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Air Treatment Equipment (cost estimate Vancouver) – Lee

- Ventilation air of 20,000cfm is provided at shafts 1, 1.1, 4, 5, 8, 9, 12, 13, 16 and 17. The air is exhausted at the following shafts 2, 3, 6, 7, 10B, 11A, 14, 15, 18, and 19.
- The air is dehumidified, cooled and/or heated as needed to be supplied at a neutral condition to the service tunnel at all times and to the beam tunnel during "beam off". Unit basis is an AAON model RL21030CD
- The airflow rate is approximately 88fpm (27meters/min) and provides an air change rate 1 every 3 hours.
- Additional fan capacity is provided at each shaft to double and/or reverse the airflow during emergency modes. Fan basis is a Cook model CV-S
- Service tunnel temperatures are maintained locally at each RF section by fan coil units (FCUs) as described in the Process Water section above.
- Temperature control in the beam tunnel is not provided because of the low heat loads but the humidity level is maintained by packaged dehumidification units located every approximately every 100 meters.
- *Post Vancouver-current design philosophy is to recirculate air from each shaft through the service tunnel and then into the beam tunnel through a "recirc chevron". Air then returns to the shaft ductwork and the surface unit where a portion is exhausted and fresh air is mixed in at a rate of 6000cfm for an air change rate of 1 every 5 hours (somewhat low by industry standards, so additional consideration is needed) in the service tunnel. The tunnel flow rate is maintained at the 88fpm level. This reduces the connected power load better than a factor of 2, cost reduction will not be as substantial though.*

Dewatering Equipment (cost estimate Vancouver) – Lee

- Sump pumps are provided at every major shaft location. Capacity is determined based on an inflow of 50gpm/mile (3.8 liters per minute/km). Each sump is to have three pumps. Any of which can pump the entire inflow volume. This design is similar to the NuMI project where a study was performed indicating a very high level reliability (.9999+).