

HILLSIDE DESALINATION PLANT – SITE PHOTOGRAPHS

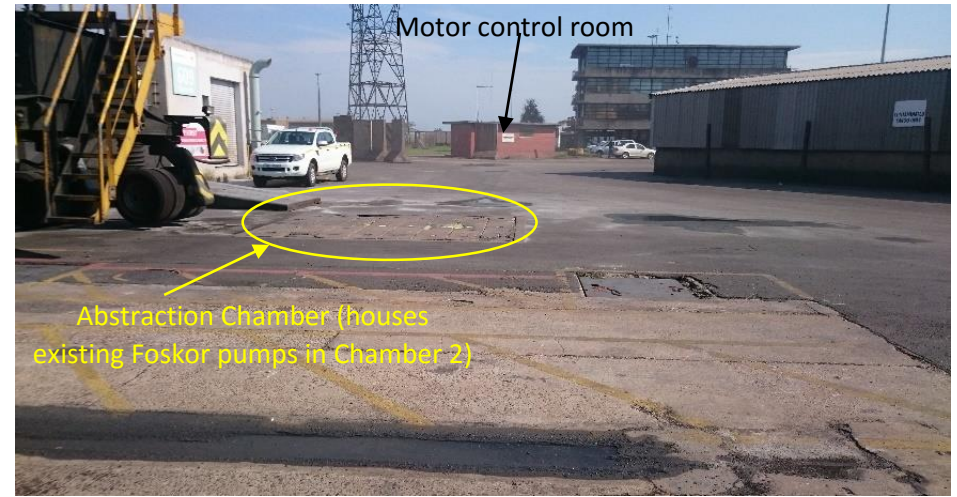


Figure 1: Left: View from the harbour wall at the point of sea water abstraction between Berths 609 and 701. Right: Pump chambers below the surface and existing motor control centre in the background. The abstraction/ raw water pipeline runs underground below the tarred surface.



Figure 2: Left: Underground raw water pipeline runs adjacent to the Foskor Acid Line. Right: Both the raw water pipeline (left) and acid pipeline (right) traverse above ground on a pipe gantry from this point to Foskor's operations.



Figure 3: The Foskor pipe gantry runs parallel to the Hillside Aluminium conveyor belt. The Tee off (shown in yellow) will be created (at Surge Tower 1) for the dedicated Hillside Aluminium raw water pipeline feed to continue within the Hillside Aluminium conveyor system to the smelter. The pipe will be connected to the back (south side) of the concrete support strut. Scaffolding and/or crane/ cherry picker will only be utilised within this area (the Surge Tower 1 footprint – highly disturbed area). Pipes will be “pulled” and “pushed” within the conveyor and joined together within the conveyor to remove all external works/ scaffolding required.



Figure 4: Left: View along the Hillside Aluminium conveyor from Transfer Tower 3 towards Transfer Tower 4. Scaffolding and/or crane will be required within the vicinity of Transfer Tower 3 (completely transformed area) to insert pipe sections into the conveyor belt. Right: View of the Hillside Aluminium conveyor belt towards Transfer Tower 3. Note the adjacent Grinrod pipe gantry.



Figure 5: Left: Thula Sihleka Pan located to the south-west of the Hillside Aluminium conveyor. Note the Grinrod pipeline gantry in the photograph. Right: The Hillside Aluminium conveyor traverses over West Central Arterial towards Transfer Tower 4.



Figure 6: Left: Transfer Tower 4. Here the pipeline will exit the conveyor belt and be laid aboveground to the left of the conveyor belt running in a north-easterly direction to the Hillside Aluminium smelter. Right: The entire conveyor belt is contained within a fenced servitude. The raw water pipeline will be laid aboveground to the left of the conveyor (as indicated in yellow).



Figure 7: Once the pipeline exists to the north of the John Ross Highway, the raw water pipeline will then exist the servitude and run adjacent to the Hillside Aluminium boundary fence in a westerly direction. Left: The below ground Sasol Gas pipeline also runs adjacent to the Hillside Aluminium fence line. Right: View back towards the culvert under the John Ross Highway along the Hillside Aluminium southern boundary fence line.



Figure 8: A pipe bridge (similar to the inset photograph on the right) will have to be created over an existing grassed stormwater drain to the proposed site for the proposed desalination plant. Left: The downstream portion of the stormwater drain is densely vegetated, however the upstream section is predominantly open and grassed (right photograph). The raw water pipe will cross the stormwater drain over the clear, grassed section.



Figure 9: Proposed location of the desalination plant within the Hillside Aluminium smelter property. The site is currently used for storage of equipment.



Figure 10: Hillside Aluminium process water reservoir. Process water from the proposed desalination plant will be pumped to this reservoir before being distributed within the smelter.



Figure 11: Left: Southerly view, Right: Northern view of the area in which the existing Lake Mzingazi pipeline (between the Hillside and Bayside Aluminium smelters) is located (to the east of the Bayside/ IsiZinda Aluminium access road). This pipeline will now be used as the wastewater pipeline to discharge brine and other wastewater from the proposed desalination plant to the Mhlatuze Sea Outfall Pipeline.



Figure 12: A pipe bridge will be constructed to convey both the wastewater pipeline over the access road to the Bayside Aluminium smelter site (now IsiZinda Aluminium's main entrance) (Left) and the Bayside water valve station. Thereafter, the pipeline will be below ground adjacent to the Bayside Aluminium road (photograph on the right) until it reaches the existing Bayside/ IsiZinda pipeline that connects to the existing Mhlathuze Sea Outfall Pipeline.