Water Report

A summary report of water use and waste disposal activities includes a detailed description of methods of obtaining water and its treatment for domestic use, and description of procedures for greywater and sewage management. The following report outlines the water use and waste disposal practices during the Turqavik – Aberdeen Projects 2010 field season.

Potable water for use at the exploration camp is taken from Qamanaarjuk Lake, located down the hill from the camp. From the lake, water is pumped with a gasoline-driven high-pressure pump. The intake location is approximately 7 m away from the shore. There, the suction hose is equipped with a standard 2" (3.22 cm) pond strainer, ensuring no organisms get accidentally sucked in. Through the 1" (2.54 cm) supply hose, water is pumped up the hill into a sheltered 1000 gallon (3.8 m^3) tank. During the transfer to a smaller tank (capacity of approximately 300 gallons or 1.1 m^3), located inside the main building, water is filtered and treated by UV radiation. This filter is a UV20 Series PURA set-up for small commercial application. During the filtering process, water is passed through a series of polyester filters that first remove sediments 10 µ and larger, and then remove any particles as small as 5 µ. In addition, the system includes a charcoal filter and, as a final treatment step, a large UV filters. This filtered and treated water is only used for consumption, preparation of foods, showering, washing of kitchen supplies and laundry. On average, approximately 2 m^3 of water is used daily. Water intake was monitored by a mounted standard meter that is used in municipal supply distribution systems (nutating disc displacement flow meter). Logs of pumped water are kept and are included with this report.

At the camp there are four 200 L capacity sumps. All greywater from domestic use (from cooking, dish washing, showering, and washing machine) is disposed into either one of the sumps. These sumps are located at a distance of well above the minimum 30 metres from the high water mark of Qamanaarjuk Lake, near the main two buildings (used for kitchen, dry and office). The sumps are lined with perforated steel drums. The kitchen sump is equipped with a commercial baffled grease trap for efficient waste separation. The locations of the three sumps used for showering, laundry and kitchen washing have been moved 1 m down slope from their original location described in the 2009 water report. The move was necessary to accommodate for the rehabilitation of the old sumps that were not draining water properly. In order to fix the old sumps, burning of the residual waste with a propane torch removed a majority of soap and grey water residue coating the sump walls.

All sewage and domestic waste are incinerated. On premises, there are two incinerators. One incinerator is The Original Burnadette supplied by Nugget Expediting Ltd. It has floor dimensions of 25" x 25" (63.5 x 63.5 cm) and contains a Beckett Industrial Burner with its own diesel fuel supply. This incinerator is used for a fast evaporation of liquids before all waste is transferred to the second incinerator. The second incinerator is a SmartAsh cyclonic barrel burner manufactured by Elastec Inc. It consists of a 208 L capacity drum with manual fuel supply. During incineration, waste is reduced to

approximately 3% ashes by volume. The incinerator uses liquid fuel such as diesel or Jet A. All sewage, kitchen waste, and solid waste (such as glass and plastic jars, paper, wood shavings, used oil, etc.) are incinerated. Incinerated ash is removed by hand, packed into cardboard boxes and wrapped in two plastic bags for additional security. These packages are then transported to municipal disposal grounds in Baker Lake.

At the drill site, water is used for circulation down the drill hole to cut through the rock and to wash out the hole. The length of the water line for the drill ranged from 200 m to 1,300 m. Water was pumped from the closest lake that was also large enough to supply approximately 40 m^3 of water per day. Water intake was monitored by the pump set-up itself with a moving rate of 10 gallons/minute (approximately 38 litres/minute or 0.038 m^3/min). Circulated water ran off from the drill site and percolated into the ground. The cuttings were directed into natural depressions of the terrain. Sixteen drill holes intersected weak to strong uranium mineralization. The cuttings were separated using a centrifuge of the drill's water recycling system, gathered into a chemically resistant industrial-size vinyl bag, and levels of uranium concentration were monitored daily. Overall, the radiation level of the cuttings fell below the 0.005 mSv/hr, which is equivalent to 0.05% uranium concentration. As indicated by the INAC Land Use Permit N2008C0007 only cuttings that exceed 0.05% uranium concentration are to be collected and disposed either down the drill hole or by other acceptable means. Two bags of cuttings exceeded the threshold value and were moved to Areva Resources Canada's licensed radioactive material storage area at the Kiggivik site. After the drill holes were completed the non-radioactive cuttings were removed from the vinyl bags and distributed in natural depressions directly around the drill site. All drill sites were monitored for radioactivity following completion and are listed in the drill site radioactivity appendix.

All fuel drums at the camp and fuel caches were stored in berms. Fuel stored on site included gasoline, Jet-B and P50 diesel. At the camp, the generator is connected to a double-walled 250 gallon (0.95 m^3) metal fuel tank by copper fuel lines. For use at the camp 4 berms were used, 3 of which have dimensions of 10' x 10' x 1' (3 x 3 x 0.3 m) and can hold 15 drums. And one berm has dimensions of 10' x 15'x 1' (3 x 4.6 x 0.3 m) to hold approximately 25 drums. The berms are made of XR-5 high grade chemically resistant vinyl fabric with L-rod supports for the berm walls. Rain water that collects in the berms is absorbed, filtered and returned as greywater. All absorbents used on site are incinerated. There are two large berms and 4 small berms at the main airstrip and one large and one small berm at the fuel cache north of the Sansa Grid. The large berms at the airstrip have the dimensions of 30' x 60' (9 x 18 m) to hold up to 300 drums, and 30' x 30' (9 x 9 m) to hold up to 150 barrels of fuel. The 4 small berms are 10' x 10' x 1' (3 x 3 x 0.3 m) and can hold 15 drums. The large berm at the Sansa fuel cache has the dimensions of 30' x 60' (9 x 18 m) to hold up to 300 drums of fuel and the small berm has the dimensions 10' x 10' x 1' (3 x 3 x 0.3 m) and can hold 15 drums. At the drill sites fuel is stored in double-walled metal containers.