



August 15, 2017

Violet Camsell-Blondin - Chair
Wek'èezhii Land and Water Board
#1, 4905 – 48th Street
Yellowknife, NT
X1A 3S3

Dear Ms. Camsell-Blondin

Re: Misery Underground Project Water Licence and Land Use Permit Application, Ekati Mine, NT

Dominion Diamond Ekati Corporation (DDEC) is pleased to provide the Wek'èezhii Land and Water Board (the WLWB) with the attached Water Licence and Land Use Permit application package (the Application) for the Misery Underground Project (the MUG Project). The MUG Project is located below the Misery open pit development which is approximately 30 km from the main facilities at the Ekati mine. Development of the MUG Project would require approximately one year of initial underground development activities, followed by underground ore extraction over about 3.5 years, producing the equivalent of about six months of full time feed to the Ekati mine processing facilities. The Project is a small but critical economic “bridge” for the Ekati mine and will ensure a steady supply of ore between the end of the Misery open pit and Sable Pit operations and the start of production from the Jay Project. Specific parts of these applications and related information are described in more detail below.

Environmental Assessment

In 1996, Applications for what would become the Ekati Diamond Mine (called the NWT Diamonds Project at the time) underwent an extensive environmental assessment and regulatory process under the *Canadian Environmental Assessment Act*, prior to the establishment of the *Mackenzie Valley Resource Management Act*.

The Environmental Impact Statement (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). Open

Record #: HSE RCD ENV 788
Document Owner: Environment Department
Date: 15-08-2017
Template # EKA TEM 1852.13

DOMINION DIAMOND EKATI CORPORATION

900 - 606 4 Street SW, Calgary, AB, Canada, T2P 1T1 T 1.403.910.1933 F 1.403.910.1934 www.ddcorp.ca



pit mining and the associated infrastructure, facilities, mitigations and impacts were considered for the Misery pit however underground mining at Misery was not planned for at the time and was not included in the EIS.

Project Schedule

A plan to recover high value kimberlite from below the mined-out Misery Pit has been prepared. The MUG Project includes development starting in April 2018, followed by kimberlite mining in early 2019 through to about mid-2022. Note that these timelines will be adjusted accordingly upon receipt of the required project approvals. At the end of the MUG Project, the minewater stored in the Lynx Pit will be pumped to the bottom of the Misery Pit and underground workings. The Misery Pit will then become the primary minewater management facility for the Jay Project. Final closure of the Misery Pit will be as described in the Jay Project Conceptual Closure and Reclamation Plan¹.

The MUG Project is a small development that will see mining at Misery transition from open pit to underground mining however, the development of the underground at Misery is a critical economic “bridge” for the Ekati mine. Development of the MUG Project in a timely manner will ensure a steady supply of ore between the end of the Misery open pit and Sable pit operations and the start of production from the Jay Project. The MUG Project will be completed ahead of final Dewatering of the Jay diked area to the Misery Pit. Please refer to Appendix A – Project Description submitted with the Application for more detailed information.

Engagement

Appendix B of the Application contains the Pre-Application Engagement Log for the MUG Project. Version 3.0 of the *Ekati Mine Engagement Plan*² (the Engagement Plan) was approved by the WLWB on September 23, 2016³. Note that another version of the Engagement Plan will be submitted to the WLWB as per Part B Condition 11 of the recently amended Water Licence W2012L2-0001(Amendment #4).

¹ See WLWB online registry under Water Licence W2013L2-0002 ([Ekati Jay Project-Appendix M-Jay Closure Plan-Jun 7_16.pdf](#))

² See WLWB Online Registry under Water Licence W2012L2-0001 or at [W2012L2-0001-Ekati-Engagement Plan-Version 3.0-May 13_16.pdf](#)

³ See WLWB Online Registry under Water Licence W2012L2-0001 or at [Ekati-Engagement Plan-Version 3.0-Board Directive and Reasons for Decision-Oct 11_16.pdf](#)

Record #: HSE RCD ENV 788
Document Owner: Environment Department
Date: 15-08-2017
Template # EKA TEM 1852.13

DOMINION DIAMOND EKATI CORPORATION

900 - 606 4 Street SW, Calgary, AB, Canada, T2P 1T1 T 1.403.910.1933 F 1.403.910.1934 www.ddcorp.ca



Plans for Approval

The Application package contains the following management plans that DDEC is requesting the Board review and approve as part of the licensing process. These are as follows:

- Closure and Reclamation (Appendix A – Project Description Section 4.9)
- Waste Rock and Ore Management Plan (Appendix G)
- Wastewater and Processed Kimberlite Management Plan (Appendix H)

Surface Leases for Misery Area/Land Use Permit Application

The area of the MUG Project is covered by existing surface leases, including 76D/9-3-2 (Misery Mining and Road) and 76D/9-4-2 (Misery Area Facilities). DDEC sought assistance from, and has been working with, the Government of the Northwest Territories (GNWT) in the planning and development of the regulatory applications for the MUG Project.

In a letter to DDEC dated July 6, 2017 the GNWT states the following:

Lease 76D/9-3-2, issued December 1, 1996 authorizes the land to be used for “Open Pit Mining and Access Road only”. This lease was amended July 31st 2014 to include the use of a “power transmission corridor”. The uses of “open pit mining and access road” are considered to be protected by Section 152 of the *Mackenzie Valley Resource Management Act* (MVRMA).

Please be advised that the underground mining is not a use contemplated by the existing lease and will require a lease amendment for the underground development. The activities associated with underground mining would be subject to the MVRMA and regulations.

Lease 76D/9-4-2, issued December 1, 1996 authorizes the land described by the lease to be used for “Misery Area Facilities”. The development of further structures or appurtenances within the footprint of the lease boundaries is within the scope of the existing lease.

DDEC is of the understanding that only certain MUG project components, those located on lease 76D/9-3-2 (Misery Mining and Road), are subject to the MVRMA and therefore a Land Use Permit application. These components are portals (two in pit locations and the possibility of one surface portal), construction and operation of a powerline connection to Misery underground, temporary kimberlite stockpile, fresh air raise and associated infrastructure, and additional de-watering lines. DDEC understands that MUG Project components located on lease 76D/9-4-2 (Misery Facilities) are

Record #: HSE RCD ENV 788
Document Owner: Environment Department
Date: 15-08-2017
Template # EKA TEM 1852.13

DOMINION DIAMOND EKATI CORPORATION

900 - 606 4 Street SW, Calgary, AB, Canada, T2P 1T1 T 1.403.910.1933 F 1.403.910.1934 www.ddcorp.ca



within the scope of the existing lease and these are a camp expansion, sprung structure, and ERT building. For more details on these components please refer to Appendix A – Project Description, Section 4.5 submitted with the Application.

DDEC is in the process of applying to the GNWT for a surface lease amendment to add the new use of “Underground Mining” to lease 76D/9-4-3.

Reclamation and Security

Closure and Reclamation of the MUG Project is described in the attached Project description document (see Appendix A – Project Description, Section 4.9). DDEC has also provided a RECLAIM security estimate for the MUG Project. When compared to the RECLAIM estimate based on recent updates for the Jay Project and the 2016 Annual Closure and Reclamation Progress Report, the MUG Project represents an overall increase of \$ 682,854 to the RECLAIM grand total. The updated RECLAIM can be found in Appendix K.

Water Licence Application

Amalgamation Request

It is the preference and request of DDEC that the entire Ekati mine be governed by a single Water Licence (WL). This follows the principle that was previously accepted for consolidation of the Sable, Pigeon and Beartooth WL into the Ekati WL in 2009 as well as the Lynx WL, W2013L2-0001, in April 2014⁴, and the Jay Project WL, W2013L2-0002, in 2016⁵. In keeping with past amalgamation and practice, DDEC is requesting that the MUG Project WL be amalgamated with the current Ekati mine WL W2012L2-0001. This single WL would provide for better clarity, consistency and certainty as well as support administrative and operational efficiency by all parties.

The proposed changes to Water Licence W2012L2-0001 to incorporate the MUG Project and the corresponding Surveillance Network Program (SNP) can be found in Appendix I and J respectively.

⁴ See WLWB Online Registry under Water Licence W2012L2-0001 or at [W2012L2-0001-Ekati-Water Licence-Amendment-Lynx Project-Reasons for Decision-Apr 30_14.pdf](#).

⁵ See WLWB Online Registry under Water Licence W2012L2-0001 or at [W2012L2-0001-Ekati-WLWB Decision on Proceeding Process-Oct 24_16.pdf](#)

Record #: HSE RCD ENV 788
Document Owner: Environment Department
Date: 15-08-2017
Template # EKA TEM 1852.13

DOMINION DIAMOND EKATI CORPORATION

900 - 606 4 Street SW, Calgary, AB, Canada, T2P 1T1 T 1.403.910.1933 F 1.403.910.1934 www.ddcorp.ca



Falcon Lake Elevation Change Requested

Additionally, DDEC is requesting a change to Part D, item 7(d) of WL W2012L2-0001. Currently the elevation of Falcon Lake is listed as 476m. This elevation was provided to the WLWB during the 2012-2013 renewal of the Ekati Water Licence. The elevation provided for Falcon Lake at this time was based on the published 1:50,000 Topographic Survey of Canada map. Site specific survey data collected since 2013 shows that the natural elevation for Falcon Lake fluctuates between 469-470m. This data is more accurate and representative of actual natural conditions for Falcon Lake. DDEC is proposing the elevation in the Water Licence be changed to 469.5m. See Appendix L for further information and data.

We trust that the Board will find these applications for the MUG Project to be comprehensive and complete. DDEC looks forward to working collaboratively with Board staff, the aboriginal community and others to facilitate the Board's review of the Application. If you have any questions or concerns regarding the Application for the MUG Project please contact me at 403-910-1933 ext. 2401 (new phone number) or Claudine.Lee@ddcorp.ca.

Sincerely,

A handwritten signature in black ink that reads 'Claudine Lee'.

Head – Environment

Record #: HSE RCD ENV 788
Document Owner: Environment Department
Date: 15-08-2017
Template # EKA TEM 1852.13

DOMINION DIAMOND EKATI CORPORATION

900 - 606 4 Street SW, Calgary, AB, Canada, T2P 1T1 T 1.403.910.1933 F 1.403.910.1934 www.ddcorp.ca



Box 32, Wekweètì, NT X0E 1W0
Tel: 867-713-2500 Fax: 867-713-2502

#1-4905 48th Street, Yellowknife, NT X1A 3S3
Tel: 867-765-4592 Fax: 867-765-4593
www.wlwb.ca

Application for:

New Land Use Permit **Amendment** to _____

<p>1. Applicant's name and mailing address:</p> <p>Dominion Diamond Ekati Corporation Attention: Claudine Lee – Head of Environment 900 – 606 4 Street SW Calgary, Alberta T2P 1T1</p>	<p>Fax number: 403-910-1934</p> <p>Telephone number: 403-910-1933 (ext. 2401)</p>
<p>2. Head office address:</p> <p>As above</p> <p>Field supervisor:</p> <p>Surface Construction: Shaun Hook (867-880-2261) /Keith Sangris (867-880-2014)</p> <p>Underground: Dave Childs (867-880-2513)</p> <p>Radiotelephone:</p>	<p>Fax number:</p> <p>Telephone number:</p> <p>See #2</p>
<p>3. Other personnel (subcontractor, contractors, company staff etc.)</p> <p>It is expected that some of the existing Ekati mine workforce will continue working for the MUG Project. However, due to the specialized nature of the work, specialist contractors will be required for various components of the Project. Preference will be given to northern contractors. As the mining of Misery Underground is similar to other underground mining at the Ekati mine, skills and contracts related to mining and maintenance may be continued.</p> <p>TOTAL: 700-1100 is the total number of persons on site at the Ekati mine. For the MUG Project there will be a maximum of 195 people at the Misery Site. (Number of persons on site)</p>	
<p>4. Eligibility: (Refer to section 18 of the <i>Mackenzie Valley Land Use Regulations</i>)</p> <p>a)(i) X a)(ii) a)(iii) b)</p>	

5. a) Summary of operation (Describe purpose, nature and location of all activities.)

The Misery Pit is located in the southeastern portion of the Ekati mine property about 30 km from the main facilities in the Lac de Gras watershed (see Map 1-3 in Appendix A - Project Description submitted with the Water Licence Application). Underground mining of the Misery kimberlite pipe will be an extension of the existing Misery open pit operation and is a small but critical economic “bridge” for the Ekati mine; ensuring a steady supply of ore between the end of the Misery open pit and Sable pit operations and the start of production from the Jay Project. The Mug Project involves the use of a number of existing and previously permitted components of the Ekati mine and Misery site infrastructure. The Project includes approximately 3.5 years of mining, with development proposed to begin in April 2018 following the completion of Misery Open Pit mining.

The following existing components will be used for the MUG Project:

- roads and transportation infrastructure (e.g., Ekati airstrip, Misery Road);
- Misery Camp and facilities (e.g. laydowns, maintenance buildings);
- existing water management infrastructure (e.g., King Pond Settling Facility, pipelines from the Misery site to the King Pond Settling Facility);
- processing plant; and,
- fine and coarse processed kimberlite management facilities (i.e., Long Lake Containment Facility [LLCF], coarse kimberlite storage area, mined-out Panda and Koala open pits).

The following activities will be undertaken to enable underground mining at Misery:

- mining of the Misery main kimberlite pipe using the Sublevel Retreat mining method;
- placement of underground waste rock at the existing and permitted Misery WRSA;
- operational management of minewater during underground mining; and
- reclamation of the constructed facilities.

With the change in mining methods from open pit to underground, new infrastructure required at the Misery site will be:

- 80 person addition to the existing Misery camp;
- portals for underground access – two in pit locations and possibly a surface portal;
- expansion to the existing surface sprung structures;
- additional dewatering lines;
- development and construction of an underground mine fresh air raise (FAR) and supply of compressed air to deliver fresh air to the underground work area;
- addition of an Emergency Response Team (ERT) building (to be a fold-away structure);
- connection of the Misery Powerline to the underground.

In addition to the above noted new infrastructure components for the MUG Project there will be:

- minor modifications to the Saddle Dam at the King Pond Settling Facility;
- possible upgrades to the existing shotcrete plant;
- rehabilitation of the existing ERT hall to become the underground dry building; and
- a temporary ore stockpile to be located within the footprint of the Misery pit area.

The Misery area is regulated by two surface leases, 76D/9-3-2 for Misery Mining and Road and 76D/9-4-2 for Misery Facilities. Lease 76D/9-4-2 (Misery Facilities), issued December 1, 1996 authorizes the land described by the lease to be used for "Misery Area Facilities". The development of further structures or appurtenances within the footprint of the lease boundaries is within the scope of the existing lease. Under Lease 76D/9-3-2 (Misery Mining and Road) the uses of "open pit mining and access road" are considered to be protected by Section 152 of the Mackenzie Valley Resource Management Act (MVRMA). However, this lease does not allow for underground mining and requires a lease amendment for the underground development of Misery. The activities associated with underground mining would be subject to the MVRMA and regulations.

Therefore, DDEC is of the understanding that only certain project components are subject to the MVRMA and therefore this LUP application. The activities that are permitted under the existing leases are those that fall within the boundaries of Lease 76D/9-4-2 (Misery Facilities) and these are the ERT building (to be a fold away structure), the sprung structure, and the camp expansion. For more details on these components please refer to Appendix A – Project Description, Section 4.5 submitted with the WL Application.

Note that DDEC will be applying to the GNWT for a lease amendment to include the new use of "underground mining" for lease 76D/9-3-2 (Misery Mining and Road).

b) Please indicate if a camp is to be set up. (Please provide details on a separate page, if necessary.)

The existing accommodations complex at the Misery site will be used to house the workforce for the Project. These facilities currently include accommodations for 115 people, consisting of single-occupancy rooms, a kitchen complex, recreation room, and exercise gym. This facility will be expanded to accommodate an additional 80 people for the Misery Underground Project. The expansion of the Misery accommodations complex does not require an expansion of the already established Misery camp pad.

6. Summary of potential environmental and resource impacts (Describe the effects of the proposed land-use operation on land, water, flora & fauna and related socio-economic impacts. Use separate page if necessary.)

Please refer to Appendix A – Project Description Misery Underground Project Chapter 6 (Environmental and Socio-Economic Risks and Mitigation) for a complete description of potential environmental and resource impacts.

7. Proposed restoration plan (please use a separate page if necessary).

Please refer to Appendix A – Project Description Misery Underground Project Chapter 4 (Project Description), Section 4.9 (Closure and Reclamation) for a complete description of the proposed restoration plan.

Also note that the current approved Interim Closure and Reclamation Plan (ICRP) for the Ekati mine is version 2.4 and can be located on the WLWB's website under Water Licence W2009L2-0001, Closure and Reclamation section or at link [W2009L2-0001-BHP-ICRP-Version 2.4-Aug 31 11.pdf](#). This ICRP was submitted to the Board in August 2011 and approved in December 2011. An annual reclamation update report is provided to the WLWB. Additionally, as per Part K Condition 6, DDEC is currently working on ICRP Version 3.0.

8. Other rights, licences or permits related to this permit application (mineral rights, timber permits, water licences, etc.)
- Class "A" Water Licence W2012L2-0001 (latest version is at [W2012L2-0001-Ekati-Water Licence-Amendment-Jay Development-Jul 6, 17.pdf](#))
 - The MUG Project is located within the existing claim block held by Dominion Diamond Ekati Corporation
 - Surface lease 76D/9-4-2 (Misery Facilities)
 - Accompanying amendment application to incorporate the MUG Project for Water Licence W2012L2-0001
 - Note that DDEC will be applying for an amendment to the Misery Mining and Road Surface lease (76D/9-3-2) to add a new use of "underground mining".

Roads: Is this to be a pioneered road? N/A Has the route been laid out or ground truthed? N/A

9. Proposed disposal methods.

a) Garbage:

Inert wastes will be returned to the existing landfill site at the main Ekati site for disposal. Food wastes will be collected separately and returned to the main Ekati site for incineration or composting. Hazardous wastes such as oily rags, used oil & other Hydrocarbons, batteries, etc. will be returned to the Waste Management Building for further processing, disposal and/or recycling. Waste will be managed as per the Waste Management Plans approved by the Wek'eezhii Land and Water Board.

Note: Approved Waste Management Plans for the Ekati mine, including the Incinerator Management Plan, Hazardous Waste Management Plan, Landfill Management Plan, and Hydrocarbon Impacted Materials Management Plan can be found on the WLWB public registry website under Water Licence W2012L2-0001, Management Plans, Waste Management Plan, at [W2012L2-0001-Ekati-Waste Management Plan-Version 3.1-Sep 30, 16.pdf](#).

b) Sewage (Sanitary & Grey Water):

Sewage will be collected from the Misery facilities and stored on site as per the approved Wastewater and Processed Kimberlite Management Plan.

c) Brush & trees: N/A

d) Overburden (Organic soils, waste material, etc.):

The Waste Rock and Ore Management Plan for the Ekati site will be updated prior to the undertaking of waste handling activities for the MUG Project. Waste rock will be stored in the previously permitted Misery WRSA.

10. Equipment (includes drills, pumps, etc.) (Please use separate page if necessary.)

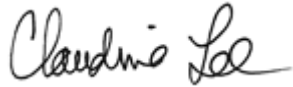
Please see the attached list.

11. Fuels	()	Number of containers	Capacity of containers	Location
Diesel				
Gasoline				
Aviation fuel				

NOTE: There will be no new fuel storage requirements for the MUG Project. Fuel facilities have already been permitted and registered at the Misery site and are included in the approved Spill Contingency Plan.

Propane	
Other	
<p>12. Containment fuel spill contingency plans.</p> <p>The MUG Project does not require any increase or procedural modification to current fuel storage, handling, and spill contingency plans. Spills will be managed in accordance with the approved Spill Contingency Plan. The current approved version of the Ekati's Spill Contingency Plan V10.0 can be found at W2012L2-0001-Ekati-Spill Contingency Plan-Version 10.0-Jun 6 16.pdf.</p>	
<p>13. Methods of fuel transfer (to other tanks, vehicles, etc.)</p> <p>Fuel storage, dispensing, and offloading activities are covered under the Ekati mine Spill Contingency Plan. The Spill Contingency Plan was developed to establish and document practices for responsible management of controlled substance spills and focuses on spill prevention and spill response. The MUG Project does not require any increase or procedural modification to current fuel storage, handling, and spill contingency plans.</p>	
<p>14. Period of operation (includes time to cover all phases of project work applied for, including restoration)</p> <p>Activities as outlined in this permit application are expected to begin as soon as the proper permitting is received and will occur year-round. The construction period will be followed by an approximately 3.5 year operational period during which kimberlite from the Misery underground pit will be mined and/or processed. At the end of the MUG Project, the minewater stored in the Lynx Pit will be pumped to the bottom of the Misery Pit and underground workings. The Misery Pit will then become the primary minewater management facility for the Jay Project.</p>	
<p>15. Period of permit (up to five years, with maximum of two years of extension).</p> <p>Five (5) years.</p>	
<p>16. Location of activities by map co-ordinates (attach maps and sketches)</p>	
<p>Minimum latitude (degrees, minutes, seconds) 64° 33' 19.2" N</p>	<p>Maximum latitude (degrees, minutes, seconds) 64° 34' 56.0" N</p>
<p>Minimum longitude (degrees, minutes, seconds) 110° 13' 29.1"W</p>	<p>Maximum longitude (degrees, minutes, seconds) 110° 9' 20.0" W</p>
<p>Map Sheet no. 76D09</p>	

17. Applicant
Print name in full



Claudine Lee – Head Environment
Signature

Date August 15, 2017

18. Fees Type A - \$150.00 ** Type B - \$150.00 ** (**Application Fees are Non-Refundable**)

Land use fee: _____ hectares @ \$50.00/hectare \$ N/A

Assignment fee \$50.00 \$ N/A Total application

Please make all cheques payable to “Receiver General for Canada”

10. EQUIPMENT LIST*

Number	Type and Size	Proposed Use
SURFACE		
1	992 Loader	Hauling Mined Material – Pit to Surface
2	777 Haul Truck	Hauling Mined Material – Pit to Surface
1	150t Crane	Hauling Mined Material – Pit to Surface
1	Power Generator	Back-up power
1	Cat D6 Dozers	King Pond Earthworks
1	Cat 345 Excavator	King Pond Earthworks
4	Cat 740 Haul Truck	King Pond Earthworks
1	Cat CS563 Packer Smooth	King Pond Earthworks
1	Fuel Truck	King Pond Earthworks
1	Mechanic/Welder Truck	King Pond Earthworks
1	Cat 930 Loader	King Pond Earthworks
1	Cat IT28/930 Tool Carrier	King Pond Earthworks
1	230T Crane	Power Line Poles & Transformers
6	Crew Cab Pick-up Truck	Construction Support
UNDERGROUND		
1	Sewage Truck	Waste collection
1	Potable Water Truck	Potable water provision
3	Tamrock Axera D07 S-260-C Jumbo	Development Drill
3	MacLean Bolter	Bolt all headings
2	Caterpillar 420EIT Wheeled Loader Shotcreter	Development
2	Tamrock Longhole Solor (Production/Services)	Production Drilling
2	Getman A-64 ANFO	Explosives
2	CAT R2900G LHD Loaders	Mucking-with some interchange on task assignment where required
1	CAT R1700G LHD Loaders	Production Mucking
5	AD45 Haul Truck	Movement of material
2	CAT120 Grader	Movement of material
3	Caterpillar IT28G	Movement of material
6	Minecat UT99C Service Truck	Ancillary support
2	Scissor Lift	Variety of activities that require working at elevated heights
2	Flat Deck	Ancillary support
1	Toe Loader EMULSION	Explosives
2	Service Fuel Truck	Ancillary support

*Note: This list of equipment is generally what will be used for the MUG Project but is subject to variations depending on the contractor(s) selected.