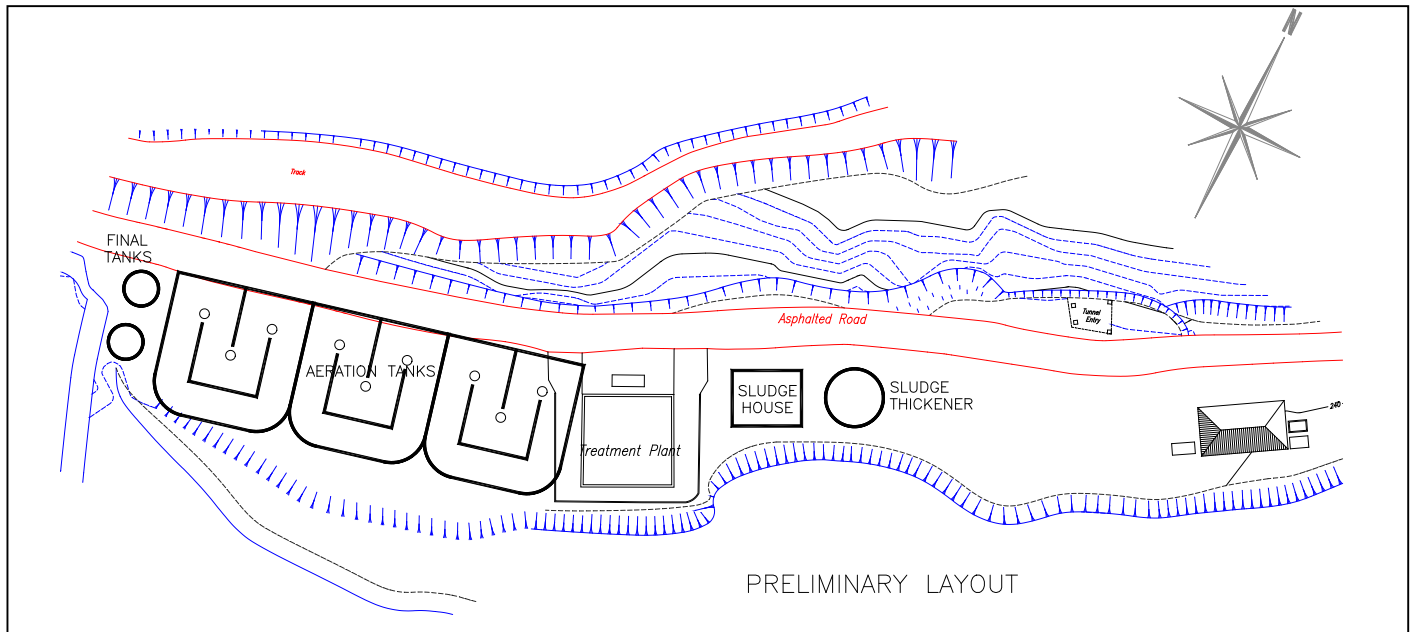


Wastewater Treatment Plants

EDESSA was retained by Mercy Corps to submit a proposal for carrying out preliminary designs of seven small-scaled municipal wastewater treatment plants and six olive residue wastewater treatment plants, based on the Lebanese and USAID Norms. The objective of the project was to attain a healthy sustainable rural environment in a way to tackle the inherent problems of chronic neglect, environmental degradation and groundwater as well as surface water contamination.



The scope of work included EDESSA's preliminary evaluation and recommendations to be adopted for implementation of the following major tasks in further phases:

- **Data Collection:** Data Collection on population and a review of available demographic studies regarding the region, with an account for seasonal population changes. The task also includes the documentation of baseline project conditions and prediction of future population trends.
- **Site topographical Surveys:** Topographic surveys for the detailed design, construction and operation stages of the project.
- **Wastewater analysis:** Wastewater analysis through effective sampling and testing procedures over an extensive period of time, taking into account series of peak hourly analyses and composite daily samples. Parameters to be tested to include COD, BOD, Ammonia, chloride and other parameters that could prove to be of concern.
- **Preliminary design scheme:** Recommendation of a preferred treatment technique or scheme, considering all suitable methods requiring less operating efforts for small-scaled wastewater treatment plants over the lifetime of the facilities. This includes preparation of schematic diagrams, Process and Instrumentation Diagrams (PIDs), process design and outline unit designs and calculations.
- **Preparation of a detailed priced BOQ for the wastewater treatment plants.**