

## **DECLARATION**

I, hereby declare that this thesis entitled “**GROUNDWATER ASSESSMENT AND WATER RESOURCE DEVELOPMENT OF CHITTUR BLOCK OF PALAKKAD DISTRICT**” is a bonafide record of research work done by me during the course of research and the thesis has not previously formed the basis for the award to me of any degree, diploma, associateship, fellowship or other similar title, of any other University or Society.

Place: Tavanur

Date:

**K. VENKATA SAI**

**(2019-28-004)**

## **CERTIFICATE**

Certified that this thesis entitled “**Groundwater assessment and water resource development of Chittur Block of Palakkad District**” is a record of research work done independently by **Er. KARI VENKATA SAI (2019-28-004)** under my guidance and supervision and that it has not previously formed the basis for the award of any degree, diploma, fellowship or associateship to him.

Place: Tavanur

Date:

**Dr. Asha Joseph**

(Major Advisor, Advisory Committee)

Professor (Dept. of IDE)

KCAEFT, Tavanur.

## **CERTIFICATE**

We, the undersigned members of the advisory committee of **Er. K. Venkata Sai (2019-28-004)**, a candidate for the degree of Doctor of Philosophy in Agricultural Engineering with major in Soil and Water Conservation Engineering, agree that the thesis entitled “**Groundwater assessment and water resource development of Chittur Block of Palakkad District**” may be submitted by **Er. K. Venkata Sai (2019-28-004)** in partial fulfillment of the requirement for the degree.

### **Committee:**

**Dr. Asha Joseph**  
**(Chairman)**  
Professor,  
Dept. of IDE,  
KCAEFT, Tavanur

**Dr. Rema K. P.**  
**(Member)**  
Professor and Head,  
Dept. of IDE,  
KCAEFT, Tavanur

**Dr. Sajeena S.**  
**(Member)**  
Professor,  
Dept. of IDE,  
KCAEFT, Tavanur

**Dr. Josephina Paul**  
**(Member)**  
Professor (Rtd.),  
Dept. of BEAS,  
KCAEFT, Tavanur

**Dr. N. Vinayachandran**  
**(Member)**  
Scientist D (Sr. HG) (Rtd.)  
CGWB, Trivandrum

**EXTERNAL EXAMINER**

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## SYMBOLS AND ABBREVIATIONS

Symbols	Abbreviations
±	: Plus or minus
×	: Multiplication
°	: Degree
°C	: Degree centigrade
%	: Percent
<i>i.e.</i>	: that is
AHP	: Analytical Hierarchy Process
bgl	: Below ground level
CGWB	: Central Groundwater Board
DGWR	: Dynamic Groundwater Reserve
ESRI	: Environmental Systems Research Institute
<i>et al.</i>	: and others
Fig.	: Figure
FMPE	: Farm Machinery and Power Engineering
GWMW	: Groundwater Monitoring Wells
GWREC	: Groundwater Resource Estimation Committee
GEE	: Google Earth Engine
GIS	: Geographical Information System
ha	: Hectare
h	: Hour
K	: Hydraulic Conductivity
IMSD	: Integrated Mission for Sustainable Development
KCAEFT	: Kelappaji College of Agricultural Engineering and FoodTechnology
KSREC	: Kerala State Remote Sensing and Environment Centre
km <sup>2</sup>	: Square Kilometer

LULC	:	Land Use/Land Cover
IMD	:	India Meteorological Department
m	:	Meter
m <sup>3</sup>	:	Cubic metre
m <sup>3</sup> d <sup>-1</sup>	:	Cubic Metre per day
m <sup>2</sup> d <sup>-1</sup>	:	Square metre per day
md <sup>-1</sup>	:	Metre per day
m	:	Meter
m <sup>2</sup>	:	Square meter
M-K	:	Mann-Kendall Test
MIF	:	Multi Influencing Factor
MSL	:	Mean Sea Level
NSE	:	Nash-Sutcliffe Efficiency
NDVI	:	Normalised Difference Vegetation Index
NRSC	:	National Remote Sensing Centre
RS	:	Remote Sensing
RMSE	:	Root Mean Square Error
R <sup>2</sup>	:	Coefficient of determination
S <sub>s</sub>	:	Specific Storage
S <sub>y</sub>	:	Specific Yield
S. No.	:	Serial number
Sci.	:	Science
SRTM	:	Shuttle Radar Topography Mission
USGS	:	United States Geological Survey
WIOA	:	Weighted Index Overlay Analysis