

EVALUATION OF THE DIPLOMA THESIS



Department: Faculty of Agrobiological Sciences, Food and Natural Resources
Department of Water Resources

Name of the student: Christoph Hofer

Name of Diploma thesis opponent: Mgr. Hana Jiráková, Ph.D.

Workplace (institution name) and position: GEOMEDIA s.r.o., consultant for hydrogeology and geothermal energy

The title of the Diploma thesis: Wastewater heat recovery in sewer systems from wastewater treatment plant operational point of view

The evaluation of the thesis:

1 2 3 4 5

evaluation: 1 = the best, 5 = the worst

1. Thesis topic and thesis significance (relevance)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Formulation of objectives	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Choice of appropriate methods and methodology used	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Work with data and information	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Evidence of a logical process being used	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Theoretical background of an author	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. The structure of paragraphs and chapters	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Work with scientific literature (quotations, norms)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Comprehensibility of the text and level of language	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Clarity and professionalism of expression in the thesis	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Formal presentation of the work, the overall impression	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Fulfilment of objectives	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Formulation of conclusions	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Professional contribution of the work and its practical usage	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. Summary and key-words comply with the content of thesis	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. Evaluation of the work by grade (1,2,3,4)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Questions for the defence of Diploma thesis:

1. Do you think that the method of acquiring heat energy from waste water before WWTP could have any negative environmental or social impacts? What would be they?

2. Three options to obtain the energy from wastewater are mentioned – before WWTP, after WWTP and in the building. What would be the most important advantage of the described „before WWTP“ option from your point of view compared to other two options? Do you think that despite the fact that the Freistadt WWTP has been evaluated as not suitable to gain energy before WWTP, it might be suitable for other options?

Other comments or suggestions (to be continued on the other side if necessary)

Heat recovery from waste water is currently much discussed topic as the geothermal energy belongs to one of the unconventional energy sources much demanded within the current EU requirements. The topic of the Master thesis dealing with the methodology to assess the suitability of the WWTP for the heat recovery was therefore a good, up to date, selection.

The objective of the thesis was not to develop a new method of gaining the heat energy, but to apply widely used methodology in Switzerland in order to test the Freistadt site and to propose a standardized approach how to proceed in obtaining a certain result in the context of wastewater heat recovery in the sewer system. The developed flowchart is very detailed and well structured and is promising to be used for evaluation of other sites.

The thesis combines very well the technical part with legislative requirements but the assessment of environmental point of view is missing. The environmental assessment should be included in the text, at least very briefly, even if the expected impacts would be negligible. The thesis shows that student used a wide range of publications, guidelines and legal documents that is much appreciated.

The text itself is generally comprehensible although many sentences remain unclear and without context. Some parts are overcharged with details making sometimes harder to follow the essential idea of the chapter.

Overall, I would recommend the thesis for the defence and my rating is very good. All these above-mentioned comments are to improve the work for potential further publication and do not negatively affect overall high quality of the work.

Date: 17.12.2015

A handwritten signature in blue ink, appearing to be 'J. H. G.', written in a cursive style.

Signature of the Diploma thesis opponent