3.1.1 Trial Change to CPK:FPK Split

By June 7, 2016 DDMI will have completed modifications to the Process Plant that will provide DDMI with enhanced operational flexibility regarding the proportion of Fine Processed Kimberlite (FPK) and Coarse Processed Kimberlite (CPK) produced as mineral waste. The next step in this DDMI initiated Feasibility Study will be to trial the Process Plant modifications on 11 June 2016. The trial will involve operating the Process Plant modification to optimize the CPK:FPK ratio. On 24 March 2017, DDMI requested an extension to continue the trial until 1 April 2018; this was approved on 2 May 2017.

During the trial CPK and FPK will still be deposited in the Processed Kimberlite Containment (PKC) Facility using current procedures; slurry pipeline of FPK, trucking of CPK but at different rates (more trucking and less volume of slurry). The expected ratio during the trial is somewhere between 60:40 and 70:30 CPK:FPK. At the current plant formerly operated at a ratio of approximately 75:25 FPK to CPK, split there would be approximately 1,604,700 tonnes of FPK and approximately 534,900 tonnes of CPK produced between June 2016 and June 2017. At the predicted possible 30:70 FPK to CPK split there would be approximately 641,9001.8 million tonnes of FPK and approximately 1,497,7002.3 million tonnes of CPK produced between June 2016 and June 2017April 2018. One of the purposes of the trial is to determine the optimum split.

During the trial, the CPK will initially be used to build a network of 3m to 5m high by 40m wide berms within and around the entire perimeter of the PKC Facility between 100 m and 150 m inside of the PKC Facility dams (Figure 5). This is expected to take approximately 9 month. FPK slurry will initially be deposited from select extended spigots outside of the potential future footprint of CPK placement. As the new CPK berms are completed, the FPK pipelines will be moved from their current location on the PKC Facility dams, to the newly constructed CPK berms from where FPK deposition will continue. FPK spigot locations may extend to the south beach area with the trial extension. Any additional CPK produced not required for berm construction will be placed in the area between the newly constructed CPK berms and the PKC Facility dams, within the PKC Facility.

The berms will be a single ring of CPK (3-5 m high and 40 m wide) on the existing FPK beach. There would be access berms, from the PKC Dam to the CPK berm, made of CPK every 300m or so. Once enough of the CPK berm is in place DDMI would begin to move FPK spigots onto the CPK.
Overall water management (during trial) will likely not be affected greatly, but a reduction in water from the North Inlet is expected. The reduced FPK production will require less process water and will require the use of only one FPK slurry pipeline, but process water will still need to be pumped through the second FPK pipeline to keep it from freezing during winter months. This flushing process will likely result in lower ice accumulation and greater water reclaim than would be expected from winter FPK slurry deposition, resulting in the need for less North Inlet water during the winter months.

The optimization will be based on a number of variables including:

- deposition characteristics;
- operational efficiency;
- water management;
- CPK placement logistics
- PKC closure;
- energy use; and
- capital and operating costs.

The trial is scheduled to begin on June 7, 2016 and is expected to proceed for 12 months until April 2018 before a final operating determination can be made. DDMI and the engineering teams advising the project require field testing over winter as well as summer months. The internal/external assurance programs for the PKC are coordinated in collaboration with the Engineer of Record and will remain in place for the duration of the trial. CPK:FPK Trial Update Reports are to be issued every three months to document trial.
progress, challenges and any new information relating to the trial. The actual start date is dependent upon WLWB approval.

This enhanced operational flexibility could have positive impacts on PKC Operations, Water Management and Closure Plans including:

- less pond water to reclaim;
- better use of PKC Facility storage capacity; and
- greater opportunity to influence the final shape of the PK Facility closure surface.

Following the above noted trial DDMI expects to have sufficient information to enable the development of plans for the PKC Facility operations going forward. The PKC Facility Operations Plans are also linked to the Water Management Plan and Waste Rock Management Plan. To facilitate a continuous transition of any required operational changes resulting from the trial, DDMI intends to update each of these management plans in parallel with the completion of the trial so they can be submitted by June 1, 2017 to the WLWB and provide them for distribution, review and approval a minimum of 90 days prior to the trial completion date. DDMI will implement the changes to these plans once approved. Closure aspects will be described at an alternatives concept level in the Version 4 Interim Closure and Reclamation Plan to be submitted towards the end of 2016 in April 2017.

The modifications that have been made to the Process Plant are to allow operational flexibility. DDMI notes that this flexibility includes the ability to return to current operations if the results of the trial do not support a permanent operational change.