

**Review of 2003 Annual Report  
DIAND – South Mackenzie District Office**

I have numbered my comments to address sections as they are numbered in the Annual Report:

2. Table 2.1 should also include water used by the small diameter drill involved in delineation drilling within the A154 pit during October and November.
6. May want to include water pumped from Collection Ponds to the PKC as it is another source of recycled water for the process plant.
8. According to the monthly SNP reports and my observations while onsite, there was no discharge from NIWTP at 1645-18 and water treatment was not occurring from January 1 until March 27. However, Table 8.1 gives discharge numbers for January through March. Is this a typographic error?
9. It should be mentioned that the zero values for dike seepage and pit water from January through April are not because of a lack of seepage, instead that the dike seepage meters did not work, and a replacement was not installed and working until May 1.
10. The column heading in Table 10.1 should be changed to include effluent from both the South and North Sewage Treatment Plants as the North Sewage Treatment Plant was operating until April 26, and it appears that effluent from the two treatment plants has been added together in the table.

The Annual Report gives a value of 4,107.4 m<sup>3</sup> for January. However, the SNP results add to a value of 3,340.9 m<sup>3</sup>.

The Annual Report gives a value of 3,062.5 m<sup>3</sup> for April. However, the SNP results add to a value of 3,079.5 m<sup>3</sup>.

The Annual Report gives a value of 2,722.0 m<sup>3</sup> for May. However, the SNP results add to a value of 3,047.0 m<sup>3</sup>. It appears that the water discharged from the South Sewage Treatment Plant to Lac de Gras in the period before discharge was directed to the PKC was not added in.

14. With the addition of 3 new haul trucks for the A154 pit and plans to increase production noted in a news release on the Diavik website, will this result in an earlier start on the A418 dike or A154 underground? How will the Mine Plan change? When will an updated Mine Plan be issued?
15. The PKC Operating Plan and the North Inlet Operating Plan were not mentioned in the Annual Report summary. Has there been any work carried out under these

plans? (eg. Additional PK slurry line installed, monitoring dam thermal conditions, PK beach development)

16. It should be noted that the Collection Pond System adjacent to the main plant site has been modified following two years of small seeps at Pond 10. Water is now pumped directly from Pond 11 to the PKC rather than being first being pumped to Pond 10 and then to the PKC in a piggyback fashion. It is my understanding that this new piping system was put in place to avoid storing large volumes of water in Pond 10 and avoid any further seepage.
20. The list of spills must also include summaries of follow-up action taken.

It would be helpful to the reviewer if the spills were organized in some manner, such as chronologically.

Regarding the spill of diesel fuel that occurred on November 10 from the fuel truck in the Bay 5 Maintenance Garage, Table 20.1 of the annual report should be revised to a volume of 250 litres as reported to the NWT Spill Line.

### **General Note for Review of Operating Plans**

It would be helpful to the reviewer for reports that are reissued annually with few changes, if those changes were highlighted in a cover letter at the beginning of the plan or marked throughout the text.

### **Review of Operations Phase Contingency Plan, Version 7**

Distribution List:

Please update the DIAND Lands Manager from Annette McRobert to Brenda Becker.

Spill exercise:

Will DDMI be acting on the recommendations of participants in the mock spill exercise and procuring additional boom material for the Hazmat trailer?

Table 4.1:

As hydrofluoric acid is not used in the process plant this section can be removed.

Section 5.6.3:

The Satellite Waste Transfer Area is no longer in use as a waste transfer area. It is now used as an Emergency Response Team training area. All wastes are taken to the Permanent Waste Transfer Area within the PKC. The section describing this area being used as a waste transfer area can be removed.

### **Review of Hazardous Materials Management Plan, Version 7**

Table 1.1:

In the location column there should be a differentiation between materials stored at the Bulk Fuel Tank Farm and the old, lined tank farm (D1 laydown) area. For instance, 54,000,000 L of diesel is stored at the Bulk Fuel Tank Farm. However, Jet B is stored at the old, lined tank farm area.

Also, the location of the old, lined tank farm area should be indicated in Figure 1, Site Layout. The old, lined tank farm area also contains other petroleum products such as heating oil. This area should be inventoried, included in Table 1.1 and described in Section 5.3.1.

It should be added that flocculants, as well as being stored at the NIWTP and STP, are also stored in the heated building next to the cold storage building in the South Camp.

Chlorine should be added the list, and the location and quantities stored on-site provided.

Rimex fluid is used on-site for corrosion protection of rims. I am uncertain as to the composition of this material and put forward the question of whether it should be added to the list and dealt with in the HMMP.

Section 7.2:

As hydrofluoric acid is not used in the process plant this section can be removed.

## **Review of Waste Management Plan, Version 7**

Section 6.1:

The Satellite Waste Transfer Area is no longer in use as a waste transfer area. It is now used as an Emergency Response Team training area. All wastes are taken to the Permanent Waste Transfer Area within the PKC. The section describing this area being used as a waste transfer area can be removed.

Table 5.1:

What paper or cardboard is approved for disposal in the inert landfill? It is my understanding that all paper and cardboard should be incinerated.

Section 5.3.1:

Has there been any progress with respect to backhauling inert wastes that are currently landfilled such as tires or air filters?

Section 6.2:

As a result of a request in an Inspection Report, DDMI provided the Inspector with a Waste Transfer Area Operating Plan on November 6, 2003. Perhaps it would be helpful to append that plan to the current Waste Management Plan.

Section 6.6:

This section should be revised as there is no incinerator at the accommodations complex.

### **Review of Water Management Plan, Version 3**

General Comments:

Sections regarding the management of water during the construction of the A418 and A21 dikes/pits have been omitted from this version. Have plans or timing of these events changed from those described in version 2 of the Water Management Plan (2000), the most current plan for these events?

When will a revised Site Water Balance be made available?

Section 2.1.3:

A single pit sump is presented as part of the pit water management plan. Testing was done in the summer of 2003 to determine whether multiple pit sumps and the use of pipes to route pit water resulted in reduced ammonia levels in pit water. What were the results of these trials? How was it determined that a single pit sump was the best option?

Section 2.2.2:

Dike seepage is reported to be less than 15% of the design allowance. What percentage of predicted levels is dike seepage?

Section 3.4.2:

I understand that water for fire suppression is continually circulated throughout the system. Does DDMI have actual or estimated volumes of water taken into the system on a daily/weekly/monthly basis?

Section 4.2:

A very small inflow to the PKC comes from snow dumped within the basin. This inflow should be accounted for. The snow generally originates from scrapings around the coarse PK hopper adjacent to the process plant. Dumped snow has also come from cleaned up small diameter drill pads on Lac de Gras.

Section 4.4:

This section states that if excess water builds up in the PKC then it will be transferred to the North Inlet for treatment. This statement is a departure from previous water management policy and should be examined more closely before becoming a part of the approved Water Management Plan.

The previous Water Management Plan (2000) noted that due to a number of characteristics, mostly dissolved metals, untreated PKC water was not suitable for discharge to the environment (p. 28). The North Inlet Water Treatment Plant is designed to treat for suspended solids and phosphorous. It does not treat for

dissolved metals. The statement in section 4.4 that PKC water will be transferred to the North Inlet for *treatment* is then somewhat misleading. The water will not be treated for the substances of greatest concern, dissolved metals. Dilution with pit water may, however, reduce levels such that they will meet licensed effluent quality criteria.

Another departure from previous water management policy is the statement that PKC water quality will be monitored and the need for additional treatment options will be evaluated. The previous Water Management Plan (2000) clearly lays out that a sulphide precipitation water treatment plant will be necessary for the treatment of PKC water before discharge to Lac de Gras. A timeline of 2009 for the commissioning of the plant is given, however, it is noted that the plant could be operational within 16 months. Does DDMI have new water quality information or a new plan that would allow for the discharge of PKC water without the need for a sulphide precipitation treatment plant?

If the discharge of PKC water to the North Inlet does become an approved part of the Water Management Plan, several aspects of the Water License will need to change in order to properly regulate discharge to Lac de Gras. These parameters would include testing for biological oxygen demand, faecal coliforms and oil and grease at the main effluent discharge. Chlorine is also a constituent of PKC water and would have to be tested for and regulated at the discharge point. Have the effects of chlorine on Lac de Gras been assessed?

Section 4.4 does not mention the scheduling for deposition of fine PK on the south side of the PKC. Does this occur and at what time of year?

### **Review of Dust Deposition Report 2003**

A recommendation of the 2002 report was to move control sites further from the minesite because of the levels of dust present at the current station locations. Both the map and coordinate table on pages 2 & 3 indicate that the control sites have not been moved this year. Why not?

Figure 3 on page 30 is mislabeled and should be labeled Figure 8. What are the units for the isopleths?

The Conclusions section on page 29 indicates that activities such as crushing, PKC dam construction and blasting and hauling for the A154 pit were not included in the initial environmental assessment predictions for dust deposition. It seems that these activities are essential to the building and running of a mine. Why were these activities not included and what activities were included to come up with the predictions?

Also, predicted dust deposition levels from the Environmental Effects Report: Climate & Air Quality (1998) were:

10mg/dm<sup>2</sup>/yr for the west side of the island  
versus a range of 45-198 mg/dm<sup>2</sup>/yr for Transect 4, in the same location;

& 58mg/dm<sup>2</sup>/yr for the North camp

versus a range of 120-1,365mg/dm<sup>2</sup>/yr for Transect 3, in the same location

Can DDMI explain these higher dust deposition results?

Water quality sampling results for zones 2 and 3 show that only one sample was analyzed for each zone. This is in contrast to zones 4 and 5 in which 4 samples are analyzed. Are the Zone 2 and 3 samples composites? If not, what is the rationale for having such a small sample size?

### **Review of East Island Seepage Report 2003**

As per the license, seepage surveys must include all mine components as well as those areas constructed with mined rock. Are there stations that represent seepage from the airstrip/apron/helipad, and the North Camp area?

Seepage well locations on the interior of the A154 dike (1645-52) should be shown on the map, Figure 1.1.