mitigation and management efforts. It provides information for adaptive management to reduce the potential for wildlife-related safety concerns for employees and to mitigate any potential effects of the Ekati Mine on wildlife. The Wildlife Management Plan provides an overview of wildlife protection goals and practices.

The main components of the WEMP are wildlife incident reporting and caribou, grizzly bear, wolf, fox, and wolverine monitoring. The focus is on documenting changes to wildlife habitat and species.

The WEMP and Wildlife Management Plan would be expanded to incorporate the Jay Project during the regulatory processes following completion of the EA process.

1.2.3.2.9 *Archaeology Monitoring Program/ Archaeology Management Plan*

The Archaeology Monitoring Program is a requirement of the Environmental Agreement. It was initiated to protect archaeological and heritage sites, defined as “a location that contains physical evidence of past human activity or use” (BHP Billiton 2012). The Archaeology Monitoring Program includes traditional Aboriginal use sites. Archaeological investigations are conducted early during all proposed land-based development projects to identify archaeological and heritage sites.

The Archaeology Management Plan outlines the practices for protecting archaeological resources including mitigation, emergency response, and employee orientation. When archaeological sites are identified, the likelihood of impacts are assessed and suitable mitigation measures are recommended. The preferred protection measure is site avoidance. When site avoidance is not possible, data recovery is the most common form of mitigation.

The Archaeology Monitoring Program and Archaeology Management Plan will be reviewed for the Jay Project and updated to incorporate the Jay Project if necessary during the regulatory processes following completion of the EA process.

1.2.3.2.10 *Geotechnical Inspections*

A requirement of the Water Licence is that certain engineered structures (dams, dikes, and water management facilities) are inspected annually by a professional engineer (WLWB 2014). The inspection is reported annually to the WLWB.

The Geotechnical Inspection Program would be expanded to incorporate the Jay Project during the Water Licence issuance process following completion of the EA process.

1.2.3.2.11 *Interim Closure and Reclamation Plan*

As a stipulation of the Water Licence and Environmental Agreement, an Interim Closure and Reclamation Plan (ICRP) has been developed with input from regulators, Aboriginal people, and stakeholders in the Project (WLWB 2014). The ICRP incorporates reclamation activities and objectives that describe how reclamation will be completed and documents the performance standards to be met at closure. The Ekati Mine ICRP is an all-inclusive plan that addresses all reclamation obligations at the Ekati Mine, and which was approved by the WLWB in 2011. Annual reclamation progress and ICRP updates are reported to the WLWB annually.

Under the ICRP, reclamation research studies are completed to address uncertainties in closure planning. The Reclamation Research Plan is a comprehensive, evolving document. The schedule of reclamation research and proposed reclamation activities evolves based on research results and activities at the Ekati Mine, with updates reported annually to the WLWB.

The ICRP would be expanded to incorporate the Jay Project during the Water Licence issuance processes following Environmental Assessment. The plan for future reclamation research would be reviewed at that time and updated as necessary to reflect the Jay Project.

1.2.3.2.12 *Adaptive Management*

Because natural ecosystems are unpredictable, adaptive management is required. Adaptive management is defined as a systematic approach for continually improving management policies and practices by learning from the outcomes of operational programs (BHP Billiton 2012), and as “monitoring the effects of actions and, where necessary, adjusting actions based on the monitoring results” (MVLWB 2011a). In practice, adaptive management is an iterative process of anticipating potential environmental effects, developing appropriate mitigation strategies to stop and/or reverse those trends, monitoring the success or failure of the developed strategies, and then using this information to improve operational management. Thus, the management plans for the Ekati Mine are regularly updated and improved.

Adaptive management has been applied to environmental issues at the Ekati Mine since its inception. Examples of lessons learned through operating experience at the Ekati Mine were summarized in the 2012 environmental impact report (BHP Billiton 2012) and are provided below in Table 1.2-1.

Table 1.2-1 A Selection of Adaptive Management Learnings Pertaining to Environmental Issues at the Existing Ekati Mine

Valued Component	Issue	Adaptive Management Actions
Caribou	Limit disturbance to caribou	<ul style="list-style-type: none"> Observations of caribou crossing Misery Haul Road used to shape the design of berms around Misery and Beartooth pits. Traditional knowledge study led to the installation of Inuksuit as deterrents to caribou approaching the Ekati Mine. An Elders Advisory Committee was established to study other means of preventing disturbance to caribou. Identification of caribou crossings with road signage. Establishing speed limits on all roads to prevent wildlife-vehicle collisions. Radio communication among drivers and main camp staff to alert drivers to caribou sightings on or near the road. Construction of caribou crossings along the Misery Haul Road in areas of high usage.
Permafrost	Reduce disturbance of permafrost layer	<ul style="list-style-type: none"> Winter construction in permafrost areas where lakes and streams are potentially affected by sedimentation (dams, dikes, culverts, and bridges). Drawdown of water levels of lakes during winter. Capping of exposed permafrost to reduce thermal degradation and erosion.
Groundwater, Physical/ Terrestrial Environment	Reduce seepage from waste rock piles and kimberlite stockpiles	<ul style="list-style-type: none"> Building toe berms to prevent seepage. Building a granite pad underneath the Fox kimberlite stockpile to prevent interaction between kimberlite and tundra, and reduce seepage. Refining the engineering design to encourage convective super-cooling of the waste rock piles margins and the development of permafrost within the piles. Monitoring for seepage twice each year. Initiation of long-term field reactivity test for various rock types. Relocation of metasediment rock from the perimeter to the central area of the Misery waste rock storage area. Detailed scientific study of SEEP 018/019 area, as a follow-up to unexpected monitoring results.
Physical/ Terrestrial Environment	Reclamation	<ul style="list-style-type: none"> Progressive revegetation research on the Long Lake Containment Facility kimberlite surfaces. Ecological risk assessments of the potential for metal uptake from vegetated Long Lake Containment Facility cover to wildlife and humans. Progressive development of the long-term re-vegetation program based on research results and Wek'ezhii Land and Water Board-approved objectives.
Water Quality	Water quality downstream of the Long Lake Containment Facility	<ul style="list-style-type: none"> Addition of flocculent to Fox Lake during dewatering to reduce total suspended solids in the Long Lake Containment Facility. Use of water from underground operations for processing of Fox kimberlite (fine particles associated with this kimberlite) to enhance settling of fine particles and reduce the amount of chloride added in the Ekati processing plant. Withheld discharge into the Long Lake Containment Facility in spring 2008 while studying the potential effects of nitrate. Completed an intensive sampling variability study for the Aquatic Effects Monitoring Program.
Fish	Limit loss of habitat	<ul style="list-style-type: none"> Constructed and operated the Panda Diversion Channel to compensate for lost stream habitat. Tested fish habitat structures in the Panda Diversion Channel. Implemented Panda Diversion Channel Management Plan: surveys to document channel stability; construction of culvert covers; spring surveys of snow thickness and grading; removal of snow in early spring; and, daily monitoring of water levels during spring melt. Constructed the Pigeon Stream Diversion to divert stream water around the Pigeon mining area, and to provide compensation for lost stream habitat.

1.2.3.2.13 *Traditional Knowledge for Environmental Monitoring*

Traditional knowledge (TK) is sought for use in environmental monitoring programs by involving communities in program planning and implementation, and by providing opportunities for community members to teach the site's environmental staff TK. Dominion Diamond strives to use TK to improve environmental monitoring programs at the Ekati Mine. The approach is to work in partnership with the Aboriginal communities and with TK holders. Annual site visits are arranged for Elders and youth from local communities. Current initiatives related to TK are outlined in Section 5.

1.2.3.3 *Corporate Policies*

Dominion Diamond upholds an integrated approach to corporate responsibility that encompasses all aspects of responsible business. Corporate policies, governance documents, and ethical principles of business conduct, and their practice, help maintain good standing in the North, and in the greater global business community.

Our various corporate policies, codes of practice, plans, and commitments are written to ensure directors, officers, and employees (collectively "employees") of Dominion Diamond Corporation and its subsidiary and affiliated companies understand the importance placed on governance and ethical conduct overall. Similarly, it helps our security holders, customers, suppliers, and competitors know what to expect from the Company.

Dominion Diamond's overarching governance policies and principles guide the operating practices in all levels of the business. In terms of governance and policies from an operational perspective, the following structure applies:

- Governance Documents set out overarching guiding principles, rules, and standards. At the asset level, these documents often stem from larger governance documents that govern operations in all our locations.
- Process and Procedure Documents are derived from the Governance Documents. These documents mainly cover what employees have to do. There can be multiple Processes or Procedures that stem from a single Governance document; they can also be linked to more than one Governance document.
- *Work Instructions* stem from the processes or procedures. These are the documents, which outline how to do things step by step.

1.2.3.3.1 *Code of Ethics and Business Conduct*

Ethics are a set of principles or rules of conduct to help distinguish between right and wrong. Ethics are about values and associated behaviours. Dominion Diamond's *Code of Ethics and Business Conduct* (Appendix 1B) outlines the manner in which Dominion Diamond and its employees do business and reflect corporate beliefs, priorities, and principles.

Employees must uphold these principles and exercise good judgment that reinforces our reputation as a company that is fair, honest, and just in its dealings with security holders, investors, customers, government, Aboriginal communities, stakeholders, suppliers, competitors, and other employees.

Finally, our *Code of Ethics and Business Conduct* (Appendix 1B) is meant to help Dominion Diamond employees recognize and deal with ethical dilemmas they may encounter, and to make clear that each employee is accountable for their actions and must be prepared to defend his or her judgment.

1.2.3.3.2 *Sustainable Development*

Dominion Diamond is committed to operating in a sustainable manner and with the utmost integrity to enhance the positive economic, environmental, and social impacts of its business while maximizing the resources it mines. This commitment is guided by the principles of social responsibility, environmental stewardship, and economic sustainability.

Dominion Diamond's intention is to build on Ekati Mine's strong track record by maintaining the operation's recognized high standards in health and safety and responsible mineral resource development, minimizing environmental impacts, participating in the local communities, and sharing the benefits of mineral production with our business partners, Aboriginal and other communities, and the people of the North in general.

With the future in mind, soon after acquiring the Ekati Mine, Dominion Diamond created a *Sustainable Development Policy* (Appendix 1C), which sets out goals to promote a safe and healthy workplace, protect the environment, develop local communities, and deliver a high quality product. By following the principles of accountability, teamwork, respect, Aboriginal and stakeholder involvement, we strive to set industry standards for sustainable development.

Our *Sustainable Development Policy* (Appendix 1C) aligns with the two international standards, ISO 14001 and the Occupational Health and Safety Assessment Series (OHSAS) 18001, as well as expectations defined in the Towards Sustainable Mining initiative published by the Mining Association of Canada (MAC). As a member of MAC, the Company is committed to following MAC policies and programs.

1.2.3.3.3 *Environmental and Social Responsibility*

Dominion Diamond maintains a high standard of environmental stewardship throughout all phases of our operations.

Dominion Diamond's Sustainable Development Policy governs how the business is run in terms of Environmental and Social Responsibility by confirming the commitment to Zero Harm to employees and people of the North, protection of the environment, continuous improvement, compliance with laws and regulations, community engagement, and respect.

To govern this practice, Dominion Diamond has created a set of clear goals and approaches towards Environmental and Social Responsibility, addressing these categories by focusing efforts on:

- Environmental protection:
 - Goal – to protect the environment.
 - Approach – to promote a culture of environmental stewardship and respect for the natural environment within our workforce and our communities.

- Community engagement:
 - Goal – to build relationships and capacity with Aboriginal communities and stakeholders.
 - Approach – to communicate openly and honestly, support local programs, and make real contributions in our communities.
- Compliance:
 - Goal – to become an industry leader in compliance.
 - Approach – to comply with all community commitments, standards, regulations, and laws by promoting sharing and collaboration with our partners, Aboriginal communities, and stakeholders.
- Creating value:
 - Goal – to create profit and opportunities for the benefit for Aboriginal communities, stakeholders, and shareholders.
 - Approach – to set and achieve business objectives through continuous improvement.

Dominion Diamond is a member of MAC and therefore reports under the six protocols of the Towards Sustainable Mining Program:

- Aboriginal and Community Outreach, of which we have consistently scored in the highest category (i.e., category AAA);
- Biodiversity;
- Energy and Green House Gas Management;
- Health and Safety;
- Crisis Management; and,
- Tailings Management.

The Towards Sustainable Mining Program also recognized Dominion Diamond as a finalist in the 2013 Environmental Excellence Awards for the work we have done in partnership with Diavik Mine on our regional Grizzly Bear deoxyribonucleic acid (DNA) Program.

Dominion Diamond additionally meets the reporting, engagement, and consultation requirements under the Environmental Agreement, Water Licences and Permits.

Dominion Diamond recently developed an Integrated Health, Safety, and Environment Management System to meet the company's sustainable development goals, the requirements under ISO 14001, (for which Dominion Diamond is certified) and OHSAS 18001 (the company will be going through the certification process, with completion expected in the fourth quarter of 2014).

1.2.3.3.4 *Community Engagement*

Aboriginal community engagement is driven by good business practice and is incorporated into the Ekati Mine Socio-Economic Agreement, Environmental Agreement, and Impact Benefit Agreements. Since 1999, the duty to consult is increasingly being driven by the legal requirements of the *Mackenzie Valley Resource Management Act*, the Tłı̨chʼo Land Claim, and by Canadian court decisions. These external requirements are managed in accordance with the Dominion Diamond Sustainable Development Policy.

Internal policies such as the Stakeholder Engagement Management Plan supports a fluent and rigorous approach to dialogue and communication, management of expectations, mitigation of risks and management initiatives, data management, and reporting for Dominion Diamond Corporation.

Dominion Diamond's engagement for the Jay Project is outlined in Section 4.

1.2.3.3.5 *Health and Safety*

At Dominion Diamond, we believe people are our most important asset. That is why we are fully committed to the health, safety, and well-being of our employees, and to establishing strong, lasting, and respectful relationships with the people and communities with whom we work.

Dominion Diamond has created the following set of clear goals and approaches towards Zero Harm, Safety, Health, and Risk Management:

- Zero harm:
 - Goal – to build a legacy of commitment, trust, and respect.
 - Approach – to actively protect our people, the environment, and our local communities.
- Safety:
 - Goal – to work with our people to reduce and eliminate workplace injuries.
 - Approach – to provide a safe and injury free workplace through committed leadership and working together.
- Health:
 - Goal – to enhance the health and well-being of our people.
 - Approach – to engage our people to promote personal health and wellness, and eliminate occupational illnesses.
- Risk management:
 - Goal – to identify and effectively manage risk.
 - Approach – to follow a strong process of assessment, critical control development, and monitoring.

Dominion Diamond has created a systematic approach to workplace injury and incident prevention that provides a safe and healthy workplace for our employees, and which works to the ultimate achievement of zero injuries. The following processes and documentation provide evidence of Dominion Diamond's thorough approach to preventative health and safety strategies:

- Twenty formal written procedures to govern internal processes.
- A robust risk assessment model designed to identify key risks to the operation, and provide suitable controls and processes for those identified risks.
- A company risk matrix designed to meet the needs and high level of safety culture expectations of the company.
- Clearly identified Fatal Risk Controls act as the greatest form of risk mitigation by the operation to identify and control high-level risks.
- Written procedures to guide employees on the expected requirements for field level and pre-job, job hazard analysis.
- A change management process designed to identify change within the operation and capture risks before changes occur. This process identifies key internal stakeholders before the change occurs, allowing subject matter experts to support and to provide appropriate communication of the change.
- An extensive safety training process including both computer-based and classroom training for company employees and contractors.
- Highly developed emergency response team system with extensive training and development opportunities provided to the members.
- An industry best-practice process for incident investigation. Designed to investigate significant events, injuries and near-misses based on criteria set by legislation and internal standards.
- Third-party certification to ISO 14001, the Environmental Management System Standard.
- 2014 implementation of OHSAS 18001 Standard, with third-party certification expected in the fourth quarter of 2014.

Dominion Diamond has recently developed an Integrated Health, Safety and Environment Management System to meet our sustainable development goals and to meet the requirements under ISO 14001, of which Dominion Diamond is certified, and OHSAS 18001, of which the company will be going through the certification process as previously noted. An integrated approach to Health, Safety and Environment Management Systems is industry standard, and being an industry leader the company has taken a proactive approach to take on this project.

The Integrated Health, Safety and Environment Management System is a series of management processes that provide a framework for tasks to be performed, consistently, correctly, and effectively, and as a result, to drive continuous improvement in health, safety, and environmental performance.

1.2.4 Performance Record

Environmental performance has been a focus for the Ekati Mine since operations began in 1998. For the first 16 years of operation and continuing through the current plan to extend mine life extension, Dominion Diamond will continue to maintain this focus. Experiences during operations have provided positive opportunities for lessons learned.

Dominion Diamond's Sustainable Development Policy (Appendix 1C) outlines our commitment to Zero Harm to people, protection of the environment, continuous improvement, compliance to laws and regulations, and community engagement and respect. Dominion Diamond has recently developed an integrated Health, Safety and Environment Management system around these principles and to meet the requirements under ISO 14001 of which we are certified and OHSAS 18001 of which we will be going through the certification process this fall.

As a member of the Mining Association of Canada, Dominion Diamond reports under the 6 Protocols of the Towards Sustainable Mining (TSM) Program (Aboriginal and Community Outreach, Biodiversity, Energy and GHG Management, Health and Safety, Crisis Management, and Tailings Management). The TSM Program also recognized Dominion Diamond as a finalist in their 2013 Environmental Excellence Awards for the work we have done in partnership with Diavik Diamond Mine on the regional Grizzly Bear DNA Program.

Specific environmental performance goals are established in the primary environmental authorizations (Water Licence, Land Use Permits, *Fisheries Act* Authorizations) and the Environmental Agreement. The Ekati Mine's performance against these goals has been excellent, with some examples as follows:

- no environmental impacts related to non-compliance with the effluent water quality criteria in the water licence;
- effective adaptive management of chloride and nitrate in minewater, including original research to develop site-specific water quality objectives;
- water Licence issuance, renewal, amendment and amalgamation processes completed on schedule without substantive concern raised of poor past performance;
- positive overall performance assessment from the Independent Environmental Monitoring Agency;
- closing off of Fisheries Act Authorizations due to compensation works successfully completed;
- no vehicle-related caribou deaths at the Ekati Mine; and,
- successful close out of Exploration Land Use Permits including return of security based on successful performance of environmental requirements.

Before production began at the Ekati Mine, detailed plans were put in place to protect the area's wildlife. For example, the Bathurst caribou herd was known to migrate through the Lac de Gras area during spring and fall. Their primary trails were identified with the help of local Aboriginal communities. Traffic controls, wildlife technicians and other protection measures were put into place, and these protection measures have evolved over time based on increasing experience and on-site monitoring. The procedures used by Dominion Diamond have proven effective because there has never been a caribou fatality due to vehicle collision over the 16-year operational history of the Ekati Mine.

Dominion Diamond continues to work with communities and other stakeholders to develop the Ekati Mine Wildlife Effects Monitoring Program, which works with both traditional knowledge and scientific wildlife monitoring. Using a network of 50 motion-activated cameras to monitor and record data on animal behaviour, the program provides insights into how wildlife interacts with Ekati Mine activities, and is used to evaluate the effectiveness of mitigation.

Processed kimberlite management and external outreach are two areas where the Ekati Mine has consistently scored high in the TSM assessments. Dominion Diamond has been meeting regularly with communities and stakeholders to share information about operations and future plans, and to hear feedback from them on decisions that may affect them.

Considerable efforts continue being made in the stewardship of the environment and the results achieved in 2013 verify that those efforts are effective. Spill response has been effective as demonstrated by the Inspector sign-off on clean-up efforts. A Spill Response Plan is in place as approved by the WLWB that covers all aspects of the Ekati Mine. The Spill Response Plan describes the approach, accountabilities, prevention methods, clean-up methods, and reporting structure for spill clean-up work. The Ekati Mine Emergency Response Team is trained to respond to environmental incidents.

The following sections provide an evaluation of spills since operations began in 1998, and some specific examples of past compliance issues at the Ekati Mine, and how the issues were resolved.

1.2.4.1 Trends in Hydraulic Spills During Operations

Dominion Diamond has completed a preliminary evaluation of spills that have occurred at the Ekati Mine. The intent of the evaluation is to establish an understanding of past performance as a means of anticipating future performance, including the Jay Project. The evaluation consisted of all Ekati Mine spills (from 1998 to present) reported to the spill database managed by the GNWT Environment and Natural Resources. The type of spills reported primarily consisted of hydraulic fluids followed by diesel fuel spills. Provided below is an overall summary of the types of spills that have been reported:

- 75% of spills consisted of hydraulic fluids. Hydraulic fluids including various oils, lubricants, glycols and coolants.
- 14% of spills consisted of diesel fuel spills released from mining equipment or within storage tanks.
- 8% spills consisted of unplanned release of liquid products including grey water, processed kimberlite, and sewage.
- 3% spills consisted of solid based products including flocculants, ammonia nitrate, and calcium chloride.

An evaluation of the type of spills based on a volume basis results in a skewing of the numbers as unplanned spills of liquid products make up an overwhelming majority (96%) of the total volume of spills reported to the database. A small number of isolated events are largely responsible for the large volumes reported. Dominion Diamond considers the prevention of unplanned releases of liquids as important; however, it does not see this item as most representative of spills generated from day to day mining operations at the Ekati Mine. Dominion Diamond considers hydraulic fluids and their widespread use in mining equipment as the best representation of spills for this evaluation.

In order to evaluate the potential role of mine activity on spill rates, hydraulic fluid spills were compared with waste rock volumes produced from Ekati Mine operations. All waste rock produced was obtained from Ekati Environmental Agreement and Water Licence Annual Reports. Annual amounts of waste rock produced compared to the volume and frequency of hydraulic fluid spills reported are provided in Figures 1.2-2 and 1.2-3. There is a clear trend of increased hydraulic fluid spills with waste rock production peaking in the year 2003 and then a reduction in hydraulic spills as waste rock production decreases. Since approximately 2009, the waste hydraulic fluid spill volumes and frequencies have been at a steady low value. The low values in spills can be partially attributed to continued incorporation of environmental stewardship in policies and procedures at the Ekati Mine and also to strong equipment inspection and maintenance procedures. With only a few exceptions, these spills take place within the Ekati Mine water management areas, do not enter the receiving environment, and are quickly cleaned-up to the Inspector's satisfaction. There were no reported environmental impacts related to these spills.

Based on the data evaluation, the volume of each individual spill is consistent with and the number of spills is proportional to the number of pieces of heavy equipment in use around the Ekati Mine. These observations suggest that the number of spills may again increase from current levels during construction of the Jay Project when the number of pieces of heavy equipment in use at the Ekati Mine will increase. Dominion Diamond will look to build on this preliminary evaluation to identify improvements/modifications to spill prevention mechanisms that are currently in place. This operational optimization is anticipated to be pursued through current operations programs and, if necessary, regulatory permitting of the Jay Project after completion of environmental assessment.

Figure 1.2-2 Comparison of Waste Rock Production and Volume of Hydraulic Fluid Spills During Operations at the Ekati Mine

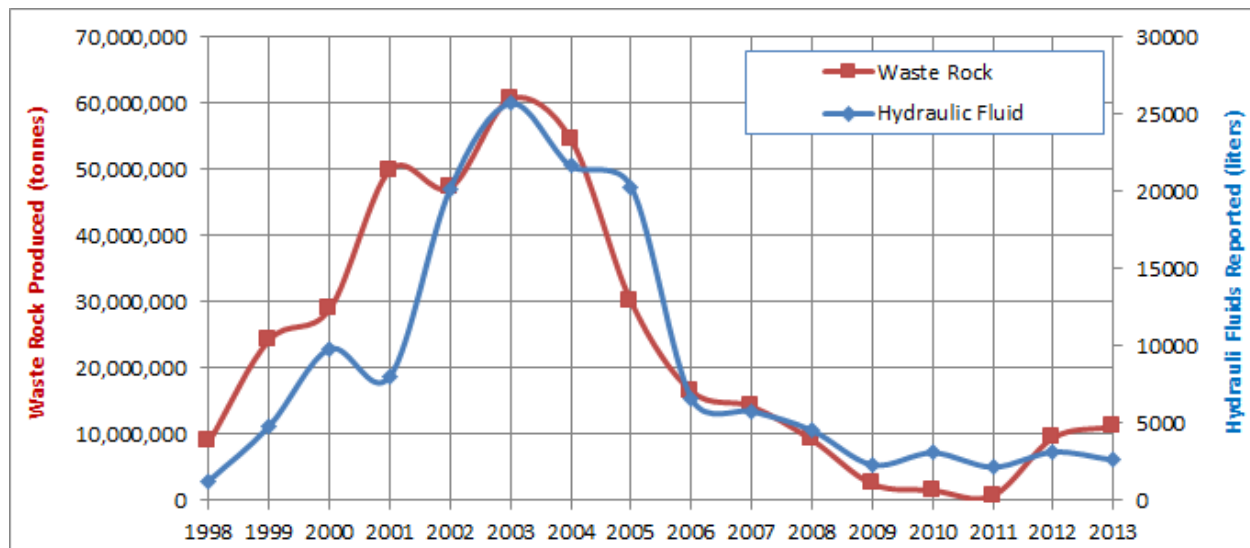
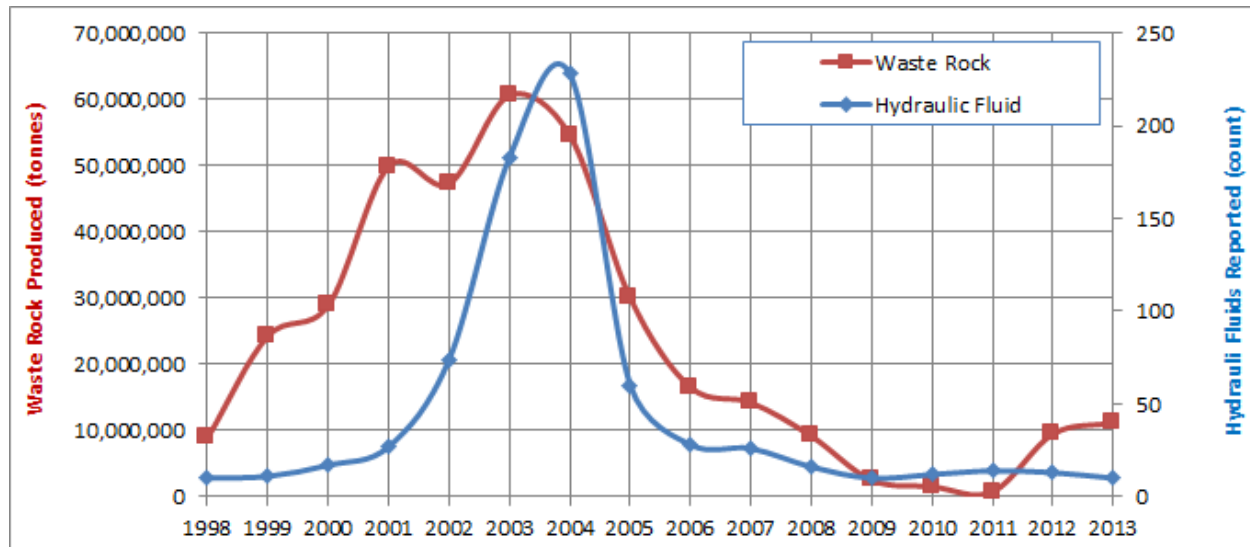


Figure 1.2-3 Comparison of Waste Rock Production and Number of Hydraulic Fluid Spills During Operations at the Ekati Mine



1.2.4.2 Specific Example: Diesel Spill on Misery Road

On March 8, 2014, at approximately 19:00 hours, a contracted fuel tanker truck (b-train) heading into Misery camp left the Misery haul road and turned on its side at approximately kilometre 12 of the Misery haul road. The Emergency Response Team extracted the driver and the ruptured fuel tank on the truck was sealed with leak stop; approximately 10 to 15 litres (L) was spilled on the ground before a spill pool was placed under the tank. Small drip leaks from the manhole access covers on the tanker cars were ongoing, but spill pads and or spill pools were placed under them. The estimated volume of diesel in the trailers was 52,200 L based on size and what was documented during filling in Yellowknife.

Dominion Diamond reported the spill through the NWT Spill Line (Spill #14-072) on March 9, 2014 and followed up with correspondence with the Water Licence and Land Use Inspector on March 10, 2014. Following that, Dominion Diamond submitted a remediation plan to the Inspector to recover the lost diesel fuel.

The updated spill report stated that 2,756 L of diesel fuel was released from the truck's fuel tanks and the Remediation Plan submitted to the Inspector on March 19, 2014 outlined how Dominion Diamond recovered the diesel fuel and would remediate the contaminated snow and soil. The Remediation Plan was prepared in conformance with the Post Emergency Procedures outlined on page 54 of the Spill Contingency Plan Version 8.1.

The Remediation Plan included recovering the diesel by vacuum truck and excavation the snow. The contaminated snow was removed to the Contaminates Snow Containment Facility. Approximately 2,500 L of fuel was recovered with this method. The spill remains open as additional summer remediation activities are occurring, including excavation of impacted soils around the spill location.

Inspections were completed during freshet and samples were collected from the pooling water in that area. Results came back with below detection for hydrocarbons. The inspector visited the spill location four times on March 19, April 23, May 27, and July 29.

1.2.4.3 *Specific Example: Unplanned Release of Processed Kimberlite at Fay Bay*

In May 2008, BHP Billiton identified and reported a release of approximately 4,465 cubic metres (m³) of fine processed kimberlite (PK) to the shore and ice of Fay Bay adjacent to Cell B of the LLCF. Clean up efforts occurred immediately following the release and resulted in the successful removal of approximately 80% of the total volume of released PK.

Vegetation recovered in all disturbed areas. Natural colonization increased plant cover on the temporary roadbed and in the adjacent disturbance areas. Grasses, seeded in 2009, had established along the entire roadbed and native shrubs and herbs continue to emerge next to the roadbed, re-establishing from undisturbed rootstocks.

A comprehensive aquatic effects study was in 2008 at Fay Bay. Monitoring indicated that only localized effects within Fay Bay and Fay-Upper Exeter Stream remained in 2009. For the 2010 AEMP, activities included measuring physical limnology, water quality, and the abundance and biological characteristics of the primary (phytoplankton) and secondary (zooplankton and benthos) producers at sites within Fay Bay, Fay-Upper Exeter, and Upper Exeter Lake South (ice covered season only). The reference sites for the monitoring program were Nanuq and Counts lakes and their outflows.

Overall, the results from monitoring at Fay Bay and downstream environments following the unplanned PK release have indicated some short-term effects to both the physical and chemical nature of the aquatic environment. The aquatic biology results indicate that the phytoplankton and zooplankton communities are recovering while the benthos community remains unaffected. The Fay Bay monitoring program was discontinued in 2010.

1.2.4.4 *Specific Example: Construction on Pigeon Stream Diversion Access Road*

On April 11, 2012, BHP Billiton requested a variance on the Pigeon Land Use Permit to install an all-season access road within 10 metres (m) of the Pigeon Stream Diversion that was being constructed to divert stream water around the Pigeon mining area and as fish habitat compensation for the loss of part of Pigeon Stream in the development of the Pigeon Pit.

As this variance was being considered by the Inspector, it was provided to the Water Board for a decision; however, the road was completed before a decision was made. At the time, the road was to be constructed to allow for access to build the Pigeon Stream Diversion, and was not within 30 m of the natural Pigeon Stream. As the road was not within 30 m of Pigeon Stream, it was not out of compliance with the Land Use Permit.

However, in future when the Pigeon Stream Diversion was to be connected, the all-season access road would be within the 30 m setback of the new channel.

A site visit with DFO, the Independent Environmental Monitoring Agency, and the Inspector was conducted on April 23, 2012. The May 7th Board Decision package allowed the variance to construct the Pigeon Stream Diversion Road within the 30 m setback of the Pigeon Stream Diversion. The Pigeon Stream Diversion was connected and in used in 2014.

1.2.4.5 Specific Example: Construction of the Panda Diversion Channel

(taken from the Court Report, R. v. BHP Diamonds Inc., 2002 NWTSC 74. 2002-12-09)

The charges before the Court related to alleged breaches of the *Fisheries Act* (i.e., depositing a deleterious substance into waters frequented by fish, and also harmfully disrupting fish habitat). The charges arose from activities by BHP during the construction phase of project in 1994 to 1997. The Court heard testimony from 26 witnesses during the lengthy trial and approximately 250 exhibits were tendered by the prosecution and defence. Several substantive issues were raised by the evidence and the submissions of counsel (e.g., the applicability of the *Fisheries Act*, a Ministerial Authorization to disrupt fish habitat, proof of the *actus reus*, and the defence of due diligence).

At the time of the spring melt in 1997 there was thermal degradation of the permafrost in these lowlands. At trial, various theories were advanced, by experts and others, as to the cause of the thermal degradation; however, it was not established that it was caused by any specific site activity of BHP.

It was found that BHP exercised due diligence in the design, construction and operation of the diversion channel and took all reasonable steps to avoid the excessive deposit of sediment from the channel into Kodiak Lake. It was also found that the thermal degradation of permafrost in the Grizzly lowlands and the resulting movement of silt and sediment from that area into the diversion channel was unexplained and was not reasonably foreseeable. This decision was delivered in Court on December 9, 2002. The Reasons for decision were also filed December 9, 2002.

1.3 Project Overview

1.3.1 Project Scope

To extend the Ekati Mine life beyond the currently anticipated closure date of 2019, Dominion Diamond proposes to develop the Jay pipe. The Jay pipe is located in the southeastern portion of the Ekati claim block, approximately 25 km from the main facilities and approximately 7 km to the northeast-east of Misery Pit, in the Lac de Gras watershed (Map 1.3-1). Open-pit mining of the Jay pipe represents 10 or more years of additional mine life (based on current ore processing rates). The Project is feasible provided that ore production is underway before 2019, which is when the other known and economically viable kimberlite resources will be exhausted. The Project is an extension of a large, stable, and successful mining operation, which substantially lowers the risks associated with the development of the proposed kimberlite pipe.

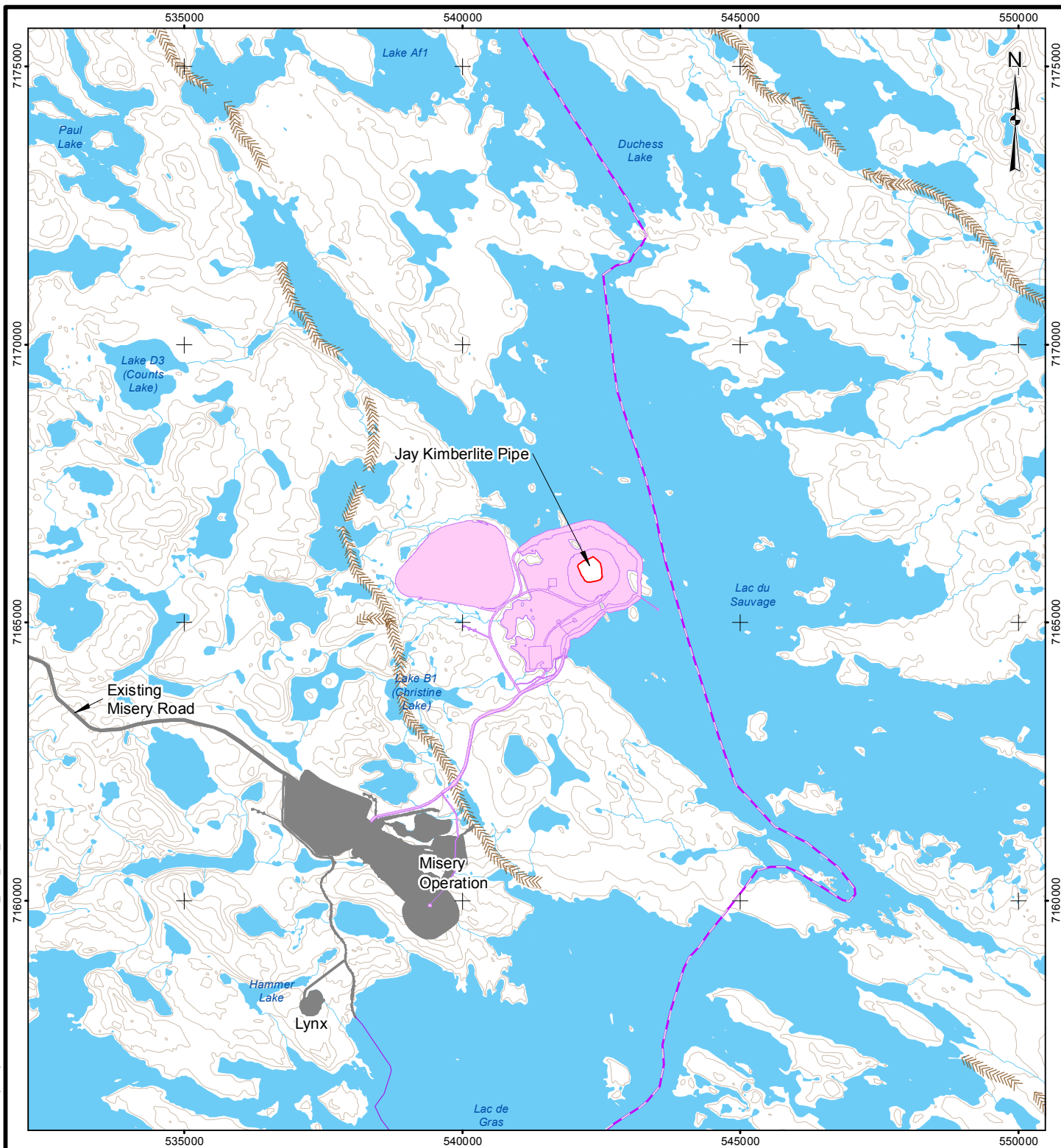
Mining of the Jay pipe is an extension of the Ekati Mine that maximizes the use of existing infrastructure including:

- Misery site mining infrastructure including fuel facility, explosives magazines;
- primary roads and transportation infrastructure including airstrip, Misery Haul Road;

- Ekati main camp and supporting infrastructure;
- processing plant; and,
- fine processed kimberlite management facilities including mined-out Panda and Koala open pits supported by the LLCF.

The following new developments and activities will be undertaken to enable mining of the Jay pipe (Section 3 provides details regarding the various project components and activities listed below):

- construction of roads, power line, lay-down areas, and incidental support buildings;
- quarrying of granite rock for construction material;
- construction of a water-retaining dike and diversion to isolate the portion of Lac du Sauvage containing the Jay pipe;
- dewatering the isolated portion of Lac du Sauvage inside the dike to expose the Jay pipe for open-pit mining;
- fish-out of the isolated portion of Lac du Sauvage;
- mining of the Jay open pit;
- pumping high total suspended solids water during dewatering to the Lynx Pit for solid settling and long-term storage;
- placement of waste rock from the Jay development on surface;
- pumping of high total suspended solids water during dewatering, and minewater and surface runoff during operations, to Misery Pit for management and discharge to the receiving environment during the later years of open-pit mining; and,
- reclamation of the constructed facilities.



LEGEND

- | | | | |
|--|-----------------------------------------------------|--|-------------|
| | EKATI MINE FOOTPRINT | | WATERCOURSE |
| | PROPOSED JAY FOOTPRINT | | WATERBODY |
| | KIMBERLITE PIPE | | |
| | WINTER ROAD | | |
| | NORTHERN PORTION OF TIBBITT TO CONTWOYT WINTER ROAD | | |
| | ELEVATION CONTOUR (10 m INTERVAL) | | |
| | ESKER | | |

2 0 2
SCALE 1:100,000 KILOMETRES

REFERENCE

CANVEC © NATURAL RESOURCES CANADA, 2012
NATURAL RESOURCES CANADA, CENTRE FOR TOPOGRAPHIC INFORMATION, 2012
DATUM: NAD83 PROJECTION: UTM ZONE 12N

DOCUMENT

DEVELOPER'S ASSESSMENT REPORT



DOMINION
DIAMOND

JAY PROJECT
NORTHWEST TERRITORIES, CANADA

TITLE

LOCATION OF JAY KIMBERLITE PIPE



Golder
Associates

PROJECT	13-1328-0041	FILE No. DAR_Intro_002_GIS
DESIGN	RK	17/06/14
GIS	ANK	16/10/14
CHECK	JV	16/10/14
REVIEW	JV	16/10/14
SCALE AS SHOWN	REV. 0	

MAP 1.3-1

All licences and approvals required to undertake the proposed Project are currently in place with the exception of:

- Class A Water Licence;
- Land Use Permit;
- Surface Lease;
- Fisheries Authorization; and,
- Approval under Section 5(1) of the *Navigation Protection Act* for construction of a dike and other works in Lac du Sauvage and waterbodies adjacent to the Project, and exemption under Section 24 for dewatering of the diked area of Lac du Sauvage.

1.3.2 Project Setting

The Ekati Mine and its surrounding claim block are located approximately 200 km south of the Arctic Circle and 300 km northeast of Yellowknife in the NWT, Canada (Map 1.3-2). The Ekati Mine is located within the headwaters of the Coppermine River drainage basin, which flows north to the Arctic Ocean (Map 1.3-3).

The Ekati Mine is located in the sub-arctic region known as the Southern Arctic Ecozone and more specifically within the Takijuk Lake Upland Ecoregion (Map 1.3-4). Cold winter conditions predominate, with approximately five months of spring/summer/fall weather each year when daytime temperatures are above freezing. Winters are long and extremely cold, with daily temperatures often below -30 degrees Celsius (°C). Annual precipitation is low. Additional climate data are provided in Section 7.

The Ekati Mine and its surrounding claim block cover 2,663 square kilometres (km²). To date, development has only occurred in approximately 0.77% of the claim block (3,002 ha or 30.2 km²). The topography of the region is relatively flat, with the local area characterized by undulating to rolling terrain with northwest to southeast trending ridge features known as eskers, and exposed bedrock outcrops. The local terrain is characterized by boulder fields, tundra, and wetlands, and by numerous lakes with interconnecting streams. Permafrost is continuous, typically extending to a depth of 300 m, and is overlain by an active layer, which thaws during the summer and refreezes during the winter. The active layer is typically within 1 to 2 m of the ground surface. A more detailed description of terrain is provided in Section 10.

The lakes and streams of the area are characterized by clear, soft, and low-nutrient waters, typical of Northern aquatic environments. Most nutrients in the soil in permafrost areas are not accessible to flowing water. Low temperatures in the active layer result in low rates of organic matter decomposition and nutrient release. Thus, surface waters are typically very low in nutrients and in aquatic plant production. The biological productivity and biomass of plants and animals in streams and lakes are low compared to streams and lakes in southern Canada. Northern waterbodies are cold, nutrient poor, and covered with up to 2 m of ice for nine months of the year (Pienitz et al. 1997). Additional information on lakes and streams is provided in Section 8.



LEGEND

- JAY PROJECT
- EXISTING MINE OR PROJECT
- TERRITORIAL CAPITAL
- POPULATED PLACE
- HIGHWAY
- ALL-SEASON ROAD
- WINTER ROAD
- TIBBITT TO CONTWOYTO WINTER ROAD
- NORTHERN PORTION OF TIBBITT TO CONTWOYTO WINTER ROAD
- TERRITORIAL/PROVINCIAL BOUNDARY
- TREELINE
- WATERCOURSE
- WATERBODY
- EKATI CLAIM BLOCK

REFERENCE

WATER OBTAINED FROM ATLAS OF CANADA
NATURAL RESOURCES CANADA, CENTRE FOR TOPOGRAPHIC INFORMATION, 2012
PROJECTION: CANADA LAMBERT CONFORMAL CONIC

DOCUMENT

DEVELOPER'S ASSESSMENT REPORT

150 0 150
SCALE 1:6,000,000 KILOMETRES



DOMINION
DIAMOND

JAY PROJECT
NORTHWEST TERRITORIES, CANADA

TITLE

LOCATION OF THE EKATI CLAIM BLOCK

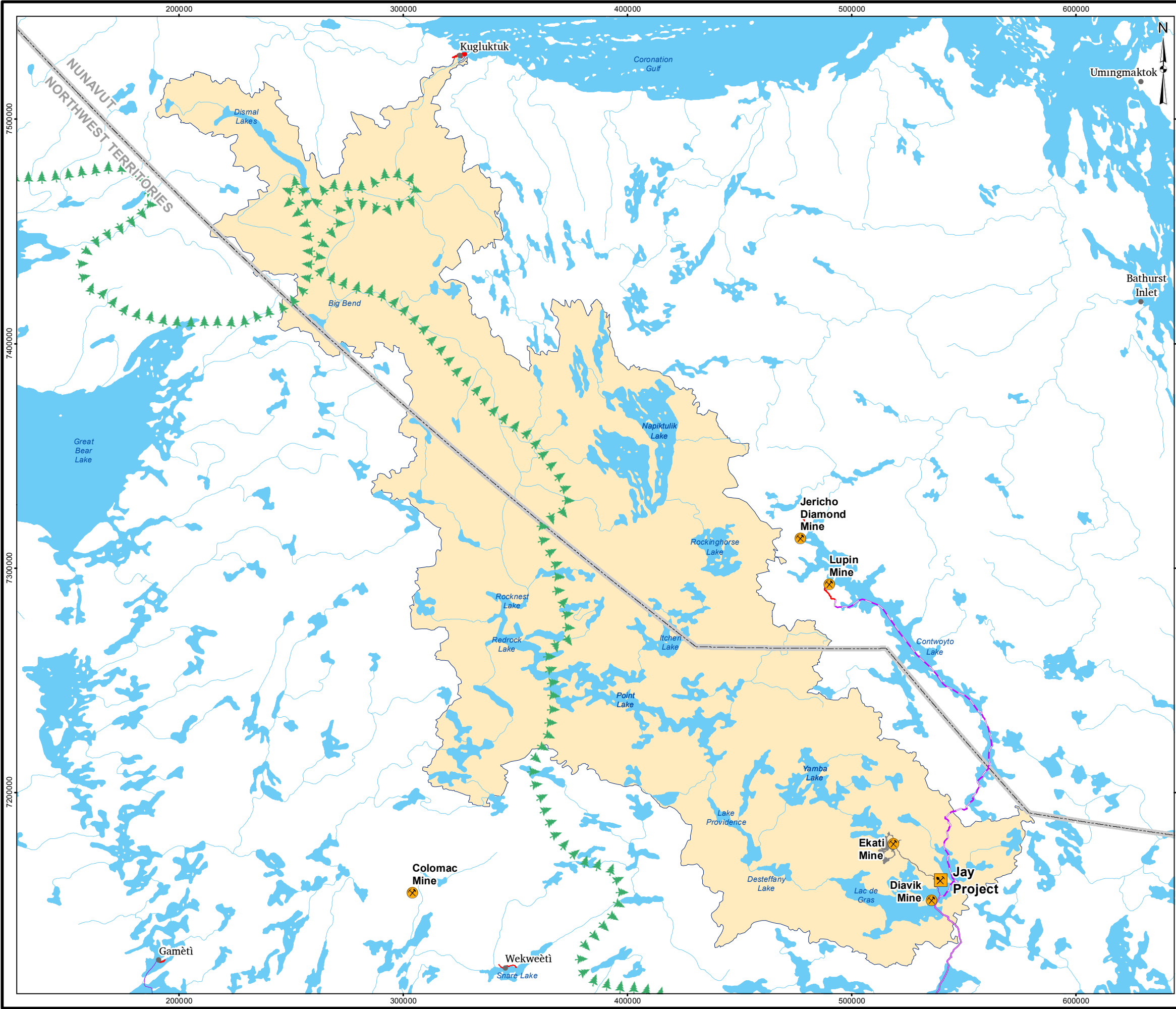


Golder
Associates

PROJECT	13-1328-0041	FILE No. DAR_Intro_003_GIS
DESIGN	RK	17/06/14
GIS	ANK	16/10/14
CHECK	JV	16/10/14
REVIEW	JV	16/10/14
SCALE AS SHOWN	REV. 0	

MAP 1.3-2

G:\CLIENTS\DOMINION\DEC_Jay and Lynx\Projects\Figures\13-1328-0041_Jay & Lynx\EADAR\Other\DAR_Intro_004_GIS.mxd



LEGEND

- EKATI MINE FOOTPRINT
- JAY PROJECT
- EXISTING MINE OR PROJECT
- POPULATED PLACE
- ALL-SEASON ROAD
- WINTER ROAD
- TIBBITT TO CONTWOYTO WINTER ROAD
- NORTHERN PORTION OF TIBBITT TO CONTWOYTO WINTER ROAD
- TREELINE
- TERRITORIAL/PROVINCIAL BOUNDARY
- WATERCOURSE
- WATERBODY
- COPPERMINE RIVER WATERSHED

REFERENCE

WATER OBTAINED FROM ATLAS OF CANADA
NATURAL RESOURCES CANADA, CENTRE FOR TOPOGRAPHIC INFORMATION, 2012
DATUM: NAD83 PROJECTION: UTM ZONE 12N

DOCUMENT

DEVELOPER'S ASSESSMENT REPORT

40 0 40
SCALE 1:1,700,000 KILOMETRES

PROJECT		13-1328-0041		FILE No. DAR_Intro_004_GIS	
DESIGN		RK	17/06/14	SCALE AS SHOWN	
GIS		ANK	17/10/14	REV 0	
CHECK		JV	17/10/14	MAP 1.3-3	
REVIEW		JV	17/10/14		

DOMINION DIAMOND JAY PROJECT
NORTHWEST TERRITORIES, CANADA

COPPERMINE RIVER WATERSHED

Golder Associates



LEGEND

- JAY PROJECT
- EXISTING MINE OR PROJECT
- TERRITORIAL CAPITAL
- POPULATED PLACE
- HIGHWAY
- ALL-SEASON ROAD
- WINTER ROAD
- TIBBITT TO CONTWOYTO WINTER ROAD
- NORTHERN PORTION OF TIBBITT TO CONTWOYTO WINTER ROAD
- TERRITORIAL/PROVINCIAL BOUNDARY
- TREELINE
- WATERCOURSE
- WATERBODY
- EKATI CLAIM BLOCK
- SOUTHERN ARCTIC ECOZONE
- TAKIJUG LAKE UPLAND ECOREGION

REFERENCE

WATER OBTAINED FROM ATLAS OF CANADA
NATURAL RESOURCES CANADA, CENTRE FOR TOPOGRAPHIC INFORMATION, 2012
NATIONAL ECOLOGICAL FRAMEWORK, ATLAS OF CANADA 1,000,000 NATIONAL
FRAMEWORKS DATA
PROJECTION: CANADA LAMBERT CONFORMAL CONIC

DOCUMENT

DEVELOPER'S ASSESSMENT REPORT

150 0 150
SCALE 1:6,000,000 KILOMETRES



DOMINION
DIAMOND

JAY PROJECT
NORTHWEST TERRITORIES, CANADA

TITLE

TAKIJUG LAKE UPLAND ECOREGION OF THE SOUTHERN ARCTIC ECOZONE



Golder
Associates

PROJECT	13-1328-0041	FILE No. DAR_Intro_006_GIS
DESIGN	RK	17/06/14
GIS	ANK	16/10/14
CHECK	JV	16/10/14
REVIEW	JV	16/10/14
SCALE AS SHOWN	REV. 0	

MAP 1.3-4

The terrestrial vegetation community around the Ekati Mine is characterized by species adapted to: long, cold winters and very short, cold summers; low nutrient concentrations; and, localized areas of drought and standing water. Heath tundra is the most abundant vegetation cover, characterized by an abundance of low-growing heath plants. Lichen-dominated communities are found on the crests and upper slopes of eskers where the snow does not accumulate. Shrub species are found in sheltered riparian areas along streams, seeps, and lakeshores associated with poorly drained soils. The vegetation characteristic of the sedge wetlands and of tussock-hummock plant communities occurs in depressions containing standing water. Additional information on vegetation is provided in Section 11.

Although the biological productivity in the streams and lakes is relatively low, the aquatic ecosystems support numerous species of aquatic organisms including aquatic plants, phytoplankton, zooplankton, benthic invertebrates, and fish. Nine fish species are found in Lac du Sauvage: Lake Trout, Lake Whitefish, Round Whitefish, Slimy Sculpin, Cisco, Burbot, Arctic Grayling, Northern Pike, and Ninespine Stickleback. Additional information on fish and fish habitat is provided in Section 9.

Despite the harsh climate, the area supports many species of mammals and birds. Most of these animals are migratory, moving onto the barrenlands in spring and summer and migrating south as winter approaches (e.g., caribou, wolf, spotted sandpiper, pectoral sandpiper, yellow warbler, peregrine falcon), while others are non-migratory (e.g., grizzly bear, wolverine, arctic fox, red fox, arctic hare, raven, gyrfalcon), and utilize the area year-round. Although uncommon, muskoxen have been also been observed on occasion. Additional information on wildlife is provided in Section 13.

The Bathurst, Ahiak, and Beverly barren-ground caribou herds typically winter south of the treeline and calve in the barren-ground tundra. At a regional scale, heath tundra, heath tundra/boulder-bedrock, and riparian shrub appear to be the most preferred habitat types during the northern and post-calving migration periods. Based on TK, the outlet of Lac du Sauvage into Lac de Gras and along the esker on the west side of Lac du Sauvage are known to be important caribou movement sites. Additional information on caribou is provided in Section 12.

The predominant traditional land use activity in the Lac de Gras area is hunting. The Ekati claim block is within the traditional lands of Inuit, Dene and Metis people. Historically, small family groups travelled in anticipation of caribou migration and fished in lakes throughout the North during the summer. Archaeological studies have shown that human use of the Lac de Gras area dates back to 3,000 years before present time. Additional information on traditional land use is provided in Sections 14 and 15.

The areas at the outlet of Lac du Sauvage into Lac de Gras and along the esker to the west of Lac du Sauvage are also important traditional use and cultural sites. These values are respected by Dominion Diamond; the Project has been designed to avoid physical disturbance of the outlet area of Lac du Sauvage. Dominion Diamond held discussions with TK holders to determine the best placement of Project infrastructure to limit disturbance to the esker from Project components such as the road crossing at the esker west of Lac du Sauvage and placement of the waste rock. Additional information about these discussions with TK holders and other community engagement activities is provided in Section 5.

1.3.3 Need for the Project

1.3.3.1 Regional Context

Regionally, diamond exploration and mining have been a major contributor to the NWT economy since the 1990s. Mining overall is the largest private sector employer in the NWT; mining accounts for 29% of the territory's gross domestic product (GNWT 2013a). The mining industry creates substantial opportunities and revenue for Aboriginal and other Northern businesses, and generates revenues for government in the form of royalties and taxes.

Currently, there are four operating mines in the NWT, three of which are diamond mines and one tungsten mine (the Cantung Mine). The ability of the mining industry in the NWT to sustain its contribution to the economy is currently in doubt, because reserves of the four producing mines will likely be depleted over the next 5 to 15 years. Under current projections, the Ekati Mine will close in 2019, the Diavik Mine in 2023, and Snap Lake Mine in 2028. The Cantung Mine was expected to close in 2014, but a recent discovery may result in an extension of mine life.

Six projects are currently in the stages of advanced exploration or development, including the Gahcho Kué Project (a diamond mine). If these six projects become mines, the closures of the four currently operating mines would be somewhat mitigated. However, the cumulative impacts of these six projects, in terms of employment or production value, would barely offset the closure of the Ekati Mine alone. Further, there is no assurance that all of these six projects will become mines. The Ekati and Diavik mines provide substantial employment and economic benefits because of the open-pit component of their operations and their relatively larger scale. Continuation of the Ekati Mine beyond 2019 would be of substantial benefit to the economy of the NWT, and to Aboriginal and other Northern businesses and their direct and indirect employees.

The GNWT (2013b) has set a Mineral Development Strategy as a territorial priority. The goal of this Strategy is to support sustainable mineral development in the NWT, so that Aboriginals and other Northerners benefit from mineral development to the greatest extent practical. A three-person panel of outside experts listened to stakeholders in a process of engagement that extended from late January 2013 to April 2013. This panel heard from over 120 individuals representing 65 different organizations during the course of 40 meetings. The majority of participants supported development of the NWT's mineral resources. However, there was a strong emphasis on doing so with a balanced approach to economic, social, and environmental outcomes of mining developments.

The overall conclusion of the Pathways to Mineral Development Report of the Stakeholders Engagement Panel was the following:

"The vast majority of participants in the process supported development of the NWT's mineral resources. That being said, most stakeholders clearly expect the Mineral Development Strategy to identify initiatives and pathways for balanced mineral development that will protect the environment, respect Aboriginal cultures and lifestyles, and leave Northerners with a lasting and positive legacy." (excerpt from Pathways to Mineral Development Report of the Stakeholders Engagement Panel for the NWT Mineral Development Strategy) (GNWT 2013b).

1.3.3.2 *The Future of the Ekati Mine*

The mining of the various kimberlite pipes at the Ekati Mine is undertaken in a manner that provides a sustainable and stable operation. The rate at which a pipe can be mined and the order in which each pipe can be developed depend on factors unique to each pipe. Typical pipe characteristics that must be considered include:

- pipe size and geometry;
- physical properties of the kimberlite and its associated processing characteristics;
- diamond grade and grade distribution within the pipe;
- carat values; and,
- location relative to the processing plant.

Typical operational factors that must also be considered include:

- current operating costs;
- haul truck cycle times;
- equipment fleet size and composition;
- processing plant capacity; and,
- workforce stability.

The above factors, coupled with operational considerations, result in an intricate mine planning process. Without the Jay pipe, the current Ekati Mine life does not extend past 2019.

The Project is the cornerstone of Dominion Diamond's strategy for a long-term sustainable Northern diamond business that is an ongoing source of benefits for the North. The Project will maintain benefits flowing from the Ekati Mine for 10 or more additional years (i.e., to at least 2029) based only on open-pit mining. Underground mining of the deeper portions of the Jay pipe would extend mine life further into the future. If the Mine life is extended it is feasible that economic considerations may change (e.g., diamond prices may rise), allowing development of presently identified but not economically viable kimberlite resources (e.g., Fox deep). Additional exploration during an extension of the Ekati Mine life may also result in the discovery of additional viable diamond-bearing kimberlite pipes within Dominion Diamond's mineral holdings. Thus, the Project may allow even longer-term extension of the mine's life with consequent benefits to the NWT and its residents. Dominion Diamond's vision of a long-term future for the Ekati Mine involves the Project (i.e., the Jay pipe) as a stable operating platform from which additional resources can be brought into development in future.

1.3.4 Approach to the Project

The Project is an extension of a large, stable, and successful mining operation that has been a foundational element of the Northern economy for 16 years. The Project is unique among recently proposed mining projects in the NWT because it is not a new mine but rather further development of an existing mine. New mining projects have financing risks that can interrupt, delay, or even prevent mine development. An extension project, such as the Jay pit, provides greater assurance of continued economic benefits for the North.

Dominion Diamond has made all parties aware that the financial viability of the Project is linked to the release of diamond-bearing kimberlite for processing before the currently scheduled closure of the Ekati Mine in 2019. To maintain economic benefits to Northern people, Dominion Diamond has committed to supporting a complete, fair, and timely review process, and has requested that all parties make similar commitments, recognizing that the Project:

- respects cultural and environmental values;
- provides uninterrupted operation of the Ekati Mine;
- maximizes the use of existing infrastructure; and,
- provides positive project economics, a realistic development schedule, and mitigation of environmental effects.

Dominion Diamond highlights the following important aspects of its approach to the Project:

- Because of traditional use for camping, fishing, and caribou movement at the outlet of Lac du Sauvage into Lac de Gras and surrounding area, the Project design avoids any physical disruption of those areas.
- The Project is designed to achieve the fundamental scheduling constraint of production before the Ekati Mine would otherwise close.
- Dominion has worked with urgency on the Project. During only its first 18 months of ownership beginning in April 2013, Dominion Diamond has already completed the following key tasks related to development of the Project:
 - initiated immediate community engagement on the Project;
 - established a routine for quarterly community engagement meetings, provided site visits, conducted community TK workshops, and conducted other engagement activities, which continue on an ongoing basis;
 - conducted baseline environmental field programs in summer of 2013 and winter 2014;
 - submitted the (September 2013) Lynx Project application that would result in an incremental increase in the operating life of the Ekati Mine;
 - dedicated immediate resources to the Project so that the Jay-Cardinal Project Description was submitted in October, along with a draft version of the Jay-Cardinal TOR to facilitate the MVRB's initial stage of work (i.e., scoping);

- acknowledged in its initial submission that the Jay-Cardinal Project would be referred to the Review Board for Environmental Assessment, thereby facilitating the referral process (referral completed December 2013);
 - immediately initiated work on the Project DAR even while the Review Board issued TOR for the Project;
 - respected initial feedback received through the engagement process and prepared a revised Project description and amendments to the TOR for the Jay Project based, in large part, on community feedback; the Project revision removes the development of the Cardinal kimberlite pipe, which substantially reduces the Project's footprint in Lac du Sauvage; and,
 - submitted the Jay Project DAR.
- The Project design makes full use of existing Ekati Mine facilities to reduce the environmental footprint, and to avoid the need for costly and time-consuming construction of major mine components such as a processing plant, tailings facility, camp, airstrip, and primary access roads.

Dominion Diamond compared the Project alternatives on the basis of cost, schedule, socio-economics, and environmental effects. The proposed Project was selected as the best overall option, as detailed in Section 2. The Project design maximizes potential economic benefits, minimizes environmental effects to the extent feasible, provides a schedule for development integrated with the current Ekati mine plan, and provides reasonable and appropriate mitigation for environmental effects that cannot be avoided.

1.3.5 Project Schedule

The primary time constraint for the Project is that kimberlite production must be delivered to the processing plant by 2019 to avoid a shutdown of the Ekati Mine. To meet this constraint, the following general milestones are required, after the current DAR begins the EA review process in 2014:

2015

- EA review process completed;
- Ministerial approval received; and,
- applications for operational permits and authorizations submitted.

2016

- regulatory review for operational permits and authorizations completed;
- construction of land-based access (roads and power line) to Lac du Sauvage and other allowable Project activities;
- issuance of Operational Permits and Authorizations; and,
- dike construction begins.

2017

- dike construction continues; and,
- dewatering and fish-out begin.

2018

- dike construction continues; and,
- dewatering and fish-out continue.

2019

- dewatering and fish-out complete;
- construction of Sub-Basin B Diversion Channel completed;
- remaining pipelines and pumping system components for water management completed; and,
- pre-stripping for Jay open pit begins.

The above general timeframe is achievable with an accelerated construction timeframe that still provides a reasonable amount of time for regulatory review and approval. The timely receipt of regulatory approvals is critical to the success of this Project and thus of the opportunity to extend the Ekati Mine life by 10 or more years.

Dominion Diamond recognizes that amendments to the *Mackenzie Valley Resource Management Act* and to the process of Devolution have occurred and are scheduled to occur during the Project start-up timeframe. Dominion Diamond will work collaboratively with government and Aboriginal communities to avoid potential Project delays and to take advantage of any potential opportunities to advance the Project schedule that may become apparent as these amendments are implemented.

1.4 Regulatory Process

1.4.1 Previous Environmental Assessments

The initial applications for what would become the Ekati Diamond Mine (called the Northwest Territories Diamonds Project at that time) were reviewed by the Environmental Assessment Review Panel (the Panel) between 1994 and 1996 (Section 1.2.2, Table 1.4-1). The Panel recommended that the Government of Canada approve the Northwest Territories Diamonds Project.

In 1999, BHP applied to the Northwest Territories Water Board for an expansion to the existing Ekati Mine. This application was for the inclusion of the Sable, Pigeon, and Beartooth pipes to the north of the existing facilities. The EA for this project was undertaken by the MVRB who, in 2001, recommended that the DIAND (now known as AANDC) Minister approve the proposed development. The proposed development was approved with conditions.

In 2013, Dominion Diamond proposed open pit mining of the Lynx kimberlite pipe as an extension of mining activities at the Misery site. Because of the relatively small size of the development and the few new facilities or roads, the Lynx pit was approved by the Wek'eezhii Land and Water Board on the basis of a Preliminary Screening. A Water Licence amendment and Land Use Permit were issued by the WLWB in 2014.

Table 1.4-1 Existing Environmental Assessments for the Ekati Mine Relevant to the Jay Project

Project	Environmental Assessment	Subsequent or Associated Licensing and Permitting	Aspect Relevant to the Jay Project
Northwest Territories Diamonds Project	<ul style="list-style-type: none"> Northwest Territories Diamonds Project Environmental Impact Statement (1995) Panel recommendation to approve the Northwest Territories Diamonds Project (1996) Government of Canada Approval (1996) 	<ul style="list-style-type: none"> Class A Water Licence Surface Land Leases Mining Leases Fisheries Authorizations <i>Navigable Waters Protection Act</i> Approvals 	<ul style="list-style-type: none"> Initial approval for the overall Ekati Operation, which included open-pit and underground development of the Panda, Koala, Fox, Leslie, and Misery kimberlite pipes, processing plant, waste rock and water management, camp, airstrip, and on-site roads, deposition of fine processed kimberlite into Cells A to D of the Long Lake Containment Facility and into mined-out open pits
Sable, Pigeon, and Beartooth Expansion	<ul style="list-style-type: none"> Environmental Assessment Report for Sable, Pigeon, and Beartooth kimberlite pipes (April 2000) Mackenzie Valley Review Board's Report of Environmental Assessment on the Proposed Development of Sable, Pigeon, and Beartooth kimberlite pipes (February 2001) 	<ul style="list-style-type: none"> Class A Water Licence Type A Land Use Permits Surface Land Leases Fisheries Authorizations <i>Navigable Waters Protection Act</i> Approvals 	<ul style="list-style-type: none"> Open-pit development of Sable, Pigeon, and Beartooth kimberlite pipes, waste rock and water management, Ursula granular quarry, fine processed kimberlite deposition into Cells A to D of the Long Lake Containment Facility and Beartooth open pit

1.4.1.1 Northwest Territories Diamonds Project

The BHP Northwest Territories Diamonds Project (i.e., Ekati Mine) underwent an extensive EA and regulatory process under the *Canadian Environmental Assessment Act* in 1996, before the *Mackenzie Valley Resource Management Act* was established. In July 1994, the DIAND Minister referred the project to the Minister of Environment for public review under the Environmental Assessment and Review Process Guidelines Order, a process that was mandated by an Order-in-Council from the federal Cabinet. In December 1994, a Panel was appointed to assess the potential for adverse impacts from a segment of the mining industry that was new to Canada, the mining of diamonds from kimberlite.

The short- and long-term environmental and socio-economic effects of the Northwest Territories Diamonds Project and the proposed development plan were reviewed by the Panel. In May 1995, the Panel issued guidelines for the preparation of an EIS. The EIS was prepared and submitted by BHP in July 1995. The EIS assessed the combined open-pit and underground development of five diamond-bearing kimberlite pipes near Lac de Gras, four located within a few kilometres of each other in the Koala watershed (Panda, Koala, Fox, and Leslie [the Leslie kimberlite pipe has not been developed]) and a fifth, to the southeast, adjacent to Lac de Gras (Misery). The 1995 EIS also anticipated the future development of additional kimberlite pipes.

In January and February of 1996, extensive public hearings were held in potentially impacted communities identified by the Panel in the western NWT (and present day Nunavut). In June 1996, the Panel concluded that the environmental effects of the proposed Ekati Mine were largely predictable and could be mitigated. The Panel concluded that monitoring would detect any effects not predicted or those not accurately predicted, allowing them to be addressed through various environmental management plans and an adaptive management strategy.

Concerning future development possibilities at the Ekati Mine, the conclusion of the Panel was:

"The cumulative environmental effects of additional development by BHP on the Lac de Gras claim block are unlikely to be significant. It has reached this conclusion for several reasons. First, mining of additional pipes would extend the life of the mine and would not result in development of additional processing capacity. Secondly, tailings would be deposited in mined-out pits and no expansion of the Long Lake tailings impoundment or creation of a new impoundment would be required. Thirdly, if additional pits were developed, the Proponent and government would have some years of experience in managing the effects of the Project. Nevertheless, continued monitoring and adaptive management would be required, especially if new pits were located in previously undeveloped watersheds. Finally, the Panel agrees with the Proponent's conclusion that the cumulative socio-economic effects entailed by extending the life of the mine are likely to be positive since extension of the life of the mine would provide economic stability." (excerpt from page 67 of the Environmental Assessment Review Panel June 1996 Report) (CEAA 1996)

The Panel's June 1996 Report was accepted without any changes by the Government of Canada.

1.4.1.2 Sable, Pigeon, and Beartooth Projects

In 1999, BHP applied for an expansion to the Ekati Diamond Mine to include three new kimberlite pipes that were not included in the original application; the Sable, Pigeon and Beartooth pipes (BHP 1999; BHP Billiton 2008). BHP noted in their 1999 application that the expansion was discussed in the original 1995 EA process for the Ekati Mine, and that no new processes or methods would be required for the expansion. Further, no new waste streams would be generated (i.e., kimberlite would be processed at the existing plant, and processed kimberlite and process water would be deposited in the existing LLCF). As such, the new application was considered an expansion of the existing mine (rather than a new project), and the Review Board issued a Terms of Reference that reflected these conditions.

Mining of the Beartooth kimberlite pipe was completed in 2009 and development of the Pigeon kimberlite pipe was initiated in 2014. Development of the Sable kimberlite pipe is not scheduled.

1.4.1.3 Jay Project Regulatory Process

With the exception of the Inuvialuit Settlement Region, the regulatory process in the NWT is set out in the *Mackenzie Valley Resource Management Act*. The Land and Water Boards of the Mackenzie Valley are responsible for performing initial review and preliminary screenings of proposed projects, and regulating the use of the land and water as well as the deposition of waste within their respective regions.

The Ekati Mine is located within the Wek'ëezhii settlement area where all development applications are processed by the WLWB. The WLWB provides for the conservation, development, and use of land and water resources for optimum benefit to the residents in their settlement areas and the Mackenzie Valley, and to all Canadians.

Most of the facilities and activities related to mining of the Jay pipe have already been subject to EA and approval. For example, new processing facilities, processed kimberlite containment facilities, or camp facilities are not required as part of the Project. There are no newly proposed mining methods associated with this application; the socio-economic benefits of the Ekati Mine will be extended 10 or more years with Project approval.

The Project requires the construction of a dike in Lac du Sauvage and dewatering within this isolated portion of Lac du Sauvage for the duration of mining. This is required to enable development of the open-pit mine with an access road. This type of development (e.g., diversion of freshwater and dewatering to expose a kimberlite pipe for mining), in this environment, has been previously assessed within the Northwest Territories Diamond Project (1998), and the Sable, Pigeon, and Beartooth Expansion (2002). These engineering activities have been successfully carried out and accepted as successful by regulators for the Ekati Mine and for other mines (e.g., Diavik Mine). The instruments of environmental management and monitoring currently in use at the Ekati Mine will be expanded to include all aspects of the Project.

Based on Dominion Diamond's initial submissions and Project Description of October 2013, the Project was referred in November 2013 by AANDC under paragraph 126(2)(a) of the *Mackenzie Valley Resource Management Act* to the Review Board for an environmental assessment. The initial stage of the EA process included Scoping Sessions and the issuance of the TOR for the Project by the MVRB. In June 2014, Dominion Diamond provided a Project Description Addendum to the MVRB, and the MVRB issued a revised TOR for the Project on July 17, 2014 (Appendix 1A). The purpose of the TOR is to focus the EA on issues related to the Project that are most important and relevant to this stage of the permitting process.

Following the approval of the EA, Dominion Diamond would be eligible to proceed through the required regulatory process for issuance of a Water Licence and Land Use Permit. As part of those processes, Dominion Diamond will be required to engage with regulatory authorities as they complete detailed engineering and other designs for the Project, including plans for mitigation, environmental control features, and the amendment of Ekati Mine monitoring plans.

1.4.2 Jay Project Permits and Approvals

The following sections describe the licences and permits that will be required to enable mining of the Jay pipe (Table 1.4-2). The necessary mineral leases, which provide the fundamental mineral and mining rights required for the Project, are already held by Dominion Diamond.

1.4.2.1 Surface Leases

Eight surface leases are currently in place for the existing operations at the Ekati Mine (Map 1.4-1). These leases do not cover the area around Lac du Sauvage where the new development for the Project will occur. Therefore, one or more new surface lease(s) will be sought for the Lac du Sauvage area in conjunction with this Project application as required by the *Mackenzie Valley Land Use Regulations*.

Table 1.4-2 Permits, Approvals, Licences, or Leases Required for the Ekati Mine and Jay Project

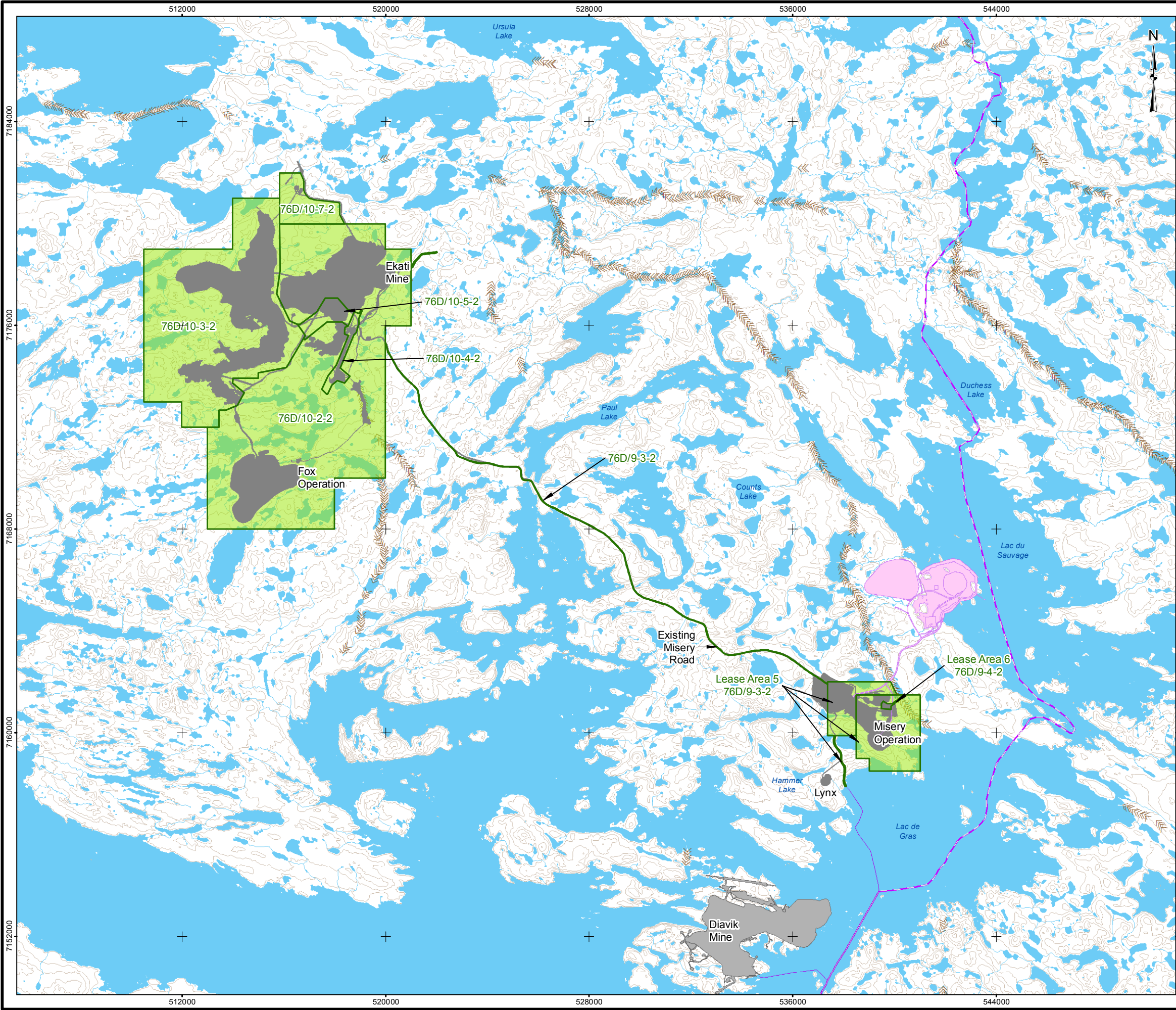
Permit, Approval, Licence, or Lease	Administration	Current Permit, Licence or Lease	Project Components/ Activities Included	Relevance to Jay Project
Surface Lease (Crown Land)	Government of the Northwest Territories	<ul style="list-style-type: none"> 76D/10-2-2 (Koala, Panda, and Fox mining, and facilities) (6,023 ha) 76D/10-3-2 (Long Lake Containment Facility) (3.701 ha) 76D/10-4-2 (airstrip and facilities) (110 ha) 76D/10-5-2 (Koala area facilities) (155 ha) 76D/9-3-2 (Misery open-pit mining, facilities, and road) (1,144.04 ha) 76D/9-4-2 (Misery area facilities) (12 ha) 76D/10-7-2 (Pigeon open-pit mining, facilities, and road) (324.6 ha) 76D/15-4-2 (Sable open-pit mining and facilities) (998 ha) 	<ul style="list-style-type: none"> Occupy and use lands required for open pits, processing plant, camp, air strip, and site road 	<ul style="list-style-type: none"> A surface lease will be required for the necessary developments in the Lac du Sauvage area beyond the boundaries of the current surface leases
Type A Land Use Permit	Wek'èezhii Land and Water Board	<ul style="list-style-type: none"> W2008F0009 (Sable Haul Road) W2008D0007 (Mining and associated activities on Sable Lease) W2008D0008 (Mining and associated activities on Pigeon Lease) W2013D0006 (Mining and associated activities for Lynx Pit) W2013C0005 (Exploration activities) W2014I0001 (Misery power line) 	<ul style="list-style-type: none"> Exploration and mining development activities 	<ul style="list-style-type: none"> A Type A Land Use permit will be required for the Jay Project for the open pits and access roads, runoff and water diversion structures, and other activities
Class A Water Licence	Wek'èezhii Land and Water Board	<ul style="list-style-type: none"> N7L2-1616 – Ekati Mine Issued: January 1, 1997 by the NWT Water Board Renewed as MV2003L2-0013: October 4, 2005 by the MVLWB MV2001L2-0008 - Sable, Pigeon and Beartooth Expansion Project Issued: August 15, 2002 by the MVLWB Renewed as W2009L2-0001: August 14, 2009 by the WLWB MV2003L2-0013 – Ekati Mine (This licence is a renewal of N7L2-1616) Issued: October 4, 2005 by the MVLWB Re-issued as W2009L2-0001: August 14, 2009 by the WLWB W2009L2-0001 – Ekati Mine (This licence is the amalgamation of the renewal of MV2001L2-0008 into MV2003L2-0013) Issued: August 15, 2009 by the WLWB Assigned to Dominion Diamond: April 2013 Renewed as W2012L2-0001: August 18, 2013 Amended to incorporate the Lynx Project Issued: June 6, 2014 by the WLWB Expiry: August 18, 2021 	<ul style="list-style-type: none"> Operation of the Ekati Mine Mining activities at all established areas Future mining at the Pigeon, Sable and Lynx kimberlite pipes Various identified water diversions and water uses Deposition of processed kimberlite into the Beartooth Pit Disposal of waste from diamond mining and processing associated with development, operation, and reclamation activities within the Koala, Pigeon, Sable, and Lac du Sauvage watersheds 	<ul style="list-style-type: none"> Class A Water Licence to include dewatering activities within a diked area of Lac du Sauvage, and management/disposal of waste

Table 1.4-2 Permits, Approvals, Licences, or Leases Required for the Ekati Mine and Jay Project

Permit, Approval, Licence, or Lease	Administration	Current Permit, Licence or Lease	Project Components/ Activities Included	Relevance to Jay Project
Fisheries Authorization	Fisheries and Oceans Canada	<ul style="list-style-type: none"> Fisheries Authorization SCA96021 – Ekati Fisheries Authorization SC00028 – King Pond – Cujo Stream Fisheries Authorization SC01111 – Desperation Pond, Carrie Stream Fisheries Authorization SC99037– Sable, Pigeon and Beartooth 	<ul style="list-style-type: none"> Loss of lake and stream habitat caused by construction and operation of the Koala, Panda, Misery, and Fox pits and other Ekati Mine infrastructure Loss of fish habitat caused by the use of King Pond as a settling facility for the Misery pit operations Loss of fish habitat associated with the construction of a dike across Desperation-Carrier Stream and for the use of Desperation Pond for waste rock storage and water management Loss of fish habitat caused by the development of the Beartooth, Sable, and Pigeon pits 	<ul style="list-style-type: none"> A Fisheries Authorization will be required for the dike construction, fish-out, and dewatering of a diked area of Lac du Sauvage, and construction and operation of the Jay Pit
Navigable Waters Protection Act/ Navigation Protection Act Approval	Transport Canada	<ul style="list-style-type: none"> 8200-T-12313.1 Original Ekati water works 8200-97-6112 Sable, Pigeon, Beartooth water works 	<ul style="list-style-type: none"> Construction of water intakes, water diversion, dewatering of lakes, processed kimberlite disposal, discharge/outfalls, dams/dikes, spillway discharge channel, water crossings and compensation structures associated with construction and operation of the mine and its infrastructure 	<ul style="list-style-type: none"> An exemption under Section 24 of the <i>Navigation Protection Act</i> is required for Dominion Diamond to dewater a diked area of Lac du Sauvage An Approval under Section 5(1) of the <i>Navigation Protection Act</i> is required for construction of a dike and other works in Lac du Sauvage and adjacent waterbodies in the project area

WLWB = Wek'èezhii Land and Water Board; NWT = Northwest Territories; MVLWB = Mackenzie Valley Land and Water Board; ha = hectare.

G:\CLIENTS\DOMINION\DEC Jay and Lynx\EADAR Other\DAR Intro\005_GIS.mxd



LEGEND

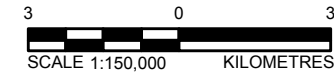
- EKATI MINE FOOTPRINT
- DIAMIK MINE FOOTPRINT
- PROPOSED JAY FOOTPRINT
- WINTER ROAD
- TIBBITT TO CONTWOYTO WINTER ROAD
- NORTHERN PORTION OF TIBBITT TO CONTWOYTO WINTER ROAD
- ELEVATION CONTOUR (10 m INTERVAL)
- ESKER
- WATERCOURSE
- WATERBODY
- EKATI SURFACE LEASE



REFERENCE

CANVEC © NATURAL RESOURCES CANADA, 2012
NATURAL RESOURCES CANADA, CENTRE FOR TOPOGRAPHIC INFORMATION, 2012
DATUM: NAD83 PROJECTION: UTM ZONE 12N

DOCUMENT

DEVELOPER'S ASSESSMENT REPORT



PROJECT		13-1328-0041		FILE No. DAR_Intro_005_GIS	
 DOMINION DIAMOND		JAY PROJECT NORTHWEST TERRITORIES, CANADA			
TITLE					
LOCATION OF THE EKATI SURFACE LEASES					
	DESIGN	RK	17/06/14	SCALE AS SHOWN	
	GIS	LMR	16/10/14	REV 0	
	CHECK	JV	16/10/14	MAP 1.4-1	
	REVIEW	JV	16/10/14		

1.4.2.2 Type A Land Use Permits

The Ekati Mine currently holds six Type A Land Use Permits (Pigeon Pit and associated activities, Sable Pit and associated activities, Sable Haul Road, Exploration activities, Lynx Pit and associated activities, and Misery power line), which were issued by the WLWB. These Permits cover mining exploration and development activities.

For the Jay Project, a Type A Land Use Permit is required for the area around Lac du Sauvage that is outside the boundaries of the pre-*Mackenzie Valley Resource Management Act* Surface Leases (Map 1.4-1). The Land Use Permit would include the extraction of waste rock and kimberlite, construction of a water diversion structure, construction of a site access road, and the other activities required for mining of the Jay pipe. The DAR is in support of Dominion Diamond's application for a Land Use Permit.

1.4.2.3 Class A Water Licence

The Ekati Mine operates under a Class A Water Licence (WLWB 2014) that regulates water use and waste deposition. The present DAR is in support of Dominion Diamond's application for a Water Licence enabling the development, operation, and closure of the Project.

1.4.2.4 Fisheries Authorizations

The Ekati Mine currently operates under four Fisheries Authorizations issued by DFO. The existing Fisheries Authorizations for the Ekati Mine were received under the previously in force *Fisheries Act*, which allowed, with a Fisheries Authorization, for the harmful alteration, disruption or destruction of fish habitat and required fish habitat compensation for any harmful alteration, disruption or destruction.

The *Fisheries Act* was revised in 2012, with the fisheries protection provisions of the *Fisheries Act* coming into force on November 25, 2013. Under Section 35 of the new Act, serious harm to fish is prohibited, unless authorized. As a condition of an Authorization, offsetting measures must be implemented to counterbalance losses. The *Fisheries Protection Policy* (DFO 2013a), and *Fisheries Productivity Investment Policy: A Proponent's Guide to Offsetting* (DFO 2013b), describe DFO's policy with respect to the new *Fisheries Act* and offsetting requirements.

The Project will result in effects to fish and fish habitat through the construction of the dike in Lac du Sauvage, and the dewatering and fish-out within the diked area. An Authorization under the *Fisheries Act* is being sought to provide for such activities within Lac du Sauvage. Dominion Diamond will continue to work with DFO on the details of the offsetting requirements for the Project.

1.4.2.5 Navigation Protection Act Approvals

The Ekati Mine operates under two *Navigable Waters Protection Act* Approvals. The *Navigable Waters Protection Act* was amended in 2012, with the *Navigation Protection Act* coming into force on April 1, 2014. An exemption under Section 24 of the *Navigation Protection Act* that would enable dewatering within the isolated portion of Lac du Sauvage inside the dike is being sought. An Approval under Section 5(1) for other works, including dike construction in Lac du Sauvage, will also be sought, after opting-in under Section 4(1).

1.5 Report Development and Organization

1.5.1 Report Purpose

The purpose of this report is to meet the requirements in the TOR (Appendix 1A) in support of Dominion Diamond's application for the Jay Project. The TOR outline the potential issues that the DAR needs to address to provide sufficient information for the MVRB to make informed decisions and recommendations regarding the Project.

Most of the facilities required for supporting and processing kimberlite mined from the Jay pipe already exist at the Ekati Mine. Because of the substantive use of existing facilities, the Project is an extension of the operating life of the existing Ekati Mine, rather than a new mining project.

This DAR provides the following information:

- an overview of the developer (also referred to as the proponent) (Section 1.2);
- a review of the existing and required regulatory permits and approvals (Section 1.4.2);
- a description of the alternative approaches for the Project that were evaluated and the rationale for the selected approach (Section 2);
- a description of the new development and activities required for the Project (Section 3.5);
- a description of the existing Ekati Mine operations, including those elements directly associated with mining of the Jay pipe (Section 3.4);
- a summary of previous and on-going community engagement (Section 4);
- a summary of how local and traditional knowledge were collected and used in the assessment of effects from the Project on the environment (Section 5);
- a description of the environmental assessment approach (Section 6);
- a description of the existing environmental components that will likely interact with the Project (Sections 7.2, 8.2, 9.2, 10.2; 11.2, 12.2, 13.2, 14.2, and 15.2);
- a description of the Project's environmental design features and mitigation to be implemented to limit adverse environmental effects (Sections 7.3, 8.4, 9.3, 10.4, 11.3, 12.3, 13.3, 14.3, and 15.3);
- analysis of residual Project-specific and cumulative effects (Sections 7.4, 8.5, 9.4, 10.3, 11.4, 12.4, 13.4, 14.4, 15.4, and 17);
- residual impact classification and determination of environmental significance (Sections 7.6, 8.7, 9.6, 11.6, 12.6, 13.6, 14.6, and 15.6) and,
- recommended follow-up and monitoring to address areas of uncertainty in the assessment, and test effects predictions and the effectiveness of environmental design features and mitigation (Sections 7.7, 8.8, 9.7, 10.4, 11.7, 12.7, 13.7, 14.7, and 15.7).

1.5.2 Applicable Regulatory Guidelines and Policies

The following guidance documents from the MVLWB were referenced in the preparation of the present DAR:

- *Document Submission Standards* (MVLWB 2012a);
- *Standards for Geographical Information Systems Submissions* (MVLWB 2012b);
- *Engagement and Consultation Policy* (MVLWB 2013a);
- *Engagement Guidelines for Applicants and Holders of Water Licences and Land Use Permits* (MVLWB 2013b);
- *Environmental Impact Assessment Guidelines* (MVRB 2004);
- *Socio-economic Impact Assessment Guidelines* (MVRB 2007);
- *Guidelines for Incorporating Traditional Knowledge in Environmental Impact Assessment* (MVRB 2005); and,
- *Water and Effluent Quality Management Policy* (MVLWB 2011a).

Other supporting documentation used to inform the present DAR included the following:

- *AANDC Guidelines for Designing and Implementing Aquatic Effects Monitoring Programs for Development Projects in the Northwest Territories* (Government of Canada 2009);
- *Guidelines for Developing a Waste Management Plan* (MVLWB 2011b);
- *Guidelines for Spill Contingency Planning* (Government of Canada 2007a);
- *Mine Site Reclamation Policy for the Northwest Territories* (Government of Canada 2002);
- *Mine Site Reclamation Policy Guidelines for the Northwest Territories* (Government of Canada 2007b);
- *Draft Guidelines for Adaptive Management - a Response Framework for Aquatic Effects Monitoring* (WLWB 2010);
- *Measures to Avoid Causing Harm to Fish and Fish Habitat* (DFO 2013c); and,
- *Fish Screen Design Criteria for Flood and Water Truck Pumps* (Government of Canada 2011).

1.5.3 Terms of Reference

A core element of the EA process is issue identification, which involves regulators, potentially impacted communities, the general public, and the developer of the proposed project. Key activities that comprise issue identification are scoping sessions, which are held by the MVRB and include technical and community workshops conducted in potentially impacted communities. From the issue identification process, Key Lines of Inquiry (KLOIs), Subjects of Note (SONs), and remaining issues are identified that need to be addressed during the evaluation of the Project. To provide guidance to the developer of the proposed project, the MVRB authors a project-specific TOR, which outlines all of the information that will be required in the DAR in order for the MVRB to be able to adequately evaluate whether they will recommend the Project for approval. As required by the TOR, the DAR must provide a response to KLOIs and SONs.

After the MVRB receives the DAR, an Adequacy Review is anticipated to determine whether all of the items provided in the TOR have been addressed. To aid in this Review, a Concordance Table has been produced as part of the DAR, which outlines the requirements in the TOR and the corresponding location within the DAR where the developer's response is provided (Appendix 1D). Once the Adequacy Review has been completed, the MVRB is anticipated to then ask interested parties to begin their technical review of the DAR. To aid in the review of the DAR by interested parties, all commitments, including mitigation proposed by the developer, have been summarized into one table (Commitments Table) attached as Appendix 1E. Details on how the DAR was structured to reflect the TOR are provided in Section 1.5.4.

1.5.4 Report Organization

1.5.4.1 *Organizational Approach*

The structure and organization of the DAR is reflective of the EA requirements established in the TOR issued specifically for the Project (Appendix 1A). Similar to the recent EAs completed for the Gahcho Kué Project (De Beers 2010) and NICO Project (Fortune 2011), the structure of the DAR addresses the five KLOIs and six SONs identified in standalone sections (Table 1.5-1).

The DAR has been organized to reduce repetition and to present information in a logical progression, with additional emphasis on issues identified as priorities by the MVRB, as noted above. Plain language summary reports have also been provided in English and local Aboriginal languages.

Table 1.5-1 Location of Key Lines of Inquiry, Subjects of Note, and Remaining Issues in the Developer's Assessment Report

Issue Identification	Section in the Terms of Reference	Section in the Developer's Assessment Report
Key Lines of Inquiry		
Impacts to water quality and quantity from Project components	7.3.1	8
Impacts to fish and fish habitat from Project components	7.3.2	9
Impacts to caribou from Project components	7.3.3	12
Analysis of alternative means	7.3.4	2
Maximizing benefits and minimizing impacts to communities	8.1.1	14
Subjects of Note		
Impacts to air quality from Project components	7.4.1	7
Impacts to vegetation from Project components	7.4.2	11
Impacts to wildlife and wildlife habitat from Project components	7.4.3	13
Impacts to terrain from Project components	7.4.4	10
Impacts to cultural aspects from Project components	8.2.1	15
Remaining Issues		
Assessing the impacts of the environment on the development	9	16
Cumulative effects summary	10	17

1.5.4.2 Organizational Breakdown

This DAR is organized into 17 main sections as described below.

Section 1 provides a brief introduction including: a corporate profile of Dominion Diamond, an overview of the Project (a detailed description is provided in Section 3), a description of the regulatory process including a summary of required licences and permits, and an outline of the report's organization. The TOR, Concordance Table, and Commitments Table are provided as appendices to Section 1 (Appendices 1A, 1D, and 1E).

A range of project alternatives were assessed by Dominion Diamond. In Section 2 the KLOI of analysis of alternative means is addressed in terms of mining method (alternative means to carrying out the Project) and Project components (alternative means for waste rock management, road access, and power supply).

The Project is described in detail in Section 3: the approach to the Project; the Project schedule; existing facilities that will be utilized for the Project; the environmental setting for the Project, including geological, geochemical, geotechnical, and hydrogeological characterization; and, the conceptual design for all Project components. The geology, permafrost, geochemical, and hydrogeology baseline reports for the Project are provided as annexes to Section 3.

The approach to engagement with communities and regulatory bodies during the EA process is detailed in Section 4. The Engagement Plan and Engagement Record are provided as appendices to Section 4.

The traditional knowledge (TK) collected for the Project and used within the DAR is described in Section 5. This section has been previously submitted to respective communities for review.

The overall assessment approach is outlined in Section 6, including identification of valued components and spatial and temporal boundaries and the approach for completing the pathways analysis, residual effects analysis, residual impact classification, and determination of significance.

The SON of impacts to air quality from Project components is addressed in Section 7. This section provides a standalone assessment for potential effects to air quality. Because the predicted changes to air quality from the Project will feed into the majority of subsequent assessments (water quality, vegetation, wildlife, and human environment), this information is presented early within the DAR. The air quality baseline report for the Project is provided as an annex to Section 7.

The KLOI of impacts to water quality and water quantity from Project components is addressed in Section 8. This section provides a standalone assessment for potential effects to hydrogeology, hydrology (water quantity), and surface water quality. The hydrogeology, hydrology, and water quality baseline reports for the Project are provided as annexes to Section 8.

The KLOI of impacts to fish and fish habitat from Project components is addressed in Section 9. This section provides a standalone assessment for potential effects to fish and aquatic life other than fish, including the consideration of predicted changes to hydrology, water quality, and fish habitat. The conceptual fish-out plan and conceptual off-setting plan are provided as appendices to Section 9; the plankton, benthic invertebrate, and fish and fish habitat baseline reports for the Project are also provided as annexes to Section 9.

The SON of impacts to terrain from Project components is addressed in Section 10. This section provides a standalone assessment of potential effects from waste rock storage areas to terrain such as soils and hydrology, permafrost, and topography and slope stability. This section also includes an assessment of effects from seismic activity and climate change-related factors (e.g., temperature, permafrost regime, average and extreme precipitation, and seasonal flooding and melt patterns) on the geotechnical stability of engineered structures for the Project.

The SON of impacts to vegetation from Project components is addressed in Section 11. This section provides a standalone assessment of potential effects to vegetation, including consideration of predicted changes to air quality, hydrology, water quality, terrain, and soils. Analysis of changes to soils is provided as an appendix. The soils and vegetation baseline reports for the Project are provided as annexes to Section 11.

The KLOI of impacts to caribou from Project components is addressed in Section 12. This section provides a standalone assessment of potential effects to caribou, including consideration of predicted changes to air quality, hydrology, water quality, ambient noise, and vegetation. The wildlife baseline report for the Jay Project is provided as an annex to Section 12.

The SON of impacts to wildlife and wildlife habitat from the Project components is addressed in Section 13. This section provides a standalone assessment of potential effects to wildlife other than caribou. The analysis of changes to noise levels from the Project is provided as an appendix.

The KLOI of maximizing benefits and minimizing impacts to communities and the SON of impacts to cultural aspects from Project components are addressed in Sections 14 and 15, respectively.

The assessment of climate change on the operating period of the Tibbitt to Contwoyto Winter Road and subsequent effects on the Project is presented in Section 16. Baseline data for traffic volumes and operating periods, and the land cover types, fish, vegetation and wildlife species that occur along the Tibbitt to Contwoyto Winter Road are provided in this section. Reference to where the assessment of environmental effects on the Project is also provided (i.e., Section 10).

The additional issue of assessing the impacts of the environment on the development is addressed in Section 16. In this section potential impacts from climate change, permafrost regime changes, seasonal flooding and melt patterns, extreme precipitation events, and seismic events are addressed.

A summary of the cumulative effects approach, methods, and results from the KLOIs and SONs for the biophysical and socio-economic components is provided in Section 17.

A high level of the assessment and conclusions for each KLOI and SON, and some other key sections of the DAR such as the Project Description and Community Engagement is provided in Section 18.

1.6 References

- BHP Billiton (BHP Billiton Canada Inc. including subsidiary BHP Billiton Diamonds Inc.). 2012. Ekati Diamond Mine 2012 Environmental Impact Report. Yellowknife, NWT, Canada.
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1.7 Glossary

Term	Definition
Barrenland	The area of the Northwest Territories east of the Mackenzie River valley and north and east of the tree line characterized by a low rolling tundra landscape, continuous permafrost, and low densities of human settlement.
Baseline	Background or reference; conditions before Project development.
Bedrock	The solid rock (harder than 3 on Moh's scale of hardness) underlying soils and the regolith in depths ranging from zero (where exposed to erosion) to several hundred metres.
Biomass	The total mass of organisms in a given area or volume.
Claim Block	Since the early 1900s, mineral rights have been government-owned and cannot be purchased; however, an individual or a company can lease the mineral rights from the government. Claim block delineates the area for which an individual or company holds the mineral claim form.
Crown Land	Commissioner's land as defined in the <i>Northwest Territories Act</i> (Canada) and the <i>Commissioner's Land Act</i> , or Territorial Lands, as defined in the <i>Territorial Lands Act</i> (Canada) and which are administered by the Government of the Northwest Territories.
Developer's Assessment Report	The Developer's Assessment Report is a document submitted by the developer of a proposed project that addresses the issues that are identified in the Terms of Reference. This document provides regulatory agencies and the general public the information they will require to make informed decisions regarding the project.
Dewatering	Removal of water from a natural waterbody by pumping or draining.
Drainage Basin	The area drained by a river or stream; see also watershed.
Drawdown	A lowering of the water level in a reservoir or other body of water.
Ecoregion	Relatively homogeneous subdivisions of an ecozone, which are characterized by distinctive climatic zones or regional landforms.
Ecosystem	Ecological system consisting of all the organisms in an area and the physical environment with which they interact.
Ecozone	Areas of the Earth's surface representative of large and very generalized units characterized by interactive and adjusting abiotic and biotic factors. The ecozone lies at the top of the ecological hierarchy and defines, on a subcontinental scale, the broad mosaics formed by the interaction of macroscale climate, human activity, vegetation, soils, geological, and physiographic features of the country.
Environmental Impact Statement (EIS)	A report that documents the information required to evaluate the environmental impact of a project.
Erosion	The wearing away of the land surface by running water, wind, ice, or other geological agents, including such processes as gravitational creep. Detachment and movement of soil or rock by water, wind, ice, or gravity.
Esker	Linear structures of loose sand and gravel, formed by glacial rivers. They provide critical habitat for carnivores and ungulates in the Arctic.
Fish	Fish as defined in the <i>Fisheries Act</i> , includes parts of fish, shellfish, crustaceans, marine animals and any parts of shellfish, crustaceans or marine animals and the eggs, sperm, spawn, larvae, spat and juvenile stages of fish, shellfish, crustaceans and marine animals.
Flocculent	A reagent added to a dispersion of solids in a liquid to bring together the fine particles to form flocs. Flocs are small masses formed in a fluid through coagulation, agglomeration or biochemical reaction of fine suspended particles.
Footprint	The proposed development area that directly affects the soil and vegetation components of the landscape.
Geology	The science that deals with the Earth's physical structure and substance, its history and the processes that act on it.
Groundwater	That part of the subsurface water that occurs beneath the water table, in soils and geologic formations that are fully saturated.
Habitat	The physical space within which an organism lives, and the abiotic and biotic entities (e.g., resources) it uses and selects in that space.

Term	Definition
Headwater	A tributary stream of a river close to or forming part of its source.
Heath tundra	A closed mat plant community that grows on moderate to well drained soils, covering most of the upland areas. Plants generally belong to the heath family, the Ericaceae. The vegetation layer forms a mat of low shrubs dominated by dwarf birch and Labrador tea.
Hydrology	The science that deals with the Earth's water, specifically its movement in relation to land.
Key Line of Inquiry	Areas of the greatest concern that require the most attention during the environmental impact review and the most rigorous analysis and detail in the Developer's Assessment Report. Their purpose is to ensure a comprehensive analysis of the issues that resulted in significant public concern about the proposed development.
Kimberlite	Igneous rocks that originate deep in the Earth's mantle and intrude the Earth's crust. These rocks typically form narrow pipe-like deposits that sometimes contain diamonds.
Kimberlite Pipe	Vertical structures on which kimberlites occur in the Earth's crust.
Lichens	A simple slow-growing plant that typically forms a low crustlike, leaflike, or branching growth on rocks, walls, and trees.
Limnology	The study of open fresh and more rarely saline waterbodies, specifically lakes and ponds (both natural and manmade), including their physical, chemical, and biological properties.
Metasediment Rock	Sedimentary rocks that have been modified by metamorphic processes.
Minewater	Water collected in a mine and which is brought to the surface by water management methods in order to enable the mine to continue working.
Nitrate	A compound with the univalent group NO_3^- .
Open-Pit Mining	Surface mining technique of extracting rock or minerals from the earth by their removal from an open pit.
Oxides of Nitrogen	Consist of nitric oxide (NO) and nitrogen dioxide (NO_2) and are reported as equivalent NO_2 .
Particulate Matter	Any aerosol that is released to the atmosphere in either solid or liquid form.
Permafrost	Ground (soil or rock and included ice and organic material) that remains at or below 0°C for at least two consecutive years. Permafrost is defined on the basis of temperature. It is not necessarily frozen, because the freezing point of the included water may be depressed several degrees below 0°C ; moisture in the form of water or ice may or may not be present.
Phytoplankton	Small, usually microscopic, plants that live in the water column of lakes and make their food through primary production.
Processing Plant	The Ekati processing plant located at the Ekati main camp is where the physical processing occurs to get the diamonds from the kimberlite.
Pushback Pit	The incremental mining from the smallest pit to the larger pit.
Reference Sites	Represents areas of a comparative ecosystem where exposure to stressors of potential concern has not been increased as a result of human disturbance.
Riparian	Refers to terrain, vegetation or simply a position next to or associated with a stream, floodplain or standing waterbody.
Runoff	The portion of precipitation or irrigation water that moves across land as surface flow and enters streams or other surface receiving waters.
Sediment	Solid material that is transported by, suspended in, or deposited from water. It originates mostly from disintegrated rocks; it also includes chemical and biochemical precipitates and decomposed organic material, such as humus. The quantity, characteristics and cause of the occurrence of sediment in streams are influenced by environmental factors. Major factors are degree of slope, length of slope soil characteristics, land usage, and quantity and intensity of precipitation.
Seepage	Slow water movement in subsurface. Flow of water from man-made retaining structures. A spot or zone, where water oozes from the ground, often forming the source of a small spring.
Sedge	A grass-like plant with a triangular stem often growing in wet areas. Sedge wetland habitats are typically wet sedge meadows and other sedge associations of non-tussock plant species. Sedge species such as <i>Carex aquatilis</i> and <i>C. bigelowii</i> , and cotton grass (<i>Eriophorum angustifolium</i>) are the dominant vegetation types. Plant species occupy wet, low lying sites where standing water is present throughout much of the growing season.

Term	Definition
Sedimentation	The process by which suspended particles in waste water settle to the bottom.
Species	A group of organisms that actually or potentially interbreed and are reproductively isolated from all other such groups; a taxonomic grouping of genetically and morphologically similar individuals; the category below genus.
Sub-basin	A smaller basin with a regional basin.
Subject of Note	Areas of the concern that require attention during the environmental assessment. Are of lower priority than the key lines of inquiry, but still require a sufficient analysis to demonstrate whether the development is likely to cause significant adverse impacts.
Sub-Level Retreat Mining Method	Underground mining method that does not require backfill.
Sulphur Dioxide	A colourless gas with a pungent odour. In Alberta, natural gas processing plants are responsible for close to half of the emissions of this gas. Oil sands facilities and power plants are also major sources. Others include gas plant flares, oil refineries, pulp and paper mills, and fertilizer plants.
Surface Lease	A lease negotiated by a company or individual with a surface owner for the right to access the area.
Sustainable Development	Development that meets the needs of the present, without compromising the ability of future generations to meet their own needs
Terms of Reference	Written requirements governing environmental impact assessment implementation, consultations to be held, data to be produced and form/contents of the environmental impact assessment report.
Total Suspended Particulate	A term used to collectively describe tiny airborne particles or aerosols that are less than 100 micrometres in size.
Total Suspended Solids	The amount of suspended substances in a water sample. Solids, found in wastewater or in a stream, which can be removed by filtration. The origin of suspended matter may be artificial or anthropogenic wastes or natural sources such as silt.
Traditional Knowledge	The knowledge, innovations and practices of indigenous people; refers to the matured long-standing traditions and practices of certain regional, indigenous, or local communities.
Traditional Land Use	Use of the land by Aboriginal groups for harvesting traditional resources such as wildlife, fish or plants, or for cultural purposes such as ceremonies or camping.
Treeline	An area of transition between the tundra and boreal forest to the south.
Tundra	A type of ecosystem dominated by lichens, mosses, grasses, and woody plants; a treeless plain characteristic of the Arctic and sub-arctic regions.
Tussock - hummock	A tussock is a tuft of grass or grass like plants like sedges. Tussock –hummock refers to a type of tundra consisting of acre upon acre of sedge tussocks, usually located on flat, poorly drained land or gentle slopes.
Underground Mining	Underground mining technique of extracting rock or minerals from the earth by their removal from an open pit.
Upland areas	Ground elevated above the lowlands along rivers or between hills; highland or elevated land; high and hilly country.
Valued Component	Represent physical, biological, cultural, and economic properties of the social-ecological system that are considered to be important by society.
Waste Rock	Rock moved and discarded in order to access resources.
Waste Rock Storage Area	Engineered landforms in which waste rock from mining activities is stored.
Waterbody	An area of water such as a river, stream, lake or sea.
Watercourse	Riverine systems such as creeks, brooks, streams and rivers.

Term	Definition
Watershed	An area or ridge of land that separates waters flowing to different rivers, basins, or seas.
Wetlands	An area of land where the water table is at or above the mineral soil for the entire year.
Wildlife	Under the <i>Species at Risk Act</i> , wildlife is defined as a species, subspecies, variety or geographically or genetically distinct population of animal, plant or other organism, other than a bacterium or virus that is wild by nature and is native to Canada or has extended its range into Canada without human intervention and has been present in Canada for at least 50 years.
Zooplankton	Small, sometimes microscopic, animals that live in the water column of lakes and mainly eat primary producers (phytoplankton).