

This questionnaire has been designed by a work team of the Technological Center CARTIF to obtain information about the wastewater treatment plant in the field of the MEDAWARE project - Development of tools and guidelines for the promotion of the sustainable urban wastewater treatment and reuse in the agricultural production in the Mediterranean countries

1 BASIC DATA OF THE WASTEWATER TREATMENT PLANT

Name: Abdelkarim M. jarrar Position: Head of W.W.div

1. Where is your local wastewater treatment plant located?

Address: Madaba W.W.T. plant
 City: Madaba County: Jordan State: _____ Zip: _____
 Telephone number 05/3251458 Fax number _____ E-mail address Karimjarrar@yahoo.com

2. How many stages of treatment does your facility use?

Primary _____
 Secondary the plant was primary and changed to secondary on2002
 Tertiary _____
 Other _____

3. What is the capacity of the treatment plant?

Liters per day (average) 5000 m³day
 Number of People and/or Employees 30
 Peak Daily Flow Estimate 300 m³hr

4. How is the sludge disposed of?

Burned Landfill
 Fertilizer Other

5. Where does the treated wastewater go after it leaves the plant?

River or Stream
Ocean

Lake
Other for irrigation

6. In what year was the plant built?

1987

7. Have there been any modifications of the plant in recent years?

The W.W.T plant was stabilization ponds until year 2002. It changed to Activated sludge treatment plant

8. Are there any plans for additional improvements to the plant?

No

9. Wastewater analysis information (influent)

Wastewater BOD	<u>1450</u>
Wastewater COD	<u>2500</u>
Wastewater Suspended Solids	<u>1350</u>

10. Treated water- Local government requirement - If known (effluent)

Wastewater BOD	<u>30</u>
Wastewater COD	<u>65</u>
Wastewater Suspended Solids	<u>25</u>

2 WASTEWATER TREATMENT INFORMATION

11. Primary Treatment Processes

	<i>Processes</i>	<i>Size (if know)</i>	<i>Main operational problems (if exists)</i>
<input checked="" type="checkbox"/>	Bar or bow screen	_____	_____
<input checked="" type="checkbox"/>	Grit removal	_____	The design is not correct so there is a many problems in safety
<input type="checkbox"/>	Primary sedimentation	_____	_____
<input type="checkbox"/>	Comminution	_____	_____
<input checked="" type="checkbox"/>	Oil / fat removal	_____	Not safety for workers
<input type="checkbox"/>	Flow equalisation	_____	_____
<input checked="" type="checkbox"/>	pH neutralisation	_____	_____
<input type="checkbox"/>	Imhoff tank	_____	_____
<input type="checkbox"/>	_____	_____	_____
<input type="checkbox"/>	_____	_____	_____

12. Secondary Treatment Processes

	<i>Processes</i>	<i>Size (if know)</i>	<i>Main operational problems (if exists)</i>
<input type="checkbox"/>	Activated sludge	_____	_____
<input checked="" type="checkbox"/>	Extended aeration	18720 m ³	_____
<input type="checkbox"/>	Aerated lagoon	_____	_____
<input type="checkbox"/>	Trickling filter	_____	_____
<input type="checkbox"/>	Rotating bio-discs	_____	_____
<input type="checkbox"/>	Anaerobic treatment/UASB	_____	_____
<input type="checkbox"/>	Anaerobic filter	_____	_____
<input type="checkbox"/>	Stabilisation ponds	_____	_____
<input type="checkbox"/>	Constructed wetlands	_____	_____
<input type="checkbox"/>	Aquaculture	_____	_____
<input type="checkbox"/>	_____	_____	_____
<input type="checkbox"/>	_____	_____	_____

13. Tertiary Treatment Processes

	Processes	Size (if know)	Main operational problems (if exists)
<input checked="" type="checkbox"/>	Nitrification	_____	_____
<input checked="" type="checkbox"/>	Denitrification	_____	Not safety
<input type="checkbox"/>	Chemical precipitation	_____	_____
<input checked="" type="checkbox"/>	Disinfection	_____	_____
<input type="checkbox"/>	(Direct) filtration	_____	_____
<input type="checkbox"/>	Chemical oxidation	_____	_____
<input type="checkbox"/>	Biological P removal	_____	_____
<input type="checkbox"/>	Constructed wetlands	_____	_____
<input type="checkbox"/>	Aquaculture	_____	_____
<input type="checkbox"/>	_____	_____	_____
<input type="checkbox"/>	_____	_____	_____

14. Advanced Treatment Processes

	Processes	Size (if know)	Main operational problems (if exists)
<input type="checkbox"/>	Chemical treatment	_____	_____
<input type="checkbox"/>	Reverse osmosis	_____	_____
<input type="checkbox"/>	Electrodialysis	_____	_____
<input type="checkbox"/>	Carbon adsorption	_____	_____
<input type="checkbox"/>	Selective ion exchange	_____	_____
<input type="checkbox"/>	Hyperfiltration	_____	_____
<input type="checkbox"/>	Oxidation	_____	_____
<input type="checkbox"/>	Detoxification	_____	_____
<input type="checkbox"/>	_____	_____	_____
<input type="checkbox"/>	_____	_____	_____

3 CONTROL AND MONITORING SYSTEMS

15. Which are the most critical process parameters that may affect the efficiency of the wastewater treatment plant?

<i>Parameter</i>	<i>Process</i>	<i>Current Automatic Control?</i>	
<input checked="" type="checkbox"/> Wetwell levels	On-off pumping	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
<input type="checkbox"/> Sludge depth	Primary treatment	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
<input type="checkbox"/> Solids Retention Time (SRT)	Conventional activated sludge	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> Dissolved oxygen concentration	Conventional activated sludge	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
<input type="checkbox"/> Return flowrate from the clarifier	Conventional activated sludge	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
<input type="checkbox"/> Internal recycle	Biological nutrient removal	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
<input type="checkbox"/> Methanol feed rate	Biological nutrient removal	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
<input type="checkbox"/> Air / solids ratio	Dissolved air flotation thickening	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
<input type="checkbox"/> Sludge depth	Gravity thickening	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
<input type="checkbox"/> Belt speed	Gravity belt thickening	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
<input type="checkbox"/> Chemical dosage rate	Chemical addition for water-solids separation	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
<input type="checkbox"/> Chlorine dosage rate	Chlorination	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
<input type="checkbox"/> _____	_____	Yes <input type="checkbox"/>	No <input type="checkbox"/>
<input type="checkbox"/> _____	_____	Yes <input type="checkbox"/>	No <input type="checkbox"/>
<input type="checkbox"/> _____	_____	Yes <input type="checkbox"/>	No <input type="checkbox"/>
<input type="checkbox"/> _____	_____	Yes <input type="checkbox"/>	No <input type="checkbox"/>
<input type="checkbox"/> _____	_____	Yes <input type="checkbox"/>	No <input type="checkbox"/>
<input type="checkbox"/> _____	_____	Yes <input type="checkbox"/>	No <input type="checkbox"/>
<input type="checkbox"/> _____	_____	Yes <input type="checkbox"/>	No <input type="checkbox"/>
<input type="checkbox"/> _____	_____	Yes <input type="checkbox"/>	No <input type="checkbox"/>
<input type="checkbox"/> _____	_____	Yes <input type="checkbox"/>	No <input type="checkbox"/>
<input type="checkbox"/> _____	_____	Yes <input type="checkbox"/>	No <input type="checkbox"/>
<input type="checkbox"/> _____	_____	Yes <input type="checkbox"/>	No <input type="checkbox"/>

16. In your opinion, what are the main problems with the control system of the wastewater treatment plant?

There is no control system of the wastewater treatment so we don't have any information but we think the problem is that we need a worker how have an experience in controlling and managing the treatment plant

17. In your opinion, what treatment processes / parameters should be monitored / controlled automatically?

All processes should be monitored or controlled automatically

If you have any questions about this document, please contact us by e-mail at yolnun@cartif.es

Thank you for you collaboration.