

Brief overview of the Beit Lahia wastewater emergency, 27th March 2009, North Gaza Governorate, Gaza Strip 7th April Update

Background

The Beit Lahia Wastewater Treatment Plant (BLWWTP) in North Gaza Governorate is shown in aerial view in Figure 1.

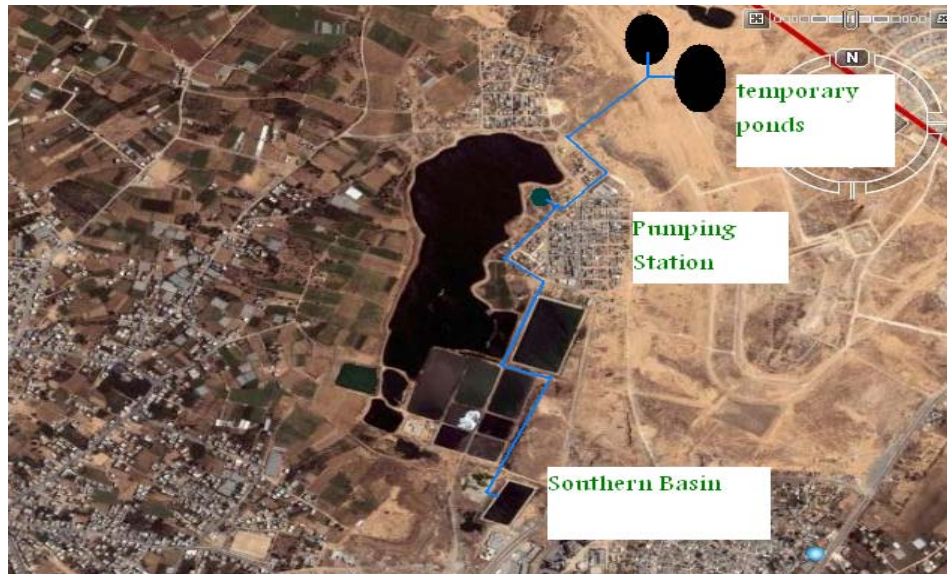


Figure 1 Aerial view of Beit Lahia Wastewater Treatment Plant (CMWU and InfraMan 2007:8)

Early Friday morning 27th March 2009, wastewater pumped from the large infiltration lagoon (Centre of Figure 1: containing about 2 million cubic metres [m³] of wastewater) to the two temporary ponds (Top right of Figure 1: estimated maximum volume of 250,000 m³ about 1.2km to the north near the red line¹) overflowed the banks, caused erosion and damage, and about 40-50,000 m³ of treated wastewater escaped down a natural Wadi towards the Bedouin Um AlNasser Village. This happened early in the morning, no one was hurt or any houses flooded or damaged. A CMWU² team visited the site with coordination from Israel later on Friday 27th, and commenced an emergency response. Pumping from the large infiltration lagoon was stopped, and contractors were engaged by CMWU (and funded by UNICEF) to deposit sand near Um AlNasser Village to prevent any further flow of wastewater close to this village (*refer to Figures 2- 8*).

¹ The ponds are located in a depression surrounded by sand dunes. The ponds receive and infiltrate (mostly through lateral flow) around 12,000 m³/day in a 7/3 wetting-drying cycle (CMWU & Inframom 2007:8).

² CMWU is Coastal Municipalities Water Utility



Figure 2 The stationary front edge of the estimated 40-50,000 m³ wastewater that escaped from the temporary disposal ponds early morning of Friday 27th March 2009 (Photograph by the WASH Cluster Team on 29th March 2009)



Figure 3 Sand being collected by the CMWU contractor close to the leading edge of the escaped wastewater (Photograph by the WASH Cluster Team on 29th March 2009)



Figure 4 Um AlNasser Village close to the stationery leading edge of the escaped wastewater, and the sand deposited and positioned by the CMWU contractor (Photograph by the WASH Cluster Team on 29th March 2009)



Figure 5 Sand being dropped by the CMWU contractor at the stationery leading edge of the escaped wastewater (Photograph by the WASH Cluster Team on 29th March 2009)



Figure 6 Sand being dropped by the CMWU contractor at the stationery leading edge of the escaped wastewater (Photograph by CMWU, received by the WASH Cluster Team on 6th April 2009)



Figure 7 Sand being dropped and positioned by the CMWU contractor at the stationery leading edge of the escaped wastewater (Photograph by CMWU, received by WASH Cluster Team on 6th April 2009)



Figure 8 Sand being positioned by the CMWU contractor at the stationery leading edge of the escaped wastewater (Photograph by CMWU, received by WASH Cluster Team on 6th April 2009)

Monday 30th March 2009 - further actions required

CMWU will coordinate with Israel to undertake emergency repairs to the damaged temporary disposal ponds as soon as possible, and will provide an update report to the WASH Cluster Coordination meeting on Tuesday 31st March 2009 at 2.00pm in the UNDP Building in Gaza City. The CMWU engineers believe there is no risk of any further spillage of wastewater from the temporary disposal ponds, and the spilled wastewater is rapidly infiltrating the Wadi sand.

The wastewater spillage had no odour as is unlikely to pose a health hazard to the nearby residents of Um AlNasser Village. The WASH Cluster will continue to monitor the situation, and will recommend microbiological monitoring of the spillage by the relevant agency within the Ministry of Health, and hygiene promotion advice for the affected residents.

WASH Cluster Team in Gaza, Monday 30th March 2009

Tuesday 7th April 2009 - update of further actions

CMWU (Fareed Ashour, Wastewater Treatment Plant and Stormwater Operation Manager) gave an oral update to the WASH Cluster Coordination meeting on Tuesday 31st March 2009. Relevant staff of the Ministry of Health were sent a copy of the WASH Cluster report on 30th March 2009. The CMWU, in coordination with Israel, completed

repairs to the temporary disposal ponds over the period 2nd - 6th April 2009 (*refer to Figures 9-12*). This has now made possible the resumption of pumping of ‘polished’ wastewater from the large infiltration lagoon at BLWWTP to the temporary disposal ponds as occurred prior to the emergency on 27th March. Figures 13-15 show some pipe work and views associated with the temporary disposal ponds.



Figure 9 Opening at the embankment of the temporary disposal ponds (Photograph by the CMWU on 2nd April 2009)



Figure 10 Existing pond and the opening at the embankment; CMWU contractor completing repairs to the temporary disposal ponds (Photograph by the CMWU on 2nd April 2009)



Figure 11 CMWU contractor completing repairs to the temporary disposal ponds (Photograph by the CMWU on 2nd April 2009)



Figure 12 CMWU contractor completing repairs to the temporary disposal ponds (Photograph by the CMWU on 2nd April 2009)



Figure 13 Existing distribution pipes from the BLWWTP to the two temporary disposal ponds. (Photograph by the CMWU on 2nd April 2009)



Figure 14 Inlet pipe to the northern-eastern ponds (temporary disposal ponds) (Photograph by the CMWU on 2nd April 2009)



Figure 15 A view of one of the two temporary disposal ponds (where the collapse occurred) (Photograph by the CMWU on 2nd April 2009)

The CMWU is currently preparing a report of the events surrounding the emergency and lessons to be learnt. The CMWU has also informed the WASH Cluster that, in coordination with Israel, the pumping of wastewater from the BLWWTP to the new infiltration lagoons in the east is expected to commence by Thursday 9th April 2009, thus taking further pressure off the large infiltration lagoon at BLWWTP (CMWU General Director, Monther Shoblak, personal communication, Monday 6th April 2009).

Reference

CMWU and Inframan 2007, *Emergency Operation Plan for Beit Lahia Wastewater Treatment Plant*, Gaza Emergency Water Project (GEWP), World Bank Fund, CMWU, Gaza.