

**United Nations Development Programme**  
Programme of Assistance to the Palestinian People  
برنامج الأمم المتحدة الإنمائي / برنامج مساعدة الشعب الفلسطيني



Ref: PAL10-00047395  
Date: 07 December 2020

**Subject: Construction of Sewage Treatment Plant and Main Pressure Line in Khan Younis (Construction of Khan Younis Waste Water Treatment Plant Project) – Progress Report**

Your Excellency,

Reference is made to the contribution agreement between the Government of Japan and UNDP's Programme of Assistance to the Palestinian People for the "Construction of Sewage Treatment Plant and Main Pressure Line in Khan Younis" project, approved effective 04 January 2006.

I am pleased to submit herewith the second quarter progress report for the year 2020, as per the Representative Office of Japan's feedback and clearance.

The report summarizes the progress of the project during the period from 01 April to 30 June 2020. It also provides an overview of the achievements made, challenges, lessons learned and financial status.

I thank the Government of Japan for its contributions through UNDP, and look forward to strengthening our partnership in support of the Palestinian people.

Sincerely yours,

A handwritten signature in black ink, appearing to read 'Helle', is positioned above the typed name.

Yvonne Helle  
Special Representative  
of the Administrator  
UNDP/PAPP

Enclosure: Second Quarter 2020 Progress Report

H.E. MAGOSHI Masayuki  
Ambassador for the Palestinian Affairs  
Representative of Japan to Palestine  
Ramallah



من الشعب الياباني  
From the People of Japan



**United Nations Development Programme  
Programme of Assistance to the Palestinian People**

**Country:** occupied Palestinian territory

**Donor:** Government of Japan

**Project:**

PAL10-00047395



**Progress Report  
01 April – 30 June 2020**



## Progress Report

### 1. Report Summary

- (1) **Title of the Project:** Construction of Sewage Treatment Plant and Main Pressure Line in Khan Younis (Construction of Khan Waste Water Treatment Plant)
- (2) **Project No.:** PAL10-00047395, Award No.: 00041529
- (3) **Date of the approval:** January 2006
- (4) **Total Project budget:** US\$ 14,829,549
- (5) **Scheme of the project:** Emergency Grant
- (6) **Period covered by the report:** 01 April – 30 June 2020 (Progress Report No. 53)
- (7) **UNDP officer in charge:** Iman Al Husseini, Assistant Special Representative, UNDP/PAPP Gaza, Tel: 08-2863364 (ext. 148), Mobile: 059-9606775  
**Programme manager:** Ashraf A. Shamala, UNDP/PAPP Gaza, Tel: 08- 2863364 (ext. 141), Mobile: 059-9606792
- (8) **Palestinian counterparts:**  
 Mr Sami Hamdan, Director of Wastewater Planning Dept., Palestinian Water Authority, mobile: 059-9417130, e-mail: dr.samihamdan@yahoo.com  
 Mr Monther Shoblak, Director General, Coastal Municipalities Water Utility, mobile: 059-9267108, e-mail: monthersh@cmwu.ps  
 Mr Hatem Tayef, Director of Water and Waste Water Department, Municipality of Khan Younis, mobile: 059-9349866, e-mail: [hatem.tayef@gmail.com](mailto:hatem.tayef@gmail.com)

### 2. Contents

#### (1) Summary of the project:

##### Background:

Khan Younis city is the second largest city in the Gaza Strip with a total administrative area of 59 square kilometres and inhabited by more than 266,000 residents. The city has a rapidly growing population with an annual growth rate of 3.3%. At present, around 60% of the population of Khan Younis city is served by public sewage collection system. However, due to the absence of a wastewater treatment plant, the collected wastewater was pumped without treatment to the existing main storm water box culvert to flow out by gravity to a storm water infiltration pond located in the north-western side of Khan Younis city. In 2008, the collected wastewater was diverted to other six ad-hoc collection lagoons established temporarily in the western side of Khan Younis city. Up to September 2019, more than 15,000 cubic metres of partially treated wastewater was discharged through the lagoons to the Mediterranean Sea. The wastewater generated from unserved areas is evacuated by vacuum trucks and disposed of in the environment without any treatment.

This situation is posing serious risks to the Khan Younis residents' public health as well as contaminating the ground water aquifer. The concentration of Nitrate in some Khan Younis water wells reaches around 458 mg/l, which is almost nine times more than WHO's

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recommended level of 50 mg/l. The presence of Nitrate in water has been associated with methemoglobinemia (or blue baby Syndrome), especially in bottle-fed infants<sup>1</sup>.

Therefore, the construction of the Khan Younis wastewater treatment plant project (KY WWTP) comes as an emergency response to the vital hygienic and environmental needs of Khan Younis residents. The primary beneficiaries of the project are the 266,000 residents of Khan Younis city. Other beneficiaries include:

- The Khan Younis Municipality, the Coastal Municipalities Water Utility and the Palestinian Government, as the project will contribute to enhancing the management of water and wastewater services.
- Families of unemployed workers who will have the opportunity to work on the project.
- The local contracting sector through gaining additional experience in implementing similar large-scale wastewater treatment projects.

### **Project Objective:**

The project seeks to construct a comprehensive, functional and operational wastewater treatment plant, at a flow capacity of 26,600 cubic metres per day, in accordance with international standards. It aims at protecting public health, water resources and the environment of Khan Younis residents, while contributing to developing public and social infrastructure in the Gaza Strip.

### **Additional Fund:**

The significant fund from the Government of Japan paved the way to secure additional resources to construct the project in full-scale to meet the above-mentioned objective.

In September 2013, UNDP and the Islamic Development Bank (IsDB) signed an agreement for the implementation of the project with a total additional fund amounting to US\$ 42 million from the Kuwait Fund for Arab Economic Development and US\$ 1.175 million from UNDP, in addition to the available fund from the Government of Japan (GoJ). The agreement between UNDP and the IsDB for the implementation of the project was amended with the date extended to 31 December 2020.

Within the substantial fund from the Government of Japan, and the additional resources, the project comprises the construction of the first phase of KY WWTP at a flow capacity of 26,600 cubic metres per day, its effluent and emergency pressure pipeline, infiltration basins and electrical power supply line, in addition to undertaking one-year operation after commissioning by the same contractor who will commission the construction works of the plant.

### **Project Execution Modality:**

The project is directly executed by UNDP in coordination with the project counterparts: the Palestinian Water Authority (PWA) as sector regulator; the Coastal Municipalities Water Utility (CMWU) as service provider and final operator of the project, and the Municipality of Khan Younis as a direct beneficiary.

According to the agreement between UNDP and the IsDB, and with an aim to enhance the implementation capacity of national partners, the CMWU will implement two components of the project namely; the construction of 70% of effluent and emergency pressure pipeline and the construction of infiltration basins under UNDP's full coordination and supervision of the project.

<sup>1</sup> Guidelines for Drinking-water Quality, Third Edition, Volume 1, Recommendations, WHO, Geneva, 2004

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**(2) Project Components (GoJ Contribution):**

Component	Budget US\$	Revised Budget US\$ *	Project Site
a. Constructing main steel pressure pipeline from pump station No. 8 to KY WWTP	1,000,000	527,303	Khan Younis / Eastern side
b. Providing the detailed design for the construction of KY WWTP	1,100,000	946,804	Khan Younis WWTP sites
c. Constructing KY WWTP, Phase I, including one-year operation after commissioning	11,450,000	11,274,745	Khan Younis WWTP site (East of Khan Younis)
d. Carrying out the design review, pre-contract and construction supervision services	0	795,255	Khan Younis WWTP sites

\* Revised based on the letter of approval from the Government of Japan to reallocate budget lines dated 10 September 2015.

**(3) Project Components/Revised Budget (GoJ Contribution):**

No	Project Activities/Components	Budget – US\$			
		Original Budget according to Note Verbale 2005	Revised Budget July 2007	Revised Budget as per UNDP/ IsDB agreement September 2013	Revised/R eallocated Budget September 2015
1	Constructing main steel pressure pipeline from Pump Station No. 8 to KY WWTP	1,000,000	1,000,000	527,303	527,303
2	Providing the detailed design for the construction of KY WWTP	0	1,100,000	946,804	946,804
3	Constructing KY WWTP, Phase I, including one-year operation after commissioning	12,550,000	11,450,000	11,700,000	11,274,745
4	Carrying out the design review, pre-contract and construction supervision services for the construction of KY WWTP	0	0	370,000	795,255

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5	UNDP Direct Implementation Cost	150,000	150,000	150,629	150,629
6	<b>Sub-total 1</b>	<b>13,700,000</b>	<b>13,700,000</b>	<b>13,694,736</b>	<b>13,694,736</b>
7	Contingencies and Miscellaneous	31,064	31,064	36,328	36,328
8	<b>Sub-total 2</b>	<b>13,731,064</b>	<b>13,731,064</b>	<b>13,731,064</b>	<b>13,731,064</b>
9	Total GMS (GoJ 8%)	1,098,485	1,098,485	1,098,485	1,098,485
10	<b>Grand Total</b>	<b>14,829,549</b>	<b>14,829,549</b>	<b>14,829,549</b>	<b>14,829,549</b>

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**(4) Project Overall Co-financed Budget/Reallocated Budget**

No	Project Activities	Total US\$	Kuwait Fund/IsDB Contribution	GoJ Contribution US\$	UNDP Contribution
1	Constructing Main Steel Pressure Pipeline from Pumping Station No. 8 to KY WWTP	527,303	0	527,303	0
2	Providing the Detailed Design for the Construction of KY WWTP	946,804	0	946,804	0
3	Constructing KY WWTP, Phase I, Part of the Effluent and Emergency Pressure Pipeline with 5.6 Kilometres Length and Electrical Power Supply Line with One Year Operation	30,487,903	19,213,158	11,274,745	0
4	Constructing the Effluent and Emergency Pressure Pipeline with Total Length of 13 Kilometres (CMWU Implementation)	5,792,912	5,792,912	0	0
5	Constructing the Infiltration Basins (CMWU Implementation)	7,144,591	7,144,591	0	0
6	Consultancy Services for the Construction Supervision, Design Review and Preparation of Tender Documents of KY WWTP (Carrying out the Design Review, Pre-contract and Construction Supervision Services)	2,944,594	2,149,339	795,255	0
7	CMWU Direct Implementation Cost	517,500	517,500	0	0
8	UNDP Direct Implementation Cost	1,203,629	0	150,629	1,053,000
9	Miscellaneous (GoJ)	36,328	0	36,328	0
<b>10</b>	<b>Sub-Total 1</b>	<b>49,601,564</b>	<b>34,817,500</b>	<b>13,731,064</b>	<b>1,053,000</b>
11	UNDP GMS (8% GOJ & 7% Kuwait Fund/IsDB)	3,535,710	2,437,225	1,098,485	0
<b>12</b>	<b>Sub -Total 2</b>	<b>53,137,274</b>	<b>37,254,725</b>	<b>14,829,549</b>	<b>1,053,000</b>
13	Contingencies	4,867,275	4,745,275	0	122,000
<b>14</b>	<b>Grand Total</b>	<b>58,004,549</b>	<b>42,000,000</b>	<b>14,829,549</b>	<b>1,175,000</b>

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**(5) Project timeframe, schedule status, progress of activities, tasks and measures**

Indicated output	Activities	Timeframe								Schedule Status	Activities done in the reporting period	Remaining Work	Tasks and Measures
		2019				2020							
		1 Q	2 Q	3 Q	4 Q	1 Q	2 Q	3 Q	4 Q				
Output 1: Main pressure line supplied and installed.	Installing 996.3 metres of steel pressure pipes of 24 inches diameter, 1,070.4 metres of reinforced concrete pipes of 1,000 mm diameter and constructing 15 reinforced concrete manholes of 1.5mx1.5m and 2mx2m dimensions.									Completed	The on-site activities were completed and handed over in November 2006.		
Output 2: Detailed design and tender documents for the construction of KY WWTP provided.	Carrying out procurement processes to solicit a joint venture of international and local consultants to provide the detailed design.  Providing the detailed design and tender documents for the construction of KY WWTP.									Completed	An Expression of Interest (EOI) to prequalify consultants for the detailed design assignment was posted in December 2007 and the evaluation process was completed in February 2008.  Request for Proposal (RFP) was posted for the shortlisted consultants in April 2008 and the		



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											<p>evaluation process was completed in July 2008.</p> <p>The contract of the detailed design assignment was signed between UNDP and Sogreah &amp; Universal Group consultant in October 2008. The different activities of the detailed design assignment were performed, and the final detailed design report and tender documents were provided in December 2010.</p>		
<p>Output 3: KY WWTP of a capacity of 26,600 cubic metres per day constructed and operated for one year after commissioning.</p>	<p>Constructing KY WWTP, Phase I</p>	X	X	X	X	X	X	X	X	<p>After kicking off the work activities in August 2015, the activities of this component are on-going with six months' delay due to:</p> <ul style="list-style-type: none"> <li>-Partners' requests for changing the design.</li> <li>-Extending the bids submission</li> </ul>	<p>UNDP signed the contract ITB-2016-158, Construction of Khan Younis Waste Water Treatment Plant and Buildings, with the contractor, Metito (Overseas) LTD, at a total contract price of US\$ 18,935,575.73 on 14 December 2016. The contract price was increased to read US\$ 21,700,133.66 after adopting and approving by the IsDB the variation orders no.1, 2 and 3</p>	<p>Completing the one-year operation of KY WWTP.</p>	<p>While finalizing the detailed design in 2010, it was found that the available fund was not sufficient to comprehensively construct KY WWTP with its necessary effluent and infiltration schemes.</p> <p>UNDP mobilised resources to secure the required additional funding and the Kuwait Fund for</p>

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									<p>date due to Israel's denial to issue access permits for the international contractors to access Gaza to attend the pre-bid meeting and the site visit.</p> <p>- Israel's denial to issue visas and permits for the experts of the international contractor to access Israel and Gaza to follow up the on-site construction works, to do the dry tests and finalize the related technical comments.</p> <p>- Interruption/ delay of the on-site works due to</p>	<p>summarized in previous reports.</p> <p>The site was handed over to the contractor on 18 January 2017 and the work activities commenced on 22 January 2017.</p> <p>The on-site construction works started on 13 April 2017 with the excavation works for the administrative building, workshop, aeration tank, clarifiers and drying beds. Up to June 2020, 86,834 m<sup>2</sup> of surface soil have been stripped and 133,530 m<sup>3</sup> of soil have been excavated after stripping for the different structural components.</p> <p>The construction works continued by casting reinforced concrete for the foundations of the administrative building, and plain concrete for the aeration tank (on 17 May 2017), followed by casting massive amounts of concrete for the</p>	<p>Arab Economic Development committed to securing the required additional funding through the IsDB in February 2011.</p> <p>UNDP conducted intensive negotiation sessions with the IsDB, PWA and CMWU, which ended in signing the total additional fund's agreement (amounting to US\$42 million) between UNDP and the IsDB in September 2013.</p>
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										<p>closing Karm Abu Salem crossing and stop accessing materials at intervals of escalated security conditions in Gaza.</p> <p>- Interruption/ delay of the on-site works due to evacuating the staff and workers from this site, located at the border area, at intervals of escalated security conditions in Gaza.</p> <p>- After starting the one-year operation of the plant and providing the electrical power by the PWA, the</p>	<p>foundations, walls, columns and slabs of the different structural components. Up to June 2020, 14,070 m<sup>2</sup> of plain concrete and 19,718 m<sup>3</sup> of reinforced concrete have been casted for the administrative building, workshop, aeration tank, drying beds, clarifiers, thickeners, pre-treatment building, manholes and distributors, sand filter, composting area, blowers and generator rooms.</p> <p>2,720 m<sup>2</sup> of concrete blocks have been constructed and 12,313 m<sup>2</sup> of internal and external plastering have been executed for the administrative building, workshop, aeration tank, pre-treatment building, thickeners, sand filter and blowers and generators rooms. 992 m<sup>2</sup> of wall and floor tiles have been fixed at the administrative building.</p>		
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										<p>operation could be interrupted due to the CMWU's inability to provide the staff required on a continuous basis to operate the plant.</p> <p>83,526 m<sup>3</sup> of selected excavated materials, clean sand and Kurkar have been finally remeasured as backfilling around different structural components and for the composting area. 18,451 m<sup>3</sup> of clay, sand and gravel layers have been finally remeasured for backfilling under and around 4,930 m of PVC perforated pipes installed for the drying beds.</p> <p>7,815 m<sup>2</sup> of asphalt and 2,295 m<sup>2</sup> of interlock tiles 06 cm thick have been laid for internal roads. 15,938 m<sup>2</sup> of remeasured natural lawn have been planted at site. 1,573 m of aluminium hand railing and 1,528m of galvanized steel fence was installed.</p> <p>The required mechanical and electrical equipment have been delivered and installed on site. Up to June 2020, more</p>		
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											<p>than 3,000 m of ductile iron, steel, stainless steel and high-density polyethylene pipes, 42 pumps, 03 industrial pumps, 195 valves, 16 mixers, 05 air blowers, 06 jet aerators, 4,056 air diffusers, 13,100 filter nozzles, 10 sluice gates, 20 stop logs, 04 fine and coarse screens, 02 conveyor, 01 grit classifier, 02 grit and grease scraper bridges, 04 suction scraper bridges, 02 surge skirt, 12 cranes, 10 flowmeters, 03 diesel generators, 02 fuel tanks, 01 surge tank, 01 biofilter system, PV system 18 KW, 01 vacuum truck, 02 front loaders, workshop equipment, lab instruments and main electrical panels, equipment fittings, sensors and cables have been supplied and installed on site for different structural components.</p> <p>After completing the civil, mechanical and</p>		
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											<p>electrical works on site, the dry tests for the equipment were finalized on 08 August 2019. Waste water was successfully introduced to the plant on 09 September 2019, marking the start of the 45 days commissioning stage on 25 September 2019. After reaching high rates of quality requirements for the treated effluent, the treated effluent was pumped to the infiltration basins on 27 September 2019.</p> <p>After achieving the quality parameters of the treated effluent as required by the design, the commissioning stage ended on 07 November 2019 and the start of the one-year operation after commissioning commenced on 08 November 2019.</p> <p>The Taking-Over certificate was issued on 17 November 2019.</p> <p>Since 08 November 2019 until now, the</p>		
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											<p>electrical power needed to operate the plant was continuously supplied from GEDCO's main grid, and KY WWTP was operating on site without major interruption.</p> <p>However, the Coastal Municipalities Water Utility (CMWU), as the final operator of the plant, did not provide yet the 14 staff required to work with the contractor and assist them during the one-year operation after commissioning. Since May 2020, UNDP supported the provision of 05 specialized key personnel, through a job creation programme implemented by UNDP, to be trained and to exchange knowledge and proper codes of practice, for CMWU's decision to deploy them for the permanent operation of the plant.</p> <p>As of November 2019 until now, more than</p>		
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											2.5 million cubic metres of raw sewage was treated in KY WWTP with high quality parameters, and more than 2.3 million cubic metres of treated effluent was recharged into the ground water aquifer through the infiltration basins to ultimately be used for agricultural purposes.  Overall, 97% was achieved of this package. The remaining part will be achieved when the one-year operation after commissioning is completed in November 2020.		
Output 4: Design review, pre-contract services and construction supervision for the construction of KY WWTP performed.	Carrying out the design review, pre-contract and construction supervision services for the construction of KY WWTP.	X	X	X	X	X	X	X	X	After kicking off the work activities in August 2015, the activities of this component are on-going with six months delay due to: -partners' requests for changing the	UNDP signed the contract of the design review, pre-contract and construction supervision services with Artelia and Universal Group (Artelia&UG) consultant in the total amount of US\$ 2,944,594 on 30 July 2015.  The work activities commenced on 10	Completing the construction supervision services for the operation of KY WWTP project.	Constructability Review (CR) for design and tender documents was requested by the IsDB to be done ahead of launching the construction stage of KY WWTP.  UNDP posted an RFP for the CR in December 2013 and completed the



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									<p>design.          -extending the bids submission date due to Israeli's denial to issue access permits for the international contractors to access Gaza to attend the pre-bid meeting and the site visit.          - Israeli's denial to issue visas and permits for the experts of the international contractor to access Israel and Gaza to follow up the on-site construction works, to do the dry tests and finalize the related technical comments.</p>	<p>August 2015. The overall period of the implementation and completion of the contract was amended on 10 February 2020 by an additional 12 months to be finalized on 10 February 2021. After finalizing the design review and procurement processes for the project's main packages, as updated in previous reports, the following millstones were achieved:          ➤ UNDP signed the contract ITB-2016-158, Construction of KY WWTP and Buildings, with the contractor, Metito (Overseas) LTD, where the on-site construction and commissioning works of the plant were completed and the one-year operation stage commenced in November 2019 and the operation activities are still ongoing as briefed in the above section of</p>	<p>evaluation of the submitted offers in February 2014. However, the start of this component was delayed by more than 12 months due to the requests for changing the scope of work from the "Constructability Review" to the "Design Review" in April 2014, and due to the subsequent 51-day hostilities on Gaza (08 July - 27 August 2014) which prevented performing any activity for the entire duration. UNDP managed the requests for change and moved ahead with the new design review, pre-contract and construction supervision assignment. After kicking off the activities in</p>
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										<p>- Interruption/ delay of the on-site works due to closing Karm Abu Salem crossing and stop accessing materials at intervals of escalated security conditions in Gaza.</p> <p>- Interruption/ delay of the on-site works due to evacuating the staff and workers from this site, located at the border area, at intervals of escalated security conditions in Gaza.</p> <p>- After starting the one-year operation of the plant and providing</p>	<p>output 3.</p> <p>➤ UNDP signed the contract ITB 2016-219-UNDP, Construction of Main Pressure Lines to the Sea and to the Infiltration Basins for KY WWTP, Lot #2 Ductile Iron Pipe (UNDP package with around 5.6-kilometre length) with the contractor, Handala Company for Engineering Contracting &amp; General Trade, at a total contract price of US\$ 1,757,992 on 14 December 2016. The contract price was increased to read US\$ 2,089,626.68 after adopting and approving by the IsDB the variation order no.1 summarized in previous reports.</p> <p>The work activities commenced on 22 January 2017.</p> <p>As highlighted in the previous report, all installation and</p>	<p>August 2015, the review of the design was delayed due to partners' requests for changing the design. UNDP managed to limit those delays to 02 months only, mobilizing in a transparent and competitive manner all partners to agree on changes without jeopardizing the original design.</p>
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									<p>the electrical power by the PWA, the operation could be interrupted due to the CMWU's inability to provide the staff required on a continuous basis to operate the plant.</p>	<p>construction works for this package were finalized and completed on site on 21 November 2019.</p> <p>5,544.8 m of ductile iron pipes and 02 gate valves (with a diameter of 900 mm), 04 air release valves and 06 drain gate valves with a diameter of 12 inch were installed and tested on site. 09 reinforced concrete manholes were constructed for the different valves. 2,423 m of the excavated trenches in the asphalt roads were reinstated.</p> <p>The first Taking-Over session was organized on 26 December 2019 and the Taking-Over certificate was issued on 21 January 2020. The overall percentage of achievement of this package is 100%.</p> <p>➤ CMWU signed the contract ITB 2016-219-CMWU,</p>		
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											<p>Construction of Main Pressure Lines to the Sea and to the Infiltration Basins for KY WWTP, Lot #2 Ductile Iron Pipe (CMWU package with around 13.0-kilometre length) with the contractor, Handala Company for Engineering Contracting &amp; General Trade, at a total contract price of US\$ 3,821,020 on 08 February 2017. The contract price was increased to read US\$ 4,607,904.46 after adoption and approval of the IsDB on the variation order no.1 summarized in previous reports. The work activities commenced on 23 February 2017. After the Israeli delay of issuing approval to access the ductile iron pipes to Gaza for more than one year, their approval was</p>	
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											<p>obtained on 13 February 2018.</p> <p>The first lot of pipes (1,767 m with a diameter of 900 mm) successfully entered Gaza in November 2018. The second lot of pipes (3,249 m with a diameter of 900 mm and 2,451 m with a diameter of 1,000 mm) was manufactured and shipped in December 2018 and entered Gaza between 30 January and 18 March 2019.</p> <p>The remaining lot of pipes (3,477 m with a diameter of 900 mm and 2,308.5 m with a diameter of 1,000 mm) were manufactured and shipped to Ashdod port in August and September 2019. Up to December 2019, all required pipes for this contract have entered Gaza.</p> <p>Up to June 2020, more than 8,383 m of pipes (with a diameter of 900 mm)</p>		
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											<p>and 4,742 m of pipes (with a diameter of 1000 mm), 04 air release valves and 08 drain gate valves (with a diameter of 12 inch) were installed on site. 08 reinforced concrete manholes were constructed for these valves, in addition to 13 drop manholes and 03 energy breakers. 638.3 metre length of asphalt and 84.7 metre length of interlock were reinstated. 50.2 m<sup>3</sup> of reinforced concrete B300 for thrust blocks and 30.9 m<sup>3</sup> of reinforced concrete B300 for pipes encasement were casted on site. The sea outfall for the emergency pressure line, constructed from reinforced concrete B300, was completed on site at the seashore at the south western side of Khan Younis. To protect the sea</p>	
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											<p>outfall from the direct impacts of the sea waves, large units of interlocking blocks tetrapod shaped (equivalent to 75.3 units specified in the BOQ), were constructed from reinforced concrete B300 and installed around the sea outfall at the seashore.</p> <p>The first Taking-Over session was organized on 08 June 2020. The Taking-Over certificate is planned to be issued in July 2020.</p> <p>The overall percentage of achievement of this package is around 99%.</p> <p>➤ CMWU signed the contract ITB 2016-220-CMWU, Construction of the Infiltration Basins in Al Fukhari for KY WWTP, with the contractor, Abu Shammala &amp; Abu</p>		
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											<p>Dan Co. General Trade &amp; Contracting LTD, at a total contract price of US\$ 5,636,000 on 08 February 2017. The work activities commenced on 23 February 2017. The excavation works commenced on site on 01 April 2017. All the construction works of the infiltration basins have been completed on site and the infiltration basins were handed over on 16 April 2019. The details of the main works accomplished were highlighted in the previous reports.</p> <p>Complimenting the infiltration basins, CMWU signed the contract ITB-2019-001, Construction of the Boundary Wall for the Infiltration Basins in Al Fukhari with the contractor, Golden Steps Co., at a total contract price of US\$ 184,300. The</p>	
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											<p>site was handed over to the contractor on 15 July 2019.</p> <p>The construction works of 1,470 metres length and 2.2 metres height of concrete solid blocks for the boundary wall were completed. The first Taking-Over session was organized on 17 December 2019. The Taking-Over certificate was issued on 15 January 2020. The overall percentage of achievement of this component is 100%</p> <p>➤ UNDP signed the contract (ITB-PAL-0000046488) Construction of Main Electrical Power Supply Line for KY WWTP with the contractor, Saqqa and Khoudary Co. Ltd, at a total contract price of US\$ 841,250 on 02 October 2018.</p> <p>The work activities commenced on 07</p>		
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											<p>required tests by GEDCO, the completed works were partially handed over on 18 July 2019.</p> <p>The remaining/ postponed portion of the works (the asphalt work for road no. 14 in Al Fukhari) was accomplished on 07 December 2019 by spreading and compacting more than 14,179 m<sup>2</sup> of a new layer of asphalt on the road, marking the finalization and completion of works in this package.</p> <p>The first Taking-Over session was organized on 24 December 2019. The Taking-Over certificate was issued on 19 January 2020.</p> <p>The overall percentage of achievement of this package is 100%.</p> <p>➤ UNDP signed the contract (ITB-PAL-0000058252)</p>		
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											<p>Construction of Main Influent Pressure Line from Existing GRP Pipe to KY WWTP with the contractor, El Khaesie Co. Ltd, at a total contract price of US\$ 438,900 on 08 April 2019.</p> <p>The work includes constructing a permanent ductile iron pipe (with around 1,300 m length) to transfer the waste water from the existing pumping station no. 08 for the commissioning and operation of the plant.</p> <p>The work activities commenced on 11 April 2019.</p> <p>UNDP uploaded the initial list of materials on the CLA system on 04 February 2019. UNDP received the Israeli approval to access the required pipes and materials on 28 April 2019. However, the Israeli authorities</p>		
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											<p>issued their approval for the donation number; required to ship and facilitate accessing the required pipes and materials through the Israeli port without paying taxes, on 08 September 2019. Due to that, and while the pipes were manufactured in July 2019, the contractor was able to ship them in early October 2019.</p> <p>Up to December 2019, all required pipes, valves and fittings for this package entered Gaza.</p> <p>In January 2020, 1,220.47 m of pipes (with a diameter of 700 mm) and 45.6 m of pipes (with a diameter of 900 mm) were installed on site, marking the finalization and completion of the works of this package.</p> <p>02 gate valves with a</p>	
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											<p>a temporary UPVC pipe to enable transferring waste water from the existing pumping station no. 08 to KY WWTP to start the commissioning of the plant without delay. A variation order amounting to US\$ 19,000 was also adopted, after approving it by the IsDB, to clean the existing main sewer pipes located in Salah Elden street and to enable transferring the waste water from the city to the existing pumping station no. 08.</p> <p>The work activities commenced on 26 May 2019.</p> <p>Up to July 2019, the required 1,227 m of UPVC pipes were supplied, installed and tested on site. Cleaning the existing main sewer pipes was also accomplished as scheduled. The</p>		
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											<p>temporary influent pressure line for the commissioning of KY WWTP was handed over on 23 July 2019. The completion of this package has enabled introducing the waste water from pumping station no. 08 to the plant on 09 September 2019 to start the commissioning stage of KY WWTP without delay.</p> <p>Pumping waste water from pumping station no. 08 to KY WWTP continued through this temporary line since the commissioning stage on 09 September 2019 up to January 2020; when it was phased out after installing the permanent ductile iron pipe in January 2020.</p> <p>➤ UNDP launched the Invitation to Bid (ITB-PAL-0000089780) Rehabilitation of</p>		
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### 3. Financial report

Budget items (according to the proposal)	A. Original Budget - Note Verbale US\$	B.1 Revised Budget 1 US\$ <sup>2</sup>	B. Revised Budget 3 US\$ <sup>3</sup>	C. Disbursement US\$ <sup>4</sup>	D. Balance (B-C) US\$	E. Rate of disbursement (%) (C/B*100)
Constructing Main Steel Pressure Pipeline from Pump Station No. 8 to KY WWTP <sup>5</sup>	1,000,000	1,000,000	527,303	527,303.15	- 0.15	100.0%
Providing the Detailed Design for the Construction of KY WWTP <sup>6</sup>	0	1,100,000	946,804	946,804	0.00	100.0%
Construction of KY WWTP, Phase I, including One-year Operation After Commissioning	12,550,000	11,450,000	11,274,745	10,893,368.28	381,376.72	96.6%
Carrying out the Design Review, Pre-Contract and Construction Supervision	0	0	795,255	731,634.60	63,620.40	92.0%
UNDP Direct Implementation Cost	150,000	150,000	150,629	150,629.19	-0.19	100.0%
Contingencies and Miscellaneous	31,064	31,064	36,328	27,555.56	8,772.44	75.9%
<b>Sub-total</b>	<b>13,731,064</b>	<b>13,731,064</b>	<b>13,731,064</b>	<b>13,277,294.78</b>	<b>453,769.22</b>	<b>96.7%</b>
GMS (8%)	1,098,485	1,098,485	1,098,485	1,062,183.58	36,301.42	96.7%
Realized Loss and Gain <sup>7</sup>	0	0	0	-27.67	27.67	
<b>Total</b>	<b>14,829,549</b>	<b>14,829,549</b>	<b>14,829,549</b>	<b>14,339,450.69</b>	<b>490,098.31</b>	<b>96.7%</b>

2 Project Budget was revised based on letter of clearance from the Government of Japan dated 24 July 2007.

3 Project Budget revised based on the letter of approval from the Government of Japan to reallocate budget lines dated 10 September 2015.

4 It is important to highlight that the financial figures in this report are temporary figures and may be corrected at a later stage due to exchange rate fluctuations, realized gain/loss or any other possible corrections. UNDP/PAPP's financial system operates in such a manner that the financial system closes in early December of each year and that final expenditure reports reflecting the disbursements and GMS of the previous year are only published in March of the following year.

5 US\$ 1,000,000 was originally allocated for the implementation of main inlet steel pressure pipeline. 996.3 metres of steel pressure pipes of 24-inch diameter and 1070.4 metres of reinforced concrete pipes of 1,000 mm diameter were installed at a total contractual cost of US\$ 527,303.15 paid to the contractor. The remaining balance is utilized to cover the implementation of the treatment plant component as distributed in budget lines in the agreement signed between UNDP and IsDB on 05 September 2013 and reallocated on 10 September 2015. The remaining part of the pressure pipeline to the treatment plant site should be implemented by UNRWA and CMWU through a committed Italian fund and around one kilometre is still not implemented.

6 Based on the revised budget on July 2007, US\$ 1,100,000 was allocated for carrying out and providing the detailed design. The contract was signed between UNDP and the joint venture consultant; Sogreah Consultants & Universal Group, at a total amount of US\$ 946,804. The detailed design assignment was successfully completed without change orders or financial claims at the same contractual amount. The remaining balance of this component amounting US\$ 153,196 is utilized to cover the implementation of project components as distributed in budget lines in the agreement signed between UNDP and IDB on 05 September 2013 and reallocated on 10 September 2015.

7 Total US\$ 27.67 is realized as loss and gain in our Financial System (ATLAS) without collecting GMS for this amount.



#### 4. Any special notes or remarks:

##### 4.1 The cost estimate for the construction of Khan Younis Waste Water Treatment Plant "KY WWTP", phase I, dramatically increased due to the following reasons:

- The design capacity of WWTP, Phase I, was increased by 10,000 cubic metres per day (cm/d), based on the recommendations of the preliminary design carried out by the Palestinian Water Authority (PWA). The preliminary scope of work was identified to design an extendable wastewater treatment plant to be implemented in two phases; with inflow capacity of 16,100 cm/d and load estimates for 2018. In parallel, temporary treatment lagoons were proposed to be constructed before the construction of the permanent wastewater treatment plant, to handle 10,000 cm/d of the collected wastewater during an emergency. However, these temporary treatment lagoons had not been constructed and accordingly, the scope of work was modified to design and construct an extendable WWTP to treat the 26,100 cubic metres per day. (The final detailed design's capacity for KY WWTP, Phase I, is 26,600 cubic metres per day).
- The scope of work of the project was also modified to ensure environmentally sound disposal of the treated wastewater. The ToR of the detailed design was developed accordingly and approved by the project counterparts. The infiltration scheme (that includes the infiltration basins and emergency outflow) was added to the project components to ensure optimum utilization of the treated wastewater as an alternative non-conventional water source. By that, the treated wastewater will be recharged into the aquifer to ultimately be used for irrigation purposes and to release the pressure on the water aquifer. Thus, the detailed design assignment had included designing the components of the ultimate disposal facilities (the infiltration basins and the effluent and emergency pressure pipelines); where no budget lines were allocated in the original project document for the construction of these additional components.
- The cost for the provision of pre-contract and construction supervision by an international consultancy firm as well as the cost for the one-year operation after commissioning of the treatment plant were also not included in the original project document, in addition to the cost of the design review for the existing design and tender documents of KY WWTP.

##### 4.2 Revised cost estimate for the construction of KY WWTP, phase I, and additional fund required

According to the detailed design cost estimates, it was evident that the available fund of US\$ 11.45 million would neither be enough to construct phase I of KY WWTP nor to construct the necessary complementary components of the project (infiltration basins and effluent and emergency pressure pipelines). To ensure successful implementation and operation of the project, the following activities and their corresponding budget lines were identified for additional funding:

- Constructing KY WWTP, Phase I; including carrying out one-year operation after commissioning of the plant to exchange knowledge and proper codes of practice to CMWU as final operator.
- Constructing the effluent and emergency pressure pipelines to the infiltration basins and to the sea shore outfall, with a total length of around 18.6 Km.
- Constructing infiltration basins to recharge the treated waste water effluent into the water aquifer to ultimately be used for irrigation purposes.
- Constructing the main electrical power supply line to KY WWTP.
- Carrying out the design review, the pre-contract and construction supervision services



for the construction of KY WWTP, Phase I.

Based on the final detailed design report, UNDP revised and developed the overall cost estimate required to implement KY WWTP, Phase I; with its necessary and complementary components, to be a comprehensive, functional and operational project. UNDP mobilised resources to secure the required additional fund. The Kuwait Fund for Arab Economic Development committed in February 2011 to secure the required total additional fund amounting US\$ 43 million for the construction of KY WWTP, Phase I, through the Islamic Development Bank (IsDB).

UNDP conducted intensive negotiation sessions with the IsDB, PWA and CMWU about the management arrangements and the cost estimates, which ended by signing the total additional fund agreement between UNDP and the IsDB on 05 September 2013.

By signing this agreement, the overall project budget is co-financed by the Government of Japan with a total fund amounting to US\$ 14,829,549 and by the Kuwait Fund through the IsDB with a total fund amounting to US\$ 42 million, and by UNDP with a total fund amounting to US\$ 1.175 million.

#### **4.3 Completion of the detailed design and the IsDB's request for doing Constructability Review /Overall Design Review**

The detailed design assignment was completed by providing the final detailed design report and tender documents in December 2010. By that, the project was ready to launch the construction stage upon the availability of the required additional fund.

Throughout the negotiations between UNDP and the IsDB to secure the additional fund, the IsDB requested in a meeting in Cairo on 01 October 2012 to carry out a Constructability Review for the available design and tender documents of KY WWTP.

After signing the project agreement between UNDP and the IsDB, UNDP moved with the activities to conduct the Constructability Review and issued the relevant request for proposal in December 2013. The technical and financial evaluation of the three submitted offers was completed on 26 February 2014. However, the IsDB and counterparts requested, in April 2014, to cancel the Constructability Review and to go, instead, for an in-depth design review to be done by the construction supervision consultant.

UNDP managed the request for change and shared the new ToR of the design review, pre-contract and construction supervision services with the IsDB for approval in June 2014, but the approval and activities were delayed due to the hostilities from 08 July to 27 August 2014.

On 03 September 2014, the IsDB requested again to change the scope of the design review from in-depth design review to overall design review. UNDP managed this last request for change and proceeded with the provision of the design review, pre-contract and construction supervision in October 2014.

UNDP highlighted that the repeated request of changing the scope of the design review has seriously delayed launching the project's first activity and impacted its overall progress.

#### **4.4 COGAT "Israeli Authorities" approval to facilitate the entry of construction materials into Gaza**

The main list and quantities of needed construction materials were prepared through the detailed design stage and submitted to the Israeli authorities. An Israeli approval regarding the implementation of KY WWTP and facilitating entry of materials for this project was granted on 11 July 2010.

Through procurement processes, UNDP uploaded the initial list of materials for the



treatment plant and the main pressure line (UNDP Packages) on the CLA system in August and September 2016 respectively. CMWU uploaded the initial list of materials for the infiltration basins and the main pressure line (CMWU packages) on the GRAMMS system in December 2016 and January 2017 respectively. UNDP sent the contractors' final list of materials to the CLA on 11 March 2017 for the approval of entry of construction materials to Gaza Strip.

The Israeli approval for the ABC materials for the plant was issued on 19 April 2017. It was followed by issuing approval for 192 items (out of 1,000 items) required for the first construction stage on 07 August 2017, for 420 items required for the second construction stage on 09 January 2018, updated approval for 351 items required for the third construction stage on 26 September 2018, and for 200 items required for the fourth construction stage on 03 and 19 December 2018. UNDP intensified efforts to get approval for the rejected electrical/control cables. The electrical panels and the control cables were approved on 27 February 2019 and 10 March 2019.

The Israeli approval for the entry of only 818 metres of ductile iron pipes for the pressure line (CMWU package) was issued on 18 October 2017. The Israeli approval for only 1,000 metres of ductile iron pipes for the pressure line (UNDP package) was issued on 28 November 2017. The Israeli approval for all pipes for UNDP package was obtained on 09 January 2018, and for all pipes for CMWU package on 13 February 2018.

The Israeli approval for the donation number was issued on 08 September 2019. This was required to ship and access the pipes, valves and fittings for the remaining part of the influent pressure line from pumping station no. 8 to KY WWTP.

Till date, the Israeli concerned authorities did not approve the entry of the rich zinc painting material required to paint the galvanized steel doors in the plant, and their approval to access the required spare parts and chemicals for the internal laboratory of KY WWTP is still pending. They did not also approve the entry of the main construction materials and equipment required for the rehabilitation of pumping stations No. 08, 03 and 02 in Khan Younis for KY WWTP.

#### **4.5 Utilizing the saved amount of fund allocated for providing the detailed design to cover the provision of the design review, pre-contract and construction supervision services/ reallocation of budget lines**

Since 2006 to date, the UNDP's Project/Programme Manager has been managing the project's different tasks and activities, and the total amount of US\$ 150,000, allocated as per the project budget lines to cover the salaries of project engineers for 24 months, has been totally disbursed to cover the salaries of project staff by the end of December 2011, as seen in the financial report in section 3.

During the negotiations with the IsDB to sign the agreement of the additional fund committed by the Kuwait Fund, and aiming at bridging the financial gap concerning UNDP's direct implementation cost, UNDP approached the Government of Japan to revise the allocated fund to allow for the utilization of US\$ 300,000 for the UNDP direct implementation cost. The Government of Japan kindly approved utilizing this amount on 30 April 2013. Through final negotiations, this amount was modified to US\$ 370,000 allocated for the provision of the design review, pre-contract and construction supervision services for KY WWTP, as per the agreement signed between UNDP and the IsDB on 05 September 2013.



After evaluating the submitted proposals for the assignment of the provision of design review, pre-contract and construction supervision services for the construction of KY WWTP under RFP 2014-287, it has been found that the Artelia&UG consultant who attained the highest technical scores has the lowest financial offer amounting to US\$ 3,067,285. Whereas, the total allocated budget for this component as per the project's agreement between UNDP and the IsDB amounts to US\$ 1.37 million, and whereas the allocated/available contingencies from the Kuwait Fund for Arab Economic Development amounts to US\$ 4,725,480, UNDP approached the IsDB on 22 January 2015 to approve utilizing the deficit amount for this component from the project's allocated contingencies. On 26 February 2015, the IsDB issued an in-principle approval/no objection to cover the deficit amount from the donors' contributions after finalizing negotiations with the consultant. The negotiation was concluded on 27 May 2015 by scaling down the consultant's financial offer to US\$ 2,944,594 instead of US\$ 3,067,285.

The IsDB issued the written no objection to award the contract of the design review, pre-contract and construction supervision services for the construction of KY WWTP to Artelia and Universal Group consultant in the total amount of US\$ 2,944,594 on 02 July 2015. The IsDB requested the budget deficit for this component, amounting to US\$ 1,574,594, to be deducted from the donors' contributions, according to their percentage of contribution, and from the construction component mentioned in the UNDP and IsDB's agreement.

UNDP received the initial clearance from the IsDB's consultant (EMCC) on budget reallocation on 11 July 2015. The Government of Japan confirmed its agreement to utilize/reallocate US\$ 425,255 from their contribution allocated for the construction works to cover part of the deficit amount for this component. The Government of Japan issued their official approval on 10 September 2015. The IsDB issued their written no objection on the budget reallocation on 29 September 2015.

#### **4.6 Impact of COVID-19 pandemic**

Maintaining the operation of wastewater treatment plants is an essential factor needed to protect public health and combat the COVID-19 pandemic.

During the reporting period, the operation and performance of KY WWTP was successfully maintained without any interruption, and the quality standards for treated wastewater were met as required by the design. Disinfection measures against COVID-19 were taken inside KY WWTP as seen in the last two pictures of this report.

Nevertheless, the COVID-19 restrictions could impact and delay manufacturing, shipping, issuing the Israeli approvals and accessing the construction materials and equipment required for the rehabilitation of pumping stations no. 08, 03 and 02 in Khan Younis, as well as the spare parts required for the operation of KY WWTP, that could impact the operation of KY WWTP and delay the project's completion date.

It is also worth mentioning that, after completing the construction works and starting the one-year operation of the plant in November 2019, the inauguration ceremony for KY WWTP was planned to be conducted in February 2020 with the presence of the representatives of the GoJ and the Kuwait Fund, but the COVID-19 restrictions on travel and movement affected the initial plan and the ceremony was postponed.



**5. Pictures of project indicating before the project and progress of the project:**



**Starting Excavation Works at KY WWTP Site on 13 and 18 April 2017**



**Starting Casting Reinforced Concrete for Admin Building and Plain Concrete for Aeration Tank on 17 May 2017**



**Casting Reinforced Concrete for the Foundation of the Aeration Tank on 20 June 2017**

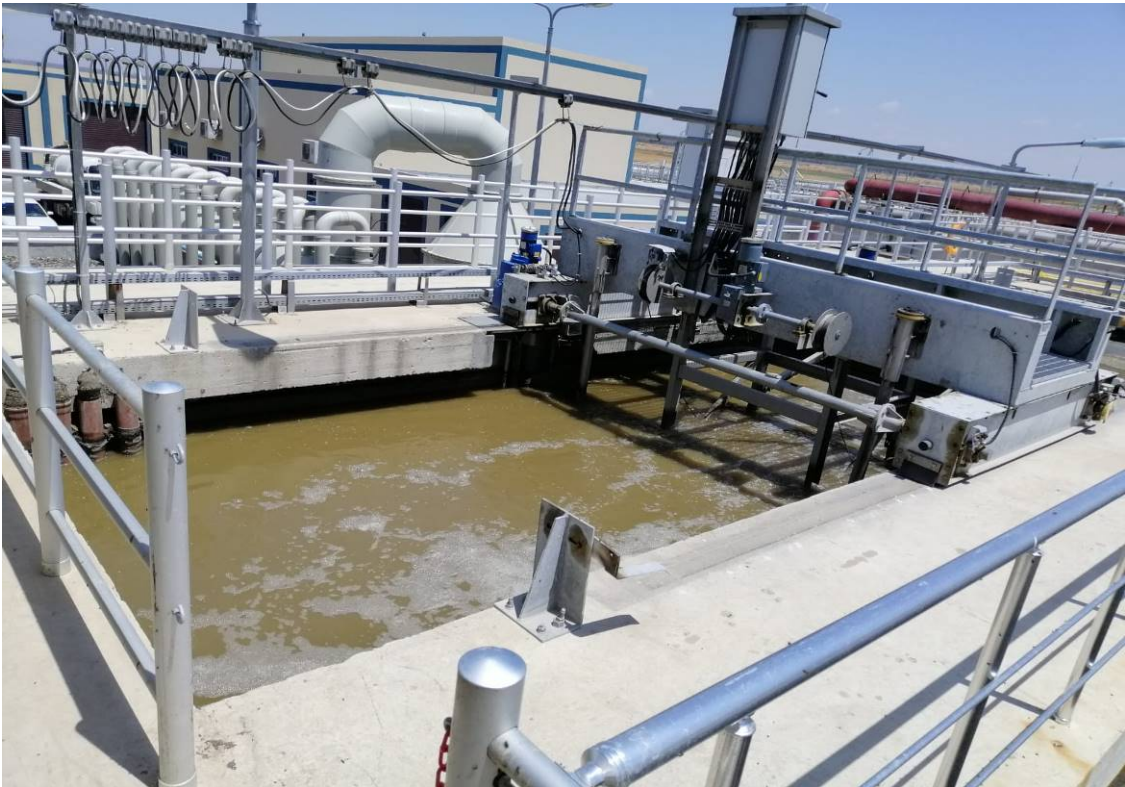


**General Overview for KY WWTP Filled after Being Filled with Waste Water in September 2019**



**Waste Water Introduced to the Plant from the Inlet Pipe at the Pre-Treatment Building on 09 September 2019**

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**The Pre-Treatment Building Under Operation up to June 2020**



**The Aeration Tank Under Operation up to June 2020**



**Clarifiers Under Operation up to June 2020**



**Sand Filter Under Operation up to June 2020**



**Drying Beds Filled with Sludge up to June 2020**



**Treated Effluent Pumped to the Infiltration Basins up to June 2020**



**Ductile Iron Pipes Entered Gaza and Installed on Site for the Effluent Pressure Lines (CMWU Package) up to Completion in June 2020**



**Installation of HDPE Pipes and Interlocking Blocks Tetrapod Shape for Sea Outfall for the Effluent Pressure Lines (CMWU Package) up to Completion in June 2020**



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**Boundary Wall for the Infiltration Basins up to Completion in January 2020**



**Installed Electrical Poles, Cables and Transformers of the Main Electrical Line for KY WWTP**



**Asphalt Work in Road No.14 in Al Fukhari in December 2019 up to completion in January 2020**




**Disinfection measures in KY WWTP against COVID-19**

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## 6. Report authorization by UNDP/PAPP

Reporting person and title: Ashraf Abu Shamala, Programme Manager	
Reviewed by: Iman Al Hussein, Head of UNDP Gaza Office a.i.	
Supervisor's name and signature: Iman Al Hussein, Head of UNDP Gaza Office a.i.	
Date of submission: 24 November 2020	