



**CENTRAL GROUND WATER BOARD**  
**MINISTRY OF WATER RESOURCES, RIVER DEVELOPMENT**  
**AND GANGA REJUVINATION**  
**GOVERNMENT OF INDIA**

**GROUND WATER YEAR BOOK  
OF  
PUNJAB AND CHANDIGARH (UT)  
2017-2018**

**North Western Region  
Chandigarh  
September 2018**

**CENTRAL GROUND WATER BOARD  
MINISTRY OF WATER RESOURCES,  
RIVER DEVELOPMENT AND GANGA  
REJUVINATION  
GOVERNMENT OF INDIA**

**GROUND WATER YEAR BOOK OF  
PUNJAB AND CHANDIGARH (UT)  
2017-2018**

**Principal Contributors**

**GROUND WATER DYNAMICS:** M. L. Angurala,  
Scientist- 'D' (Senior Hydrogeologist)  
Amandeep Kaur  
Scientist- 'B' (Junior Hydrogeologist)

**HYDROMETEOROLOGY:** Aditya Sharma  
Senior Technical Assistant

**GROUND WATER QUALITY:** B. P. Singh,  
Scientist- 'D' (Senior Chemist)  
K.S. Rawat,  
Scientist- 'B' (Junior Chemist)

North Western Region  
Chandigarh  
September 2018

## FOREWORD

Central Ground Water Board, the National Apex Organization is regularly monitoring ground water levels and ground water quality since 1968. These are most important aspects to depict the spatial and temporal variation of ground water regime. The changes in water levels and quality are attributed to the development patterns of ground water resources for irrigation and drinking water needs. Analyses of water level fluctuations are aimed at observing seasonal, annual, and decadal variations. Therefore, the accurate monitoring of the ground water levels and its quality, both in space and time, are the main pre-requisites for assessment, scientific development and planning of this vital resource.

Central Ground Water Board, North Western Region, Chandigarh has established numerous Ground Water Observation Wells in Punjab State and in Chandigarh (UT) for monitoring the water levels. During annual action plan (2017-2018), 964 Ground Water Observation Wells (170 dug wells and 794 piezometers) in Punjab and 18 observation wells (1 dug wells and 17 Piezometers) in Chandigarh were monitored to observe the behavior of water levels in shallow (phreatic) aquifers. In Addition to this, 57 deep piezometers in Punjab and 7 deep piezometers in Chandigarh were monitored to assess the impact of pumping on deeper aquifers.

In order to strengthen the ground water monitoring network for better insight into ground water development scenario, additional ground water observation wells are being established in Punjab state. As a result, there were 1052 Ground Water Observation Wells on 31.03.2018, which included 173 dug wells and 816 piezometers for monitoring phreatic aquifers and 63 deep piezometers for monitoring deeper aquifers in Punjab. About 80% of the Ground water observation wells fall in the command areas of various canal systems, the areas falling out of the major canal commands constitute the parts of Pathankot, Hoshiarpur, Nawanshahr, Ropar and SAS Nagar districts and depend solely on ground water for irrigation and domestic needs. This report presents the observations and findings for the period May 2017 to January 2018.

**Shri M. L Angurala, Scientist 'D' and Ms Amandeep Kaur, Scientist 'D'** have made concerted efforts to compile and analyse the data and prepare the report in the present form. The chapter on Hydrometeorology in the States of Punjab and Chandiagrh UT has been compiled and contributed by **Shri Aditya Sharma, STA (HM)** and the chapter on Chemical quality of ground water has been compiled and contributed by **Mrs. B. P. Singh, Scientist 'D'** and **Shri K. S. Rawat Scientist 'B'**

This report incorporates all the analytical data on ground water monitoring done in Haryana State and provides valuable information on prevailing ground water regime to the user agencies and other stakeholders as well.

**(Anoop Nagar)**  
**Regional Director**

**Ground Water Year Book  
Punjab State and Chandigarh (UT)  
2017-2018**

**CONTENTS**

<b>CHAPTER</b>	<b>PAGE No</b>
1.0 INTRODUCTION	1
1.1 Physiography	2
1.2 Drainage	4
1.3 Soils	6
2.0 GENERAL GEOLOGY	7
2.1 Geological Set Up	7
2.1.1 Aeolian sands	7
2.1.2 Alluvium	8
2.1.3 Upper Siwaliks	9
2.1.4 Middle Siwaliks	10
2.1.5 Lower Siwaliks	10
2.2 Basement configuration	10
2.3 Hydrometeorology	
2.3.1 Climate	
2.3.2 Rainfall Analysis of Punjab and Chandigarh	
2.3.3 District Wise and Month Wise Normal Rainfall Data (in mm)	
2.3.4 Deviation of 2017 Rainfall from 2016 Rainfall and Normal Rainfall	
3.0 GROUND WATER REGIME MONITORING	12
3.1 Behaviour of Water Level	15
3.1.1 May 2017	16
3.1.2 August 2017	17
3.1.3 November 2017	18
3.1.4 January 2018	19
3.2 Water table elevation	20
3.2.1 May 2017	20
3.3 Seasonal Water Level fluctuation	21
3.3.1 January 2017-May 2017	21
3.3.2 May 2017- August 2017	22
3.3.3 May 2017- November 2017	23
3.3.4 May 2017- January 2018	24
3.4 Annual water level fluctuation	24
3.4.1 May 2016-May 2017	25
3.4.2 August 2016- August 2017	26
3.4.3 November 2016- November 2017	27
3.4.4 January 2017- January 2018	28

3.5	decadal mean water level Fluctuations	29
3.5.1	May (2007- 2016) – May 2017	29
3.5.2	August (2007- 2016) – August 2017	30
3.5.3	November (2007- 2016) – November 2017	31
3.5.4	January (2008- 2017) – January 2018	32
4.0	GROUND WATER QUALITY IN PUNJAB AND CHANDIGARH	
4.1	Ground water sampling and analysis	33
4.2	Composition of ground water	33
4.3	Distribution of EC	36
4.4	Distribution of chloride	37
4.5	Distribution of nitrates	38
4.6	Distribution of Fluorides	39
4.7	Types of ground water	40
4.8	Suitability of ground water for drinking	40
4.9	Suitability of ground water for irrigation	42
4.10	Suitability of ground water for industries	43
4.11	Temporal variation	44
4.12	Conclusions on ground water quality	45
4.12.1	Composition and quality of ground water quality in Chandigarh	45

## Figures

1. Depth to water level map (May 2017)
2. Depth to water level map (August 2017)
3. Depth to water level map (November 2017)
4. Depth to water level map (January 2018)
5. Water Table Map (May 2017)
6. Seasonal Water Level Fluctuation Map: (Jan. 2017- May 2017)
7. Seasonal Water Level Fluctuation Map: ( May 2017 – August 2017)
8. Seasonal Water Level Fluctuation Map: ( May 2017 – November 2017)
9. Seasonal Water Level Fluctuation Map: ( May 2017 – January 2018)
10. Annual Water Level Fluctuation Map: (May 2016 – May 2017)
11. Annual Water Level Fluctuation Map: (August 2016 – August 2017)
12. Annual Water Level Fluctuation Map: (November 2016 – November 2017)
13. Annual Water Level Fluctuation Map: (January 2017 – January 2018)
14. Decadal Mean Water Level Fluctuation Map: Mean (2007- 2016)-May 2017)
15. Decadal Mean Water Level Fluctuation Map: Mean (2007- 2016)-August 2017)
16. Decadal Mean Water Level Fluctuation Map: Mean (2007- 2016)-November 2017)
17. Decadal Mean Water Level Fluctuation Map: Mean(2008- 2017) –January 2018)
18. Distribution Of Electrical Conductance In Shallow Ground Water (May 2017)
19. Distribution Of Chlorides In Shallow Ground Water (May 2017)
20. Distribution Of Nitrates In Shallow Ground Water (May 2017)
21. Distribution Of Fluorides In Shallow Ground Water (May 2017)

**Tables:**

1. District wise Ground water observation wells, Punjab State and Chandigarh (UT)
2. Area represented by single shallow Ground water observation wells.
3. Range of depth to Water level during May, 2017, August, 2017, November, 2017 and January, 2018.
4. Range of chemical constituents in Ground water of Punjab State.
5. Distribution of well waters of Punjab State in different classes of drinking water suitability.
6. Irrigation rating of well waters of Punjab.
7. Periodic variation in suitability classes of well waters of Punjab.

**Annexure**

- I. Depth to Water Level Data
- II. Seasonal Water Level Fluctuation
- III. Annual Water Level Fluctuation
- IV. Decadal Mean Water Level Fluctuation
- V. Results Of Chemical Analysis Of Water Samples ( May 2017)

**Plates**

1. Location of Ground Water Observation Wells locations in Punjab state
2. District wise No. of Ground Water Observation Wells
3. Ground water observation wells presentation in different districts
4. District wise distribution of potable waters in Punjab.

# **GROUND WATER YEAR BOOK**

## **PUNJAB STATE & CHANDIGARH (UT)**

### **ANNUAL ACTION PLAN: 2017-2018**

#### **1.0 INTRODUCTION**

The Punjab State is located between North latitudes  $29^{\circ} 32'$  and  $32^{\circ} 28'$  and East longitudes  $73^{\circ} 50'$  and  $77^{\circ} 00'$ . The total geographical area of the state is 50362 sq. km. It is surrounded by the states of Himachal Pradesh in the northeast, Jammu and Kashmir in the north and Haryana and Rajasthan in the south and southwest respectively. The State has a flat alluvial plain except a narrow belt along the southwestern parts where stable sand dunes are seen dotting the landscape. The area occupied by the mountains (Himalayan foothills) in northeast, is about 1243 sq km. Perennial Rivers Sutlej, Beas, Ravi and ephemeral river Ghaggar drain the state. It has a vast network of canal system. With the inception of canals, the fertile land of the State started converting into green fields and experienced spectacular achievement in agricultural production with emphasis on cultivation of paddy and high yielding varieties of crops, as a consequence demand for water increased manifold resulting in over exploitation of ground water resources.

The State has been divided into four main divisions viz. Jalandhar, Patiala, Ferozpur and Faridkot, which are further sub-divided into 22 districts, which are further divided into 77 sub-divisions /tehsils, 76 Sub- tehsils and 146 community development blocks.

#### **1.1 Physiography**

The State forms a part of vast Indo-Genetic alluvial plain. Physiographically, the State can be divided into seven distinct units, which run parallel to each other.

- I      Hilly area: Siwalik Hills on the north and northeastern part.
- ii     Eroded hills with flat land (Plateau): forms top of hills.
- iii    Intermountain valleys
- IV    Piedmont area: (Kandi zone) immediately southwest of hills.
- v.    Sirowal zone: lies further southwest of Kandi area which merges with the alluvium of Ravi, Beas, Sutlej and Ghaggar rivers.
- vi.   Alluvial plains:
  - a) Active/recent flood plains include meanders and present flood plains.
  - b) Abandoned flood plains include terraces of rivers, abandoned during Recent age.
  - c) Bar upland areas: Higher elevated land which remained beyond the reach of rivers but are composed of ancient river channels deposits (older alluvium) plains.
- vii. Sand Dunes: Covering southwest part.

i) **Hilly area :**

The outermost low lying Siwalik Hills of the Himalayas occupy the NE part. These are the deposits of the Indus River and comprised of alluvial, derived from the higher mountains, which were swept down by their numerous rivers systems and part of Siwalik rock formations have been involved in the latest Himalayan tectonic movements by which they have been folded, faulted and elevated into their outermost foothills. These occupy northern and northeastern part of Gurdaspur, Hoshiarpur, Nawanshahr and Ropar (Roop nagar) districts. These hills traverse NW – SE direction and forms the boundary with neighboring State of Himachal Pradesh. In Gurdaspur district, the hills extend from Ravi River on northwest to Beas River on the southeast. In Hoshiarpur and Nawanshahr districts, the hills cover northeast parts and extend from Beas to Satluj Rivers. These foot hills separate the main Himalayan ranges from the vast Indo-Genetic alluvial plains. The hilly region is intersected with numerous streams which remain dry during major part of the year except during rainy season when these carry flood water. The highest peak in the area is 900 m above M.S.L. The hills present uneven topography and at places are highly eroded. The gradient is varying in the hilly areas.

ii) **Eroded hills with flat land:**

These areas lie within Upper Siwalik formations and locally known as 'Beet' meaning waterless. The flat surface lands (plate or table lands) occur in Hoshiarpur district and these are fertile land composed of sandy clay and support irrigational activities.

iii) **Intermountain valleys:**

Intermountain Satluj valleys extend from Nagal to Roper along the Satluj River. It is a longitudinal valley and about 40 Km. in length having an average width of 5 Km. High land river terraces are seen on the north east and eastern part of the area which have been deeply eroded and furrowed to form "bad land" topography. The thickness of valley fill is very limited and here an average of 50 m below ground level. Another valley known as " Soon nadir valley " is an intermountain valley in the outer Himalayas extending from Daulatpur in Himachal Pradesh to Hazipur (Punjab). It runs in southeast-northwest direction and follows the general strike direction of the mountain ranges. It has a length of 20 Km and width ranges between 1.5 km to 3 km and in Punjab State.

This valley portion extend along the left bank of Soon nadir and along its right bank, Siwalik Hills are exposed.

iv) **Piedmont areas:**

The transitional area between the alluvial plains and mountainous range of the Himalayan foot hills forms the Piedmont area shown in Plate-1.2. These consist of alluvial fans which have been dissected by hill torrents and small perennial streams; much of the detritus material has been reworked separately by sheet flooding. The lower southeast slopes of the piedmont forms 'Sirowal zone'. In Punjab State, piedmont area is known as "Kandi", and occupies Southwest part of lower Siwalik Hills. The gradient is steeper near the hills and gentler towards plains. The width of 'Kandi belt' varies from 6-10 km. having rolling type of the topography. In Gurdaspur district, the spring line runs parallel to the southwestern boundary with 'Sirowal zone'. But in Hoshiarpur, and Ropar districts, the spring line (auto flow) do not exist hence boundary between Kandi and Sirowal could not be precisely demarcated.

v) **Sirowal Zone:**

It lies further southwest of Kandi belt. The topographic gradient is gentler as compared to Kandi and presents very low relief. In Gurdaspur district, the Sirowal zones occupy immediately SW of spring line and have an undulating topography.

vi) **Alluvial Plains:**

This forms a dominant physiographic unit and consists of alluvium of the Indus River with its present and ancestral tributaries. The alluvium was deposited by Ravi, Satluj, Beas and Ghaggar rivers. The plains have altitude of less than 300 m above M.S.L. The master slope is towards southwest and matches with the course of the rivers. The alluvial plains have been further divided into three sub-physiographic units based on the present relationship of the surface features to the rivers. These are as follows:

- Recent Flood Plains
- Abandoned Flood Plains
- Bar Upland Areas

**Recent Flood Plains:** These include the meandering zone and present flood plains of the rivers. The meanders, scars, sandbars, natural levees and back water swamps are the conspicuous features of the flood plains. Along the major rivers, there are low flood plains locally called 'Bet'. The recent flood plains are often separated from the upland plains by steep slopes. The water levels are shallow in 'Bet' area.

**Abandoned Flood Plains:** These are parallel to the rivers and are a few meters higher than the recent flood plains. They represent flood plains that have been abandoned in recent times by the major rivers.

**Bar Uplands:** These are large areas of relatively older alluvium and found in the Upper Bari Doab area and are elevated lands above the bordering flood plains. These remain beyond the reach of flood waters of the present river systems and are termed as "Bar Uplands". These are the most significant physiographic features of the alluvial plain. Typically, the bar uplands rise abruptly from the abandoned flood plains and are bordered by steep scarps. In Gurdaspur district, bar upland areas are characterized by undulating topography, dendritic drainage pattern and predominance of nodular "kankar".

vii) **Sand Dunes:**

These occupy southwestern part of the state which experiences semiarid type of climate and constitute about 28% of the area. These are spread over about 10-15 percent of the area and cover parts of Firozpur, Mansa, Bathinda, Muktsar, Kapurthala, Sangrur, Faridkot and Patiala districts. The area is bounded by  $29^{\circ}33'$  and  $30^{\circ}36'$  north latitudes and  $74^{\circ}18'$  &  $76^{\circ}12'$  east longitudes. These dunes are mostly isolated type and vary in size and height. The sand dunes form a thin layer over the alluvium.

**1.2 Drainage:**

The Ravi, Beas, Satluj and Ghaggar rivers along with West and East Beins and the non-perennial choes and Khads drain the Punjab State. The Ravi flows along the northwestern boundary and forms the international boundary with the Pakistan. The Satluj forms the international boundary with Pakistan in the south-western part of the State. Ghaggar river flows along the southeast boundary of the State and forms the boundary with Haryana State except at a few places where villages of Punjab lies on the left bank of Ghaggar river and Haryana villages occupy right bank of the river. All rivers flow in the southwest direction except the Satluj River which roughly flows from east to west up to Harike and from Harike it assumes southwesterly trend upto Fazilka. The Satluj and Beas rivers have been dammed by construction of Bhakra dam and Pong dam respectively. After the Construction of Ropar headworks barrage, the Satluj River has water only during the rainy season on downstream of Ropar. At Harike Patten, it carries the flow regenerated by ground water effluent seepages. Soon nadir originates near Daulatpur (H.P) and all the choes from the Western slopes of Chinta Purni range (H.P.) flow into it. The Soan nadir joins the Satluj near village Bhalan. All the rivers rise

from Himalayas and after traversing long courses, they debouch into the plains. Apart from the perennial rivers, there are other important seasonal streams, choes and drains. The sub-mountainous zone is traversed by a number of choes. Some of them contribute to the rivers while others terminate without merging into any river. These 'choes' remain dry for most part of the year. Their discharge is irregular and runoff during the monsoon period.

In Upper Bari Doab tract, Chakki Khad a perennial tributary of the Beas drains mainly the 'Kandi' belt. The Naumuni and Kiran are two tributaries of the Ravi and drain north western parts of this tract. The Patti nala drains the southwestern part of the area and joins the Satluj River. The Kiran nadir originates in north of village Isarampur in the close vicinity of Keshopur Chhamb. It is fed by ground water seepage and the excess water of Upper Bari Doab canal is also diverted into it. In addition to these tributaries, there are several khads traversing 'Kandi' belt which remain dry except during rainy season. Some of the major Khads like 'Pungotri Khad' traverse even beyond the spring line. Such Khads gain water through ground water effluent seepage. The Bist Doab tract is traversed by about 85 hill torrents known as choes, which debouch into plains. There are two main drainage patterns in this tract and both are perennial.

- I) Eastern or White Bein
- ii) The Western or Black Bein.

The eastern or White Bein originates near Garhshankar village of Hoshiarpur district and joins Satluj River near Lohian after traversing the Bist Doab tract. The Nasrala, Mehlan wali, Rajni Devi, Mehandpur, Jaijon choes join the east Bein at different places. The Western or Black Bein rises at Chhamb near Dasuya in Hoshiarpur district and joins the Beas river near Durgapur which is located upstream of its confluence with Satluj at Harike. Janauri, Mehngerwala and Kingranwala join the West Bein. In Ropar district Budki Nadi, Haripur nala, Sugh Rao, Siswan Nadi, Jainti Devi Ki Rao and Patiali Ki Rao forms the major drainage system. These all meets Satluj River except Patiali Ki Rao and Jainti Devi Ki Rao which gives water to Ghaggar River. The third zone forming the southeastern part of the State is drained by Ghaggar River which is perennial. Tangri nadir, Budha nala and Lissara nala are the main seasonal streams in the area. In south western part, some of the important drains are the Phidda drain, Chand Bhanja drain and Jallalabad drain etc.

### **1.3 Soils**

The soils of Punjab have largely developed on alluvium- the material laid by the rivers, under the dominant influence of climate followed by topography and time. The details of the soils found in the state are as follows.

#### **Reddish Chestnut Soils:**

These soils occur on stable terraces in the north and north eastern Parts of the state and are found in Pathankot Tehsil of Gurdaspur district, parts of Hoshiarpur, Dasuya and Garh Shankar Tehsil of Hoshiarpur district, Balachaur Tehsil of Nawanshahr district and Ropar, Anandpur Sahib and Kharar Tehsils of Ropar district. These soils are loamy to clay –loamy in nature and are decalcified. Erosion of soils due to water is a very serious problem. The soils are mildly acidic to neutral in reaction. These soils are found in areas having normal rainfall of 800 to 1000mm.

#### **Tropical Arid Brown Soils (Weakly Solonised):**

These soils are found in remaining areas of Gurdaspur, Hoshiarpur, Nawanshahr and Ropar districts and most parts of Jalandhar, Kapurthala, Patiala, and whole of Ludhiana, Fatehgarh Sahib Districts and in parts of Amritsar and Sangrur districts. These soils are found in areas having normal annual rainfall of 750 to 1000mm.

#### **Arid Brown Soils, (Solonised):**

These soils are found in lower parts of Amritsar, Kapurthala, Jalandhar, Patiala, Sangrur, Ferozpur districts and entire Moga district where the normal rainfall varies from 500 to 700mm. Salinity and alkalinity are the serious problem in these soils. These soils are calcareous in nature and in most cases Kankar layer occurs at 1.0 to 1.5m depth.

#### **Sierozem Soils:**

These soils are found in Bathinda, Faridkot, Ferozpur, Mansa and Muktsar districts, where normal rainfall varies 300 500mm. Salinity and alkalinity are the serious problems particularly in the canal irrigated areas. Wind erosion is also a common feature in this soil. These soils are calcareous in nature and usually have a massive Kankar layer at a depth of 0.75 to 1.25m.

#### **Desert Soils:**

These soils are found in southern parts of Ferozpur and Muktsar districts where the normal annual rain fall is less than 300mm. Wind erosion is a serious problem here.

## **2.0 GENERAL GEOLOGY**

The great Indo-Gangetic plain with an area of about 8, 50, 00 sq. km lies between the Peninsular India and the Himalayas. On the basis of seismic and borehole data, Rao (1973) divided the Indo-Gangetic Plain into five parts, which from west to east are (I) The Indus Basin in Pakistan, (ii) the Indo-Gangetic Basin in Punjab and Haryana, (iii) The Ganga Basin in Uttar Pradesh and Bihar, (iv) The Brahmaputra Basin in Assam, and (v) The Ganga- Brahmaputra Basin in West Bengal and Bangladesh. These basins have been delineated on the basis of subsurface ridges or high. In the Indo-Gangetic Basin the Quaternary alluvium has been deposited at places on semi-consolidated Tertiary rocks (Siwalik Group) or on a basement of metamorphic and igneous rocks of Precambrian age. The alluvial sediments were laid down by the rivers since Pleistocene in the “fore deep” or a down warp formed in front of the rising Himalayan ranges and thus represents the younger geological formation.

### **2.1 Geological Set Up**

The rock formations ranging in age from middle Miocene to Recent are exposed. They are represented by Siwaliks and Alluvium deposits. The Siwaliks (Middle Miocene to Pleistocene) form hilly tract running in northern and northeastern part of the State. The alluvium deposits (Pleistocene to Recent) constitute the plains of Punjab. The Siwaliks are divided into three lower, middle and upper on the basis of lithology and vertebrate fossils. The Siwalik formations have been folded and faulted due to tectonic activities. The various stratigraphic units exposed in the state are given in table as under:

#### **2.1.1 Aeolian Sand (Wind Blown Sand)**

These are medium to fine grained and buff colored sand. They occur in the form of Dunes which are formed as the disintegrated product of the older rocks and found in the southwestern part of the State the dunes are elongated in shape and are blown sand forming fixed dunes and sandy flats. The dunes are oriented in N-S direction forms ridges which rise from a meter to about ten meters above the surrounding land surface. These sands are brought from the Rajasthan desert and ultimately deposited and shaped by the southwesterly winds which blow across the area from April to June. Generally, the sand dunes contain loose and unconsolidated sand and at places where vegetation has come up these have been fixed. The sand grains are generally well rounded in shape and mainly consist of quartz and ferromagnesian minerals with flakes of mica.

### **2.1.2 Alluvium**

The greater part of Punjab is occupied by alluvial plains, which are very fertile. The Quaternary alluvial sediments were deposited on semi-consolidated Tertiary rocks and conceals underneath the fringes of Peninsular and extra- Peninsular rocks. Out of the total 50362 Km<sup>2</sup>. area of State, alluvial cover about 38500 Km<sup>2</sup> spreading over about 76% of area. This vast expanse of plains is constituted by fluvial sediments of Indus river system. Beneath thick alluvium cover, there are southwestern extensions of Siwalik, which are exposed only in northeastern hilly tract of the State. The Siwalik rocks are expected to extend Bathinda which in fact separates the northeastern Punjab plains from Southwestern Rajasthan plains. Based on O.N.G.C. data, the contact between the plains and the Siwalik Hills is believed to be normal in Gurdaspur district and is faulted in Hoshiarpur and Ropar district areas. The thickness of alluvium varies from place to places due to irregularities and undulations .The maximum thickness of 4500 m has been reported near Dasuya in Hoshiarpur district. The thickness of alluvium increases towards northeast. It is comparatively less in the southwestern parts where the rocks of Pre- Cambrian age occur as buried ridges. In the intermountain valleys in north east part, the valley fill is estimated to be around 200 m thick underlain by rocks of Siwalik system. The alluvium comprising sand, gravel and clay is deposited by the Indus river system. In accordance with their mode of deposition by large constantly shifting river, the alluvial deposits are heterogeneous in nature and individual strata have limited horizontal and vertical continuity. The alluvial complex of Pleistocene and Recent age represents the latest phase of sedimentation. It consists principally of fine to medium sand, silt and clay. Beds of gravel and coarse sand are uncommon. It is also associated with fine grained strata, concretionary zones or nodules of kankar. The sand gravel or sand bodies embodied in the clay- silt mixture in the alluvial deposits are usually either small or big lentoid bodies with longitudinal part either normal or nearly normal to the Himalayan and Siwalik strike i.e. NW-SE. Sheet like bodies of sand, sand and gravel had been deposited in the central part of the State and are regionally extensive. In southwestern and southern parts of the State, ground water is brackish to saline. The rivers have deposited their coarser material in higher reaches, so the flood plain deposits developed in southwestern parts were richer in finer sediments. The alluvium is normally divided in two groups viz:

- I) Newer Alluvium, ii) Older Alluvium. It is not possible to clearly indicate any distinct /demarcation line of separation between the two units

### **I) Newer Alluvium (Khaddar)**

It occurs in the active flood plains of present day river courses and is generally confined to the neighborhood of river channels. Along the major rivers in plain areas, there exist low flood plain areas which are locally called khaddar or 'bet'. These flood plains are often separated from upland plains by a steep slope of the order of 1m to 2m per km. The Newer alluvium is light colored and poor in calcareous matter. It consists of coarse gravel near the foot hills and ventricular beds of sand and clay along the old river course and silt and clay in the flatter parts of the river plains. It is of Upper Pleistocene to Recent age. The aquifers comprised of medium to coarse sand and gravel. The clays serve as aquitards. The various aquifers are interconnected. However, the deeper horizons show confined to semi-confined conditions. There is wide variation of the hydraulic conductivity and Transmissivity of the aquifers due to rapid changes in their texture and thickness.

### **ii) Older Alluvium (Bhangar):**

It is confined to the abandoned flood plains and bar upland regions. It consists of sandy clay, clay-silt and fine to medium sand. It consists of pale reddish brown colored beds of clay. Kankar is found disseminated more or less throughout the beds of sand and clays. The kankar bands are generally more in the older alluvium. At places extensive and massive beds of kankar also exist. It is of middle to Upper Pleistocene in age. Older alluvium forms good ground water reservoir/aquifer.

### **2.1.3 Upper Siwaliks**

These formations are exposed throughout the hilly tract starting right from northwest of Pathankot through Hoshiarpur, Ropar to Chandigarh. They are composed of soft grey medium to coarse-grained sandstones, yellowish brown and brown clays. The sandstones are poorly lithified, soft and friable. They are brownish grey in colour and contain a large proportion of mica flakes and concretions of clay. They also consist of conglomerates, boulders and pebbles of quartzite and yellowish clays. The conglomerates consist mainly of cobbles and pebbles of quartzites. The pebbles of granite limestone, sandstone and lumps of claystones are also present. The conglomerate beds do not show clear stratification and occur as wedge shaped or lenticular bands. The formations of Upper Siwaliks are prone to easy weathering and there is considerable collection of sand as talus cones. These formations yield good to moderate supplies of water.

#### **2.1.4 Middle Siwaliks**

These are exposed in Dhar and Dunera area of Pathankot Tehsil of Pathankot district, north and northeast of Kiratpur in Ropar district. These are comprised of grey micaceous, medium grained soft sandstones interbedded with red, orange and yellowish (buff colored) clays. The sandstones occasionally contain pebbles of calcareous clay, shale and quartzite. The Middle Siwaliks are poor in yields of ground water due to poor permeability.

#### **2.1.5 Lower Siwaliks**

These are exposed in Dhar and Dunera area of Pathankot Tehsil of Pathankot district, constitute massive grey to light grey, micaceous sandstones interbedded with dark red to maroon clays grading upward in to micaceous sandstone with thick beds of red clays. The rocks of Lower Siwaliks have poor yields of ground water. However small springs of low discharge occur on the hill slopes they confine their position at the bedding contacts where the argillaceous bed is underlain by arenaceous bed.

### **2.2 Basement Configuration**

The Punjab Wedge i.e. the Achaean basement rocks either outcropping or occurring under moderate thickness of alluvium in Lahore- Sargodha area in Pakistan separates the Indus basin in the west, from the Punjab depression in the east. The Punjab depression follows a NW-SE ESE and WNW direction in conformity with the trends of the Siwalik Hills. The seismic surveys by the Oil and Natural Gas Commission, (Data et al., 1964) have indicated that the basement rocks as well as the sediments of the alluvium, dip gently towards the Himalayan foothills. The basement, however, becomes deeper as the foothills are approached with a corresponding increase in the thickness of the sediments. The maximum depth of this depression, about 4500 m was at Dasuya in Punjab State. Furthermore, the Punjab Basin which is fairly deep and wide in the northwestern portions becomes narrower to the southwest and the basement topography rises gradually in that direction. A basement high occurs in the subsurface corresponding to the present water divide between the rivers of the Punjab and the Yamuna belonging to the Ganga system. According to Rao (1973), it has been long assumed that two ridges extending from Delhi, one to the northwest towards Lahore, and the other to north towards Dehradun are concealed under the alluvium of the plains. These isolated outcrops of Achaean rocks seen at Karana hills, and Sargodha extending in WNW direction from Lahore has been taken to indicate that a subsurface ridge extends under alluvium from Delhi in India to Lahore in Pakistan About 5km north

of Jagadhari (near Ambala in Haryana State), the basement was encountered at a depth of 2800 m and it remains fairly flat at that level till the foothills (Nath, 1964, Rao, 1973). This basement high, often referred to as Delhi- Lahore- Sargodha Buried Ridge based on the inference that it represents the northwesterly extension of the Aravalli Mountain system, trending NW - SE . As shown by the contours, the northwestern flank of the ridge dips steeply and the depth to the bedrock increased sharply in that direction. The contours also indicate that the slopes to the southwest are less steep and the average depth of the bedrock over the crest of the ridge is about 400-500 m. The basement in Punjab basin is known to slope from south to north, and it is rather irregular and must locally contain hills and valleys.

The basement seems to have a shape of asymmetrical basin. Both longitudinal and transverse faults are present in the basement, which forms a monocline with gentle northeasterly dip and no major structural feature were noticed. Based on seismic surveys carried out by O.N.G.C. indicated that the thickness of unconsolidated sediments in the southern part of the State is 154 m and near Jalandhar it is about 3000m and increases towards north. Near Dasuya it is about 4500 m, being the maximum. The basement rocks have been encountered in number of boreholes drilled by CGWB. The basin is shallowest in the southern part, in Bathinda district and the bed rock was encountered at a depth of 333 m below ground level at Kumharwala. At 333 m depth hard clay top of Palana series was encountered and 416 m claystone of Nagaur series was encountered during drilling of borehole down to 422 depth m. At Kheliwala, the bed rock comprised of Delhi quartzite was encountered at a depth of 533 m below ground level and the borehole was drilled down to 545 m. The thickness of unconsolidated material is maximum in the northeastern part.

## **2.3 HYDOMETREOLOGY:**

### **2.3.1 CLIMATE:**

Climate of Punjab State is semi-humid to semi-arid in the North, arid in the South & southwest and semi-arid in the remaining part of the State. The state experiences four seasons in the year namely, cold season from November to March, hot season from April to June, southwest monsoon season from last week of June to mid of September and post monsoon season from September to beginning of November. During cold weather season, seasons of western disturbances affect the climate of the state and bring rainfall of light intensity.

Chandigarh has a humid subtropical climate characterised by a seasonal rhythm: very hot summers, mild winters, unreliable rainfall and great variation in temperature (-1 °C to 46 °C). The city also receives occasional winter rains from the Western Disturbance originating over the Mediterranean Sea. The western disturbances usually bring rain predominantly from mid-December to till end of April which can be heavier sometimes with strong winds and hails if the weather turns colder (during March–April months) which usually proves disastrous to the crops. Cold winds usually tend to come from the north near Shimla, and from the state of Jammu and Kashmir, both of which receive their share of snowfall during winter time.

### **2.3.2 RAINFALL ANALYSIS OF PUNJAB AND CHANDIGARH:**

There are two seasons of rainfall in the state. The south-west monsoon season, the principal source of ground water sets in last week of June and withdraws towards end of September and contributes about 80% of annual average rainfall. Another period of rainfall is winter rain from December to March is about 20% of total rainfall which is mostly absorbed into the soil.

The annual rainfall in 2017 over the state of Punjab is quite uneven which increases from 94 mm in Southwest at Firozpur to 1283 mm in North at Gurdaspur and 1055 mm in East at Ropar. The lowest rainfall of 79% less than their corresponding normals of IMD are recorded at Ferozpur and the highest rainfall of 30% more than the IMD annual normal is received at Kapurthala during 2017.

The annual rainfall of 2017 when analysed and compared to the rainfall of 2016, it is observed that out of all districts Fatehgarh Sahib District is showing maximum rise of rainfall which is 70% more than the rainfall of last year 2016. The rise in rainfall shows in Kapurthala is +7% in Amritsar +9%, in Mansa +9%, in SAS Nagar +14%, in Hoshiarpur +20%, in Jalandhar +24%, in Ropar +29%, in Gurdaspur +36%, in Ludhiana +54, in Chandigarh +54%, in Nawanshahr +58%, in Patiala +69%. Similarly it is observed that out of all districts Maximum fall in rainfall observed at Ferozpur district which is 33% less than the rainfall of last year 2016 and the fall in rainfall in remaining districts shows in Bathinda -1%, in Moga -10%, in Faridkot -20%, in Sangrur -20%, Muktsar -23%, in Barnala -25%, in Tarn Taran -26%.

The mean annual rainfall of Punjab state during 2017 is 542 mm which is +15% more than the mean annual rainfall (472 mm) during 2016.

In Chandigarh the annual rainfall for the year 2017 was 944.4 mm which is about 53% more than the previous year (2016) rainfall of 614.4mm. There is a declining of (-12%) in 2017 from the normal rainfall of Chandigarh (1070 mm). On analysis of Annual rainfall of last 05 years of Chandigarh, it is observed that in 2013 annual rainfall was 1006 mm, in 2014 it was 707mm, in 2015 it was 817 mm, in 2016 it was 614 mm and in 2017 it is 944mm indicates that annual annual rainfall is uneven and still less than normal rainfall i.e 1070 mm.

**2.3.3 DISTRICT-WISE AND MONTHWISE NORMAL RAINFALL (in mm):**

S. N	DISTRICT	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1	AMRITSAR	30.4	29	35.4	20.9	17.1	43.1	211.4	194.1	89	28.7	7.6	15	<b>721.7</b>
2	BATHINDA	11.5	17.4	13	8	9.7	33.5	109.6	115.4	62.5	19.2	2.7	5.4	<b>407.9</b>
3	FEROZEPUR	15.7	14.5	21.3	9.3	15.4	31.3	128.4	124.7	67.9	12.3	5.1	9.7	<b>455.6</b>
4	GURDASPUR	60	49.9	53.8	25.7	21.3	57.1	324.6	319.9	126.2	37.2	11	25.8	<b>1112.5</b>
5	HOSHIARPUR	38.4	39.8	39.8	16	20.4	74.9	275.7	241.5	125.8	31.5	9.3	20	<b>933.1</b>
6	JALANDHAR	28.6	28.6	30.7	13.7	20.2	48.5	203.9	188.1	111	21.9	7.3	16.6	<b>719.1</b>
7	KAPURTHALA	27.6	21	25.8	9.5	14.1	37.1	166.3	136.5	82.7	31.4	5.4	10.6	<b>568</b>
8	LUDHIANA	24.3	26.1	26.5	12.1	16.6	51.2	203	178.3	101.7	25.7	5.4	14.7	<b>685.6</b>
9	PATIALA	26.7	24.7	20.9	9.3	15.3	54.9	235.9	208.5	115.9	21.1	4.3	14.5	<b>752</b>
10	RUPNAGAR	41.6	38.9	51.2	14.7	25.6	65.4	291	252.9	119.2	19.7	13.2	23.1	<b>956.5</b>
11	SANGRUR	18.3	19.3	15.9	10.4	18.7	44.8	160.5	145.8	85.7	20.4	4.7	12.9	<b>557.4</b>
12	FARIDKOT	16.1	14.3	17	8.1	13.9	36	120	103.8	65.3	9.8	3.8	7.5	<b>415.6</b>
13	MOGA	21.3	13.4	15	9.7	15.7	33.7	123	133.5	63.8	20.9	3.1	7.5	<b>460.6</b>
14	NAWANSHAHR	38.8	39.9	38.6	15.9	19.2	85.3	309.6	254.9	138.8	29.6	10.1	24.9	<b>1005.6</b>
15	FATEHGARH SAHIB	24.9	21.8	22.6	10	13.7	45.6	220.6	174.6	106.3	18.9	7.1	17	<b>683.1</b>
16	MUKTSAR	16.7	12.7	18.2	7	10.9	31.2	113	107.5	60.1	11.2	3.5	7.5	<b>399.5</b>
17	MANSA	12.3	18.4	11.3	7.2	8.9	30.3	110.9	122.8	70.8	18.2	2.4	6.3	<b>419.8</b>
18	BARNALA	14.7	16.9	10	11.5	9.6	30.3	129.4	117.5	78.4	18.3	3.9	8.9	<b>449.4</b>

19	SAS NAGAR(MGA)	33.4	24.7	29.5	13.8	24.6	68.8	241.8	216.6	117.3	20.2	7.3	20.7	<b>818.7</b>
20	TARN TARAN	18	18.3	21.5	10.4	12.4	23.5	133.6	111.4	68.3	17.8	4.5	9.5	<b>449.2</b>
21	CHANDIGARH	44.3	38.9	33.2	14.8	30.1	120	282.4	287.5	154.3	31.8	9.9	23.4	<b>1070.6</b>

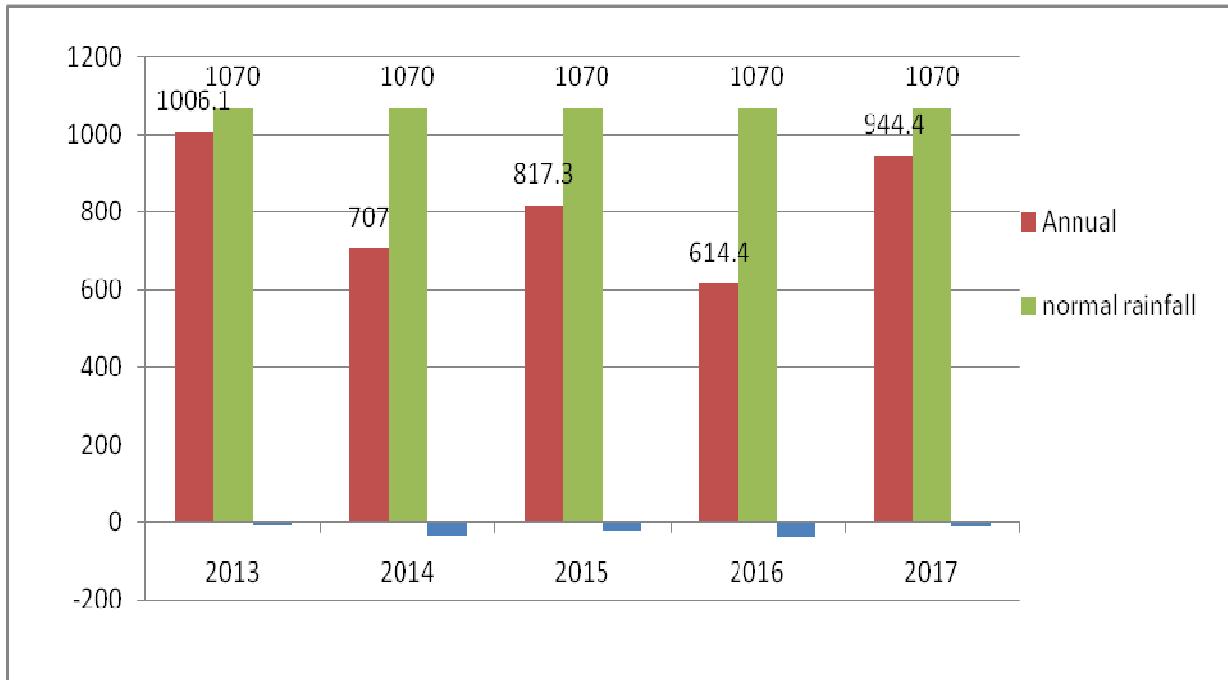
**2.3.4 DEVIATION OF 2017 RAINFALL FROM 2016 RAINFALL AND NORMAL RAINFALL:**

Deviation of 2017 rainfall from 2016 rainfall and Normal rainfall - Punjab						
S.N	District	Rainfall (mm)-2017	Rainfall (mm)-2016	Deviation From 2016 (%)	Normal Rainfall in mm	Deviation From Normal (%)
1	Amritsar	585	539	9	722	-19
2	Barnala	334	443	-25	450	-26
3	Bathinda	357	361	-1	408	-13
4	Faridkot	342	427	-20	416	-18
5	Fatehgarh Sahib	534	313	70	683	-22
6	Ferozpur	94	142	-33	456	-79
7	Gurdaspur	1283	946	36	1112	15
8	Hoshiarpur	528	439	20	933	-43
9	Jalandhar	466	375	24	719	-35
10	Kapurthala	738	692	7	568	30
11	Ludhiana	577	374	54	686	-16
12	Mansa	265	243	9	420	-37
13	Moga	534	591	-10	461	16
14	Muktsar	330	431	-23	400	-18
15	Nawanshahr	1024	650	58	1006	2
16	Patiala	546	322	69	752	-27
17	Ropar	1055	819	29	957	10
18	Sangrur	300	377	-20	557	-46
19	SAS Nagar	670	586	14	819	-18
20	Tarn Taran	276	371	-26	449	-39
21	Chandigarh	944.4	614.4	54	1070	-12

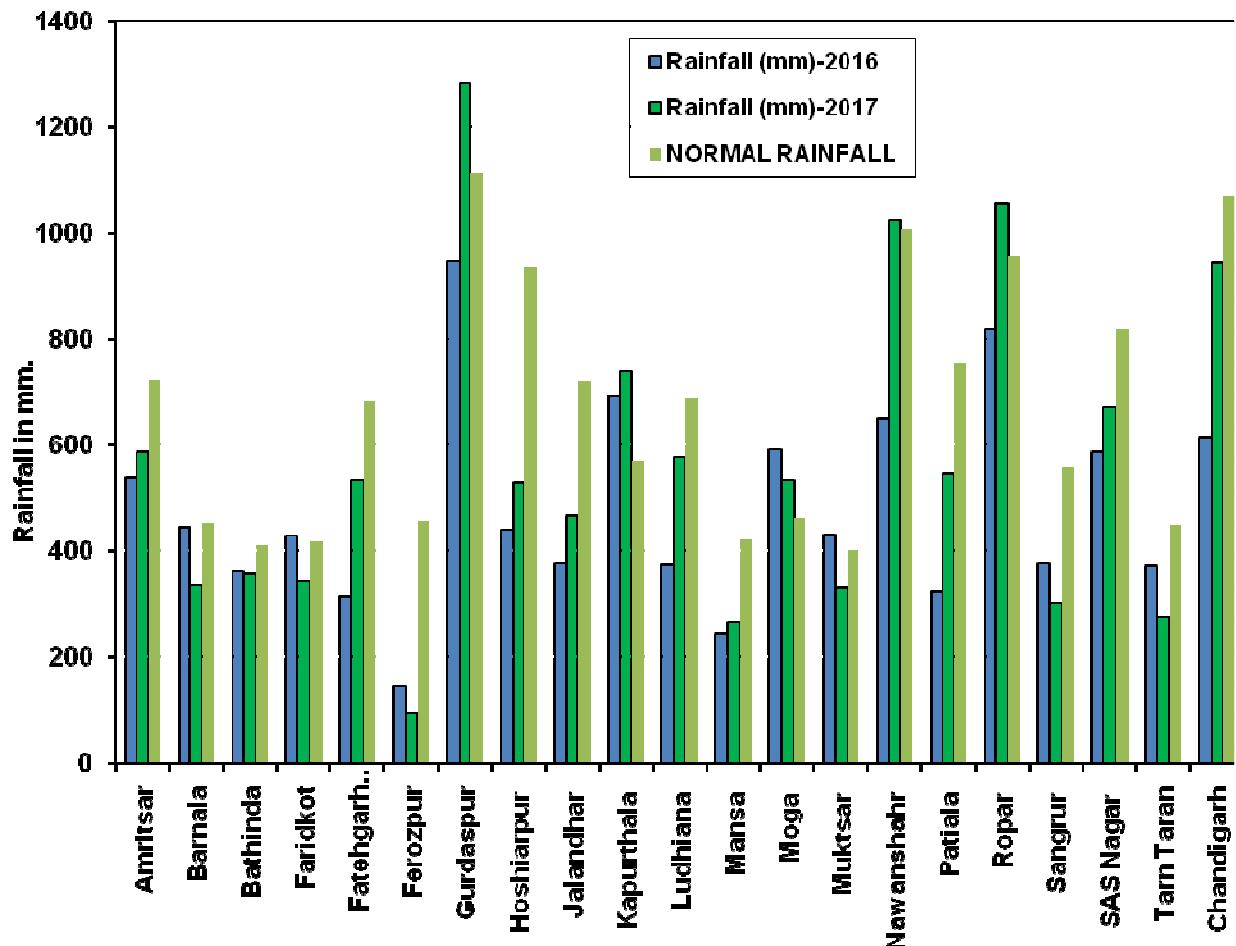
**LAST FIVE YEARS ANNUAL MONTHLY RAINFALL OF CHANDIGARH UT (in mm)**

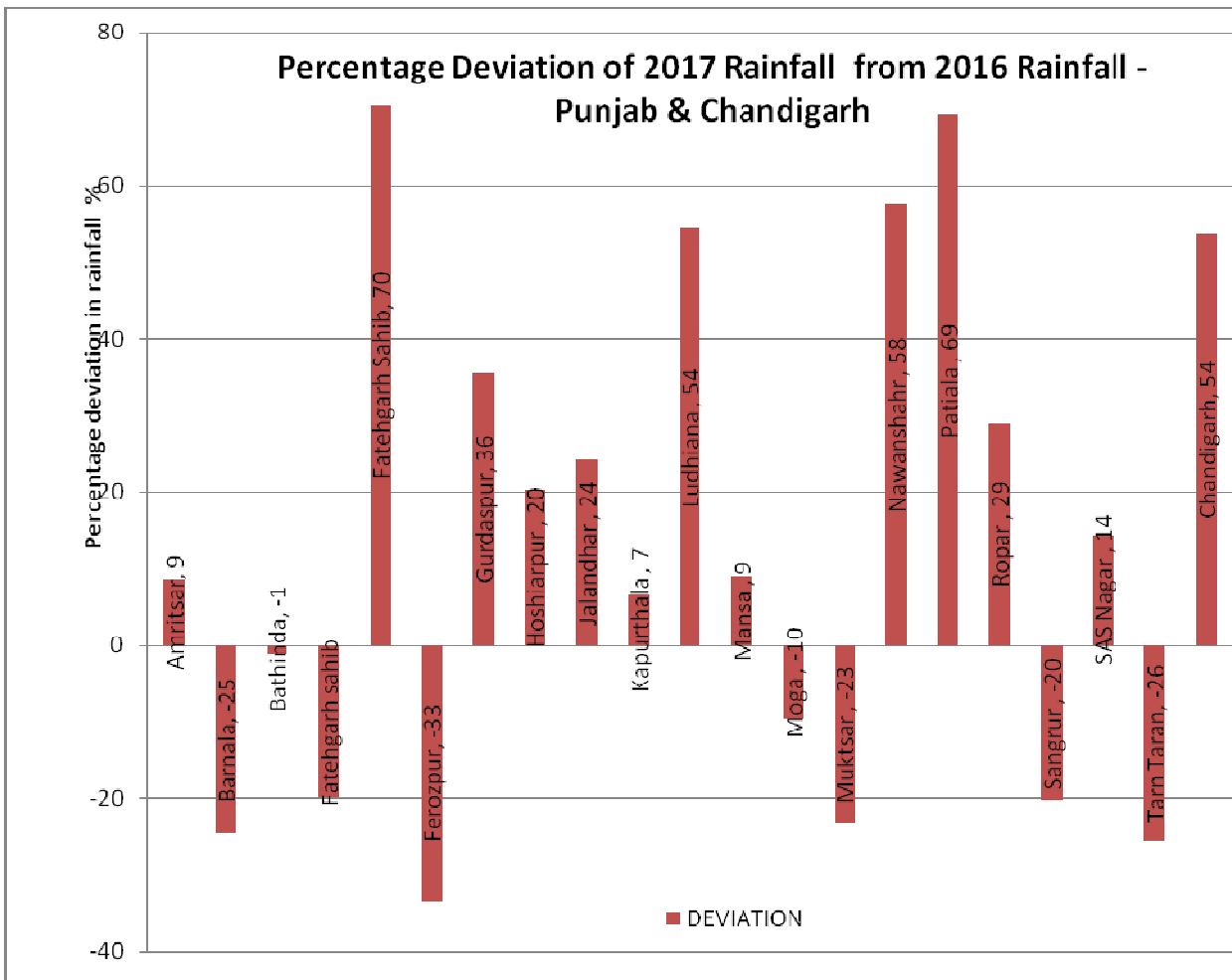
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Annual	Normal Rainfall	Deviation From Normal
2013	41.1	85.8	23.3	0.9	14.8	251.5	182.7	276.1	82.5	27.2	9.5	10.7	1006.1	1070	-5.9
2014	59.6	41.7	71.7	19.9	57.1	43.7	159.8	41.2	109.8	12.4	0.1	90	707		-33.9
2015	45.2	46.7	119.9	21.6	17.4	63.9	257.9	109.2	117.3	17.7	0.2	0.3	817.3		-23.6
2016	0	1.3	57.9	15.8	59.5	133.6	131.1	150.5	41.7	0.1	0.1	22.8	614.4		-42.5
2017	137	1.6	22	10.5	5.7	103.1	195.2	309.4	145.1	0	0	14.8	944.4		-11.7

### VARIATION IN RAINFALL IN LAST FIVE YEARS WITH NORMAL RAINFALL OF CHANDIGARH UT

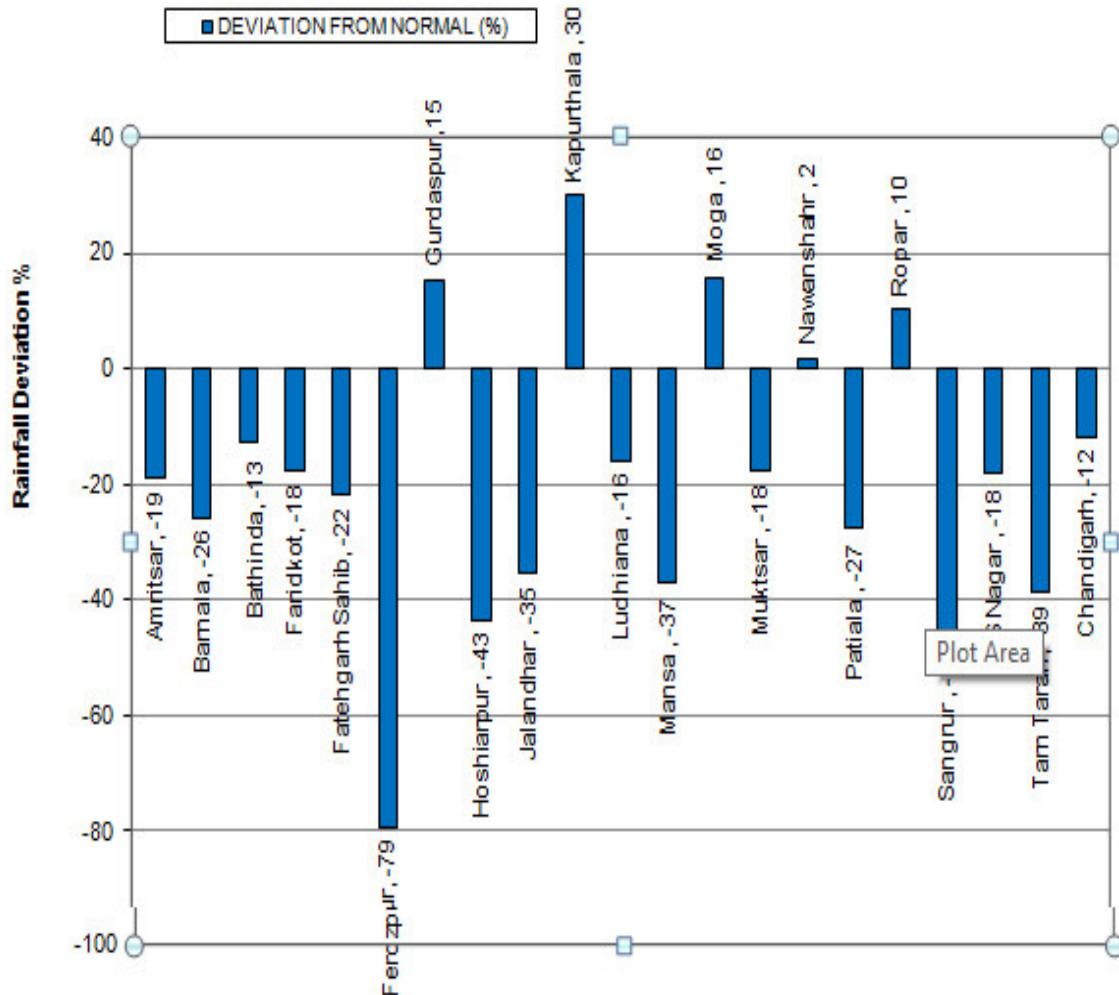


### Rainfall comparision of 2016 Vs 2017 Vs Normals - Punjab & Chandigarh UT





### DEVIATION OF 2017 RAINFALL FROM THE NORMAL RAINFALL - PUNJAB & CHANDIGARH



**REFERENCE:** <https://data.gov.in/node/87154/download>, <https://data.gov.in/catalog/district-rainfall-normal-mm-monthly-seasonal-and-annual-data-period-1951-2000>,  
[http://hydro.imd.gov.in/hydrometweb/\(S\(osdeiu45fdt1vesfkqaypze\)\)/DistrictRaifall.aspx](http://hydro.imd.gov.in/hydrometweb/(S(osdeiu45fdt1vesfkqaypze))/DistrictRaifall.aspx)

### **3.0 GROUND WATER REGIME MONITORING**

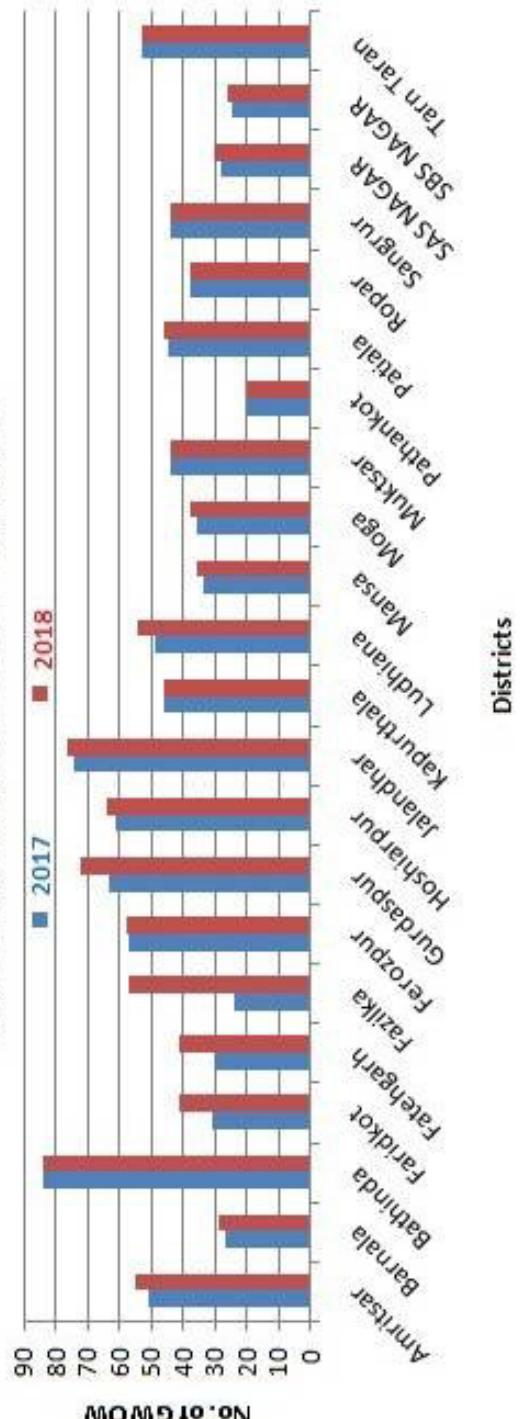
The Central Ground Water Board, North Western Region, has established Ground water observation wells in Punjab State and Union Territory of Chandigarh for monitoring water level. As on 31.3.2017 there were 964 **Ground Water Observation Wells** in Punjab which include 170 dug wells and 737 piezometers for monitoring shallow aquifers and 57 deep Piezometers for monitoring the behaviour of deeper aquifers in Punjab. There are 25 observation wells in Chandigarh (1 dug wells and 17 Piezometers for monitoring phreatic aquifer) and 7 deep piezometers to monitor behaviour of deeper aquifers. In order to strengthen the ground water monitoring in Punjab state, additional ground water observation wells were established added to the existing water level monitoring network. During aquifer mapping and re-grouping of various aquifers, some piezometers which were earlier considered to be in First Unconfined Aquifer have now been put in Aquifer Group-II/III (Confined)

As a result, there were 1052 Ground Water Observation Wells in Punjab on 31.03.2018, which included 173 dug wells and 816 piezometers for monitoring phreatic aquifers and 63 deep piezometers for monitoring deeper aquifers in Punjab. No additional Pz was added to monitoring network in Chandigarh till 31.3.2018. About 80% of the Ground water observation wells fall in the canal command areas of various canal systems, the areas falling out of the major command is part of Pathankot, Hoshiarpur, Nawanshahr, Ropar and SAS Nagar districts, parts of Gurdaspur, Jalandhar and Ludhiana districts. The district wise details of Ground water observation wells are given in **Table 1** and location of these Ground water observation wells is shown in Plate 1.

**Table- 1 District wise ground water observation wells, Punjab State and Chandigarh**

S. No.	Districts	No. of GWOW as on 31.3.2017			No. of GWOW established during			Total no. GWOW		
					2017-2018			as on 31.3.2018		
		DW	PZ	Total	DW	PZ	Total	DW	PZ	Total
1	Amritsar	6	45	51	0	4	4	6	49	55
2	Barnala	0	27	27	0	2	2	0	29	29
3	Bathinda	29	55	84	0	0	0	29	55	84
4	Faridkot	8	23	31	0	10	10	8	33	41
5	Fatehgarh	5	25	30	0	11	11	5	36	41
6	Fazilka	9	15	24	0	33	33	9	48	57
7	Ferozpur	8	49	57	0	1	1	8	50	58
8	Gurdaspur	17	46	63	0	9	9	17	55	72
9	Hoshiarpur	11	50	61	3	0	3	14	50	64
10	Jalandhar	3	71	74	0	2	2	3	73	76
11	Kapurthala	1	45	46	0	0	0	1	45	46
12	Ludhiana	9	40	49	0	5	5	9	45	54
13	Mansa	7	27	34	0	2	2	7	29	36
14	Moga	1	35	36	0	2	2	1	37	38
16	Muktsar	10	34	44	0	0	0	10	34	44
18	Pathankot	11	9	20	0	0	0	11	9	20
19	Patiala	4	41	45	0	1	1	4	42	46
20	Rupnagar	10	28	38	0	0	0	10	28	38
21	Sangrur	3	41	44	0	0	0	3	41	44
15	SAS Nagar	11	17	28	0	2	2	11	19	30
17	SBS Nagar	2	23	25	0	1	1	2	24	26
22	Tarntaran	5	48	53	0	0	0	5	48	53
Punjab State Total		170	794	964	3	85	88	173	879	1052
	Chandigarh	1	24	25	0	0	0	1	24	25
Total Punjab & Chandigarh		171	818	989	3	85	88	174	903	1077

### DISTRICTWISE NO. OF GWWOW

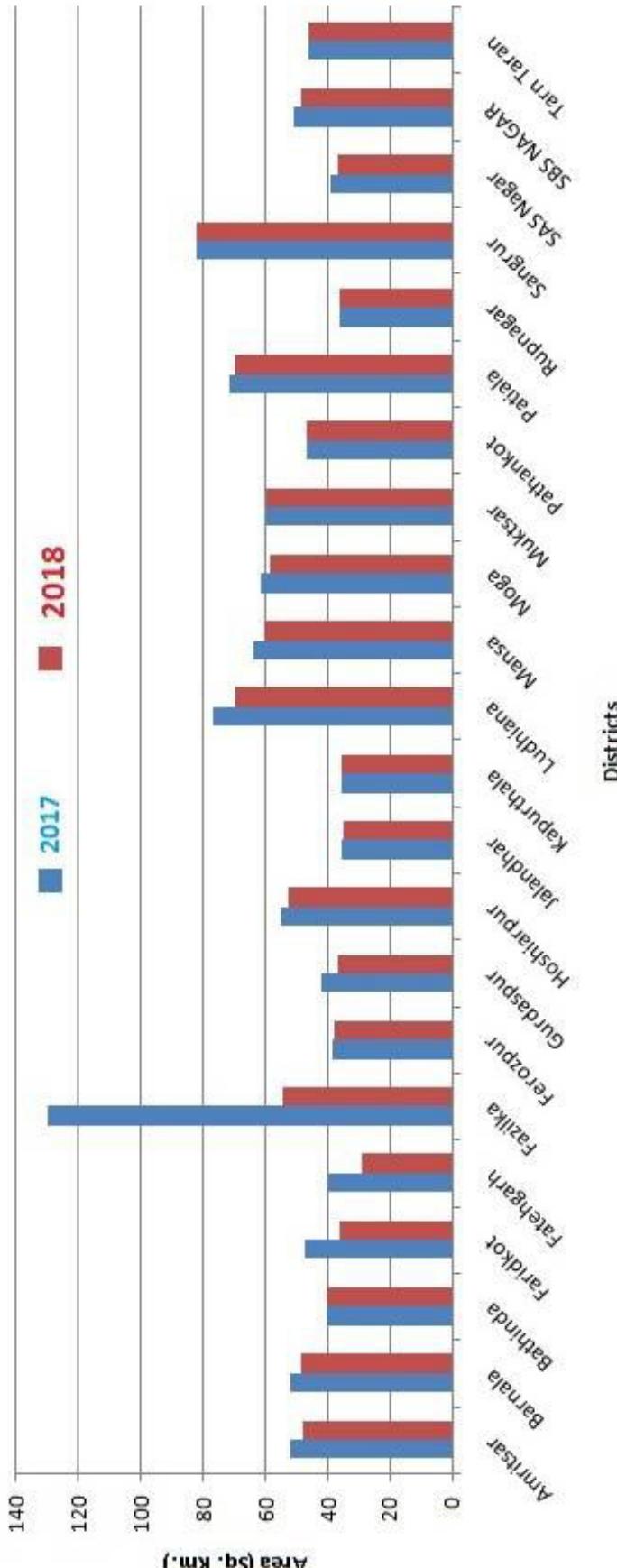


The area represented by single shallow Ground water observation wells being monitored in the state of Punjab and Chandigarh is given in **Table 2** and depicted in Plate 3.

**Table 2. Area represented by single shallow ground water observation well.**

S. No.	District	Area (Km <sup>2</sup> )	No. of Shallow GWOW's As on		Density represented by one GWOW's (area/no. of well)	
			31/3/2017	31/3/2018	31/3/2017	31/3/2018
1.	Amritsar	2647	51	55	52	48
2.	Barnala	1410	27	29	52	49
3.	Bathinda	3385	84	84	40	40
4.	Faridkot	1469	31	41	47	36
5.	Fatehgarh	1180	30	41	39	29
6.	Fazilka	3113	24	57	130	55
7.	Ferozpur	2190	57	58	38	38
8.	Gurdaspur	2635	63	72	42	37
9.	Hoshiarpur	3365	61	64	55	53
10.	Jalandhar	2632	74	76	36	35
11.	Kapurthala	1632	46	46	35	35
12.	Ludhiana	3767	49	54	77	70
13.	Mansa	2171	34	36	64	60
14.	Moga	2216	36	38	62	58
15.	Muktsar	2615	44	44	59	59
16.	Pathankot	929	20	20	46	46
17.	Patiala	3218	45	46	72	70
18.	Rupnagar	1369	38	38	36	36
19.	Sangrur	3610	44	44	82	82
20.	SAS Nagar	1093	28	30	39	36
21.	SBS NAGAR	1267	25	26	51	49
22.	Tarntaran	2449	53	53	46	46
Punjab State Total		50362	964	1052	52	48
Chandigarh		114	24	25	5	5

### Area represented by Single GWOW



### **3.1 BEHAVIOUR OF WATER LEVEL**

In order to assess the quantitative change in ground water resources, water levels were monitored as a routine of four times in a year. The behaviour of water level in May 2017, August 2017, November 2017 and January 2018 is discussed in following paragraphs. The maximum and minimum water levels recorded in different season is given below in Table 3.

**Table3.** The maximum and minimum water levels during all four seasons

Range	May 2017	August 2017	November 2017	January 2018
Minimum	1.31m bgl Kondal (Fazilka district)	0.39 m bgl Burj Bhalai Ke (Mansa district)	0.70m bgl Aryan wala (Fazilka district)	0.45m bgl Mothian wala (Fazilka district)
Maximum	59.18m bgl Sangha (Mansa District)	41.68m bgl Chatamali (Rupnagar District)	50.20m bgl Pedol (SAS Nagar District)	50.40m bgl Pedol (SAS Nagar District)

It is evident from the above table-3 that shallowest water level conditions prevail in southwest parts mainly in Mansa, Fazilka and south west parts of. While deepest water level conditions exist in the central and north eastern parts of the state covering Fatehgarh Sahib, Ludhiana, Rupnagar, Sangrur, Mansa and Kandi areas of SAS Nagar district. The water level data of all four seasons is discussed below and given in annexure-I:

#### **3.1.1 MAY 2017**

The behavioral pattern of water level in May 2017 along with depth to water level map (Fig. 1) is discussed below and data is presented in Annexure-I (Col. 4).

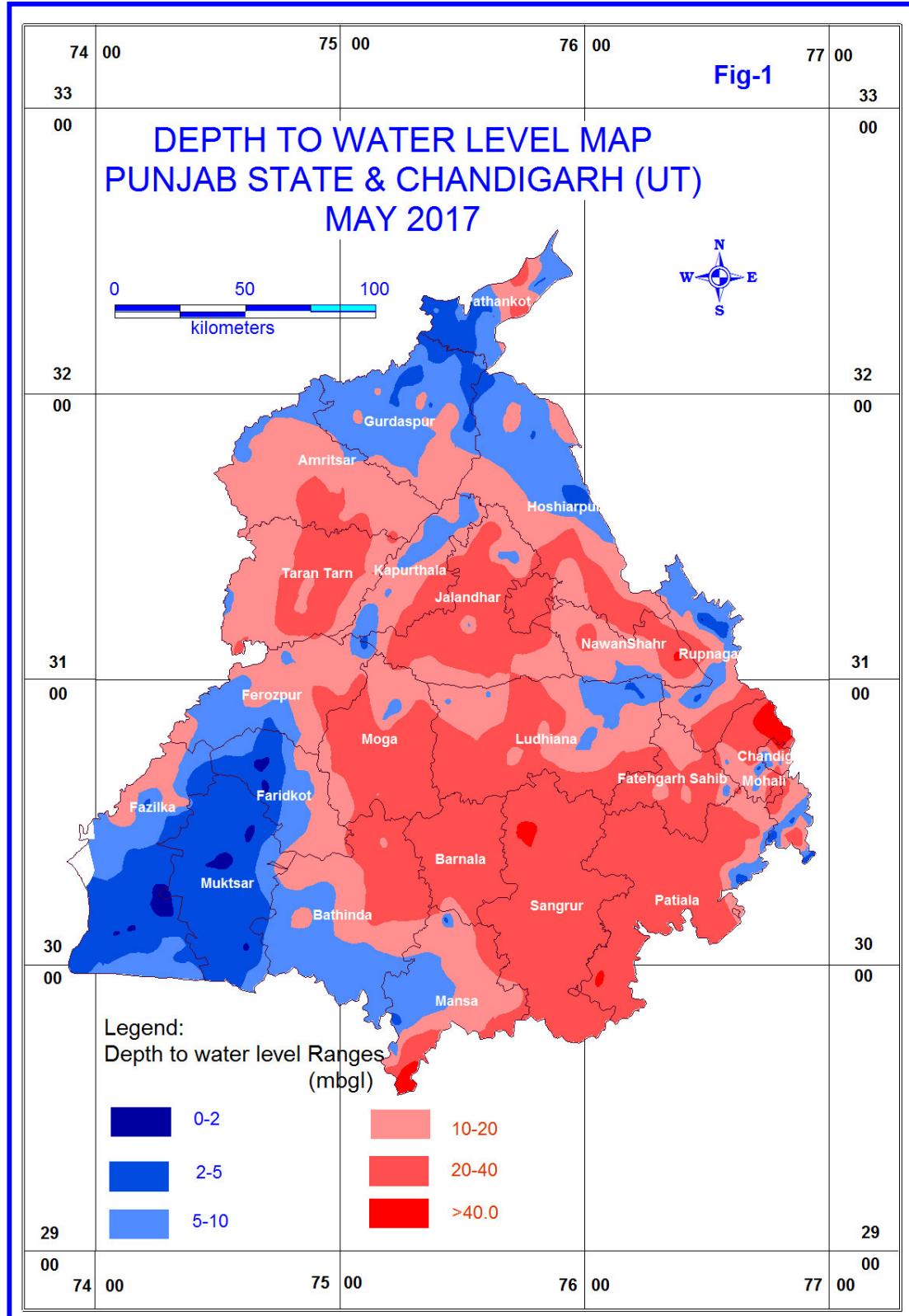
The depth to water level lies between 0.31m bgl at Kondal in Fazilkz district and 59.180m bgl at Sangha in Mansa district. Very shallow water levels of 0-2 m (causing water logging) occur in more than 2% of wells and cover nearly 1% area of the state in south western parts in Muktsar and Fazilka districts. Shallow water levels of 2-5 m have been observed in 12% of the wells and more than 11% of the total area that lies in south western

parts of Muktsar, Fazilka, Faridkot, and in northern parts of Gurdaspur & Pathankot districts, being the canal command areas, canal water is used for their agricultural needs. The water levels between 5-10 m are observed in the northern parts (Pathankot, Gurdaspur, and Hoshiarpur districts), south and south western parts (Fazilka, Ferozpur, Faridkot, Muktsar, Bathinda and Mansa districts). About 23% of wells and 20% of the area fall in this range.

Moderately Deep water levels (10-20 m) are predominant and observed in 28% wells covering about 31% area in central parts of the State. Deep water levels (20-40 m) are also observed covering parts of Amritsar, Tarntaran, Jalandhar, Kapurthala, SBS Nagar, Moga, Ludhiana, Fatehgarh, Patiala, Sangrur, Barnala and Baathinda districts and observed in 35% wells covering about 37% area of the State in central part. Very deep water levels (>40 m) are observed isolated patches in Sangrur and SBS Nagar districts and observed in 1% wells covering about 1% area of the State. Summarized details of depth to water level in different ranges are given in table below.

Depth to water level range	Wells monitored		Area covered	
	No.	%age	Sq. Km.	%age
0-2	14	2	243	<1
2-5	88	12	5319	11
5-10	171	23	9998	20
10-20	207	28	15569	31
20-40	260	35	19039	37
>40	8	1	308	<1
Total	748	100	50476	100

**Fig-1**



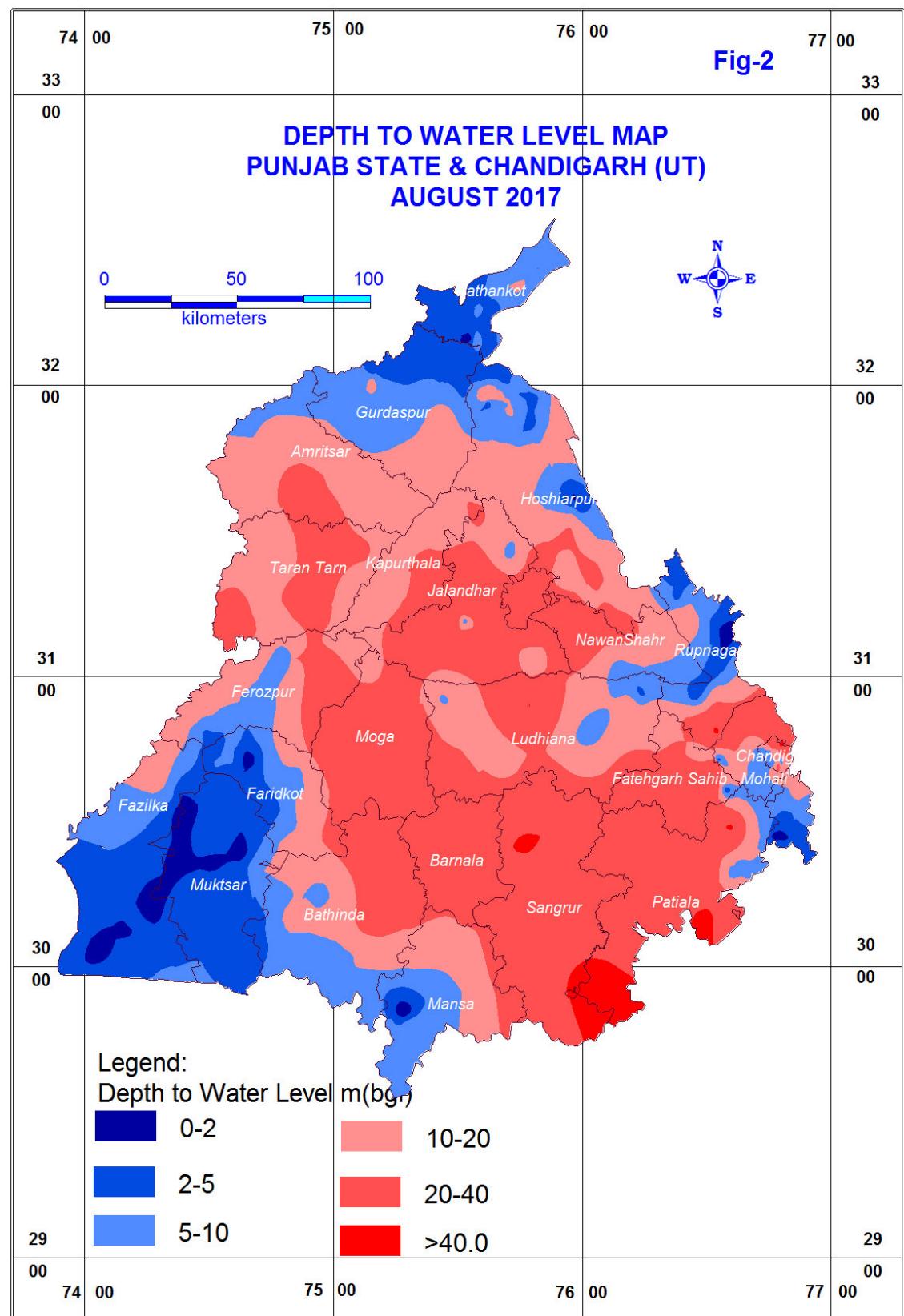
### 3.1.2 August 2017

The behavioral pattern of water level in August 2017 along with depth to water level map (Fig.2) is discussed below and data is presented in Annexure-1 (Col. 5).

The depth to water level lies between 0.39m bgl at Burj Bhalaik in Mansa Mansa district and 41.68m bgl at Chatamali in Rupnagar district. Very shallow water levels of 0-2 m (causing water logging) occur in more than 5% of wells and cover nearly 2% area of the state covering parts of Muktsar and Fazilka districts. Shallow water levels of 2-5 m have been observed in 18% of the wells and more than 12% of the total area that lies in south and south western parts of the state in (Muktsar, Fazilka, Faridkot) and in northern parts (Hoshiarpur, Gurdaspur & Pathankot) districts and few isolated patches in north eastern parts. The water levels between 5-10 m are observed in about 22% of wells and 16% of the area of the state and are observed in the northern parts (Gurdaspur, Amritsar, and Hoshiarpur districts), south and south western parts (Fazilka, Ferozpur, Faridkot, Muktsar, Bathinda and Mansa districts), eastern parts of Ropar and SAS Nagar districts.. Moderately Deep water levels (10-20 m) are predominant and observed in 24% wells covering about 29% area of the State in parts Amritsar, Tarntaran, Kapurthala, Jalandhar, Hoshiarpur, Nawanshahr, Ludhiana, Fatehgarh Sahib, Rupnagar, Chandigarh, Patiala, Ferozpur, Faridkot, Bathinda and Mansa districts. Deep water levels (20-40 m) are also observed covering parts of Amritsar, Tarntaran, Jalandhar, Moga, Ludhiana, Fatehgarh Sahib, Patiala, Sangrur and Nawanshahr districts and observed in 27% wells covering about 39% area of the State in central part. Very deep water levels (>40 m) are also observed in small patch in Sangrur and Patiala districts in 3% wells covering about 2% area of the State. Summarized details of depth to water level in different ranges are given in table below.

Depth to water level range	Wells monitored		Area covered	
	No.	%age	Sq. Km.	%age
0-2	14	5	867	2
2-5	48	18	6268	12
5-10	58	22	8238	16
10-20	62	24	14723	29
20-40	71	27	19617	39
>40	7	3	763	2
Total	260	100	50476	100

**Fig-2**



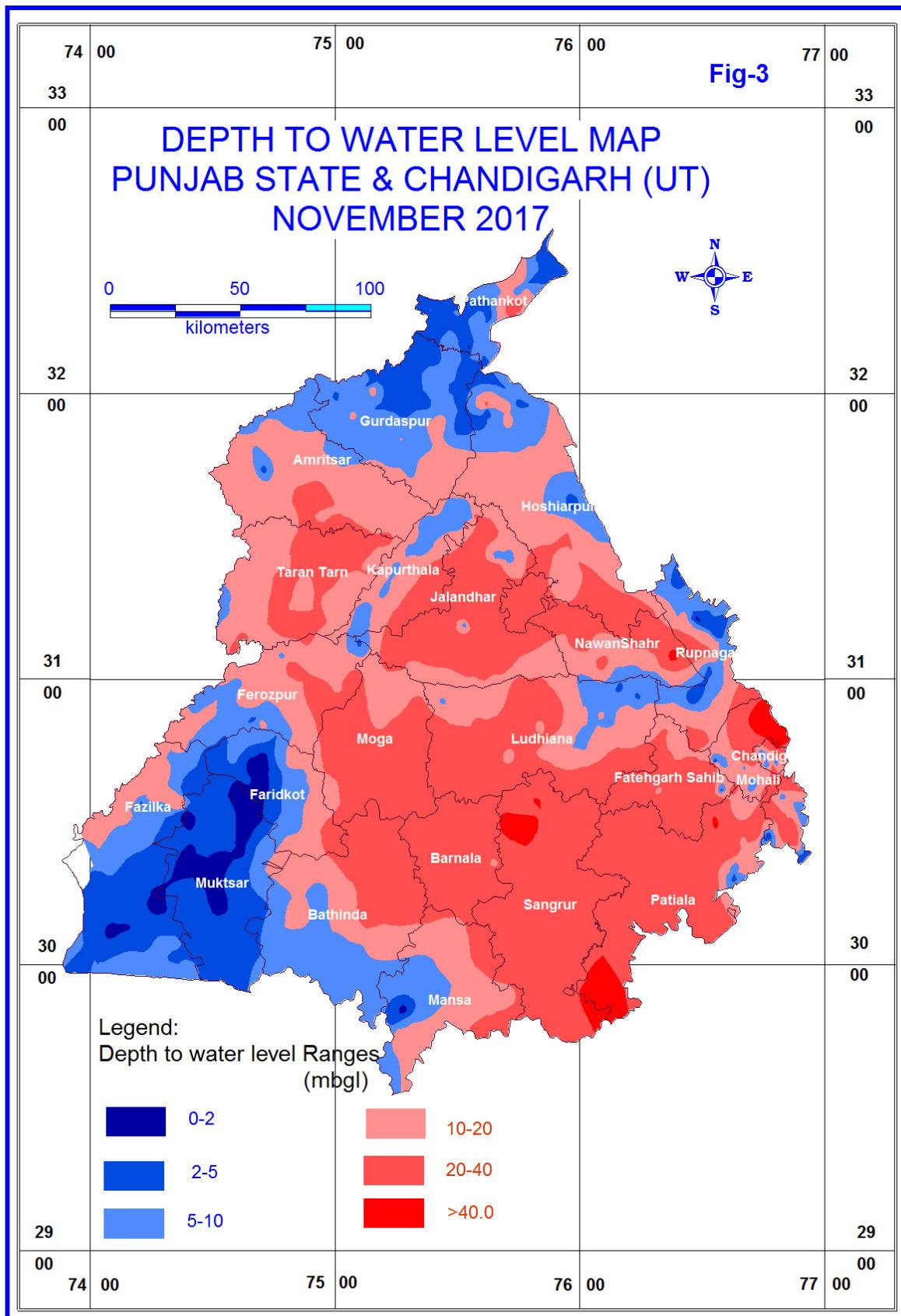
### 3.1.3 NOVEMBER 2017

The behavioral pattern of water level in November 2017 along with depth to water level map (Fig.3) is discussed below and data is presented in Annexure-I (Col. 6).

The depth to water level lies between 0.70m bgl at Aryanwala in Fazilka district and 50.20m bgl at Pedol in SAS Nagar district. Very shallow water levels of 0-2 m (causing water logging) occur in more than 3% of wells and cover nearly 2% area of the state in south western parts in Faridkot, Muktsar and Fazilka districts. Shallow water levels of 2-5 m have been observed in 13% of the wells and 10% of the total area in south western parts of state covering Muktsar, Fazilka, Faridkot, and Ferozpur districts, in north, parts of Gurdaspur, Pathankot & Hoshiarpur districts and few isolated patches in north eastern parts. The water levels in range of 5-10m are observed in northern Punjab covering Pathankot, Gurdaspur, Amritsar, Kapurthala and Hoshiarpur districts, Fazilka, Ferozpur, Faridkot, Muktsar, Bathinda and Mansa districts in south and south western Punjab and Ropar and SAS Nagar districts in the east covering 19% of wells and 18% of the area of the state. Moderately Deep water levels (10-20 m) are predominant and observed in 27% wells covering about 30% area of the State in central parts covering Gurdaspur, Amritsar, Tarntaran, Kapurthala, Jalandhar, Hoshiarpur, Nawanshahr, Ropar, Fatehgarh Sahib, Ludhiana, Moga, Ferozpur, Bathinda, Barnala and Mansa Districts. Deep water levels (20-40 m) are also observed covering parts of Amritsar, Tarntaran, Jalandhar, Nawanshahr, Hoshiarpur, Moga, Barnala, Bathinda, Mansa, Sangrur, Ludhiana, Patiala, and Fatehgarh sahib, districts and observed in 37% wells covering about 39% area of the State. Very deep water levels (>40 m) are also observed in small patches in Sangrur, Patiala and SAS Nagar districts in 1% wells covering about 1% area of the State. Summarized details of depth to water level in different ranges are given in table below.

Depth to water level range	Wells monitored		Area covered	
	No.	%age	Sq. Km.	%age
0-2	21	3	876	2
2-5	99	13	5243	10
5-10	142	19	8929	18
10-20	198	27	15109	30
20-40	275	37	19635	39
>40	11	1	684	1

**Fig-3**



### **3.1.4 January 2018**

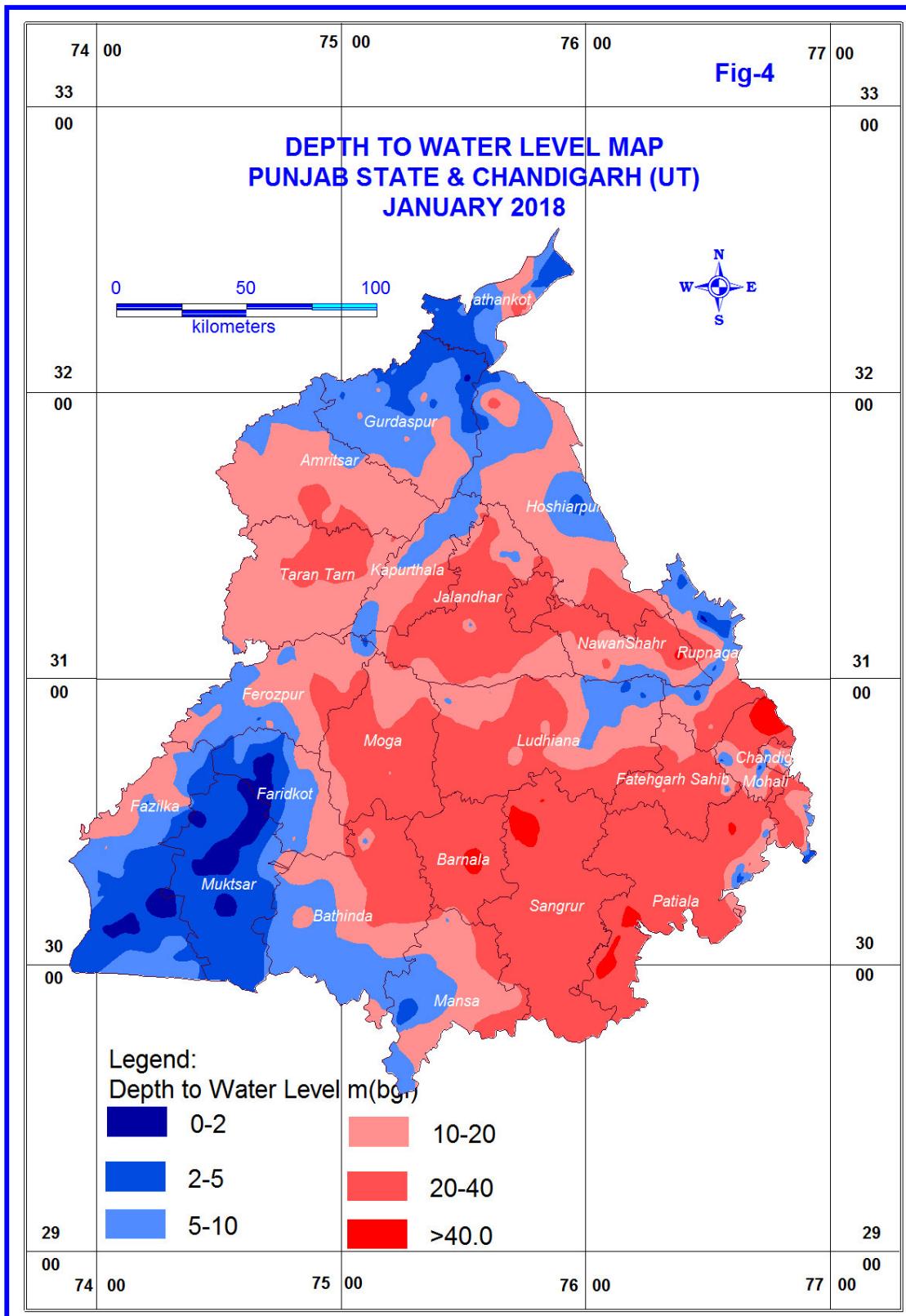
The behavioral pattern of water level in January 2018 along with depth to water level map (Fig.4) is discussed below and data is presented in Annexure-I (Col. 7).

The depth to water level lies between 0.45m bgl at Mothianwala in Fazilka district and 50.40m bgl at Pedol in SAS Nagar district.

Very shallow water levels of 0-2 m (causing water logging) occur in more than 3% of wells and cover nearly 4% area of the state in south western parts in Faridkot, Muktsar and Fazilka districts. Shallow water levels of 2-5 m have been observed in 13% of the wells and 10% of the total area that lies in south western parts of Muktsar, Fazilka, Faridkot, and in northern parts of Gurdaspur & Pathankot districts and few isolated patches in north eastern parts. These are mainly canal command areas and use canal water for their agricultural needs. The water levels between 5-10 m are observed in the northern parts (Pathankot, Gurdaspur, Amritsar, and Hoshiarpur districts), south and south western parts (Fazilka, Ferozpur, Faridkot, Muktsar, Bathinda and Mansa districts), eastern parts of Ropar and SAS Nagar districts. About 20% of wells and 19% of the area fall in this range. Moderately Deep water levels (10-20 m) are predominant and observed in 25% wells covering about 30% area of the State in parts of Gurdaspur, Amritsar, Tarntaran, kapurthala, Jalandhar, Hoshiarpur, Nawanshahr, Ropar, Fatehgarh Sahib, Ludhiana, Moga, Ferozpur, Bathinda and Mansa Districts. Deep water levels (20-40 m) are also observed covering parts of Jalandhar, Nawanshahr, Fatehgarh, Moga, Barnala, Ludhiana, Patiala and Sangrur districts and observed in 37% wells covering about 38% area of the State in central part. Very deep water levels (>40 m) are also observed covering parts of Kandi belt in Hoshiarpur and SAS Nagar districts and observed in 2% wells covering about 1% area of the State.

Depth to water level range	Wells monitored		Area covered	
	No.	%age	Sq. Km.	%age
0-2	20	3	893	2
2-5	99	13	5227	10
5-10	152	20	9518	19
10-20	190	25	15118	30
20-40	274	37	29231	38
>40	13	2	489	1

**Fig-4**



### **3.2 GROUND WATER ELEVATION AND FLOW DIRECTIONS**

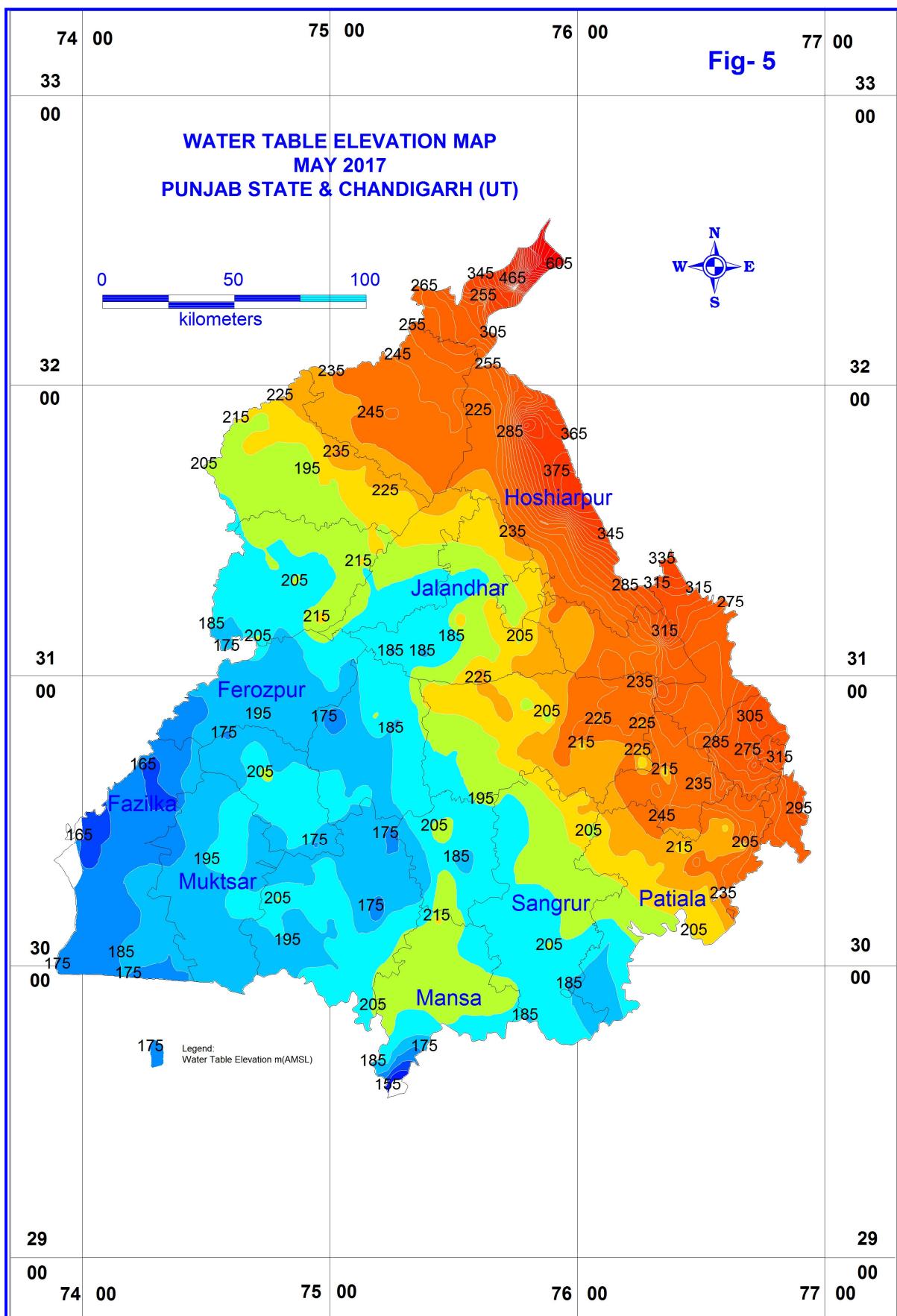
Ground water flows from areas of high hydraulic head (high water-level elevation) to areas of low head (low water level elevation). Because hydraulic heads vary laterally and vertically in a ground-water system, ground-water movements generally have a vertical as well as a horizontal component. Contour maps of heads in aquifers are constructed to determine the horizontal direction of flow. A contour map of the water table represents the elevation of the top of the saturated part of the uppermost unconfined aquifer.

The horizontal direction of ground-water flow is generally perpendicular to the contour lines and water flows down the slope of the contours in a manner analogous to the flow of water down the slope of the land surface. Water-table maps are prepared from water levels measured in ground water observation wells the elevation of the water-table surface.

#### **3.2.1 May 2017**

The water table elevation (May, 2017) contours have a maximum value of 636.78m amsl at Kiari rising in the northeastern parts in Dhar Kalan Block of Pathankot district along the Himalayas to 147.82m AMSL in southwestern part in the Punjab plains (at Singha in Sardulgarh Block, district Mansa). The map helps in determining the hydraulic gradient and direction of ground water flow. The general ground water flow direction follows the natural slope. There is not much change in the ground water flow direction which still remains northeast to southwest, but the ground water troughs have been created in Jalandhar and Bathinda districts. Gradient between contour level 195 m and 165 m in Muktsar/Fazilka districts has become gentle indicating slowing of ground water movement resulting in spreading of water logged areas to adjoining areas of other districts. The water table elevation map for May 2017 is shown in Map (Fig. 5). The grpund water table elevation data is given in Annexure-IA.

**Fig- 5**



#### **4.3 SEASONAL FLUCTUATIONS:**

On comparing Water level data of current measurement with previous measurement data is termed as seasonal water level fluctuations. The water level data of all four measurements are compared to previous measurement and seasonal water level fluctuations are determined.

##### **3.3.1 JANUARY 2017 - MAY 2017**

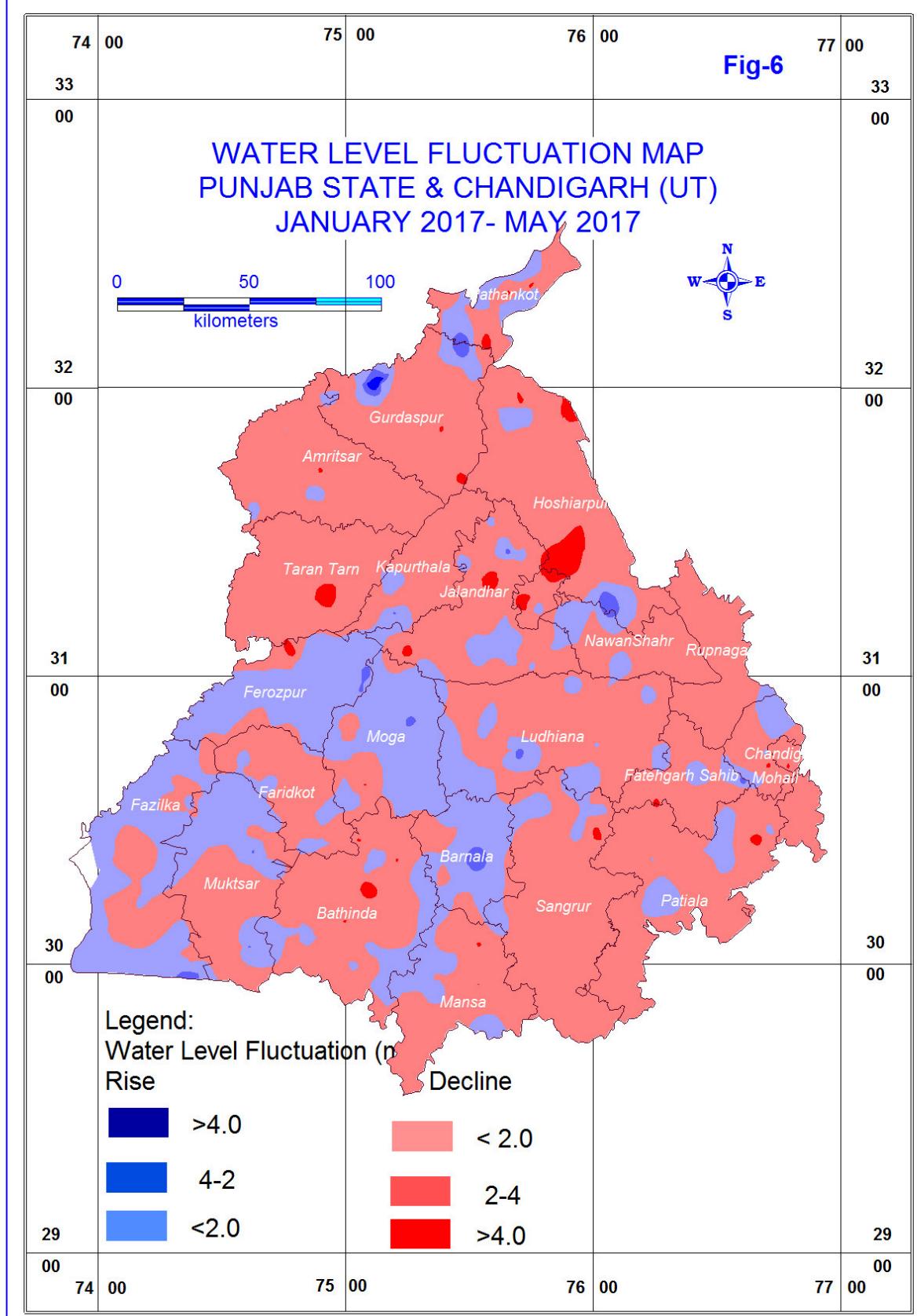
The behavioral pattern of this seasonal fluctuation is discussed along with fluctuation map (Fig. 6) below and the data are presented in Annexure-II (Col.4).

The seasonal fluctuation shows that there is a general decline of water levels in 84% of wells monitored and covering 61% area of the State. The decline has been observed in all districts except some isolated patches scattered over the state. Water level decline in the range of 0-2 m is observed in 79% of wells and 46% of area. Water level decline in the range of 2-4 m is observed in 14% of wells and 3% of area. Water level decline of >4m is observed in <1% of wells and less than <1% of area during the period.

The water level rise has been recorded in 16% of wells monitored and covering 39% area of the State covering parts of Fazilka, Muktsar, Ferozpur, Moga and Barnala districts with isolated patches in other districts. Water level rise in the range of 0-2 m is observed in 13% of wells and 35% of the area. Water level rise 2-4m is observed in 3% wells and less than 4% of area during the period. The water level has been reported in small patches in all districts in south western parts of the state. Water level rise of more than 4m is observed in <1% wells and less than 1% of area in small patches in all districts in south western parts of the state. Summarised details of seasonal fluctuation and change in ground water storage are given in table below;

Water Level Fluctuation Range		Wells Monitored		Area Covered		Change in GW Storage(MCM)	
		No.	%age	Sq. Km.	%age	GW Loss	GW Recharge
Decline	0-2	463	78	23235	46	-4215	
	2-4	33	6	7147	14	-309	
	>4.0	0	0	419	1	-45	
Rise	0-2	76	13	17431	35		926
	2-4	16	3	2187	4		155
	>4.0	1	0	57	0		5
Total		589	100	50476	100	-3483	

**Fig-6**



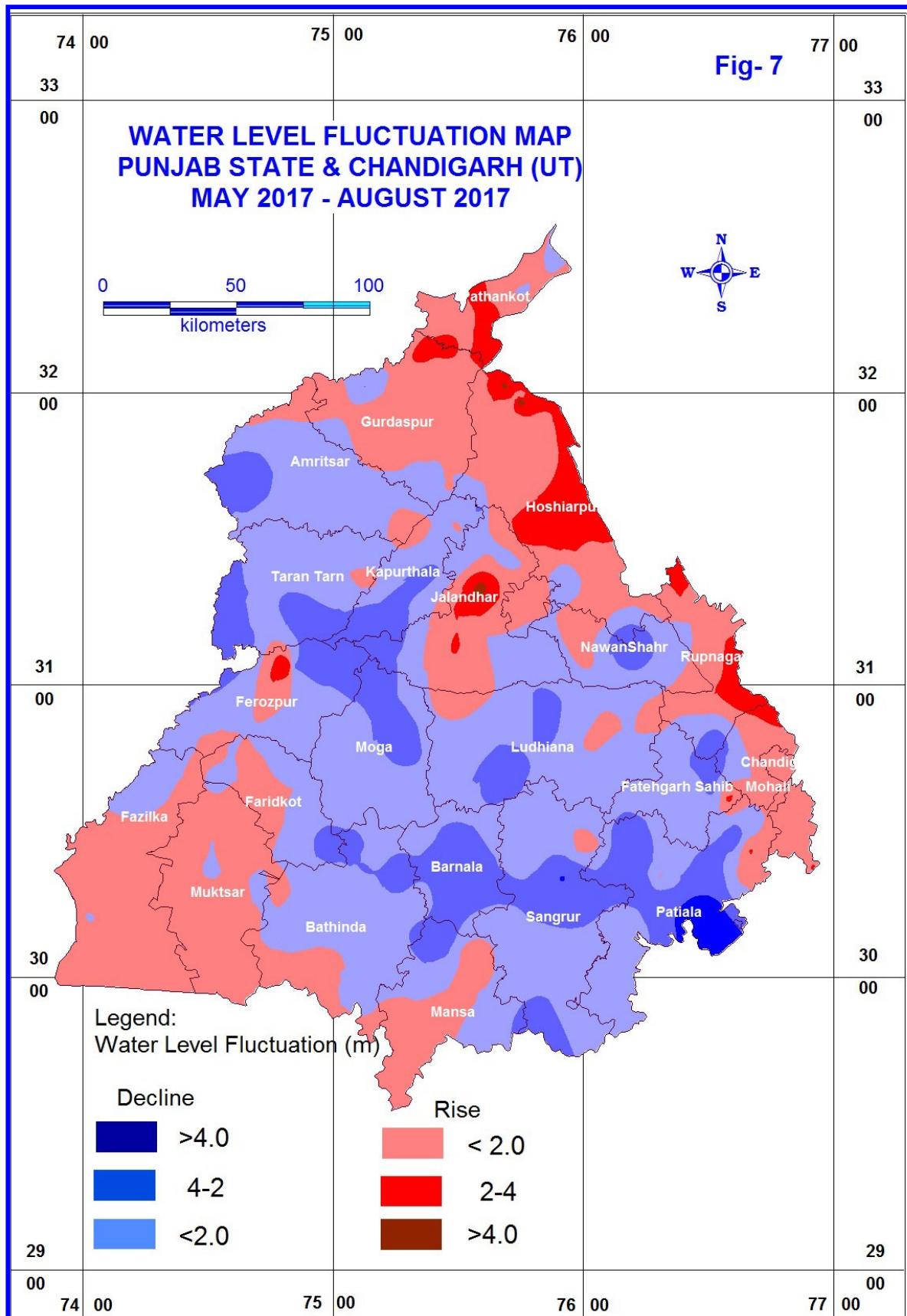
### 3.3.2 MAY 2017 - AUGUST 2017

Water level data of August 2017 is compared with water level data of May 2017 to determined seasonal water level fluctuations. The behavioral pattern of this seasonal fluctuation is discussed along with fluctuation map (Fig. 7) below and the data are presented in Annexure-II (Col.5). The seasonal fluctuation shows decline of water levels in 51% of wells monitored and covering 70% area of the State. The decline has been observed in all central parts of state covering Amritsar, Tarntaran, Kapurthala, Jalandhar, Nawanshahar, Ludhiana, Fatehgarh Sahib, Patiala, Sangrur, Barnala, Moga, Bathinda and Ferozpur districts. Water level decline in the range of 0-2 m is observed in 35% of wells and 60% of area. Water level decline of 2-4m is observed in 14% of wells and 9% of area. Water level decline more than 4m is observed in 2% wells and 1% of area during the period.

The water level rise has been recorded in 49% of wells monitored and covering 31% area in Fazilka, Muktsar, Mansa, Faridkot in southwest and Pathankot, Gurdaspur, Hoshiarpur and Rupnagar districts in Nort and northeast parts of Punjab. Water level rise in the range of 0-2 m is observed in 40% of wells and 29% of the area in all districts. Water level rise in the range of 2-4m is observed in 8% wells and >1% of area in parts of Kapurthala, Jalandhar, Nawanshahr, Ludhiana, Moga, Bathinda and Fatehgarh Sahib Districts during the period. Water level rise more than 4m is observed in 3% wells and <1% of area during the period in all districts in south western parts of the state. Summarised details of seasonal fluctuation and change in ground water storage are given in table below:

Water Level Fluctuation Range		Wells Monitored		Area Covered		Change in GW Storage	
		No.	%age	Sq. Km.	%age	GW Loss	GW Recharge
Decline	0-2	80	35	30108	60	-3613	
	2-4	31	14	4467	9	-1608	
	>4.0	4	2	418	1	-251	
Rise	0-2	92	40	14485	29		1738
	2-4	18	8	709	1		255
	>4.0	3	1	289	1		173
Total		228	100	50476	100	-3305	

**Fig- 7**



### 3.3.3 May 2017 - November 2017

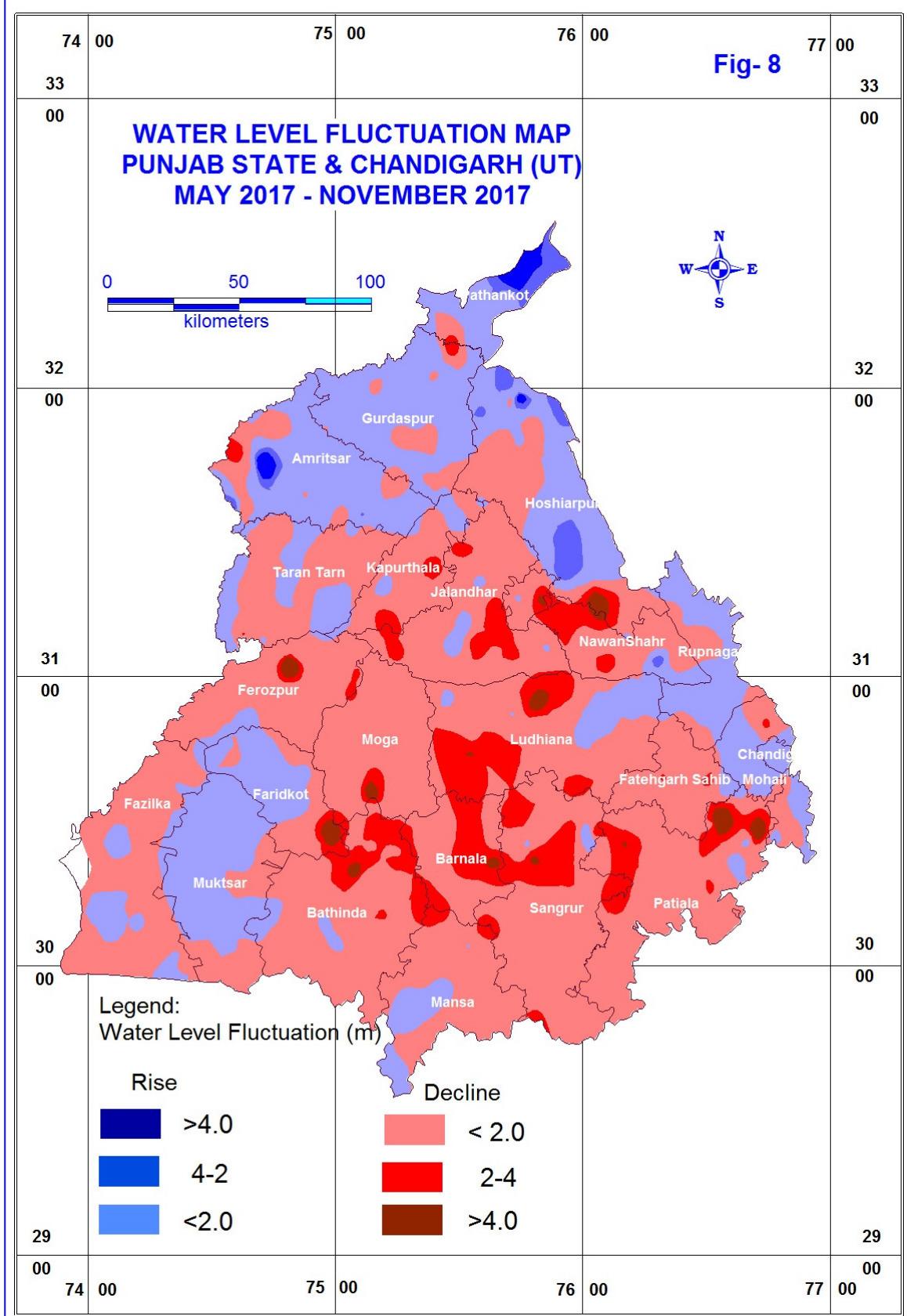
Water level data of November 2017 is compared with Water level data of May 2017 to determine the seasonal water level fluctuation. The behavioral pattern of this seasonal fluctuation is discussed along with fluctuation map (Fig. 8) below and the data are presented in Annexure-II (Col.6).

The seasonal fluctuation shows a general decline of water levels in 59% of wells monitored and covering 67% area of the State. The decline has been observed in all districts. Water level decline in the range of 0-2 m is observed in 54% of wells and 53% of area. Water level decline in the range of 2-4 m is observed in 9% of wells and 5% of area in parts of Jalandhar, Fatehgarh Sahib, Ludhiana, Sangrur, Moga, Barnala and Bathinda districts, whereas, water level decline of >4m is observed in 2% of wells and 1% of area during the period.

The water level rise has been recorded in 33% of wells monitored and covering 41% area of the State covering parts of Muktsar, Amritsar, Gurdaspur, Pathankot and Hoshiarpur districts. Water level rise in the range of 0-2 m is observed in 32% of wells and 38% of the area. Water level rise 2-4m is observed in 2% wells and 2% of area, whereas, water level decline of >4m is observed in more than 1% of wells and more than 1% of area during the period. Summarised details of seasonal fluctuation and change in ground water storage are given in table below;

Water Level Fluctuation Range		Wells Monitored		Area Covered		Change in GW Storage(MCM)	
		No.	%age	Sq. Km.	%age	GW Loss	GW Recharge
Decline	0-2	348	54	26567	53	-3188	
	2-4	57	9	2597	5	-935	
	>4.0	13	2	394	1	-236	
Rise	0-2	208	32	19108	38		2293
	2-4	15	2	1172	2		422
	>4.0	5	1	638	1		383
Total		646	100	50476	100		-1262

**Fig- 8**



### 3.3.4 May 2017 - January 2018

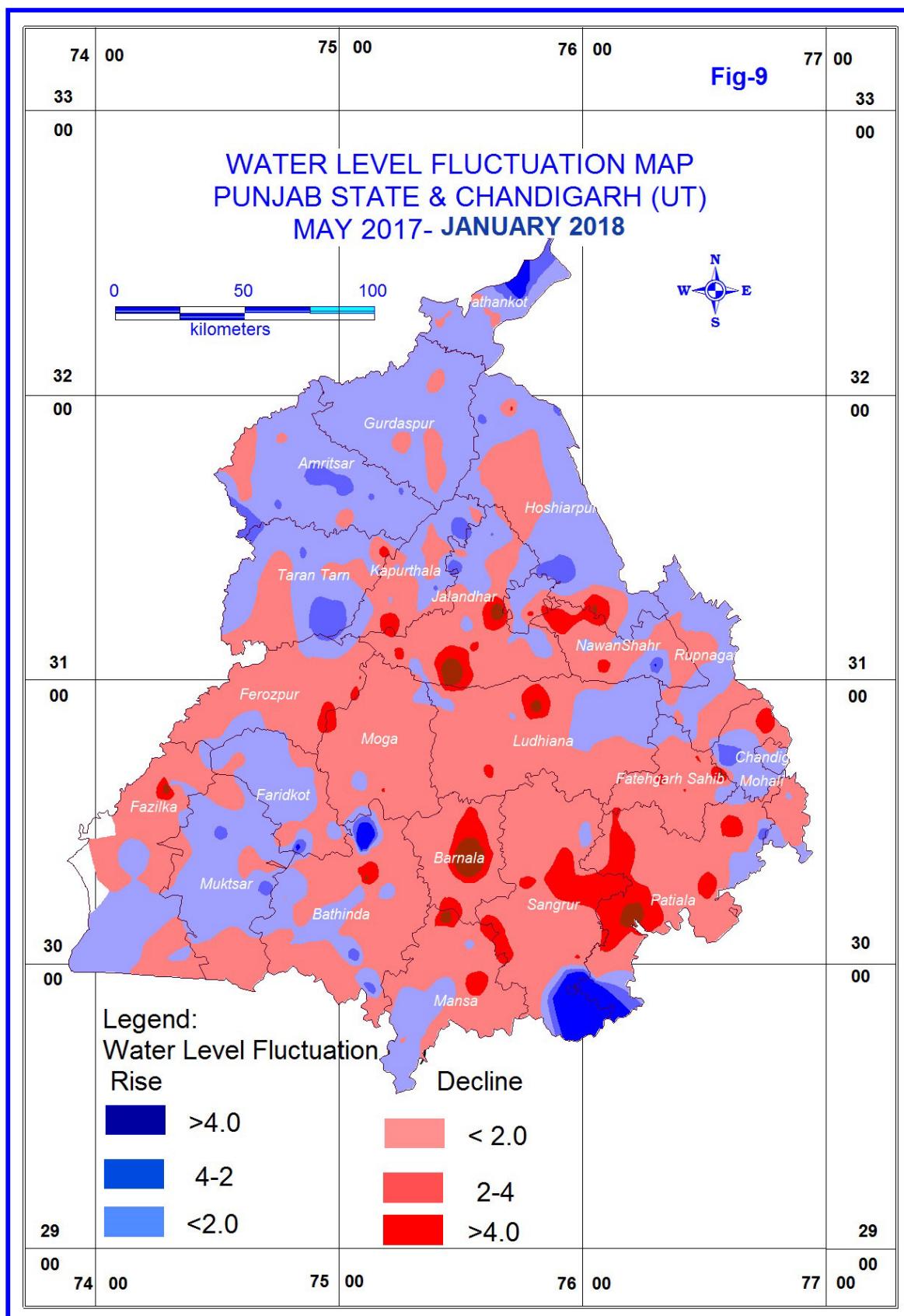
Water level data of January 2018 is compared with Water level data of May 2017 to determine the seasonal water level fluctuation. The behavioral pattern of this seasonal fluctuation is discussed along with fluctuation map (Fig. 9) below and the data are presented in Annexure-II (Col.7).

The seasonal fluctuation between May 2017 and January 2018 shows that there is a general decline of water levels in 58% of wells monitored and covering 73% area in all districts except the parts of Muktsar, Amritsar, Gurdaspur and Hoshiarpur districts. The decline has been observed in all districts. Water level decline in the range of 0-2 m is observed in 50% of wells and 70% of area. Water level decline in the range of 2-4 m is observed in 6% of wells and 1% of area whereas, water level decline of >4m is observed in 2% of wells and <1% of area during the period.

The water level rise has been recorded in 42% of wells monitored and covering 27% area in parts of Muktsar, Amritsar, Gurdaspur and Hoshiarpur districts and isolated patches in Mansa, Ludhiana, Fatehgarh Sahib, Kapurthala, Jalandhar and SAS Nagar districts . Water level rise in the range of 0-2 m is observed in 37% of wells and 26% of the area. Water level rise 2-4m is observed in 4% wells and 1% of area, whereas, water level decline of >4m is observed in 1% of wells and <1% of area during the period. Summarised details of seasonal fluctuation and change in ground water storage are given in table below;

Water Level Fluctuation Range		Wells Monitored		Area Covered		Change in GW Storage (MCM)	
		No.	%age	Km <sup>2</sup> .	%age	GW Loss	GW Recharge
Decline	0-2	324	50	36415	72	-4370	
	2-4	36	6	597	1	-215	
	>4.0	10	2	0	0	0	
Rise	0-2	240	37	13148	26		1578
	2-4	27	4	295	1		106
	>4.0	7	1	21	0		13
Total		644	100	50476	100	-2888	

**Fig-9**



### 3.4 ANNUAL WATER LEVEL FLUCTUATIONS

In order to know the impact of rainfall and ground water withdrawal during last one year, annual water level data for given period in current year is compared with water level data of corresponding period of last year and annual water level fluctuations are determined.

#### 3.4.1 MAY 2016 - MAY 2017

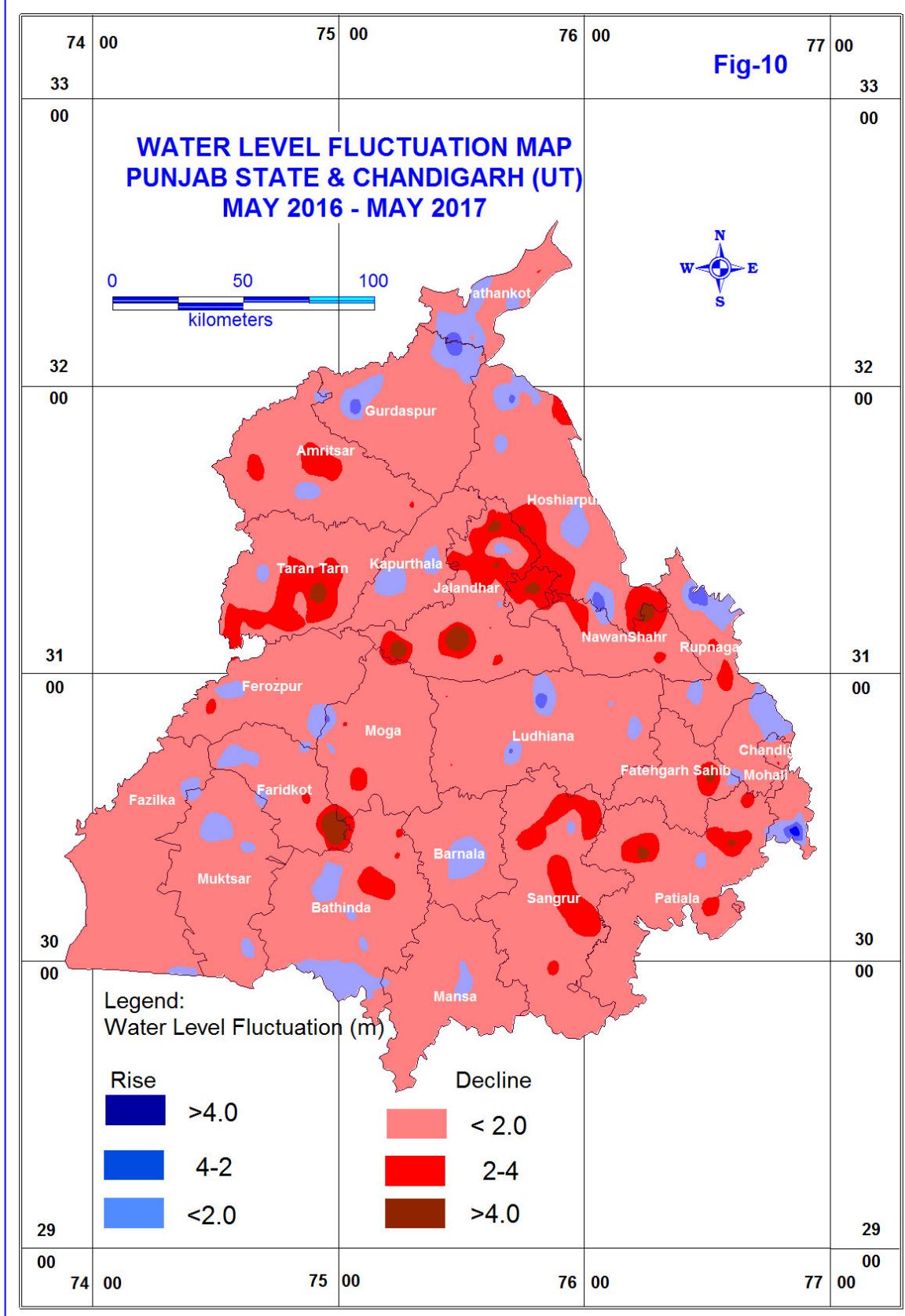
The behavioral pattern of annual fluctuation in Premonsoon season is discussed in the following paragraph along with fluctuation map (**Fig. 10**). Water level fluctuations data are given in the Annexure-III (Col-4).

The annual fluctuation depicts general decline of water levels in 89% of wells monitored and covering 93% area covering all districts in the State. Water level decline in the range of 0-2 m is observed in 78% of wells and 84% of the area. Water level decline in the range of 2-4 m is observed in 9% of wells and 8% of the area, whereas, the water level decline of >4m is observed in 2% of wells and 1% of the area during the period.

The water level rise has been recorded in 11% of wells monitored and covering 7% area in isolated patches in Pathankot, Gurdaspur, Amritsar, Hoshiarpur, Jalandhar, and SAS Nagar districts. Rise is also observed in Ferozpur, Fazilka, Muktsar and Bathinda districts. Water level rise in the range of decline 0-2 m is observed in 9% wells and 3% of area. Water level rise 2-4m is observed in >1% wells and <1% of area. The water level rise of >4m is observed in <1% of wells and <1% of the area the state during the period. Summarised details of Annual fluctuation and change in ground water storage are given in table below;

Water Level Fluctuation Range		Wells Monitored		Area Covered		Change in GW Storage (MCM)	
		No.	%age	Km <sup>2</sup> .	%age	GW Loss	GW Loss
Decline	0-2	503	78	42408	84	-5089	
	2-4	59	9	4018	8	-1446	
	>4.0	14	2	399	1	-236	
Rise	0-2	60	9	3412	7		409
	2-4	7	>1	219	0		79
	>4.0	2	<1	20	0		12
Total		645	100	50476	100		-6275

**Fig-10**



### **3.4.2 AUGUST 2016 - AUGUST 2017**

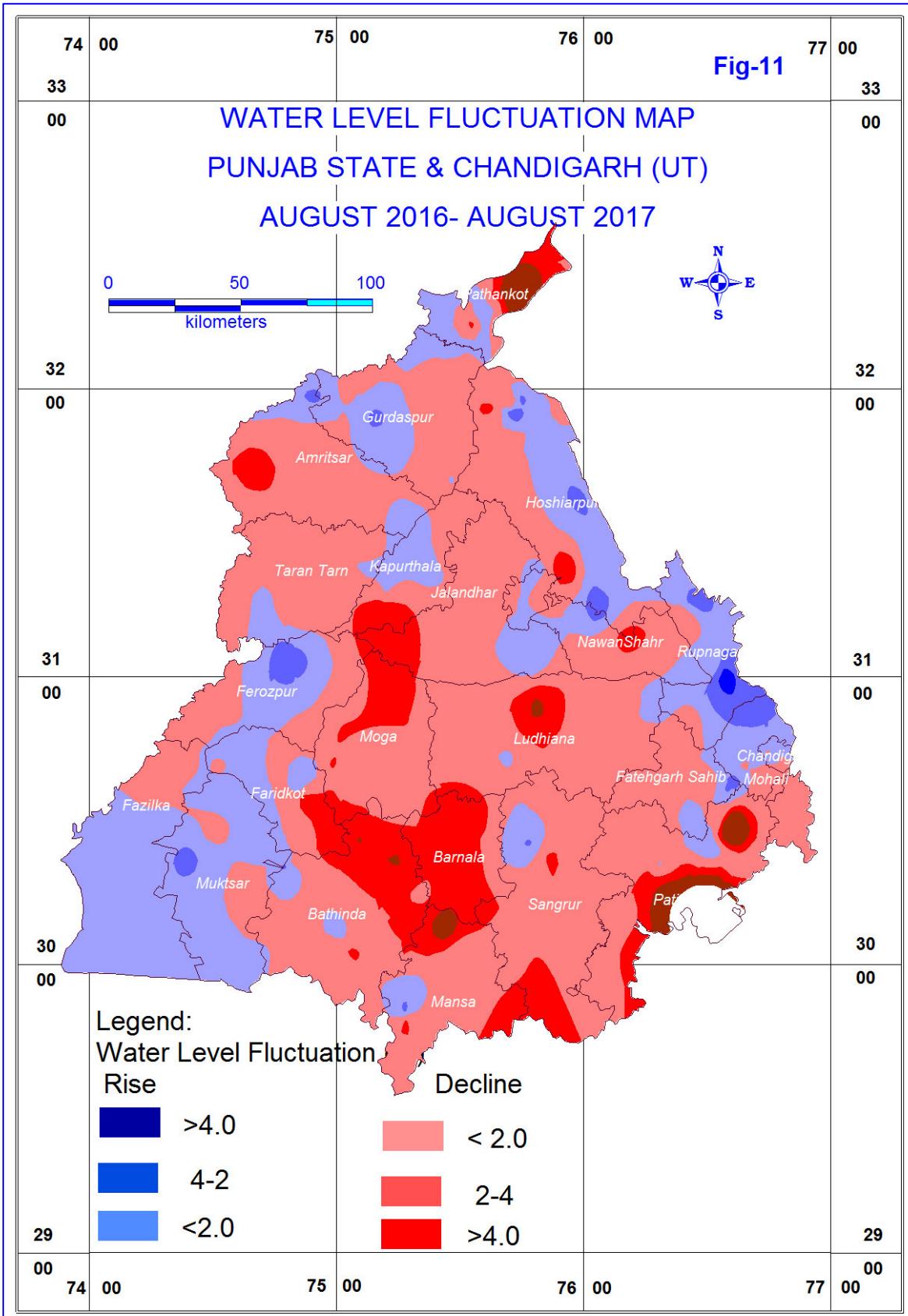
The behavioral pattern of annual fluctuation in Monsoon season is discussed in the following paragraph along with fluctuation map (Fig. 11). Water level fluctuations data are given in the Annexure-III (Col-5).

The annual fluctuation depicts general decline of water levels in 63% of wells monitored and covering 71% area of the State. Water level decline the range of 0-2 m is observed in 47% of wells and 57% of the area in all districts in the state. Water level decline in the range of 2-4 m is observed in 10% of wells and 12% of the area covering the parts of Kapurthala, Jalandhar, Moga, Bathinda, Ludhiana, Fatehgarh Sahib, Barnala, Sangrur, Patiala and Mansa districts. Water level decline >4m is observed in 6% of wells and 2% of the area during the period.

The water level rise has been recorded in 37% of wells monitored and covering 29% area of the State. The water levels rise has been observed in parts of Pathankot, Gurdaspur, Amritsar, Hoshiarpur, Jalandhar, Rupnagar, SAS Nagar, Ferozpur, Fazilka and Muktsar districts. Water level rise in the range of decline 0-2 m is observed in 29% wells and 26% of area. Water level rise 2-4m is observed in 7% wells and >2% of area. The water level rise of >4m is observed in 1% of wells and <1% of the area during the period. Summarised details of Annual fluctuation and change in ground water storage are given in table below;

Water Level Fluctuation Range		Wells Monitored		Area Covered		Change in GW Storage (MCM)	
		No.	%age	Km <sup>2</sup> .	%age	GW loss	GW Recharge
Decline	0-2	108	47	28725	57	-3447	
	2-4	22	10	6030	12	-2171	
	>4.0	15	6	1089	2	-653	
Rise	0-2	67	29	13295	26		1595
	2-4	17	7	1267	>2		456
	>4.0	2	1	70	<1		42
Total		231	100	50476	100		-4178

**Fig-11**



### 3.4.3 November 2016 - November 2017

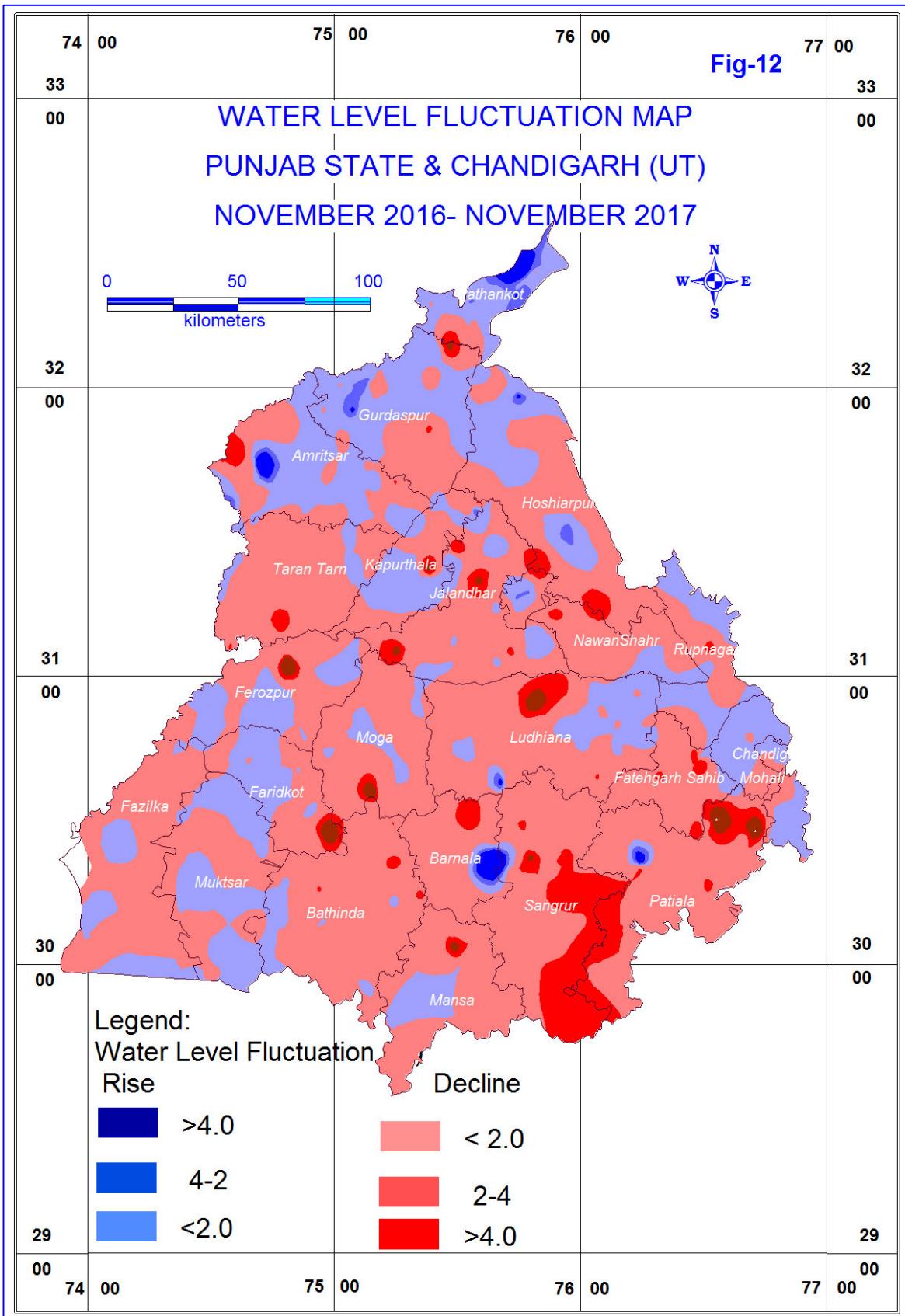
The behavioral pattern of annual fluctuations Post-Monsoon season is discussed in the following paragraph along with fluctuation map (**Fig. 12**). Water level fluctuations data are given in the Annexure-III (Col-6).

The annual fluctuation depicts general decline of water levels in 66% of wells monitored and covering 72% area in all districts except parts in Pathankot, Gurdaspur, Amritsar and Hoshiarpur in north & Fazilka, Muktsar, Bathinda and Mansa districts in south-western parts of the state. Water level decline in the range of 0-2 m is observed in 58% of wells and 65% of the area. Water level decline in the range of 2-4 m is observed in 6% of wells and 6% of the area whereas, water level decline >4m is observed in 2% of wells and 1% of the area during the period.

The water level rise has been recorded in 34% of wells monitored and covering 28% area in Fazilka, Muktsar, Bathinda and Mansa districts in south-western parts, Pathankot, Gurdaspur, Amritsar and Hoshiarpur in northern parts and Ludhiana, Runagar and SAS Nagar eastern parts of the state. The Rise is also observed in isolated patches in other districts of the state. Water level rise in the range of decline 0-2 m is observed in 32% wells and 27% of area. Water level rise of 2-4m is observed in 1% wells and <1% of area. The water level rise of >4m is observed in 1% of wells and <1% of the area during the period. Summarised details of Annual fluctuation and change in ground water storage are given in table below:

Water Level Fluctuation Range		Wells Monitored		Area Covered		Change in GW Storage (MCM)	
		No.	%age	Km2	%age	GW Loss	GW Recharge
Decline	0-2	375	58	33085	65	-3970	
	2-4	39	6	2941	6	-1059	
	>4.0	14	2	321	1	-193	
Rise	0-2	204	32	13416	27		1610
	2-4	8	1	426	<1		153
	>4.0	8	1	287	<1		172
Total		648	100	50476	100		-3286

**Fig-12**



### 3.4.4 January 2017 - January 2018

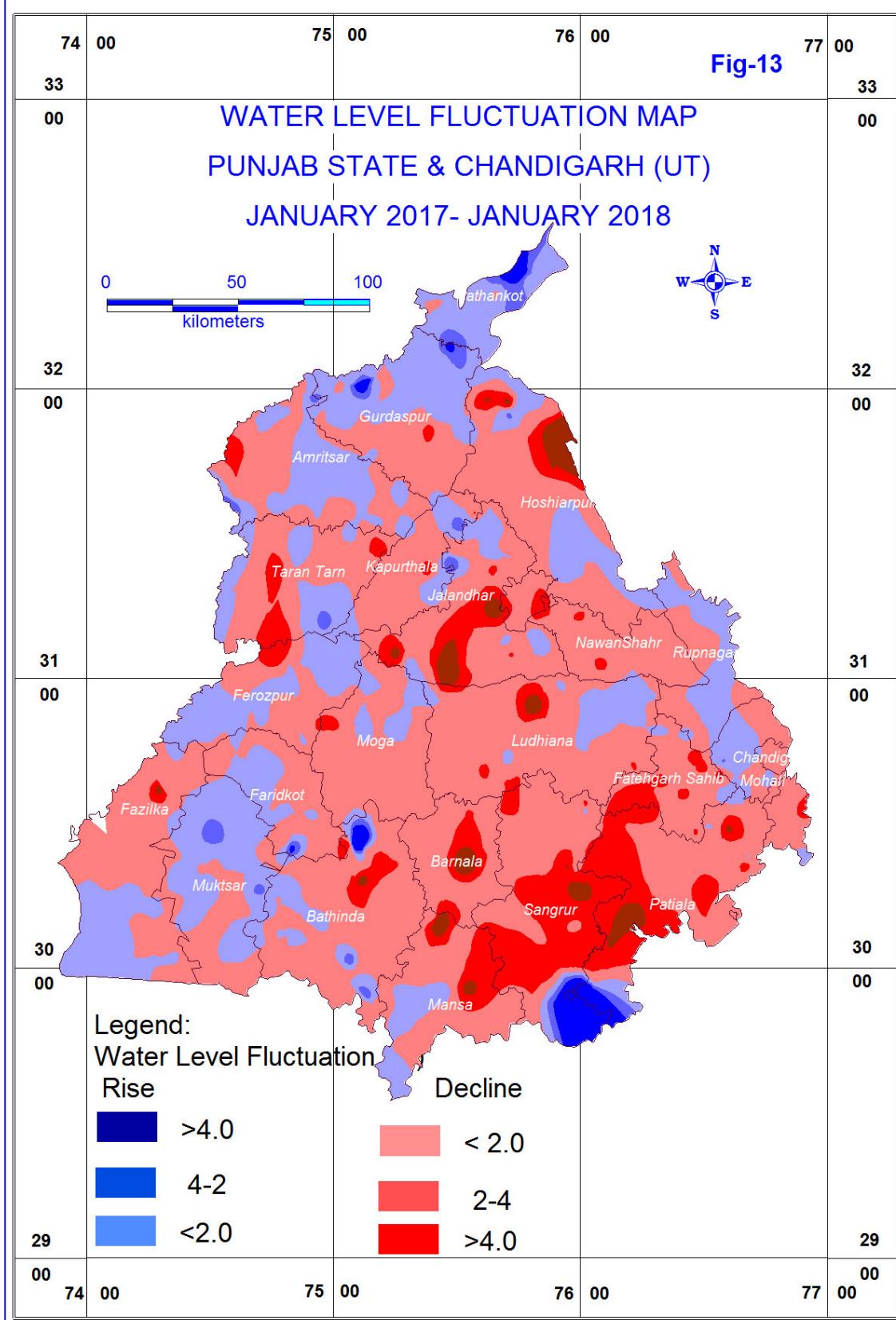
The behavioral pattern of annual fluctuations is discussed in the following paragraph along with fluctuation map (**Fig. 13**). Water level fluctuations data are given in the Annexure-III (Col-7).

The annual fluctuation shows that there is a general decline of water levels in 70% of wells monitored and covering 72% area of the State. The decline has been observed in parts of all districts except Pathankot district. Water level decline in the range of 0-2 m is observed in 58% of wells and 59% of the area. Water level decline in the range of 2-4 m is observed in 9% of wells and 11% of the area. The water level decline of >4m is observed in 3% of wells and 2% of the area during the period.

The water level rise has been recorded in 30% of wells monitored and covering 28% area in Pathankot, Gurdaspur, Amritsar Tarntaran, Ferozpur, Fazilka Muktsar districts. The water levels rise has been observed in patches in others parts of the state. Water level rise in the range of decline 0-2 m is observed in 27% wells and 26 of area. Water level rise 2-4m is observed in 2% wells and 1% of area. The water level decline of >4m is observed at few locations covering in 1% of wells and 1% of the area during the period. Summarised details of Annual fluctuation and change in ground water storage are given in table below;

water level fluctuation range		Wells monitored		Area covered		Change in GW Storage (MCM)	
		No.	%age	Km2.	%age	GW Loss	GW Recharge
Decline	0-2	370	58	29583	59	-3550	
	2-4	58	9	5439	11	-1958	
	>4.0	18	3	784	2	-470	
Rise	0-2	170	27	13337	26		1600
	2-4	15	2	716	1		258
	>4.0	7	1	617	1		370
Total		638	100	50476	100	-3750	

**Fig-13**



### **3.5 DECADAL MEAN WATER LEVEL FLUCTUATION**

Changes in water level behaviour since last one decade are determined using decadal mean data. Water level mean of past one decade for each ground water observation well is computed and compared with the respective water level data of the given monitoring to determine the decadal mean water level fluctuation.

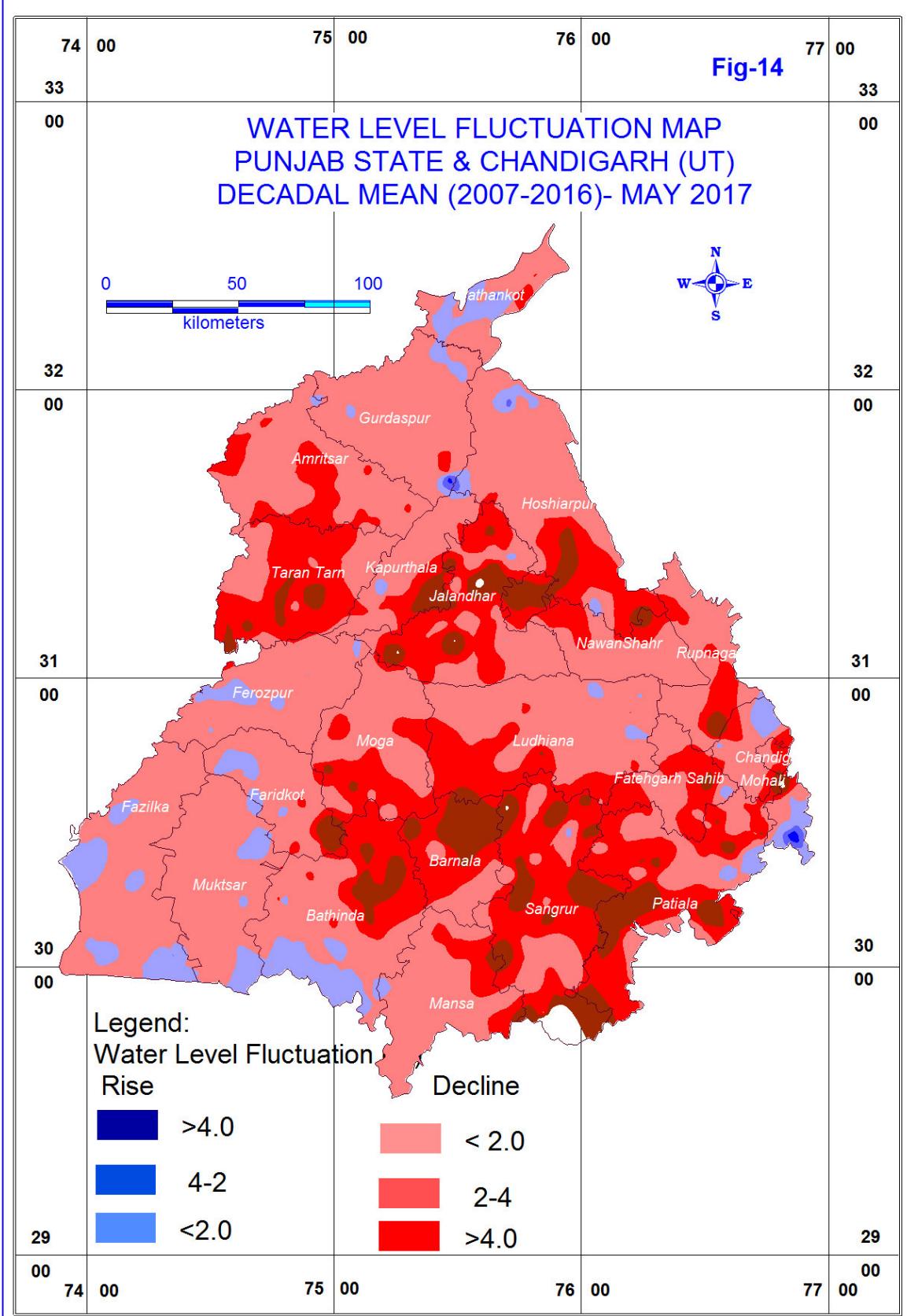
#### **3.5.1 Mean of May (2006:2016) & May 2017**

The behavioral pattern of decadal mean fluctuations during of aforesaid period is discussed in the following paragraph along with fluctuation map (Fig. 14). Water level fluctuations data are given in the Annexure-IV (Col-4). The decadal mean fluctuations show that decline in 89% of observation wells monitored covering about 93% area of the state. The decline has been observed in all districts in south, central and Northern parts of the state. The decline of 0-2 m has been observed in about 59% of wells and 60% of area. Water level decline of 2-4 m is observed in 20% of the wells and 26% of the area in parts of covering the parts of Amritsar, Tarntaran, Kapurthala, Jalandhar, Hoshiarpur, Nawanshahr, Ludhiana, Fatehgarh Sahib, Moga, Barnala, Sangrur, Patiala and Mansa districts. Water level decline of >4m is observed in about 10% of the wells and 7% of area.

Rise in water level has also been observed in 11% of wells and 7% of area in sparsely isolated patches in the state. Water level rise in the range of 0-2 m is observed in 10% of wells and 7% of the area. Water level rise of 2-4m is observed in <1% of wells and <1% of the area. Water level rise of >4m is observed in <1% of wells and <1% of the area in area. Summarised details of Decadal Mean fluctuation and change in ground water storage are given in table below;

Water Level Fluctuation Range		Wells Monitored		Area Covered		Change in GW Storage (MCM)	
		No.	%age	Km <sup>2</sup> .	%age	GW Loss	GW Recharge
Decline	0-2	426	59	30230	60	-3628	
	2-4	147	20	13375	26	-4815	
	>4.0	76	10	3754	7	-2252	
Rise	0-2	74	10	3017	6		362
	2-4	2	<1	80	<1		29
	>4.0	2	<1	20	<1		12
		727	100	50476	100		-10292

**Fig-14**



### 3.5.2 Mean of August (2006:2016) & August 2017

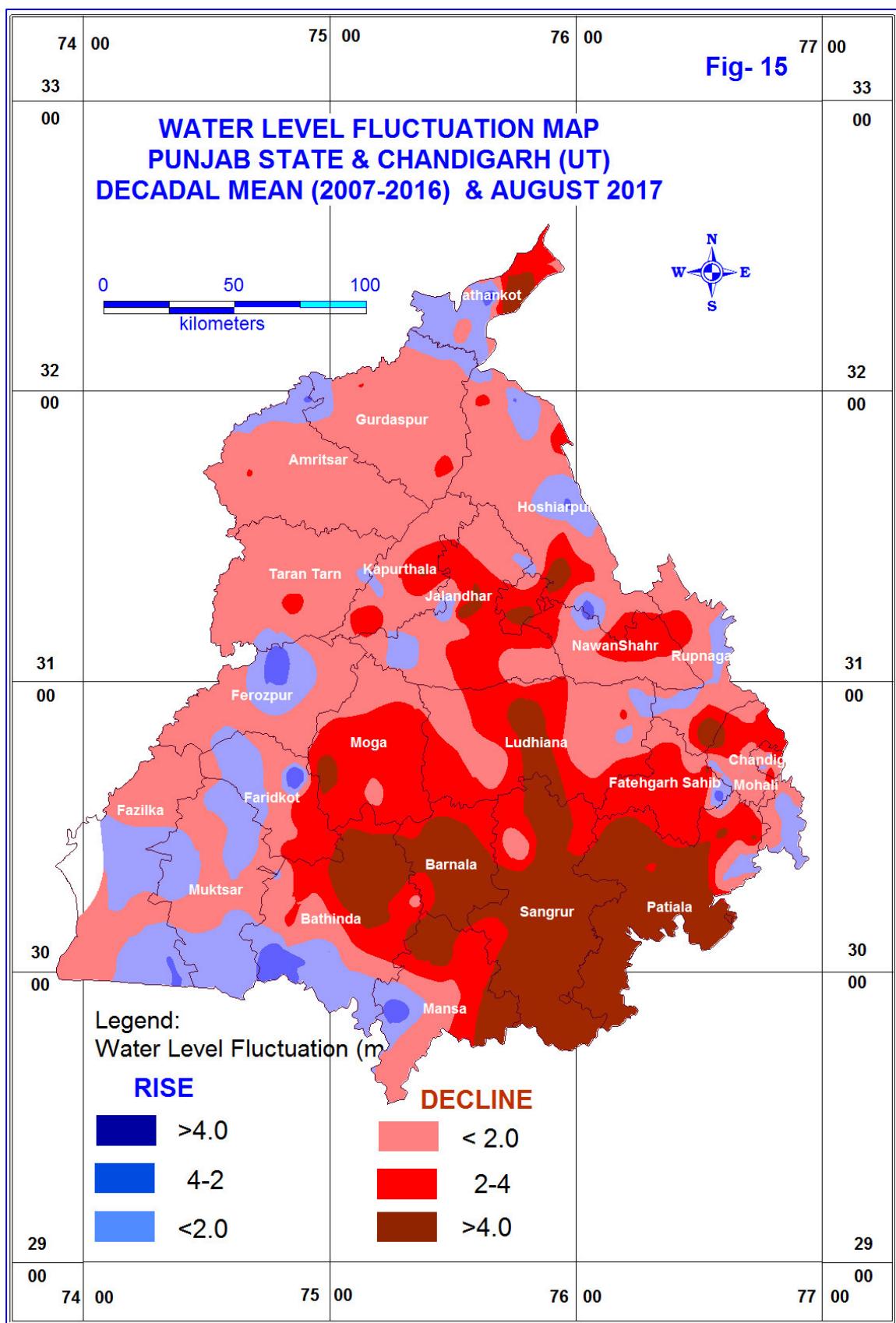
The behavioral pattern of decadal mean fluctuations of aforesaid period is discussed in the following paragraph along with fluctuation map (**Fig. 15**). Water level fluctuations data are given in the Annexure-IV (Col-5).

The decadal mean fluctuations show that decline in 75% of observation wells monitored covering about 83% area of the state. The decline has been observed in all districts of the state. The decline of 0-2 m has been observed in about 41% of wells and 45% of area. Water level decline of 2-4 m is observed in 17% of the wells and 21% of the area covering the parts of Hoshiarpur, Kapurthala, Jalandhar, Ludhiana, Fatehgarh Sahib, SAS Nagar, and Chandigarh, Moga, Barnala, Bathinda, Sangrur and Patiala districts. Water level decline of >4m is observed in about 17% of the wells and 17% of area in south central parts in Ludhiana, Bathinda, Barnala, Sangrur and Patiala Districts the worst affected area by the water level decline.

Rise in water level has also been observed in 25% of wells and 17% of area in isolated patches Gurdaspur, Pathankot, Hoshiarpur, Ropar and SAS Nagar districts in north and north eastern parts. Rise in water level is also observed in Ferozpur, Fazilka, Muktsar, Bathinda and Faridkot districts. Water level rise in the range of 0-2 m is observed in 23% of wells and 15% of the area. Water level rise of 2-4m is observed in 1% of wells and 1% of the area. Water level rise of >4m is observed in about 1% of the wells and <1% of area. Summarised details of Decadal Mean fluctuation and change in ground water storage are given in table below;

Water Level Fluctuation Range		Wells Monitored		Area Covered		Change in GW Storage (MCM)	
		No.	%age	Km <sup>2</sup>	%age	GW Loss	GW Recharge
Decline	0-2	99	41	22725	45	-2727	
	2-4	42	17	10835	21	-3901	
	>4.0	41	17	8717	17	-5230	
Rise	0-2	57	23	7631	15		916
	2-4	2	1	543	1		195
	>4.0	2	1	25	0		15
		243	100	50476	100		-10732

**Fig- 15**



### 3.5.3 Decadal Mean November (2006:2016) & November 2017

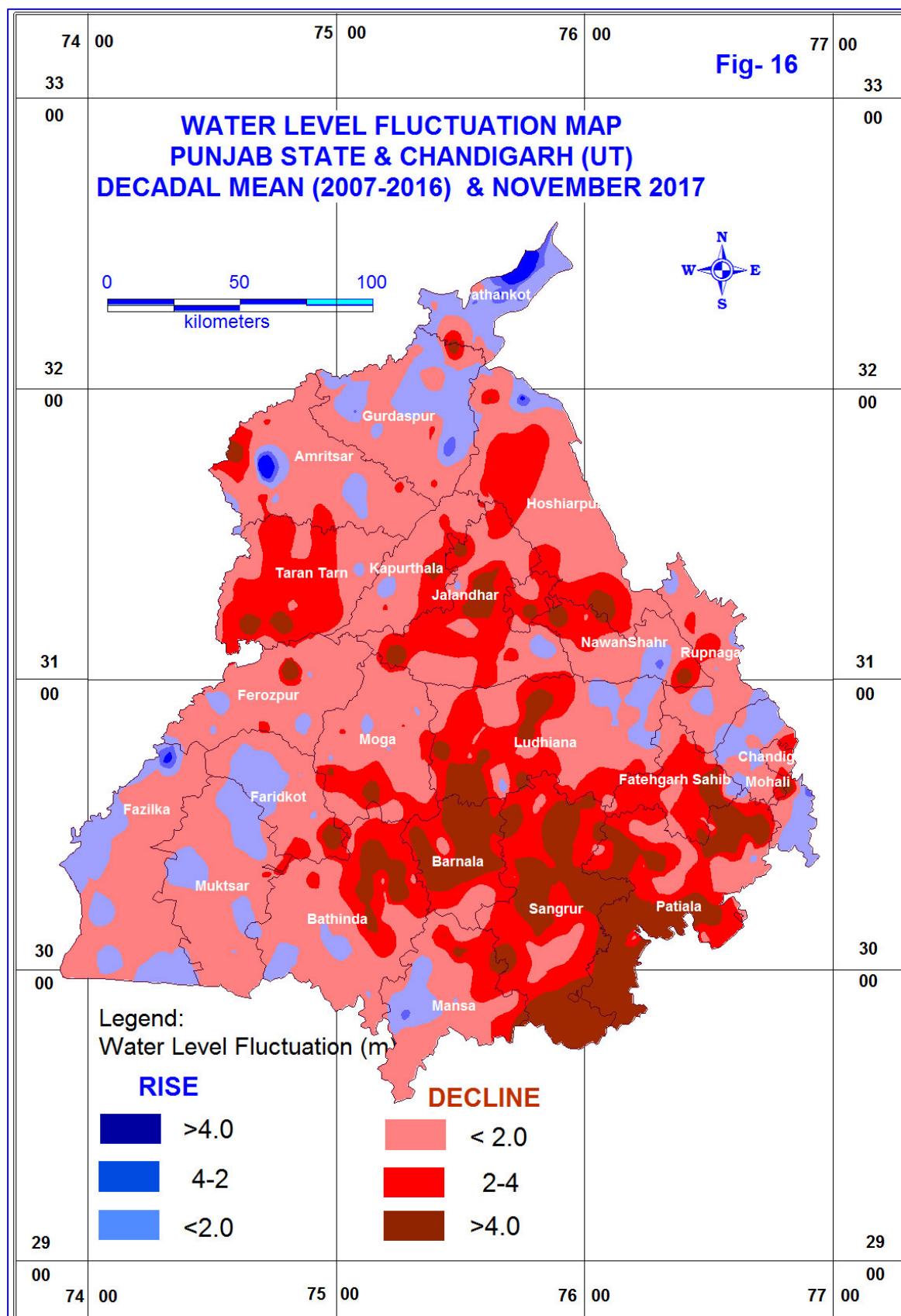
The behavioral pattern of decadal mean fluctuations of aforesaid period is discussed in the following paragraph along with fluctuation map (**Fig. 15**). Water level fluctuations data are given in the Annexure-IV (Col-6).

The decadal mean fluctuations show that shows decline in 80% of observation wells monitored covering about 87% area of the state. The decline has been observed in all districts of the state. The water level decline in range of 0-2m has been observed in about 49% of wells and 51% of area. Water level decline in range of 2-4m is observed in 19% of the wells and 24% of the area in parts of Jalandhar, Hoshiarpur, Ludhiana, Moga, Barnala, Bathinda, Sangrur, Patiala and Fatehgarh Sahib districts. Water level decline of >4m is observed in about 12% of the wells and 12% of area in parts of Ludhiana, Moga, Barnala, Bathinda, Sangrur, Patiala and Fatehgarh Sahib districts.

Rise in water level has also been observed in 20% of wells and 13% of area in Pathankot, Gurdaspur, Amritsar, Tarn Taran districts in north. Rise in water level is also observed in Ferozpur, Fazilka, Faridkot, Muktsar, Bathinda and Mansa districts. Water level rise in the range of 0-2 m is observed in 1% of wells and 12% of the area. Water level rise of 2-4m is observed in 1% of wells and <1% of the area. Water level rise of >4m is observed in 1% of wells and <1% of the area during the period. Summarised details of Decadal Mean fluctuation and change in ground water storage are given in table below;

Water Level Fluctuation Range		Wells Monitored		Area Covered		Change in GW Storage (MCM)	
		No.	%age	Km <sup>2</sup>	%age	GW Loss	GW Recharge
Decline	0-2	352	49	25927	51	-3111	
	2-4	136	19	11925	24	-4293	
	>4.0	84	12	5827	12	-3496	
Rise	0-2	133	18	6235	12		748
	2-4	8	1	317	1		114
	>4.0	6	1	245	0		174
		719	100	50476	100		-9891

**Fig- 16**



### 3.4.4 Decadal Mean of January (2007:2017) & January 2018

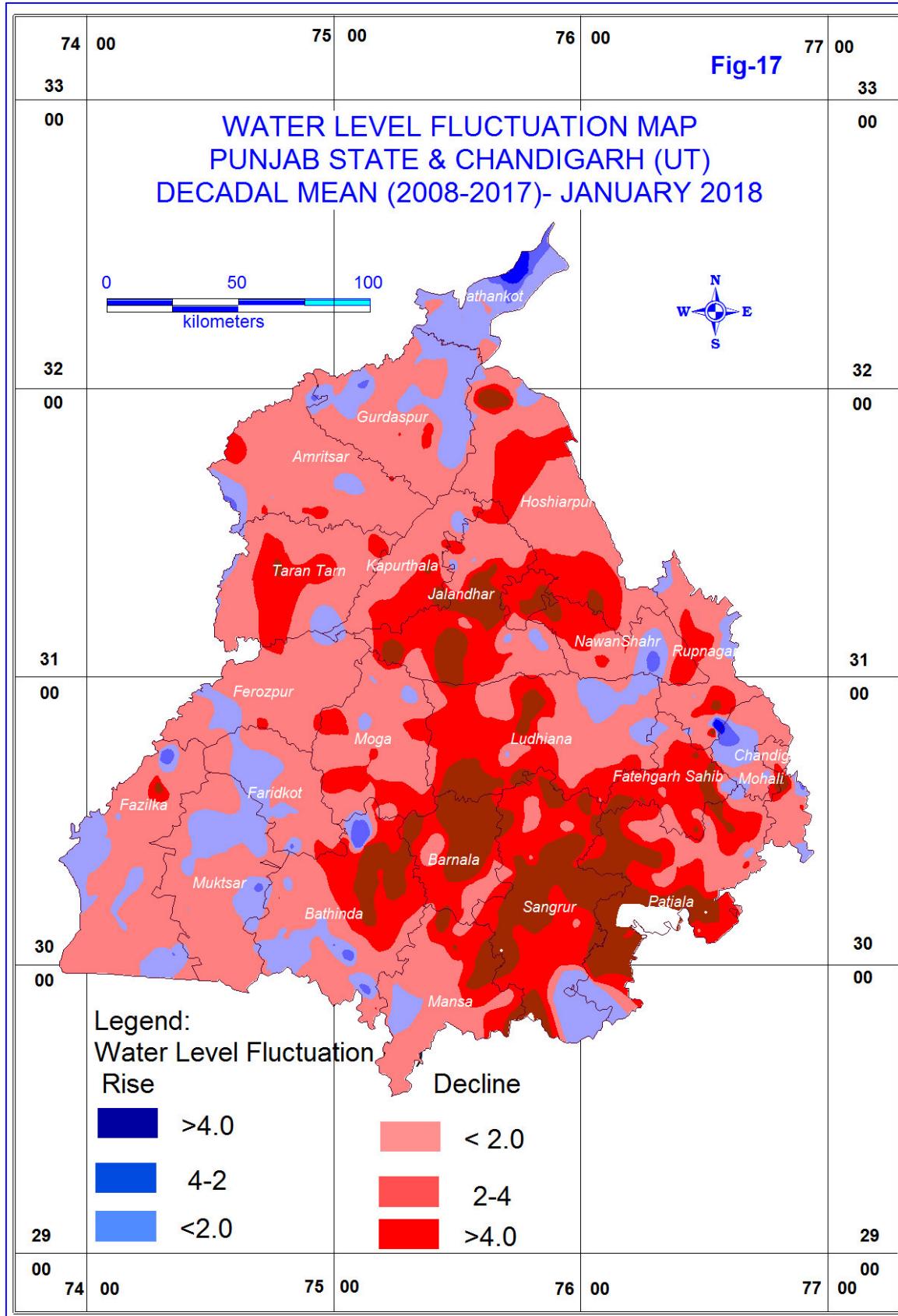
The behavioral pattern of decadal mean fluctuations of aforesaid period is discussed in the following paragraph along with fluctuation map (**Fig. 17**). Water level fluctuations data are given in the Annexure-IV (Col-7).

The decadal mean fluctuations show that decline in 82% of observation wells monitored covering about 86% area of the state. The decline has been observed in all districts in the state. The decline of 0-2 m has been observed in about 48% of wells and 51% of area. Water level decline of 2-4 m is observed in 21% of the wells and 23% of the area in Hoshiarpur, Jalandhar, Ludhiana, Moga, Barnala, Bathinda, Sangrur, Patiala and Fatehgarh Sahib districts. Water level decline of >4m is observed in about 13% of the wells and 11% of area in parts of Jalandhar, Ludhiana, Moga, Barnala, Bathinda, Sangrur, Patiala and Fatehgarh Sahib districts.

Rise in water level has also been observed in 18% of wells and 14% of area in Pathankot, Gurdaspur, Ropar and SAS Nagar districts in north and north eastern parts. Rise in water level is also observed in Ferozpur, Fazilka, Muktsar, Bathinda and Faridkot districts. Water level rise in the range of 0-2 m is observed in 16% of wells and 12% of the area. Water level rise of 2-4m is observed in 1% of wells and 1% of the area. Water level rise of >4m is observed in 16% of wells and 12% of the area during the period in the state. Summarised details of Decadal Mean fluctuation and change in ground water storage are given in table below;

Water Level Fluctuation Range		Wells Monitored		Area Covered		Change in GW storage (MCM)	
		No.	%age	Km <sup>2</sup>	%age	GW Loss	GW Recharge
Decline	0-2	343	48	26227	51	-3147	
	2-4	147	21	11655	23	-4196	
	>4.0	90	13	5567	11	-3340	
Rise	0-2	112	16	6145	12		737
	2-4	14	1	417	1		150
	>4.0	8	1	465	1		279
		714	100	50476	100		-9517

**Fig-17**



Annexure-I

Sno	State	District	Location	May-17	Aug-17	Nov-17	Jan-18
1.	Chandigarh	Chandigarh	Burail	2.75	2.57	2.44	2.83
2.	Chandigarh	Chandigarh	Sect 44d (S)	4.75	3.44	3.74	3.95
3.	Chandigarh	Chandigarh	Sect 37d (S)	5.35	4.81	4.77	4.98
4.	Chandigarh	Chandigarh	Sector-46 (Shallow)	8.59	7.03	7.24	
5.	Chandigarh	Chandigarh	Sect 31d (S)	11.84	11.76	11.76	11.82
6.	Chandigarh	Chandigarh	Sect 10c (S)		15.70	15.35	
7.	Chandigarh	Chandigarh	Sect 31d (D)	19.94	19.43	19.34	19.25
8.	Chandigarh	Chandigarh	Csio-S	22.28	22.20	22.24	22.21
9.	Chandigarh	Chandigarh	New Indust Area	25.74	23.86	23.84	23.72
10.	Chandigarh	Chandigarh	Sect 10c (D)		26.80	27.70	
11.	Chandigarh	Chandigarh	Sec-27, Ar Well	42.54	41.11	41.16	
12.	Chandigarh	Chandigarh	Sect 39d (S)	6.56	5.28		
13.	Punjab	Amritsar	Bhattaywad-Pz	14.60		3.60	
14.	Punjab	Amritsar	Ramdas-Dw	7.53	6.27	5.65	5.78
15.	Punjab	Amritsar	Bajwa-Pz			5.90	6.30
16.	Punjab	Amritsar	Nangal Sahaul-Pz	7.20		6.00	5.90
17.	Punjab	Amritsar	Gago Mahal- Pz	6.40	6.23	6.07	6.27
18.	Punjab	Amritsar	Vadala Viran-Pz			8.00	7.90
19.	Punjab	Amritsar	Sham Nagar-Pz	9.60		8.80	8.00
20.	Punjab	Amritsar	Pakharpura-Pz	9.80		9.00	
21.	Punjab	Amritsar	Karyl-Pz	10.20		9.50	9.70
22.	Punjab	Amritsar	Chogwan- Pz	11.11	14.35	10.87	10.30
23.	Punjab	Amritsar	Jasrur-Pz	10.50		11.10	
24.	Punjab	Amritsar	Nawan Tanal- Pz	11.70	12.13	11.41	
25.	Punjab	Amritsar	Mehleykey-Pz	9.70		12.30	11.30
26.	Punjab	Amritsar	Rampura-Pz	14.50		12.60	12.10
27.	Punjab	Amritsar	Chak Dogra-Pz	12.10		12.80	10.30
28.	Punjab	Amritsar	Shabura-Pz	12.50		12.80	13.50
29.	Punjab	Amritsar	Ajana	11.86	12.95	12.94	12.23
30.	Punjab	Amritsar	Bholewal-Pz			13.00	12.30
31.	Punjab	Amritsar	Sarangra-Pz			13.10	12.50
32.	Punjab	Amritsar	Majitha-Pz	14.30		13.50	13.40
33.	Punjab	Amritsar	Beas07	14.78	14.05	13.88	14.18
34.	Punjab	Amritsar	Mehta	13.50		14.25	13.34
35.	Punjab	Amritsar	Ugar Aulakh-Pz	15.10		14.40	14.50
36.	Punjab	Amritsar	Kandowali-Pz	15.50		14.50	13.70

37.	Punjab	Amritsar	Rupowal Brahmana-Pz	15.40		14.50	14.10
38.	Punjab	Amritsar	Vadala Kalan-Pz	16.60		15.90	15.90
39.	Punjab	Amritsar	Wandala Bittewad-Pz	16.50		16.10	16.20
40.	Punjab	Amritsar	Sathiala-Pz	17.80		16.50	16.20
41.	Punjab	Amritsar	Mehta-Pz	15.60		16.60	13.30
42.	Punjab	Amritsar	Khilchian-Pz	17.50		16.70	15.80
43.	Punjab	Amritsar	Miran Chak-Pz	18.20		16.80	16.40
44.	Punjab	Amritsar	Tarsika-Pz	17.70		16.80	15.60
45.	Punjab	Amritsar	Rayya-Pz			16.90	16.90
46.	Punjab	Amritsar	Jethuwal-Pz	17.70		17.00	15.60
47.	Punjab	Amritsar	Dhulika-Pz	17.40		17.40	17.10
48.	Punjab	Amritsar	Boparai Khurd-Pz			18.00	16.70
49.	Punjab	Amritsar	Dohan-Pz	20.50		18.40	19.00
50.	Punjab	Amritsar	Bal Kalan-Pz	20.10		18.50	17.30
51.	Punjab	Amritsar	Makhan Windi-Pz	20.10		18.90	17.00
52.	Punjab	Amritsar	Mahima-Pz	20.40		19.50	19.40
53.	Punjab	Amritsar	Talwandi Dogra-Pz	20.60		20.00	20.00
54.	Punjab	Amritsar	Jandiala Guru-Pz	19.37	20.15	20.03	20.55
55.	Punjab	Amritsar	Gill Wali-Pz	22.20		21.10	21.30
56.	Punjab	Amritsar	Verka-Pz			22.00	20.00
57.	Punjab	Amritsar	Amritsar1	25.12	25.74	25.24	25.10
58.	Punjab	Amritsar	Amritsar				26.60
59.	Punjab	Barnala	Shekha	32.80		17.40	33.87
60.	Punjab	Barnala	Dhanaula-Pz	21.80		22.95	22.61
61.	Punjab	Barnala	Ramgarh-Pz	22.10		23.52	23.13
62.	Punjab	Barnala	Pakho Ke-Pz	27.70		28.65	28.31
63.	Punjab	Barnala	Lohgarh-Pz	27.70		29.40	29.11
64.	Punjab	Barnala	Bhadaur-Pz	27.99	29.59	29.95	29.38
65.	Punjab	Barnala	Raisar-Pz			31.95	31.67
66.	Punjab	Barnala	Patti Dwarka-Pz			32.25	24.00
67.	Punjab	Barnala	Mahal Kalan-Pz	32.71	34.69	35.15	34.86
68.	Punjab	Barnala	Daula-Pz			35.61	35.31
69.	Punjab	Barnala	Kurar-Pz	36.80		37.90	37.61
70.	Punjab	Barnala	Amla Singh Wala-Pz	37.10		38.21	37.89
71.	Punjab	Barnala	Nangal-Pz	37.10		38.26	37.93
72.	Punjab	Barnala	Barnala (S)	34.68	38.16	38.71	43.82
73.	Punjab	Barnala	Tappa Mandi-Pz	30.60			31.41
74.	Punjab	Bathinda	Raike Kalan	3.51	3.26	2.71	2.38
75.	Punjab	Bathinda	Balluana1	5.37	5.46	5.27	5.05

76.	Punjab	Bathinda	Kalla Bandar	6.40	5.40	6.00	5.76
77.	Punjab	Bathinda	Nathena-Pz	5.70		6.53	7.61
78.	Punjab	Bathinda	Kot Bhaktu-Pz	5.80		6.65	6.38
79.	Punjab	Bathinda	Pathrala-Pz	6.73		6.73	
80.	Punjab	Bathinda	Bandi-Pz			6.87	6.77
81.	Punjab	Bathinda	Jassi Bhagwali	6.87	5.97	7.02	6.86
82.	Punjab	Bathinda	Deratapp	6.17	6.86	7.03	6.90
83.	Punjab	Bathinda	Balluana-Pz	7.07		7.10	6.85
84.	Punjab	Bathinda	Mehta-Pz	6.94		7.18	6.67
85.	Punjab	Bathinda	Sangat -Pz	7.08	7.37	7.40	6.85
86.	Punjab	Bathinda	Jassi Paowali-Pz	7.81		7.53	7.05
87.	Punjab	Bathinda	Multania-Pz	6.92		7.62	6.77
88.	Punjab	Bathinda	Lalliana-Pz	6.60		7.71	7.41
89.	Punjab	Bathinda	Phullo Khari-Pz			7.97	7.63
90.	Punjab	Bathinda	Jajjal_Dw	7.10	8.83	8.74	7.36
91.	Punjab	Bathinda	Bhagibandar	8.73	9.07	9.13	4.97
92.	Punjab	Bathinda	Bagher Mohabat Singh-Pz	8.60		9.23	9.00
93.	Punjab	Bathinda	Rajgarh Kubey-Pz	8.93		9.25	9.22
94.	Punjab	Bathinda	Guru Sar-Pz	9.11	9.75	9.51	9.24
95.	Punjab	Bathinda	Bahman Kaur Singh-Pz	9.50		9.52	6.33
96.	Punjab	Bathinda	Ghudda-Pz	9.97		10.09	9.65
97.	Punjab	Bathinda	Maur Kalan-Pz			11.51	11.12
98.	Punjab	Bathinda	Maihma Bhagwan-Pz	11.19		11.62	10.24
99.	Punjab	Bathinda	Nahinwala	11.74	12.55	12.42	
100.	Punjab	Bathinda	Gulabgarh 2 (S)			13.60	
101.	Punjab	Bathinda	Ablu	13.79	12.04	14.57	13.81
102.	Punjab	Bathinda	Maisar Khana-Pz	14.30	15.92	14.95	14.61
103.	Punjab	Bathinda	Gobind Pura-Pz			15.36	14.46
104.	Punjab	Bathinda	Maisar Khana	14.84		16.04	15.53
105.	Punjab	Bathinda	Ganga-Pz	15.25	16.78	16.25	15.56
106.	Punjab	Bathinda	Tungwali-Pz	15.61		16.70	
107.	Punjab	Bathinda	Harraipur-Pz	16.91		18.41	
108.	Punjab	Bathinda	Phulla1	20.80	21.34	21.07	28.10
109.	Punjab	Bathinda	Sooch-Pz	20.43		22.10	21.24
110.	Punjab	Bathinda	Mehraj-Pz	21.45		22.15	22.63
111.	Punjab	Bathinda	Maluka-Pz	21.43		22.61	22.37
112.	Punjab	Bathinda	Lehra Dhulkot-Pz	24.06		24.55	23.21
113.	Punjab	Bathinda	Nathana-Pz	19.36		24.62	21.52
114.	Punjab	Bathinda	Jhanduke-Pz	21.97		24.80	23.10

115.	Punjab	Bathinda	Jhanduke	23.02	23.97	24.97	23.72
116.	Punjab	Bathinda	Koir Singh Wala-Pz	23.96		25.20	24.61
117.	Punjab	Bathinda	Balianwali-Pz	24.12		25.85	25.76
118.	Punjab	Bathinda	Dhapali1	23.73	26.23	26.03	
119.	Punjab	Bathinda	Kothaguru-Pz	24.13	26.82	26.10	6.50
120.	Punjab	Bathinda	Mandi Kalan-Pz	25.76		26.15	26.61
121.	Punjab	Bathinda	Burj Gill-Pz	25.67		27.38	26.22
122.	Punjab	Bathinda	Dialpur Mirza	24.40	26.76	27.45	26.18
123.	Punjab	Bathinda	Dhapali-Pz	25.02	28.16	27.75	26.47
124.	Punjab	Bathinda	Rampura			28.05	27.82
125.	Punjab	Bathinda	Dialpura Bhlaike	26.68	26.73	28.41	27.58
126.	Punjab	Bathinda	Rayya-Pz	26.42		28.60	28.26
127.	Punjab	Bathinda	Aleke Jalal-Pz	25.99		28.67	27.11
128.	Punjab	Bathinda	Bugran-Pz	28.31		30.29	29.92
129.	Punjab	Bathinda	Badiala-Pz	28.09	29.51	31.10	
130.	Punjab	Bathinda	Salabatpur-Pz	30.46		33.04	31.36
131.	Punjab	Bathinda	Dulle Wala-Pz	30.69		33.18	31.09
132.	Punjab	Bathinda	Bhagwan Pura				17.20
133.	Punjab	Bathinda	Burj-Pz	9.50			
134.	Punjab	Bathinda	Gill Patti-Dw	9.89			9.97
135.	Punjab	Bathinda	Gulabgarh 1 (Vs)	15.43			
136.	Punjab	Bathinda	Jajjal	7.10			8.40
137.	Punjab	Bathinda	Kahan Singh Wala-Dw	18.41			
138.	Punjab	Bathinda	Kalyan Sukha-S				25.06
139.	Punjab	Bathinda	Kalyan Sukha-M				25.69
140.	Punjab	Bathinda	Kot Fatta-Dw	12.60			12.95
141.	Punjab	Bathinda	Kot Guru	6.46			6.60
142.	Punjab	Bathinda	Kot Shamir	14.20	14.67		14.34
143.	Punjab	Bathinda	Phul	24.60			
144.	Punjab	Bathinda	Puhla-Pz	20.53			22.21
145.	Punjab	Bathinda	Seema-Dw	19.36			19.14
146.	Punjab	Bathinda	Sidhana	22.40			23.91
147.	Punjab	Bathinda	Teona-Pz	5.46			5.23
148.	Punjab	Faridkot	Aryan Wala-Pz	1.73		0.70	1.10
149.	Punjab	Faridkot	Mehmuana	1.54	0.70	0.90	1.00
150.	Punjab	Faridkot	Ratti Rori-Pz	1.60		0.90	0.95
151.	Punjab	Faridkot	Chak Kalan-Pz	2.40		1.80	1.59
152.	Punjab	Faridkot	Sukhwala-Pz	3.00	2.15	2.46	2.18
153.	Punjab	Faridkot	Sher Singh Wala- Pz	3.62	3.60	2.97	2.81

154.	Punjab	Faridkot	Faridkot-Pz	4.25		3.45	3.50
155.	Punjab	Faridkot	Wara Dwarka-Pz	4.43	3.45	3.46	3.55
156.	Punjab	Faridkot	Dipsinghwala	5.25	4.50	4.08	4.26
157.	Punjab	Faridkot	Jand Sahib-Pz	4.48	5.07	4.49	4.50
158.	Punjab	Faridkot	Killi-Pz	5.34	4.40	4.57	4.62
159.	Punjab	Faridkot	Pahluwala-Pz	4.70		4.85	4.45
160.	Punjab	Faridkot	Ghuiana-Pz	5.10		4.90	4.60
161.	Punjab	Faridkot	Sadiq-Pz	4.80	5.27	5.20	5.25
162.	Punjab	Faridkot	Mumra-Pz	6.45	6.62	6.50	6.00
163.	Punjab	Faridkot	Deviwala I-Pz	6.99	6.62	6.53	6.75
164.	Punjab	Faridkot	Deviwala II-Pz	8.82	7.45	6.76	
165.	Punjab	Faridkot	Nangal-Pz	8.80	8.85	7.60	8.25
166.	Punjab	Faridkot	Kot Kapura	7.72	7.97	7.72	7.63
167.	Punjab	Faridkot	Deviwala-Pz	7.03	11.15	7.97	
168.	Punjab	Faridkot	Matta	8.46	9.28	8.62	8.60
169.	Punjab	Faridkot	Tehna-Pz		9.47	9.12	
170.	Punjab	Faridkot	Dhilwan Kalan	10.75	11.95	9.80	9.10
171.	Punjab	Faridkot	Rorian Kapura-Pz	9.40		10.55	10.23
172.	Punjab	Faridkot	Bead Sikhawala- Pz	9.89	8.70	11.30	
173.	Punjab	Faridkot	Behabal Kalan-Pz	11.40		11.90	11.66
174.	Punjab	Faridkot	Karirwali	11.55	12.68	13.19	6.70
175.	Punjab	Faridkot	Dhudi-Pz	12.90		13.30	13.12
176.	Punjab	Faridkot	Chahd Baja	15.69	17.73	17.27	16.60
177.	Punjab	Faridkot	Fatehgarh-Pz	17.10		18.95	18.61
178.	Punjab	Faridkot	Baja Khana	18.70	21.25	26.26	18.05
179.	Punjab	Faridkot	Dhaipai-Pz	7.70			7.41
180.	Punjab	Faridkot	Faridkot	4.46			4.13
181.	Punjab	Faridkot	Koharwala- Dw	7.05			6.67
182.	Punjab	Faridkot	Nawan Killa-Pz				1.45
183.	Punjab	Faridkot	Sandhwan-Pz	6.55			6.50
184.	Punjab	Fatehgarh Sahib	Bhagiana	4.80	2.45	3.19	3.88
185.	Punjab	Fatehgarh Sahib	Chunni Kalan		15.91	15.55	
186.	Punjab	Fatehgarh Sahib	Kalewal			18.20	17.55
187.	Punjab	Fatehgarh Sahib	Burj	18.05		19.15	19.15
188.	Punjab	Fatehgarh Sahib	Alipur Sodhian-Pz	18.15		19.20	19.50
189.	Punjab	Fatehgarh Sahib	Chandiala-Pz	19.50		19.70	18.20
190.	Punjab	Fatehgarh Sahib	Jai Singh Wala	18.20		19.75	20.25
191.	Punjab	Fatehgarh Sahib	Bassi Pathana	19.48	21.34	20.11	19.85
192.	Punjab	Fatehgarh Sahib	Khamanon-Pz	19.95		20.20	19.70

193.	Punjab	Fatehgarh Sahib	Sado Majra	18.55		20.20	20.60
194.	Punjab	Fatehgarh Sahib	Inayatpur-Pz-S			20.87	
195.	Punjab	Fatehgarh Sahib	Mianpur-Pz	20.90		21.60	21.50
196.	Punjab	Fatehgarh Sahib	Ladpur			21.80	21.70
197.	Punjab	Fatehgarh Sahib	Fatehgarh Sahib-Pz	21.47	21.77	21.85	21.54
198.	Punjab	Fatehgarh Sahib	Lohar Majra	21.25		21.85	21.45
199.	Punjab	Fatehgarh Sahib	Sirhind-Pz	22.10		22.00	23.20
200.	Punjab	Fatehgarh Sahib	Timber Pur-Pz	24.05		22.60	22.05
201.	Punjab	Fatehgarh Sahib	Kharey_Pz			22.80	21.20
202.	Punjab	Fatehgarh Sahib	Talwara	20.40		22.80	23.30
203.	Punjab	Fatehgarh Sahib	Nalini-Pz	21.64	21.99	23.15	22.47
204.	Punjab	Fatehgarh Sahib	Jhambela	22.25		23.55	24.05
205.	Punjab	Fatehgarh Sahib	Shahpur	23.55		24.55	24.95
206.	Punjab	Fatehgarh Sahib	Amlloh1			26.00	25.75
207.	Punjab	Fatehgarh Sahib	Tahalpur	24.30		26.00	26.00
208.	Punjab	Fatehgarh Sahib	Khera-Pz	26.20		27.20	27.30
209.	Punjab	Fatehgarh Sahib	Nandpur Kalaur-Pz	31.50		33.00	33.50
210.	Punjab	Fatehgarh Sahib	Salempur			33.60	33.50
211.	Punjab	Fatehgarh Sahib	Bhateri1	32.12	34.40	33.72	33.95
212.	Punjab	Fatehgarh Sahib	Badalialasingh	37.56	39.80	39.88	38.70
213.	Punjab	Fatehgarh Sahib	Bagga Kalan	25.35			27.45
214.	Punjab	Fatehgarh Sahib	Chuni Khurd-Pz	15.85			20.60
215.	Punjab	Fatehgarh Sahib	Fatehgarh Sahib	20.45			22.00
216.	Punjab	Fatehgarh Sahib	Pawala	12.24	10.45		
217.	Punjab	Fazilka	Ladhuwala	2.08	0.63	1.20	1.36
218.	Punjab	Fazilka	Khuiansarwar- Pz	1.91	1.55	1.36	1.40
219.	Punjab	Fazilka	Kundal1	1.31	1.31	1.48	0.98
220.	Punjab	Fazilka	Alamgarh	1.87	1.58	1.89	1.29
221.	Punjab	Fazilka	Muradwala Dal-Pz	1.76		2.06	2.05
222.	Punjab	Fazilka	Sohangarh Ratte	2.81	2.13	2.09	2.16
223.	Punjab	Fazilka	Sitoganno	2.50	2.01	2.21	1.93
224.	Punjab	Fazilka	Malukpur-Pz	2.12		2.31	2.28
225.	Punjab	Fazilka	Bannawala		2.86	2.58	2.30
226.	Punjab	Fazilka	Abohar	2.84	2.51	2.71	2.48
227.	Punjab	Fazilka	Nihalkhera	3.14	2.67	2.93	2.24
228.	Punjab	Fazilka	Pattiwalla-Pz	2.71		3.00	
229.	Punjab	Fazilka	Danger Khera-Pz	3.09		3.28	
230.	Punjab	Fazilka	Jandwala Watan-Pz	2.88		3.37	3.35
231.	Punjab	Fazilka	Danewal Satkosi	4.76	4.78	3.63	4.38

232.	Punjab	Fazilka	Ramsara-Pz	4.19		4.38	4.25
233.	Punjab	Fazilka	Shatriwala-Pz	4.04		4.54	
234.	Punjab	Fazilka	Ghananga Kalan-Pz	3.88		4.60	4.55
235.	Punjab	Fazilka	Godiwala-Pz	4.30		4.78	4.72
236.	Punjab	Fazilka	Giddran Wali-Pz	3.48		5.00	
237.	Punjab	Fazilka	Kaler Khera-Pz	4.72		5.00	
238.	Punjab	Fazilka	Jand Wala Johian-Pz	4.82		5.22	5.15
239.	Punjab	Fazilka	Dipulana-Pz	6.25	5.79	5.23	
240.	Punjab	Fazilka	Himmatpura-Pz	5.61		5.95	5.85
241.	Punjab	Fazilka	Asifwala-Pz	5.90		6.42	6.30
242.	Punjab	Fazilka	Guru Harsahai-Pz	6.07		6.85	6.77
243.	Punjab	Fazilka	Bazirdpura	7.72	7.67	7.60	
244.	Punjab	Fazilka	Chak Khere Wala-Pz	7.13		7.68	7.55
245.	Punjab	Fazilka	Sherewala-Pz	8.77		8.90	8.80
246.	Punjab	Fazilka	Bulla Rai Uttar-Pz			9.30	9.20
247.	Punjab	Fazilka	Pancha Wali-Pz	9.67		10.18	10.12
248.	Punjab	Fazilka	Swah Wala- Pz	10.30	10.89	10.30	10.05
249.	Punjab	Fazilka	Jalalabad-Pz			14.62	14.52
250.	Punjab	Fazilka	Hamed Saidoke-Pz	14.75		15.37	15.25
251.	Punjab	Fazilka	Khore Ki Uttar-Pz	15.92		17.45	17.25
252.	Punjab	Fazilka	Nure-Ki-Uttar 07pz	16.47		17.51	17.83
253.	Punjab	Fazilka	Fattu Wala-Pz	20.27		21.61	21.60
254.	Punjab	Fazilka	Baman Wali-Pz	12.65			13.15
255.	Punjab	Fazilka	Chak Pune Wala-Pz	11.53			16.90
256.	Punjab	Fazilka	Fazilka-Pz	9.20			9.85
257.	Punjab	Fazilka	Jaimal Singhwala Pz	9.49	5.80		10.00
258.	Punjab	Fazilka	Kandh Wala-Pz	3.38			3.50
259.	Punjab	Fazilka	Kathgarh-Pz	14.33			14.80
260.	Punjab	Fazilka	Markhiwa Bhamni-Pz	6.77			7.15
261.	Punjab	Fazilka	Mothian Wali				0.45
262.	Punjab	Fazilka	Roran Wala-Pz	3.78			4.30
263.	Punjab	Fazilka	Sham Singhwala-Pz	5.07	4.83		
264.	Punjab	Fazilka	Singhpura-Pz	3.96			3.28
265.	Punjab	Firozpur	Tibbi Taiwan Laluwalla-Pz	3.63		4.20	4.10
266.	Punjab	Firozpur	Piyarana	5.31	5.40	4.41	4.70
267.	Punjab	Firozpur	Mana Singh Wala-Pz	4.70		5.37	5.32
268.	Punjab	Firozpur	Rala Hazi- Pz	6.10		7.02	6.93
269.	Punjab	Firozpur	Mohre Wala-Pz		8.40	7.20	6.45
270.	Punjab	Firozpur	Jang-Pz	7.58		8.22	8.14

271.	Punjab	Firozpur	Rukne Wala-Pz	8.05		9.01	9.10
272.	Punjab	Firozpur	Dulchi Ke-Pz	7.94		9.14	8.95
273.	Punjab	Firozpur	Jaimal Wala-Pz	9.07		9.80	9.63
274.	Punjab	Firozpur	Wage Wala-Pz	9.53		10.02	9.85
275.	Punjab	Firozpur	Tibbi Kalan-Pz	9.65		11.00	10.74
276.	Punjab	Firozpur	Chak Kandhe Shah-Pz	10.42		11.20	11.09
277.	Punjab	Firozpur	Mudki-Pz	10.92		11.72	11.48
278.	Punjab	Firozpur	Malsian-Pz	11.47	13.25	12.25	11.60
279.	Punjab	Firozpur	Katoran-Pz			13.19	12.92
280.	Punjab	Firozpur	Sadhusha Wala-Pz	12.65		13.30	13.09
281.	Punjab	Firozpur	Mohkam Khan Wala-Pz	12.76		13.65	13.48
282.	Punjab	Firozpur	Machi Bugra/ Gujran-Pz	12.90		14.04	13.90
283.	Punjab	Firozpur	Chamb-Pz	17.85		19.00	18.45
284.	Punjab	Firozpur	Gogiani-Pz	18.50		19.15	18.95
285.	Punjab	Firozpur	Lauhke Kalan- Pz	17.81	20.00	19.56	
286.	Punjab	Firozpur	Lohere Khurd-Pz	18.75		20.01	20.01
287.	Punjab	Firozpur	Mallanwala Khas-Pz	11.80		23.30	12.26
288.	Punjab	Firozpur	Malluwala-Pz	21.40		23.68	23.45
289.	Punjab	Firozpur	Bara Mansur Wala-Pz	26.35		28.02	28.65
290.	Punjab	Firozpur	Talwandi Jalle Khan-Pz	26.77		29.17	29.10
291.	Punjab	Firozpur	Sultan Khan Wala Urf-Pz	9.50			11.40
292.	Punjab	Gurdaspur	Jhandalbana-Pz	3.50		2.10	2.60
293.	Punjab	Gurdaspur	Massit-Pz	3.30		2.30	2.55
294.	Punjab	Gurdaspur	Kalerkalan-Pz			2.40	3.00
295.	Punjab	Gurdaspur	Pandoritalab	2.68	2.49	2.51	7.30
296.	Punjab	Gurdaspur	Raipur	3.75		2.70	3.65
297.	Punjab	Gurdaspur	Jhabkra	4.60		3.00	3.50
298.	Punjab	Gurdaspur	Nangal-Pz	4.10		3.25	3.40
299.	Punjab	Gurdaspur	Khatgarh-Pz	5.10		3.30	3.80
300.	Punjab	Gurdaspur	Salehchak(Vs)		3.30	3.77	3.88
301.	Punjab	Gurdaspur	Saidowal Kalan-Dw	4.80	4.17	3.88	3.64
302.	Punjab	Gurdaspur	Masana-Pz	4.80		3.90	4.05
303.	Punjab	Gurdaspur	Saleh Chak-S		3.74	3.90	4.18
304.	Punjab	Gurdaspur	Mullowali 2(M)			4.18	4.14
305.	Punjab	Gurdaspur	Gajikort-Pz	5.90		4.20	4.40
306.	Punjab	Gurdaspur	Mullowali 1(Vs)			4.25	4.39
307.	Punjab	Gurdaspur	Lakankala-Pz	4.90		4.45	4.75
308.	Punjab	Gurdaspur	Galri	5.70	3.45	4.65	4.97
309.	Punjab	Gurdaspur	Shahpur-Pz	5.30		4.80	5.00

310.	Punjab	Gurdaspur	Dostpur-Pz	5.50		4.90	5.10
311.	Punjab	Gurdaspur	Kalanaur-Pz	6.15	8.23	5.00	5.15
312.	Punjab	Gurdaspur	Shahpur Jattan-Pz	5.90		5.05	5.10
313.	Punjab	Gurdaspur	Shezada Kalan-Pz	6.10		5.10	5.30
314.	Punjab	Gurdaspur	Khan Fatta-Pz	6.30		5.60	5.80
315.	Punjab	Gurdaspur	Dera Baba Nanak	6.66	6.22	6.44	6.67
316.	Punjab	Gurdaspur	Parcha-Pz	7.00		6.45	6.70
317.	Punjab	Gurdaspur	Ghumani Khurd-Pz	7.50		6.75	6.70
318.	Punjab	Gurdaspur	Maman-Pz	7.80		6.90	7.40
319.	Punjab	Gurdaspur	Shikar-Pz	8.00		7.10	7.40
320.	Punjab	Gurdaspur	Bhagowal	8.32	6.35	7.17	7.53
321.	Punjab	Gurdaspur	Ghania Ki Bangar- Pz	8.35	8.50	8.05	7.96
322.	Punjab	Gurdaspur	Langurwal-Pz	8.70		8.15	8.30
323.	Punjab	Gurdaspur	Kala Afgana-Pz	9.60		8.55	8.75
324.	Punjab	Gurdaspur	Dinanagar	4.97	2.56	8.60	4.02
325.	Punjab	Gurdaspur	Chahal Kalan-Pz	9.20		8.75	8.70
326.	Punjab	Gurdaspur	Bariyar	9.80		9.25	9.50
327.	Punjab	Gurdaspur	Chahgill-Pz	9.30		9.40	9.00
328.	Punjab	Gurdaspur	Gurdaspur-Pz	9.30		9.55	10.00
329.	Punjab	Gurdaspur	Quaddian -Pz			9.60	9.80
330.	Punjab	Gurdaspur	Hassanpur Kalan-Pz	10.40		9.80	10.10
331.	Punjab	Gurdaspur	Khanmalik-Pz	10.20		9.80	10.00
332.	Punjab	Gurdaspur	Tikriwala-Pz	9.90		10.10	10.40
333.	Punjab	Gurdaspur	Madipur Fatehgarhchuria	10.09	10.66	10.15	9.96
334.	Punjab	Gurdaspur	Malikpur-Pz	9.35		10.15	10.35
335.	Punjab	Gurdaspur	Dhianpur	11.48		11.05	10.65
336.	Punjab	Gurdaspur	Harchowal-Pz			11.50	12.50
337.	Punjab	Gurdaspur	Sathial-Pz	12.78	12.45	11.87	11.18
338.	Punjab	Gurdaspur	Chone-Pz	11.65		12.15	11.90
339.	Punjab	Gurdaspur	Patti Atwal-Pz	12.60		12.50	12.70
340.	Punjab	Gurdaspur	Kalanaur-Dw	11.80	12.66	12.86	11.00
341.	Punjab	Gurdaspur	Dakoha-Pz	15.19	15.92	15.14	14.72
342.	Punjab	Gurdaspur	Kaure-Pz	15.30		16.90	16.10
343.	Punjab	Gurdaspur	Bilasbal-Pz	17.40		17.00	16.60
344.	Punjab	Gurdaspur	Hargobindpur	19.20	19.03	19.34	
345.	Punjab	Gurdaspur	Batala-Pz				8.05
346.	Punjab	Gurdaspur	Bham	15.97	15.90		
347.	Punjab	Gurdaspur	Hargobindpur1	4.30			
348.	Punjab	Gurdaspur	Kahnuwan	16.60			

349.	Punjab	Gurdaspur	Mallewal-Pz	6.60			5.60
350.	Punjab	Gurdaspur	Mirza Jaan-Pz	9.75			9.50
351.	Punjab	Gurdaspur	Nishayara		5.80		1.54
352.	Punjab	Gurdaspur	Sohal	12.10			11.50
353.	Punjab	Hoshiarpur	Mukerian Dw		2.83	2.63	
354.	Punjab	Hoshiarpur	Chak Sheru-Dw	4.45	2.50	3.21	3.42
355.	Punjab	Hoshiarpur	Hazipur	9.73	4.75	3.27	8.15
356.	Punjab	Hoshiarpur	Chohal	3.90	1.40	3.57	3.74
357.	Punjab	Hoshiarpur	Samraj Tanda-Dw	6.20	5.00	3.98	3.96
358.	Punjab	Hoshiarpur	Pan Khuh-Dw	7.90	3.55	4.70	6.14
359.	Punjab	Hoshiarpur	Bhangala-Chhota-Dw		3.35	5.22	5.27
360.	Punjab	Hoshiarpur	Jhir Da Khuh-Dw	6.51	4.25	5.28	
361.	Punjab	Hoshiarpur	Durimiwal	6.10	5.20	5.80	6.49
362.	Punjab	Hoshiarpur	Haler Rampur-Dw	4.70	3.75	5.90	5.00
363.	Punjab	Hoshiarpur	Sibo Chak- Dw	8.25	6.80	7.22	7.82
364.	Punjab	Hoshiarpur	Dasuya2 (S)	8.70		9.84	9.09
365.	Punjab	Hoshiarpur	Talwara1	13.61	11.47	11.07	11.54
366.	Punjab	Hoshiarpur	Nangal Bihala- Dw	11.88	11.18	11.28	11.08
367.	Punjab	Hoshiarpur	Dagan-Dw	10.80	10.00	11.32	13.18
368.	Punjab	Hoshiarpur	Thakarwala	15.04	16.31	11.71	12.09
369.	Punjab	Hoshiarpur	Sham Chaurasi	13.76	11.55	13.80	13.97
370.	Punjab	Hoshiarpur	Garh Di Wala-Pz		13.50	14.79	12.79
371.	Punjab	Hoshiarpur	Bhamnaur		16.90	15.75	16.15
372.	Punjab	Hoshiarpur	Simbli- Ow	17.20	22.30	18.66	17.19
373.	Punjab	Hoshiarpur	Simbli-Pz	20.91	23.90	18.90	18.33
374.	Punjab	Hoshiarpur	Rampur Colony (Hsp) Pz-Medium	24.02	21.24	20.90	
375.	Punjab	Hoshiarpur	Mahilpur-Pz	22.75	22.21	21.41	21.85
376.	Punjab	Hoshiarpur	Adowal Garhi-Pz		20.35	21.75	24.70
377.	Punjab	Hoshiarpur	Garhshankar (S)	20.69	19.23	27.91	25.16
378.	Punjab	Hoshiarpur	Phuglana- Pz	27.92	27.35	28.10	25.65
379.	Punjab	Jalandhar	Udhopur	8.50	7.20	6.78	7.68
380.	Punjab	Jalandhar	Allawalpur	7.05		7.29	7.80
381.	Punjab	Jalandhar	Adampur 3(S)	7.18	7.88	7.61	7.58
382.	Punjab	Jalandhar	Nasirpur-Pz	10.70		11.80	11.30
383.	Punjab	Jalandhar	Kharal Kalan Pz-S	14.80	13.05	15.93	15.19
384.	Punjab	Jalandhar	Pathial-Pz	16.75		16.80	16.20
385.	Punjab	Jalandhar	Phillaur 2(S)		16.15	17.20	17.40
386.	Punjab	Jalandhar	Akalpur-Pz	17.10		18.10	17.80
387.	Punjab	Jalandhar	Sultanpur-Pz	17.60		18.60	18.10

388.	Punjab	Jalandhar	Adarman-Pz	18.10		18.70	25.30
389.	Punjab	Jalandhar	Samarahi-Pz	18.90		18.70	18.40
390.	Punjab	Jalandhar	Shahkot-Pz-Pb	17.80		18.70	17.10
391.	Punjab	Jalandhar	Gehlan-Pz	18.00		18.80	18.10
392.	Punjab	Jalandhar	Bhogpur-Pz			20.80	20.50
393.	Punjab	Jalandhar	Kartarpur 2(S)	18.89	20.82	21.90	19.39
394.	Punjab	Jalandhar	Kakar Kalan-Pz	20.10		22.10	21.60
395.	Punjab	Jalandhar	Kurla-Pz	21.60		22.10	21.10
396.	Punjab	Jalandhar	Bilga-Pz	21.70		22.80	22.40
397.	Punjab	Jalandhar	Talwan-Pz	21.10		23.00	21.50
398.	Punjab	Jalandhar	Thanda-Pz	22.00		23.10	22.60
399.	Punjab	Jalandhar	Kala-Pz	22.60		23.20	21.40
400.	Punjab	Jalandhar	Mehsampur-Pz	19.60		23.20	21.50
401.	Punjab	Jalandhar	Pharwala-Pz	22.50		24.40	23.20
402.	Punjab	Jalandhar	Kot Wadal Khan-Pz	22.70		24.60	24.30
403.	Punjab	Jalandhar	Rurka Kalan- Pz	22.50		25.20	22.40
404.	Punjab	Jalandhar	Skarar Pur-Pz	23.70		25.20	21.60
405.	Punjab	Jalandhar	Chania-Pz	24.10		25.75	24.90
406.	Punjab	Jalandhar	Rahimpur-Pz	26.25		28.10	25.30
407.	Punjab	Jalandhar	Hardo Pharwal-Pz	25.80		28.80	31.50
408.	Punjab	Jalandhar	Fateh Jalal-Pz	28.75		29.80	25.40
409.	Punjab	Jalandhar	Nussi-Pz	28.60		30.10	28.35
410.	Punjab	Jalandhar	Nakodar 3(S)		31.29	31.38	36.34
411.	Punjab	Jalandhar	Jandiala-Pz	30.25	30.30	32.28	31.85
412.	Punjab	Jalandhar	Hardo Sheikh-Pz	29.90		32.50	32.10
413.	Punjab	Jalandhar	Jandu Singha-Pz	31.20		32.70	32.10
414.	Punjab	Jalandhar	Kang Sahib Rai-Pz	31.20		33.20	33.00
415.	Punjab	Jalandhar	Nangal Shaman	32.75		33.60	33.30
416.	Punjab	Jalandhar	Janian-Pz	31.10		33.80	33.50
417.	Punjab	Jalandhar	Kalyanpur-Pz	32.60		33.90	33.60
418.	Punjab	Jalandhar	Billi Chahrami-Pz	33.60		34.10	33.85
419.	Punjab	Jalandhar	Dhanda-Pz	32.60		34.10	33.80
420.	Punjab	Jalandhar	Nakodar 2(M)	35.74	33.54	34.18	37.44
421.	Punjab	Jalandhar	Gillian-Pz	33.45		34.20	34.00
422.	Punjab	Jalandhar	Mahmuwal-Pz	32.40		34.20	33.75
423.	Punjab	Jalandhar	Gohiran		33.45	34.43	34.68
424.	Punjab	Jalandhar	Lallian Kalan Pz-S	35.15	33.05	36.44	36.12
425.	Punjab	Jalandhar	Jalandhar-Pz(Vs)	38.75	34.06	38.24	36.84
426.	Punjab	Jalandhar	Dhirowal-Pz	10.30			10.90

427.	Punjab	Jalandhar	Shahkot(S)		25.91		
428.	Punjab	Kapurthala	Nangal Lubhana-Pz		6.35	6.00	
429.	Punjab	Kapurthala	Chakoke-Pz	6.14		6.76	6.24
430.	Punjab	Kapurthala	Begowal-Pz	6.30		6.80	6.30
431.	Punjab	Kapurthala	Hazipur-Pz	7.24		7.49	6.79
432.	Punjab	Kapurthala	Nadala			8.30	7.50
433.	Punjab	Kapurthala	Talwandi Chaudary -Pz	8.89	10.70	8.52	10.45
434.	Punjab	Kapurthala	Karnail Ganju-Pz	7.46		8.71	8.01
435.	Punjab	Kapurthala	Thikriwali-Pz	8.25		8.90	8.40
436.	Punjab	Kapurthala	Bholath M	10.29	10.19	9.09	9.62
437.	Punjab	Kapurthala	Bholath S	9.74	9.67	9.26	3.14
438.	Punjab	Kapurthala	Nurpur Janoa-Pz	8.63		9.53	8.58
439.	Punjab	Kapurthala	Miani Bola-Pz	9.61		9.81	9.46
440.	Punjab	Kapurthala	Hamira-Pz	10.34		11.44	10.94
441.	Punjab	Kapurthala	Bhawanipur-Pz	10.70		11.62	10.00
442.	Punjab	Kapurthala	Bhatnura Khurd- S	15.55	17.82	15.32	
443.	Punjab	Kapurthala	Bauril Harnampur-Pz	14.64		15.49	14.64
444.	Punjab	Kapurthala	Sultanpur2 (S)	13.86	17.50	17.14	16.95
445.	Punjab	Kapurthala	Hussainpura-S Pz		26.40	21.10	23.83
446.	Punjab	Kapurthala	Hussainpura-Vs Pz		26.20	22.11	20.93
447.	Punjab	Kapurthala	Maheru-Pz	23.30		24.30	23.10
448.	Punjab	Kapurthala	Rawalpindi-Pz	23.35		24.35	22.95
449.	Punjab	Kapurthala	Kapurthala2 (S)	21.50	23.97	25.46	22.71
450.	Punjab	Kapurthala	Bhanoki-Pz	26.20		27.10	25.20
451.	Punjab	Kapurthala	Sangatpur-Pz	22.50		27.10	24.40
452.	Punjab	Kapurthala	Kishanpur	27.95		27.75	26.25
453.	Punjab	Kapurthala	Phagwara(Shallow)		29.95	29.62	26.90
454.	Punjab	Kapurthala	Nathu Chahal-Pz	32.19		33.49	29.69
455.	Punjab	Kapurthala	Amanipur-Pz	12.65			12.45
456.	Punjab	Kapurthala	Balera-Pz	33.10			34.15
457.	Punjab	Kapurthala	Dalla		22.15		
458.	Punjab	Kapurthala	Mithra-Pz	13.60			15.10
459.	Punjab	Kapurthala	Paazian-Pz	18.70			19.60
460.	Punjab	Kapurthala	Phagwara2 (S)	27.10			29.35
461.	Punjab	Kapurthala	Saiflabad-Pz	8.83			9.00
462.	Punjab	Kapurthala	Shalapur Dona-Pz	29.70			29.70
463.	Punjab	Ludhiana	Sherian	4.04	4.09	3.84	4.04
464.	Punjab	Ludhiana	Lelon-Pz	5.45		4.70	5.20
465.	Punjab	Ludhiana	Udonwal-Pz	5.10		4.70	4.55

466.	Punjab	Ludhiana	Sherpur-Pz	5.65		5.15	5.15
467.	Punjab	Ludhiana	Chaunta-Pz	5.95		6.05	5.90
468.	Punjab	Ludhiana	Hambowal-Pz	6.30		6.20	5.90
469.	Punjab	Ludhiana	Doraha-Pz	7.53	7.35	6.90	6.94
470.	Punjab	Ludhiana	Machhiwara-Pz			8.80	8.50
471.	Punjab	Ludhiana	Upplan	9.00		8.85	8.50
472.	Punjab	Ludhiana	Sidhwan Bet-Pz	9.39	8.95	8.95	8.81
473.	Punjab	Ludhiana	Chankian Khurd-Pz	9.25		9.00	8.96
474.	Punjab	Ludhiana	Katanikalan-Pz	9.85		9.20	8.90
475.	Punjab	Ludhiana	Lalan1	11.17		9.49	
476.	Punjab	Ludhiana	Begowal			9.95	
477.	Punjab	Ludhiana	Aliwal-Pz	9.20		10.10	9.80
478.	Punjab	Ludhiana	Bilaspur-Pz	10.05		10.15	10.05
479.	Punjab	Ludhiana	Mushkabad		12.72	11.50	12.17
480.	Punjab	Ludhiana	Punjeta			11.55	
481.	Punjab	Ludhiana	Bhahlolpur-Dw	13.25	12.23	12.28	12.78
482.	Punjab	Ludhiana	Lodhiwal-Pz	11.75		12.36	11.25
483.	Punjab	Ludhiana	Utlan	12.50	12.60	12.72	
484.	Punjab	Ludhiana	Mehduda			13.40	13.20
485.	Punjab	Ludhiana	Samrala 2(S)	14.84	14.91	14.41	14.29
486.	Punjab	Ludhiana	Lil-Pz Iii		13.20	14.48	12.97
487.	Punjab	Ludhiana	Bhikhi Khatron-Pz	14.13		15.03	15.03
488.	Punjab	Ludhiana	Mangat-Pz	12.00		15.45	12.05
489.	Punjab	Ludhiana	Bhagwanpur-Pz	15.15		15.75	15.00
490.	Punjab	Ludhiana	Rasulpur			15.75	15.55
491.	Punjab	Ludhiana	Sanewal-Pz	16.85		17.20	17.10
492.	Punjab	Ludhiana	Lil- li Pz	14.38	17.26	17.50	
493.	Punjab	Ludhiana	Payal-Pz	17.75		18.75	18.60
494.	Punjab	Ludhiana	Gopalpur 2(S)	18.66	20.44	18.83	19.00
495.	Punjab	Ludhiana	Hedon-Pz	18.40		19.20	18.10
496.	Punjab	Ludhiana	Sangatpura-Pz	19.05		19.20	18.60
497.	Punjab	Ludhiana	Pabbian-Pz	18.40		19.80	19.40
498.	Punjab	Ludhiana	Harnampur	19.28		19.91	19.43
499.	Punjab	Ludhiana	Alamgir-Pz	19.55		20.50	20.35
500.	Punjab	Ludhiana	Dodpur-Pz	20.25		20.95	20.65
501.	Punjab	Ludhiana	Talwandi Kalan-Pz	19.15		21.00	20.25
502.	Punjab	Ludhiana	Kishangarh-Pz	20.50		21.25	20.90
503.	Punjab	Ludhiana	Ragba-Pz	20.28		22.06	21.45
504.	Punjab	Ludhiana	Mehma Singh Wala-Pz	21.60		23.02	22.80

505.	Punjab	Ludhiana	Gohaur-Pz	23.15		23.05	23.00
506.	Punjab	Ludhiana	Pandori-Pz	21.20		23.10	21.95
507.	Punjab	Ludhiana	Sahoran-Pz			23.10	22.85
508.	Punjab	Ludhiana	Manak Majra-Pz	22.10		23.50	22.80
509.	Punjab	Ludhiana	Dinnamder-Pz	21.65		23.60	22.60
510.	Punjab	Ludhiana	Ikloha-Pz	22.75	24.15	23.60	24.52
511.	Punjab	Ludhiana	Khandur	22.37		23.64	23.44
512.	Punjab	Ludhiana	Kalsian			23.75	30.55
513.	Punjab	Ludhiana	Chaminala-Pz	22.10		23.80	23.40
514.	Punjab	Ludhiana	Bharthala Randhawa-Pz	23.89		24.72	24.30
515.	Punjab	Ludhiana	Rashiana-Pz	23.20		24.95	24.10
516.	Punjab	Ludhiana	Galibkalan-Pz	23.70		25.60	25.70
517.	Punjab	Ludhiana	Mansuran-Mgow			25.60	24.00
518.	Punjab	Ludhiana	Chhapar-Pz	24.05		26.10	25.20
519.	Punjab	Ludhiana	Rattewal-Pz	23.90		26.40	25.15
520.	Punjab	Ludhiana	Kaonke Kalan			26.95	
521.	Punjab	Ludhiana	Sajaywal-Pz	24.50		28.75	25.05
522.	Punjab	Ludhiana	Rashin			29.08	29.18
523.	Punjab	Ludhiana	Kishanpur-Pz	26.60		29.30	27.85
524.	Punjab	Ludhiana	Roomi-Pz	26.30		29.80	26.80
525.	Punjab	Ludhiana	Rajona Khurd	26.23		30.18	27.13
526.	Punjab	Ludhiana	Lohara-Pz	29.80		30.50	30.60
527.	Punjab	Ludhiana	Nurpur-Pz	28.50		30.50	30.70
528.	Punjab	Ludhiana	Raikot-Pz	28.56		30.60	30.20
529.	Punjab	Ludhiana	Bassian Mgow			32.30	32.40
530.	Punjab	Ludhiana	P.A.U.Ludhiana 2(S)	28.69	32.53	33.87	33.54
531.	Punjab	Ludhiana	Tandari Kallon			37.40	37.25
532.	Punjab	Ludhiana	Chattar Singh Park-Ldh	39.98	40.46		
533.	Punjab	Ludhiana	Manoke-Pz	29.10			
534.	Punjab	Mansa	Burj Bhalaike		0.39	1.12	3.13
535.	Punjab	Mansa	Kusla-Pz	4.17		3.62	3.15
536.	Punjab	Mansa	Fattamaluka	6.93	5.48	5.67	5.31
537.	Punjab	Mansa	Bhamme Kalan-Pz	6.93		6.10	6.81
538.	Punjab	Mansa	Makha-[Pz	7.07		7.20	7.14
539.	Punjab	Mansa	Behniwala-Pz	6.83		7.60	7.43
540.	Punjab	Mansa	Gharangne-Pz	7.41		7.70	7.64
541.	Punjab	Mansa	Kot Dhamru	8.37	7.88	7.75	7.66
542.	Punjab	Mansa	Raipur-Pz	8.25	8.05	7.75	7.50
543.	Punjab	Mansa	Junniar			8.90	8.15

544.	Punjab	Mansa	Khokhar Kalan-Pz	8.37		9.10	8.82
545.	Punjab	Mansa	Alampur Mandran-Pz	10.94		11.40	11.16
546.	Punjab	Mansa	Khiala Kalan-Pz	10.66		11.40	11.51
547.	Punjab	Mansa	Bareh-Pz	11.64		11.70	11.60
548.	Punjab	Mansa	Ralla	12.19	15.54	12.95	12.76
549.	Punjab	Mansa	Burj Rathi-Pz	13.11		14.38	14.05
550.	Punjab	Mansa	Kotra	13.48	14.27	14.42	14.02
551.	Punjab	Mansa	Alisher Khurd-Pz	13.24		14.53	14.43
552.	Punjab	Mansa	Budhlada-Pz	14.85		15.70	
553.	Punjab	Mansa	Bahadur Pur-Pz	15.43		16.90	16.41
554.	Punjab	Mansa	Phaphare Bhaike-Pz	15.63		17.10	16.92
555.	Punjab	Mansa	Bhikhi 2 (S)			17.97	
556.	Punjab	Mansa	Tibbi Hari Singh-Pz	18.20		18.96	18.11
557.	Punjab	Mansa	Bhikhi 1 (S)	19.10	17.77	19.00	18.73
558.	Punjab	Mansa	Lakhiwal-Pz	18.77		19.90	19.90
559.	Punjab	Mansa	Hirke-Pz	20.10		21.30	20.47
560.	Punjab	Mansa	Aklia-Pz	19.94		23.10	21.82
561.	Punjab	Mansa	Hero Kalan-Pz	25.81		29.00	28.90
562.	Punjab	Mansa	Budhlada	12.41			15.00
563.	Punjab	Mansa	Gehlan-Pz	7.19			
564.	Punjab	Mansa	Joga -Dp-Pz	2.43			9.03
565.	Punjab	Mansa	Mansa	9.73			10.16
566.	Punjab	Mansa	Sangha-Pz	59.18			
567.	Punjab	Moga	Mandar-Pz	8.55		10.00	10.00
568.	Punjab	Moga	Tota Singh Wala-Pz	9.30		10.75	10.70
569.	Punjab	Moga	Kamalke-Pz	12.65		13.90	13.74
570.	Punjab	Moga	Baje Ke-Pz	15.77	18.48	16.00	15.78
571.	Punjab	Moga	Samalsar-Pz	17.90		19.51	19.11
572.	Punjab	Moga	Indergarh-Pz	19.52		19.76	19.40
573.	Punjab	Moga	Thathe Bhai-Pz	18.95		20.26	19.93
574.	Punjab	Moga	Nathu Wala-Pz	20.70		22.11	21.83
575.	Punjab	Moga	Damru Khurd	21.13	22.77	22.61	
576.	Punjab	Moga	Mangewala-Pz	22.25		23.70	23.27
577.	Punjab	Moga	Budh Singh Wala-Pz	23.91	24.79	24.10	23.10
578.	Punjab	Moga	Dinna-Pz	26.50		27.80	27.51
579.	Punjab	Moga	Khokri Kalan-Pz	27.05		28.15	27.81
580.	Punjab	Moga	Raonke Kalan-Pz	27.40		28.30	28.02
581.	Punjab	Moga	Khosa Randhir-Pz	27.70		28.60	28.30
582.	Punjab	Moga	Samad Bhai-Pz	19.50		28.95	20.59

583.	Punjab	Moga	Daulatpur Niwan-Pz	27.95		29.10	28.73
584.	Punjab	Moga	Chand Nawan-Pz	28.30		29.30	28.94
585.	Punjab	Moga	Himatpura-Pz			30.09	29.84
586.	Punjab	Moga	Dhudi Ke-Pz	29.10		30.10	29.77
587.	Punjab	Moga	Bilaspur-Pz	30.20		31.27	30.99
588.	Punjab	Moga	Meemana-Pz	30.35		31.40	31.17
589.	Punjab	Moga	Jhandewala-Pz	31.30		32.25	31.93
590.	Punjab	Moga	Mehron-Pz	32.46		33.30	33.06
591.	Punjab	Moga	Chogawan-Pz	32.42	35.49	34.27	33.20
592.	Punjab	Moga	Nihalsinghwala-Pz	31.85	32.32	34.60	33.95
593.	Punjab	Moga	Dagru- Pz	33.85	34.32	34.68	34.12
594.	Punjab	Moga	Baraghara-Pz	21.60			22.11
595.	Punjab	Moga	Darapur				23.93
596.	Punjab	Moga	Darapur 07pz	23.70			27.30
597.	Punjab	Moga	Ghoha Khurd-Pz				19.39
598.	Punjab	Moga	Mari Mustfa-Pz	20.80			22.10
599.	Punjab	Muktsar	Khirkian Wala-Pz	1.70		1.20	1.25
600.	Punjab	Muktsar	Balocha Khera(Rasoolpur)	1.34	1.63	1.27	0.90
601.	Punjab	Muktsar	Dahak-S			1.53	0.75
602.	Punjab	Muktsar	Khunde Halal-Pz	2.41	1.67	1.55	1.55
603.	Punjab	Muktsar	Chaktam Kot-Pz	1.93		1.60	1.55
604.	Punjab	Muktsar	Jandwala-Pz			1.65	1.55
605.	Punjab	Muktsar	Ratta Khera Chota-Pz	2.30		1.80	1.85
606.	Punjab	Muktsar	Doda	2.32	1.02	1.89	2.65
607.	Punjab	Muktsar	Labanianwali	2.68	2.37	2.10	3.50
608.	Punjab	Muktsar	Kollian Wali-Pz			2.20	2.05
609.	Punjab	Muktsar	Lambi	1.37		2.26	2.25
610.	Punjab	Muktsar	Lambi-Pz	2.67	2.26	2.26	
611.	Punjab	Muktsar	Sehna Khera-Pz			2.53	2.50
612.	Punjab	Muktsar	Doda-Pz	3.18	2.65	2.61	
613.	Punjab	Muktsar	Abulkharana-Pz	2.72		2.63	2.60
614.	Punjab	Muktsar	Phulu Khera-Pz	2.50		2.63	2.60
615.	Punjab	Muktsar	Husnar-Pz	2.90		2.80	2.70
616.	Punjab	Muktsar	Kattianwali-Pz	3.15		2.95	3.00
617.	Punjab	Muktsar	Bhiti Wala-Pz	2.63		3.15	3.05
618.	Punjab	Muktsar	Chakmaan-Pz			3.15	3.15
619.	Punjab	Muktsar	Kabar Wala	4.86	3.74	3.24	3.09
620.	Punjab	Muktsar	Sheikh-Pz	2.88		3.25	2.95
621.	Punjab	Muktsar	Gidderbaha			3.52	

622.	Punjab	Muktsar	Muktsar	4.64	4.67	4.49	2.23
623.	Punjab	Muktsar	Dhalkot-Pz	6.60		6.77	6.30
624.	Punjab	Muktsar	Bhaliana	9.21	9.83	9.84	9.53
625.	Punjab	Muktsar	Alam Wala	2.92			2.37
626.	Punjab	Muktsar	Giddarbaha-Pz				3.65
627.	Punjab	Muktsar	Jhurar-Pz	2.90			2.30
628.	Punjab	Muktsar	Killian Wali-Pz	5.72			
629.	Punjab	Muktsar	Kot Bhai- Dw	5.73			2.70
630.	Punjab	Muktsar	Kuttianwali	2.00			
631.	Punjab	Muktsar	Sohiwal-Pz	3.12			3.45
632.	Punjab	Pathankot	Khanikhui	2.76	1.16	1.71	
633.	Punjab	Pathankot	Philora-Pz	3.20		1.90	2.60
634.	Punjab	Pathankot	Khogaki Chaka-Pz	3.85		2.20	2.55
635.	Punjab	Pathankot	Kui-Dw	5.22	5.30	2.30	
636.	Punjab	Pathankot	Kiari- Dw	5.17	4.98	2.44	3.34
637.	Punjab	Pathankot	Pathankot1	4.80	2.38	3.25	5.35
638.	Punjab	Pathankot	Sujanpur-Pz	5.10		3.30	3.75
639.	Punjab	Pathankot	Jainpur-Pz	3.30		3.40	3.40
640.	Punjab	Pathankot	Rakawal-Pz	4.60		3.95	4.20
641.	Punjab	Pathankot	Bhoa	4.57	2.97	4.04	4.07
642.	Punjab	Pathankot	Bamyal	4.50	3.13	4.19	4.60
643.	Punjab	Pathankot	Mirthal	5.40		4.30	4.30
644.	Punjab	Pathankot	Narot Jaimalsingh-Pz	5.65		5.10	5.40
645.	Punjab	Pathankot	Nawan Pind	5.51	3.21	5.43	5.79
646.	Punjab	Pathankot	Kirian Khurd-Pz	7.20		5.50	5.80
647.	Punjab	Pathankot	Parmota-Dw	11.00	11.23	5.55	5.58
648.	Punjab	Pathankot	Gharotakalan	8.79	6.04	7.74	
649.	Punjab	Pathankot	Sarna			8.60	8.18
650.	Punjab	Pathankot	Rani Pur-Pz	11.30		8.80	9.70
651.	Punjab	Pathankot	Ghoh		9.55	8.95	
652.	Punjab	Pathankot	Matti-Pz	26.10		16.10	19.40
653.	Punjab	Pathankot	Kuther-Pz	23.90		24.00	23.35
654.	Punjab	Pathankot	Jandwala	27.70		25.00	25.90
655.	Punjab	Pathankot	Dhar Khurd	4.10			2.45
656.	Punjab	Pathankot	Ghoh Dw	12.20			10.17
657.	Punjab	Pathankot	Jhakolahri		3.96		
658.	Punjab	Pathankot	Malikpur	7.30			7.00
659.	Punjab	Pathankot	Mirthal-Dw	3.10			4.10
660.	Punjab	Pathankot	Muthi	4.50			4.55

661.	Punjab	Pathankot	Phulpiara	4.90			4.60
662.	Punjab	Pathankot	Sarna1		5.85		
663.	Punjab	Patiala	Surala Kalan-Pz	3.65		3.60	3.10
664.	Punjab	Patiala	Lacharu Kalan	6.41	5.03	5.31	5.56
665.	Punjab	Patiala	Haluka	9.95	10.43	10.46	
666.	Punjab	Patiala	Kami Kalan	12.90	12.60	14.13	12.77
667.	Punjab	Patiala	Handesaran-S	17.48	15.23	16.98	
668.	Punjab	Patiala	Kami Khurd-Pz			20.40	21.45
669.	Punjab	Patiala	Passiana-Pz	22.65		22.90	22.95
670.	Punjab	Patiala	Bhora-Pz			23.60	24.30
671.	Punjab	Patiala	Lachkani-Pz	23.15	24.59	23.95	23.62
672.	Punjab	Patiala	Challeta-Pz	24.65		24.95	25.35
673.	Punjab	Patiala	Samaspur-Pz	24.85		26.70	25.90
674.	Punjab	Patiala	Bhojo Majri 07pz	22.65	26.02	26.90	25.75
675.	Punjab	Patiala	Mongowal-Pz	25.65		26.95	26.95
676.	Punjab	Patiala	Kalyan 07pz	25.92	25.82	27.00	26.61
677.	Punjab	Patiala	Kheri Pandte-Pz	26.80		27.05	28.45
678.	Punjab	Patiala	Rakhra-Pz			27.75	27.55
679.	Punjab	Patiala	Jainagar-Pz	28.70		29.90	29.30
680.	Punjab	Patiala	Rasoolpur Jaura-Pz	29.30		30.05	29.90
681.	Punjab	Patiala	Mehmood Pur-Pz	28.70		30.15	28.85
682.	Punjab	Patiala	Sangatpura-Pz	28.62	31.00	30.25	
683.	Punjab	Patiala	Gulwatti-Pz	31.05		31.05	32.05
684.	Punjab	Patiala	Bhankhar-Pz	29.50		31.70	32.45
685.	Punjab	Patiala	Sauja-Pz	30.00		31.70	31.45
686.	Punjab	Patiala	Birkauli	28.22	30.83	32.10	
687.	Punjab	Patiala	Nanhera-Pz	24.80		32.60	26.05
688.	Punjab	Patiala	Gharam-Pz	33.60		34.80	34.75
689.	Punjab	Patiala	Bhunerheri-Pz			34.85	36.10
690.	Punjab	Patiala	Dhaneta-Pz	33.65		35.05	35.55
691.	Punjab	Patiala	Devigarh 1pz	34.96	41.15	35.67	35.75
692.	Punjab	Patiala	Devigarh lipz	34.35		35.86	35.62
693.	Punjab	Patiala	Devigarh-lll Pz	34.55		36.32	35.93
694.	Punjab	Patiala	Samana-Pz	35.50	36.52	36.70	41.73
695.	Punjab	Patiala	Randhwara-Pz			36.85	36.75
696.	Punjab	Patiala	Kutha Kheri-Pz	38.35		38.70	38.55
697.	Punjab	Patiala	Kulburcha-Pz	36.30		38.75	39.25
698.	Punjab	Patiala	Kakrala-Pz	38.05		39.90	40.35
699.	Punjab	Patiala	Harion Kalan-Pz	39.35		40.70	22.90

700.	Punjab	Patiala	Patran-Pz	40.45	41.05	41.62	41.73
701.	Punjab	Patiala	Thua	34.03	35.71	42.38	35.13
702.	Punjab	Patiala	Bassma Pipla	9.27	9.14		6.06
703.	Punjab	Patiala	Dhakdaba 07	27.20	30.46		
704.	Punjab	Patiala	Hari Majra	5.71	6.80		
705.	Punjab	Patiala	Rajpura-Pzst	37.90	41.67		41.90
706.	Punjab	Rupnagar	Kotla	1.60		1.10	0.80
707.	Punjab	Rupnagar	Hardinamoh	3.14	1.14	2.19	2.10
708.	Punjab	Rupnagar	Bera Chauta	3.93	3.19	2.53	3.60
709.	Punjab	Rupnagar	Chakdera	5.07	4.18	4.10	4.19
710.	Punjab	Rupnagar	Braham Pur	5.32	3.25	4.30	4.73
711.	Punjab	Rupnagar	Bhatto-Pz	6.05		5.70	5.25
712.	Punjab	Rupnagar	Attari-Pz	7.00		6.40	5.85
713.	Punjab	Rupnagar	Ahmedpur	9.15	6.12	7.50	
714.	Punjab	Rupnagar	Dhair	9.58	8.81	8.54	8.98
715.	Punjab	Rupnagar	Kiwan-Pz	9.80		9.90	10.15
716.	Punjab	Rupnagar	Dumewal	13.66	13.71	13.00	13.03
717.	Punjab	Rupnagar	Bains	16.20		17.35	17.10
718.	Punjab	Rupnagar	Amrali-Pz	17.25		17.75	17.35
719.	Punjab	Rupnagar	Rurki Heeran-Pz	19.54	20.95	19.75	19.12
720.	Punjab	Rupnagar	Rajgiri-Pz	19.90		21.60	21.40
721.	Punjab	Rupnagar	Morinda-Pz	24.00		24.50	24.60
722.	Punjab	Rupnagar	Badali-Pz				0.47
723.	Punjab	Rupnagar	Bhalan	6.15	4.25		5.40
724.	Punjab	Rupnagar	Chatamli- Pz	38.84	41.68		39.81
725.	Punjab	Rupnagar	Kakrali				18.84
726.	Punjab	Rupnagar	Rampur-Pz	9.50			9.60
727.	Punjab	Rupnagar	Salempur				22.45
728.	Punjab	Rupnagar	Singh Bhagwant Pur				32.40
729.	Punjab	Sangrur	Manvi-Pz	23.07	24.44	23.80	23.58
730.	Punjab	Sangrur	Rurki Kalan-Pz	23.50		25.40	24.70
731.	Punjab	Sangrur	Kokahar-Pz	25.65		26.75	27.65
732.	Punjab	Sangrur	Sekhwas-Pz	26.45		27.75	27.90
733.	Punjab	Sangrur	Chatha Nanhera-Pz	28.60		29.20	30.05
734.	Punjab	Sangrur	Kila Hakima	27.00		29.30	28.60
735.	Punjab	Sangrur	Longowal-Pz	28.48	29.90	29.42	29.52
736.	Punjab	Sangrur	Banbhaura-Pz	26.45		29.60	28.10
737.	Punjab	Sangrur	Dharamgarh-Pz	29.95		30.35	32.15
738.	Punjab	Sangrur	Chural Kalan M	28.38	31.05	30.48	29.66

739.	Punjab	Sangrur	Rampur Channa-Pz	28.20		30.70	29.50
740.	Punjab	Sangrur	Bagarian-Pz	32.72	31.33	31.05	31.10
741.	Punjab	Sangrur	Lehal Kalan-Pz	30.05		31.35	31.90
742.	Punjab	Sangrur	Khanpur Fakiran-Pz	31.45		32.05	32.35
743.	Punjab	Sangrur	Bugra 1	30.34	32.66	32.34	32.54
744.	Punjab	Sangrur	Hassanpur-Pz	30.95		33.30	32.10
745.	Punjab	Sangrur	Kala Jhar-Pz	32.35		34.25	35.60
746.	Punjab	Sangrur	Kheri Naran-Pz	32.90		34.35	34.95
747.	Punjab	Sangrur	Ladda-Pz		35.65	34.50	34.75
748.	Punjab	Sangrur	Bakshiwala-Pz	34.30		34.75	35.30
749.	Punjab	Sangrur	Kuler Khurd-Pz	34.65		34.75	35.25
750.	Punjab	Sangrur	Mehsampur-Pz	34.75		35.05	34.95
751.	Punjab	Sangrur	Rajo Majra-Pz	31.15		35.70	32.60
752.	Punjab	Sangrur	Khurni-Pz	34.45		36.05	36.65
753.	Punjab	Sangrur	Sunam-Pz	34.97	36.43	36.21	36.17
754.	Punjab	Sangrur	Malerkotla-Dw	37.74	38.33	38.19	
755.	Punjab	Sangrur	Bhojowali-Pz	35.60	39.70	38.52	37.85
756.	Punjab	Sangrur	Sekhpur Khurd-Pz	36.70		38.70	38.25
757.	Punjab	Sangrur	Bhunerheri-Pz	35.85		39.60	39.70
758.	Punjab	Sangrur	Ghanauri Kalan-Pz	40.64	41.37	40.22	40.97
759.	Punjab	Sangrur	Sikandarpur-Pz	39.55		41.15	40.70
760.	Punjab	Sangrur	Panjgaraian- Pz	38.55		41.40	40.40
761.	Punjab	Sangrur	Rurgarh-Pz	42.13		44.00	43.65
762.	Punjab	Sangrur	Balang-Pz	33.05			
763.	Punjab	Sangrur	Bapla-Pz	37.55			
764.	Punjab	Sangrur	Bhogiwal- Pz				33.50
765.	Punjab	Sangrur	Bopla-Pz				40.70
766.	Punjab	Sangrur	Ghaghlo-Pz	36.85			
767.	Punjab	Sangrur	Haryao-Dw	21.50			
768.	Punjab	Sangrur	Isra-Pz	31.10			
769.	Punjab	Sangrur	Minsa-Pz				35.50
770.	Punjab	Sangrur	Patiala Kalan-Pz	35.85			
771.	Punjab	Sas Nagar	Sirsini	1.80	1.25	1.23	
772.	Punjab	Sas Nagar	Ghoga		3.09	2.67	3.86
773.	Punjab	Sas Nagar	Antala	4.02	2.00	3.02	3.35
774.	Punjab	Sas Nagar	Landran		4.96	4.46	
775.	Punjab	Sas Nagar	Dheri	5.85	5.51	4.98	5.36
776.	Punjab	Sas Nagar	Issapur- Dw		5.35	5.81	
777.	Punjab	Sas Nagar	Joli	7.77	7.44	5.90	9.10

778.	Punjab	Sas Nagar	Malkpur-Pz	8.80		6.80	5.05
779.	Punjab	Sas Nagar	Dera Bassi 07pz	13.47	13.10	12.95	13.15
780.	Punjab	Sas Nagar	Gharoon	16.30		15.80	14.15
781.	Punjab	Sas Nagar	Landran-Pz	17.15	17.27	16.68	
782.	Punjab	Sas Nagar	Raipur Kalan	17.90		17.35	17.85
783.	Punjab	Sas Nagar	Manoli-Pz	17.75		18.80	18.55
784.	Punjab	Sas Nagar	Kurrrha-Pz	21.65		21.40	21.45
785.	Punjab	Sas Nagar	Sundran-Pz			22.40	22.35
786.	Punjab	Sas Nagar	Chandiala-Pz	23.70		24.85	25.50
787.	Punjab	Sas Nagar	Palheri-Pz	30.86		30.05	29.30
788.	Punjab	Sas Nagar	Singhpura-Pz	30.55		32.05	31.40
789.	Punjab	Sas Nagar	Barauli-Pz	37.85		39.30	38.50
790.	Punjab	Sas Nagar	Balongi-Pz	42.20		42.05	40.85
791.	Punjab	Sas Nagar	Pedol-Pz	47.95		50.20	50.40
792.	Punjab	Sas Nagar	Ballopur	3.45			
793.	Punjab	Sas Nagar	Rurkan-Pz	24.35			23.70
794.	Punjab	Sas Nagar	Sohana-Pz	3.30			2.90
795.	Punjab	Sbs Nagar	Bahlora Kallan- Pz		6.45	5.32	5.41
796.	Punjab	Sbs Nagar	Alowal-Pz	6.30		6.50	6.00
797.	Punjab	Sbs Nagar	Dugri Garol-Pz	8.40		7.90	6.90
798.	Punjab	Sbs Nagar	Aur-Pz	11.00		11.80	11.50
799.	Punjab	Sbs Nagar	Mahalpur-Pz	13.30		13.30	12.60
800.	Punjab	Sbs Nagar	Balachore	18.66		14.70	14.40
801.	Punjab	Sbs Nagar	Ramgarh-Pz			14.80	13.40
802.	Punjab	Sbs Nagar	Kariam-Pz	15.40		15.90	15.60
803.	Punjab	Sbs Nagar	Bahara-Pz	17.30		17.60	17.25
804.	Punjab	Sbs Nagar	Jethu Majra-Pz	17.50		18.50	18.20
805.	Punjab	Sbs Nagar	Raipur Dhaba-Pz	17.50	16.95	18.65	17.56
806.	Punjab	Sbs Nagar	Hakimpur-Pz	16.65		18.80	18.30
807.	Punjab	Sbs Nagar	Langoya-Pz	17.60		18.80	18.30
808.	Punjab	Sbs Nagar	Badhwan-Pz	17.10		19.20	18.90
809.	Punjab	Sbs Nagar	Banga-Pz			21.00	20.90
810.	Punjab	Sbs Nagar	Padmaiwal-Pz	19.10		21.80	21.20
811.	Punjab	Sbs Nagar	Baharam-Pz	19.00		22.75	22.10
812.	Punjab	Sbs Nagar	Balaipur-Pz	20.10		23.30	22.90
813.	Punjab	Sbs Nagar	Bahua-Pz	21.70		23.80	23.30
814.	Punjab	Sbs Nagar	Bhadi-Pz	25.10		26.80	26.40
815.	Punjab	Sbs Nagar	Saroya-Pz			33.80	33.50
816.	Punjab	Sbs Nagar	Mauhra-Pz	35.34	35.05	35.18	34.17

817.	Punjab	Sbs Nagar	Dhan Wala-Pz	43.90		45.20	45.00
818.	Punjab	Sbs Nagar	Rahon	9.17			10.87
819.	Punjab	Sbs Nagar	Torewal-Pz	23.85			
820.	Punjab	Taran Taran	Rajoke-Pz	9.20		8.70	
821.	Punjab	Taran Taran	Dholan-Pz	10.30		9.60	
822.	Punjab	Taran Taran	Mari Kamboke-Pz			11.50	
823.	Punjab	Taran Taran	Gandi Wind-Pz	12.32	13.68	13.37	
824.	Punjab	Taran Taran	Kotbudda-Pz	14.10		14.00	
825.	Punjab	Taran Taran	Khalra-Pz	14.60		14.10	
826.	Punjab	Taran Taran	Bhagala-Pz	14.50		14.80	
827.	Punjab	Taran Taran	Mohawa	13.54	15.43	14.99	
828.	Punjab	Taran Taran	Attari-Pz	18.50		15.20	14.50
829.	Punjab	Taran Taran	Aima Khurd-Pz	15.50		16.20	14.40
830.	Punjab	Taran Taran	Bhusse-Pz	18.20		16.50	16.00
831.	Punjab	Taran Taran	Bhikiwind- Pz	15.93	17.61	17.38	
832.	Punjab	Taran Taran	Bhankar Kalan-Pz	18.10		17.60	17.20
833.	Punjab	Taran Taran	Pindan-Pz	17.90		18.00	17.30
834.	Punjab	Taran Taran	Kairon-Pz	18.50		18.10	
835.	Punjab	Taran Taran	Bhagwanpur-Pz	18.10		18.20	
836.	Punjab	Taran Taran	Kotli Sur Singh-Pz	19.10		18.30	
837.	Punjab	Taran Taran	Kalsia Kalan07	17.05	17.27	18.48	
838.	Punjab	Taran Taran	Chola Sahib-Pz	18.35	21.26	19.46	
839.	Punjab	Taran Taran	Fatehabad- Pz	20.10		20.10	21.00
840.	Punjab	Taran Taran	Marhona-Pz	21.10		20.30	17.50
841.	Punjab	Taran Taran	Bhure-Pz	19.50		20.40	21.10
842.	Punjab	Taran Taran	Khadur Sahib-Pz	19.20	20.61	20.54	
843.	Punjab	Taran Taran	Goindwal 07	20.24	19.43	20.70	
844.	Punjab	Taran Taran	Sugga-Pz	20.90		20.80	
845.	Punjab	Taran Taran	Chakkare Khan-Pz	20.50		21.00	20.10
846.	Punjab	Taran Taran	Mahendipur-Pz	21.90		21.20	
847.	Punjab	Taran Taran	Sahab Pura- Pz	20.75	21.13	21.56	
848.	Punjab	Taran Taran	Bhalaipur-Pz	21.70		21.80	20.50
849.	Punjab	Taran Taran	Jandoke-Pz	22.50		21.90	21.10
850.	Punjab	Taran Taran	Sheron-Pz	21.60		22.00	22.00
851.	Punjab	Taran Taran	Ratoke-Pz	19.99	23.38	22.15	
852.	Punjab	Taran Taran	Chuselawad-Pz	23.10		22.40	
853.	Punjab	Taran Taran	Bakipur-Pz	22.80		22.50	20.60
854.	Punjab	Taran Taran	Bath-Pz	22.10		22.90	21.30
855.	Punjab	Taran Taran	Ekalgoda-Pz	24.60		24.10	22.70

856.	Punjab	Taran Taran	Sabran-Pz	24.90		26.30	
857.	Punjab	Taran Taran	Bahla-Pz				21.10
858.	Punjab	Taran Taran	Bhura-Pz	17.20			
859.	Punjab	Taran Taran	Brahmpur-Pz	20.70			19.00
860.	Punjab	Taran Taran	Choudhary Wala-Pz	21.70			
861.	Punjab	Taran Taran	Jalalabad-Pz	16.50			19.50
862.	Punjab	Taran Taran	Nandpur-Pz				19.50
863.	Punjab	Taran Taran	Thatha- Pz	24.20			
864.	Punjab	Taran Taran	Varing-Pz				22.30

**Annexure-1A**

S. No.	Water table Elevation m AMSL)	Latitude			Longitude		
		D	M	S	D	M	S
		(1)	(2)	(3)	(4)		
1.	147.82	29	34	43	75	15	50
2.	163.78	30	34	0	74	23	0
3.	167.87	30	37	15	74	18	15
4.	168.01	30	23	15	74	1	15
5.	170.34	30	28	45	74	1	30
6.	170.53	30	41	0	74	17	0
7.	170.54	30	32	45	74	18	0
8.	170.57	30	40	44	74	16	30
9.	174.17	30	24	30	74	2	29
10.	174.75	30	27	10	74	5	55
11.	175.20	30	31	28	74	7	0
12.	176.70	30	37	39	74	18	37
13.	176.87	30	29	46	74	12	45
14.	176.88	30	11	2	75	11	26
15.	176.92	30	45	0	74	17	30
16.	177.15	30	49	26	75	1	35
17.	177.23	30	11	55	74	2	15
18.	177.65	30	4	30	74	0	30
19.	178.03	30	11	2	75	11	26
20.	179.53	30	49	0	74	22	50
21.	179.63	29	57	30	74	23	0
22.	179.74	30	16	10	74	0	5
23.	179.88	30	21	45	74	8	45
24.	179.88	30	34	0	74	23	0
25.	180.02	30	23	0	74	22	45
26.	180.28	30	2	45	73	57	18
27.	181.29	30	3	45	74	4	10
28.	181.31	30	27	4	75	15	6
29.	181.62	30	8	52	74	11	30
30.	181.62	30	31	30	74	18	15

31.	181.90	30	25	1	74	56	16
32.	181.91	30	12	35	74	10	0
33.	182.09	30	6	46	74	4	40
34.	182.09	30	14	16	74	8	16
35.	182.10	30	7	36	74	9	30
36.	182.35	30	53	17	74	29	20
37.	182.53	30	42	30	74	24	15
38.	182.58	30	45	46	74	22	4
39.	183.10	30	22	20	73	57	5
40.	183.24	30	34	18	74	12	45
41.	183.70	30	17	40	74	6	32
42.	183.75	30	47	36	74	35	24
43.	184.11	30	36	5	74	23	20
44.	184.33	30	23	30	75	14	7
45.	184.40	30	2	15	74	20	45
46.	184.70	31	6	0	74	35	0
47.	185.06	30	6	25	74	55	28
48.	185.13	30	21	36	75	12	34
49.	185.23	29	58	35	74	10	0
50.	185.54	30	29	7	75	14	32
51.	185.58	30	22	2	75	18	28
52.	185.66	30	47	9	74	32	46
53.	185.77	30	38	28	74	24	30
54.	185.83	30	31	55	74	23	8
55.	185.84	31	3	47	74	50	45
56.	185.89	30	48	32	75	2	46
57.	185.90	30	57	10	74	29	0
58.	185.94	30	15	37	75	12	8
59.	186.23	30	57	0	75	3	30
60.	186.30	30	47	57	74	45	48
61.	186.30	30	50	25	74	57	47
62.	186.39	30	18	15	74	12	0
63.	186.65	30	53	48	74	57	48
64.	186.74	30	44	20	74	28	45

65.	186.80	30	49	14	74	29	45
66.	186.89	30	12	55	74	16	9
67.	186.93	30	48	30	74	29	0
68.	186.95	31	4	30	74	47	20
69.	187.10	30	51	9	74	52	0
70.	187.24	30	55	42	74	39	30
71.	187.35	30	58	47	74	44	55
72.	187.97	30	9	50	75	9	0
73.	187.97	30	18	0	74	55	0
74.	188.14	30	11	35	74	24	40
75.	188.15	30	36	39	75	10	59
76.	188.20	31	3	0	74	49	20
77.	188.24	30	12	49	75	15	10
78.	188.27	30	20	20	74	47	23
79.	188.39	30	0	0	74	22	45
80.	188.53	30	10	0	74	50	0
81.	188.63	30	47	50	74	58	30
82.	188.80	30	31	24	75	14	2
83.	189.00	30	1	55	74	27	52
84.	189.08	30	46	50	74	52	50
85.	189.28	29	58	15	74	40	20
86.	189.81	30	3	45	74	12	45
87.	190.00	30	21	45	75	31	30
88.	190.01	30	30	50	75	10	0
89.	190.03	30	38	47	74	38	22
90.	190.14	30	57	40	74	51	0
91.	190.20	30	2	41	74	58	1
92.	190.37	30	17	30	75	23	15
93.	190.38	30	40	14	74	37	23
94.	190.47	30	55	42	74	31	15
95.	190.49	30	44	30	75	10	10
96.	190.64	30	19	11	75	5	22
97.	190.69	30	51	20	74	40	0
98.	190.87	30	26	1	75	5	59

99.	190.87	30	41	30	74	58	50
100.	191.01	31	9	0	74	38	0
101.	191.13	29	59	50	74	45	12
102.	191.23	30	9	0	75	0	0
103.	191.36	30	9	0	75	0	0
104.	191.40	30	23	17	74	42	2
105.	191.51	30	26	0	75	10	30
106.	191.51	31	3	40	74	49	30
107.	191.59	30	21	51	74	24	12
108.	191.60	30	26	42	74	48	52
109.	191.65	30	23	45	75	8	0
110.	191.75	30	21	43	74	50	5
111.	191.75	30	40	50	74	45	55
112.	191.77	30	41	23	74	31	38
113.	191.79	30	17	15	74	29	0
114.	191.85	30	12	30	74	22	30
115.	191.85	30	27	15	74	59	0
116.	191.90	31	4	55	75	22	45
117.	191.96	30	16	3	74	25	14
118.	192.06	30	59	30	74	36	5
119.	192.19	30	17	51	75	6	46
120.	192.28	30	8	1	74	30	41
121.	192.30	30	44	22	74	51	44
122.	192.33	30	3	30	74	36	12
123.	192.37	29	58	34	74	29	52
124.	192.50	30	3	50	74	27	41
125.	192.50	30	31	24	75	14	2
126.	192.50	31	0	22	75	5	16
127.	192.52	30	6	45	75	0	30
128.	192.55	29	57	24	76	3	24
129.	192.58	29	54	32	76	1	0
130.	192.59	30	23	0	75	8	0
131.	192.70	30	30	53	74	41	56
132.	192.87	30	18	0	75	6	30

133.	192.91	30	14	6	75	20	52
134.	192.93	30	3	28	74	20	30
135.	192.95	30	21	45	75	31	30
136.	193.02	30	3	30	74	36	50
137.	193.06	30	16	0	75	5	30
138.	193.07	30	21	0	74	27	19
139.	193.09	30	37	4	75	4	38
140.	193.30	30	42	25	74	35	25
141.	193.30	30	50	28	75	7	2
142.	193.40	30	45	40	74	59	30
143.	193.50	30	55	59	74	46	33
144.	193.54	30	45	40	75	12	40
145.	193.55	30	18	38	75	11	33
146.	193.57	30	25	36	75	3	36
147.	193.58	30	50	9	75	16	8
148.	193.65	29	49	10	75	48	0
149.	193.65	30	4	5	74	48	5
150.	193.73	30	5	46	74	48	43
151.	193.81	30	27	30	74	31	0
152.	193.88	30	8	5	74	20	50
153.	193.90	30	6	0	74	45	0
154.	193.90	30	7	50	74	40	5
155.	193.90	30	44	44	74	38	22
156.	193.90	31	5	40	75	15	50
157.	193.92	30	19	48	74	42	51
158.	193.98	30	21	45	75	14	30
159.	194.11	31	8	0	75	29	6
160.	194.15	29	56	15	75	58	0
161.	194.24	30	16	5	74	15	15
162.	194.25	30	35	53	75	4	17
163.	194.25	31	1	5	74	53	18
164.	194.27	30	35	10	74	32	45
165.	194.39	30	19	30	75	14	30
166.	194.40	29	59	28	75	1	35

167.	194.46	30	16	3	74	41	48
168.	194.60	31	12	15	74	35	45
169.	194.69	30	18	52	75	18	35
170.	194.69	31	15	45	75	29	30
171.	194.81	30	17	27	74	48	49
172.	194.81	30	18	20	74	54	35
173.	194.85	30	4	30	76	7	45
174.	195.01	30	28	30	75	19	18
175.	195.04	30	33	11	75	9	45
176.	195.10	30	42	0	74	50	58
177.	195.12	30	18	35	74	37	29
178.	195.27	30	21	45	75	14	30
179.	195.44	30	24	20	74	49	40
180.	195.51	30	25	35	74	55	8
181.	195.64	31	8	0	75	29	6
182.	195.80	31	16	0	74	54	45
183.	195.80	31	19	30	75	35	20
184.	195.82	30	20	8	74	37	23
185.	195.92	30	5	29	74	49	44
186.	196.00	30	15	43	75	34	12
187.	196.04	30	25	20	75	39	0
188.	196.06	31	6	30	75	23	5
189.	196.10	31	12	0	74	47	15
190.	196.22	30	51	30	74	42	42
191.	196.37	31	7	21	75	5	45
192.	196.45	30	42	30	74	39	20
193.	196.53	30	2	45	75	40	58
194.	196.58	30	6	20	75	10	50
195.	196.60	30	12	0	74	49	0
196.	196.66	30	22	5	74	31	20
197.	196.90	31	16	15	74	47	30
198.	196.90	31	18	0	75	25	20
199.	197.03	30	7	35	74	47	46
200.	197.05	30	33	51	75	1	54

201.	197.10	30	13	19	74	38	19
202.	197.10	30	57	30	75	1	22
203.	197.23	30	31	20	75	42	16
204.	197.37	30	12	0	74	49	0
205.	197.38	31	18	55	75	24	0
206.	197.39	30	35	8	75	16	45
207.	197.40	31	9	45	75	20	35
208.	197.50	29	54	32	75	7	41
209.	197.70	30	39	58	74	51	31
210.	197.81	30	9	56	75	51	25
211.	197.85	31	15	45	75	29	30
212.	197.90	29	43	47	75	15	34
213.	197.95	29	50	30	75	51	0
214.	197.95	31	16	40	74	42	0
215.	198.03	31	7	30	75	21	40
216.	198.04	30	7	15	74	48	15
217.	198.09	30	20	29	74	57	50
218.	198.19	31	4	46	75	19	49
219.	198.24	29	46	45	75	25	10
220.	198.28	31	19	30	75	35	20
221.	198.29	30	36	46	74	52	15
222.	198.30	30	26	50	74	37	35
223.	198.30	31	16	10	75	17	30
224.	198.41	30	14	0	74	47	0
225.	198.62	31	10	15	74	38	45
226.	198.63	30	13	15	74	47	0
227.	198.65	31	15	0	74	50	30
228.	198.70	30	5	32	75	47	0
229.	198.80	31	11	0	75	26	10
230.	198.90	30	52	43	75	19	50
231.	199.03	30	7	24	75	48	53
232.	199.07	30	23	20	74	38	0
233.	199.08	31	19	30	75	35	20
234.	199.10	30	1	18	75	58	40

235.	199.23	31	0	0	75	9	2
236.	199.25	30	34	15	74	52	0
237.	199.27	30	35	0	74	50	0
238.	199.50	31	14	15	75	19	15
239.	199.53	30	28	52	74	50	18
240.	199.53	30	32	8	74	47	30
241.	199.80	31	16	45	74	33	0
242.	199.95	30	1	50	75	4	0
243.	200.07	31	21	0	74	42	0
244.	200.09	30	36	46	74	52	15
245.	200.13	30	36	46	74	52	15
246.	200.20	31	21	15	74	50	5
247.	200.30	31	14	0	74	33	20
248.	200.39	30	9	56	75	2	30
249.	200.43	30	36	58	74	47	57
250.	200.50	30	36	10	75	9	26
251.	200.55	29	58	48	75	52	10
252.	200.59	30	4	10	75	0	0
253.	200.60	30	3	19	75	5	55
254.	200.60	30	31	32	74	54	48
255.	200.70	31	23	45	74	37	0
256.	200.80	30	25	30	75	25	45
257.	200.87	31	13	10	75	12	0
258.	200.89	29	59	35	75	5	30
259.	200.90	30	40	47	75	27	32
260.	201.01	30	31	45	75	38	30
261.	201.02	31	24	0	74	47	43
262.	201.03	31	13	10	75	12	0
263.	201.10	30	15	30	74	56	10
264.	201.11	30	36	30	74	51	56
265.	201.22	30	32	46	75	41	44
266.	201.43	30	50	42	75	19	50
267.	201.49	29	50	0	75	52	40
268.	201.50	31	15	45	75	29	30

269.	201.52	30	11	30	75	40	30
270.	201.70	31	15	0	74	50	0
271.	201.74	31	7	30	75	21	40
272.	201.75	29	41	40	75	13	45
273.	201.89	29	57	50	75	2	0
274.	201.90	31	36	15	74	35	30
275.	202.03	31	6	30	75	23	5
276.	202.17	30	33	7	74	45	15
277.	202.20	30	21	30	75	39	15
278.	202.23	29	47	19	75	32	12
279.	202.27	30	4	0	75	32	15
280.	202.29	31	16	0	75	31	0
281.	202.35	29	58	58	75	48	18
282.	202.35	30	59	54	75	16	47
283.	202.40	30	37	20	74	42	10
284.	202.40	31	22	45	74	57	15
285.	202.57	30	9	28	75	15	10
286.	202.60	31	8	0	75	16	20
287.	202.70	31	20	15	75	0	0
288.	202.78	29	48	0	75	17	0
289.	202.90	31	14	45	75	12	15
290.	202.96	30	32	0	74	51	0
291.	203.06	30	10	57	75	24	51
292.	203.10	31	21	45	74	46	0
293.	203.13	30	33	50	76	1	5
294.	203.19	30	9	9	74	57	54
295.	203.25	31	23	30	74	55	50
296.	203.35	31	17	30	75	12	50
297.	203.36	30	25	26	75	46	36
298.	203.43	30	31	0	75	23	30
299.	203.45	30	53	14	75	14	13
300.	203.48	30	55	49	75	18	45
301.	203.50	30	1	53	75	10	43
302.	203.52	30	43	26	74	42	1

303.	203.55	31	21	55	75	8	40
304.	203.60	30	34	8	74	42	12
305.	203.70	30	43	43	75	30	45
306.	204.20	31	3	15	75	18	10
307.	204.20	31	18	45	75	16	5
308.	204.29	30	31	22	75	33	33
309.	204.33	30	38	12	75	0	5
310.	204.55	31	19	0	75	29	20
311.	204.61	31	19	30	75	38	30
312.	204.90	31	42	45	74	54	15
313.	204.99	30	17	10	75	45	40
314.	205.11	31	17	45	75	12	0
315.	205.30	29	50	55	75	10	23
316.	205.38	30	17	10	75	45	40
317.	205.40	30	4	5	75	53	0
318.	205.46	31	34	0	74	37	45
319.	205.69	30	20	28	75	45	32
320.	205.70	30	51	48	75	10	45
321.	205.81	29	57	15	75	21	30
322.	205.90	31	7	30	74	42	30
323.	205.90	31	10	20	75	34	25
324.	205.90	31	34	45	74	43	0
325.	205.91	29	55	45	75	32	30
326.	205.92	31	13	44	75	7	7
327.	206.25	31	23	50	75	29	5
328.	206.27	31	22	10	75	22	50
329.	206.30	30	33	27	75	48	20
330.	206.30	31	17	55	75	1	15
331.	206.34	30	20	45	75	59	3
332.	206.44	30	38	38	75	42	10
333.	206.50	30	41	32	75	36	46
334.	206.50	31	19	56	74	51	25
335.	206.50	31	26	15	74	51	15
336.	206.50	31	31	45	74	47	30

337.	206.50	31	39	30	74	46	15
338.	207.00	31	1	14	75	23	0
339.	207.01	30	7	25	75	26	25
340.	207.05	31	22	10	75	22	50
341.	207.06	31	7	45	75	33	0
342.	207.51	30	3	20	75	29	30
343.	207.63	29	54	30	75	27	40
344.	207.65	31	1	15	75	27	50
345.	207.68	31	31	0	74	42	0
346.	207.80	31	32	15	74	41	0
347.	207.89	30	4	48	75	20	10
348.	207.93	30	13	44	74	47	17
349.	208.08	30	13	44	74	47	17
350.	208.10	31	7	45	75	33	0
351.	208.17	29	55	29	75	11	54
352.	208.19	30	27	28	76	3	5
353.	208.26	29	59	40	75	24	0
354.	208.37	29	59	22	75	30	27
355.	208.40	30	20	16	75	55	29
356.	208.40	31	24	0	75	34	30
357.	208.50	30	8	42	76	11	53
358.	208.50	31	22	45	74	46	45
359.	208.55	30	9	0	75	59	30
360.	208.63	30	1	3	75	20	46
361.	208.80	30	47	34	75	33	41
362.	208.80	31	22	45	75	39	10
363.	208.80	31	34	45	74	52	30
364.	208.83	29	48	7	75	14	10
365.	208.83	30	13	30	76	8	45
366.	208.88	31	38	0	74	52	30
367.	209.09	30	26	15	75	26	15
368.	209.36	29	53	58	75	29	5
369.	209.40	31	14	45	75	42	30
370.	209.50	31	37	0	74	44	45

371.	209.54	30	40	15	74	45	45
372.	209.59	29	56	8	75	21	11
373.	210.03	31	26	0	75	7	50
374.	210.10	31	7	20	75	33	40
375.	210.10	31	16	30	75	44	15
376.	210.47	30	46	30	75	28	15
377.	210.50	30	43	49	75	32	18
378.	210.51	30	25	30	76	40	0
379.	210.76	30	7	18	75	29	30
380.	210.80	31	34	0	74	56	15
381.	210.92	30	34	40	75	40	28
382.	210.93	31	23	15	75	19	35
383.	211.02	30	54	0	75	47	30
384.	211.20	30	50	55	75	53	19
385.	211.26	30	31	30	75	54	0
386.	211.30	30	50	7	75	24	6
387.	211.40	31	36	30	75	0	0
388.	211.41	30	43	30	75	35	30
389.	211.42	30	54	10	75	48	40
390.	211.55	31	43	30	74	42	45
391.	211.57	29	52	38	75	41	58
392.	211.60	30	47	34	75	33	41
393.	211.65	31	23	48	75	14	10
394.	211.96	31	30	45	75	4	0
395.	212.05	31	53	30	74	43	15
396.	212.06	29	50	0	75	27	24
397.	212.11	31	26	10	75	29	55
398.	212.15	30	21	15	75	56	45
399.	212.40	30	17	10	75	27	35
400.	212.50	31	5	15	75	40	10
401.	212.58	31	46	45	74	36	30
402.	212.60	31	50	30	74	39	0
403.	212.63	31	34	0	75	2	0
404.	212.72	31	24	30	75	14	50

405.	212.75	31	9	30	75	37	0
406.	212.89	31	43	0	74	40	0
407.	212.90	31	38	30	74	36	15
408.	212.92	30	16	14	75	59	8
409.	212.99	31	7	20	75	45	25
410.	213.10	30	44	56	75	40	18
411.	213.15	29	55	42	75	33	42
412.	213.18	31	13	45	75	46	45
413.	213.20	31	40	15	75	0	35
414.	213.30	31	3	15	75	33	17
415.	213.30	31	29	30	75	13	0
416.	213.34	30	2	31	75	26	10
417.	213.35	31	11	46	75	44	28
418.	213.42	31	7	20	75	45	25
419.	213.48	31	47	0	74	53	30
420.	213.66	31	22	45	75	5	45
421.	213.85	30	22	15	75	47	50
422.	213.90	31	30	29	75	7	15
423.	214.30	31	2	55	75	39	20
424.	214.32	31	26	10	75	29	55
425.	214.36	31	13	45	75	46	45
426.	214.53	30	40	0	76	20	45
427.	214.69	30	11	5	76	30	48
428.	214.75	31	27	5	75	22	16
429.	214.95	30	44	25	75	40	18
430.	215.10	31	47	48	74	46	0
431.	215.14	31	50	45	74	45	30
432.	215.41	31	27	30	75	26	0
433.	215.54	31	33	45	75	6	30
434.	215.75	31	27	45	75	34	5
435.	215.85	30	51	1	75	35	27
436.	216.17	31	27	19	75	17	45
437.	216.30	31	30	40	75	37	55
438.	216.45	31	36	15	75	35	16

439.	216.68	30	54	10	75	48	40
440.	216.72	30	49	56	75	38	26
441.	216.90	30	46	46	75	44	14
442.	216.93	31	33	15	75	10	15
443.	216.98	31	36	15	75	35	16
444.	217.07	31	16	15	75	49	45
445.	217.28	30	29	0	76	36	15
446.	217.35	31	12	15	74	57	45
447.	217.45	30	11	5	76	30	48
448.	217.48	31	17	22	75	47	33
449.	217.60	31	54	0	74	40	0
450.	217.65	30	11	5	76	30	48
451.	217.80	30	15	20	76	16	50
452.	217.80	31	35	0	75	14	15
453.	217.90	30	42	1	76	15	53
454.	217.94	30	19	48	76	19	12
455.	217.95	31	25	45	75	39	50
456.	217.99	30	9	51	75	25	33
457.	218.00	31	7	0	75	44	55
458.	218.20	31	35	0	75	18	0
459.	218.20	31	47	45	74	41	0
460.	218.28	30	27	32	76	1	15
461.	218.40	31	26	53	75	11	36
462.	218.40	31	31	45	75	35	20
463.	218.61	30	55	24	75	26	24
464.	218.66	31	7	0	76	0	20
465.	218.68	31	12	45	75	49	30
466.	218.86	31	36	15	75	35	16
467.	219.60	31	35	0	75	10	45
468.	219.70	31	23	15	75	8	0
469.	219.73	31	34	28	75	33	18
470.	219.75	31	45	30	74	57	30
471.	219.84	30	47	45	75	43	25
472.	219.85	31	7	30	75	42	0

473.	219.90	30	25	3	76	3	30
474.	220.10	31	39	45	75	4	45
475.	220.12	31	25	20	75	42	30
476.	220.40	31	4	55	75	43	5
477.	220.48	31	41	15	74	59	15
478.	220.55	31	14	15	75	39	45
479.	220.62	30	43	35	75	42	0
480.	220.75	30	45	30	76	1	19
481.	221.29	31	32	5	75	30	20
482.	221.38	30	21	22	76	14	35
483.	221.49	31	11	40	75	32	0
484.	221.65	30	23	45	76	26	30
485.	221.84	31	32	5	75	30	20
486.	221.85	31	38	30	75	8	15
487.	222.10	31	27	15	75	41	15
488.	222.89	31	32	5	75	30	20
489.	223.08	31	23	1	75	50	1
490.	223.15	30	50	14	75	50	15
491.	223.25	30	55	55	75	24	42
492.	223.25	31	35	50	75	37	45
493.	223.36	31	30	55	75	18	0
494.	223.40	31	9	15	75	49	30
495.	223.45	31	32	28	75	22	50
496.	223.80	31	33	50	75	19	15
497.	224.00	30	20	5	76	14	10
498.	224.08	30	16	20	76	31	18
499.	224.32	31	25	20	75	42	30
500.	224.39	31	36	12	75	39	0
501.	224.60	31	43	0	75	8	15
502.	224.70	31	36	44	75	31	30
503.	224.95	31	36	10	75	39	0
504.	225.15	30	50	57	76	4	56
505.	225.45	30	47	39	75	51	24
506.	225.59	31	43	57	75	1	23

507.	225.80	30	56	43	75	36	46
508.	226.20	31	36	10	75	39	0
509.	226.30	30	27	5	76	22	10
510.	226.34	31	51	50	74	57	30
511.	226.49	31	43	57	75	1	23
512.	226.80	30	39	44	75	55	25
513.	227.08	30	21	10	76	18	30
514.	227.10	31	5	50	75	51	25
515.	227.30	31	40	0	75	9	50
516.	227.35	30	17	48	76	19	50
517.	227.40	31	54	15	74	54	40
518.	227.91	31	1	45	75	47	35
519.	228.10	30	28	30	76	35	45
520.	228.40	31	3	45	75	53	15
521.	228.40	31	40	0	75	15	0
522.	228.85	30	52	0	75	43	5
523.	228.90	31	0	40	75	36	45
524.	228.90	31	3	15	75	45	40
525.	228.93	30	32	51	76	1	1
526.	229.33	31	40	45	75	14	30
527.	229.35	30	24	55	76	10	28
528.	229.41	30	44	15	75	50	30
529.	229.43	30	44	15	75	50	30
530.	229.50	30	44	19	76	9	40
531.	229.65	30	24	20	76	35	45
532.	229.75	30	44	15	76	11	0
533.	229.84	30	32	30	76	7	45
534.	229.92	31	42	30	75	18	45
535.	230.23	30	33	50	76	1	5
536.	230.35	30	28	45	76	12	13
537.	230.40	30	44	53	75	47	6
538.	230.47	31	58	0	74	55	2
539.	230.81	31	39	30	75	23	0
540.	231.06	31	7	5	75	55	35

541.	231.11	30	34	6	76	4	50
542.	231.30	31	50	40	75	2	15
543.	231.35	30	38	49	76	4	8
544.	231.60	30	49	45	76	15	45
545.	231.66	31	25	20	75	42	30
546.	231.90	31	13	20	76	0	20
547.	231.97	30	30	0	76	33	15
548.	232.10	31	59	0	74	52	0
549.	232.25	30	43	32	76	3	49
550.	232.40	30	37	9	75	57	27
551.	232.60	31	46	30	75	10	10
552.	232.93	31	56	0	74	59	0
553.	233.00	30	58	50	75	54	45
554.	233.00	31	55	20	74	57	20
555.	233.10	31	57	55	75	0	45
556.	233.20	30	22	35	76	31	45
557.	233.20	31	55	20	75	6	30
558.	233.26	31	41	30	75	28	30
559.	233.52	31	55	30	75	4	50
560.	233.65	31	52	0	75	3	0
561.	233.78	30	24	50	76	30	50
562.	233.83	30	49	50	75	55	25
563.	233.85	30	24	30	76	20	15
564.	233.90	30	37	40	76	22	10
565.	233.90	32	0	20	75	0	0
566.	234.20	31	46	15	75	6	0
567.	234.50	31	7	0	76	0	20
568.	234.56	30	28	0	76	28	25
569.	234.65	31	45	55	75	13	18
570.	234.80	31	54	53	75	35	19
571.	235.20	32	0	30	75	9	15
572.	235.46	30	33	30	76	15	50
573.	235.60	31	37	55	75	24	55
574.	236.40	31	45	45	75	2	0

575.	236.52	31	12	25	75	53	40
576.	236.85	32	1	0	75	8	0
577.	236.92	30	32	19	76	14	13
578.	237.06	32	0	45	75	2	0
579.	237.14	31	7	30	76	7	0
580.	237.25	31	5	53	76	18	45
581.	237.30	30	29	30	76	31	0
582.	237.70	31	40	15	75	23	30
583.	237.73	31	6	30	76	5	0
584.	238.02	31	6	30	76	9	10
585.	238.25	31	53	0	75	8	0
586.	238.40	31	42	30	75	24	5
587.	238.60	31	15	0	76	3	0
588.	238.65	31	42	30	75	18	45
589.	238.65	31	50	20	75	16	0
590.	238.93	30	42	45	75	56	0
591.	239.09	31	8	35	76	10	42
592.	239.22	31	54	0	75	26	0
593.	239.70	31	57	15	75	10	15
594.	239.95	30	45	19	75	57	39
595.	240.10	31	51	40	75	23	15
596.	240.23	31	30	5	75	44	55
597.	240.35	31	48	0	75	40	0
598.	240.50	32	4	15	75	12	40
599.	240.70	31	49	30	75	18	30
600.	240.88	30	39	45	76	14	0
601.	240.95	30	48	15	76	15	30
602.	241.10	31	59	30	75	12	25
603.	241.36	30	30	0	76	25	30
604.	241.44	30	38	30	76	31	0
605.	241.70	31	51	58	75	10	8
606.	241.99	31	57	35	75	14	35
607.	242.26	31	7	25	76	11	40
608.	242.30	31	48	0	75	40	0

609.	242.40	30	37	10	76	14	45
610.	242.45	30	57	36	76	3	35
611.	242.80	31	54	30	75	21	45
612.	242.90	31	58	40	75	20	40
613.	243.25	30	27	45	76	42	18
614.	243.25	30	42	7	76	13	7
615.	243.40	31	4	55	76	10	50
616.	243.70	30	57	10	76	14	59
617.	243.80	31	8	35	76	10	42
618.	243.93	30	39	0	76	19	45
619.	244.03	31	43	0	75	27	30
620.	244.10	30	31	5	76	28	55
621.	244.20	31	58	49	75	31	10
622.	244.35	30	56	10	76	18	15
623.	244.42	31	1	40	76	12	50
624.	244.85	30	49	30	76	9	40
625.	244.86	32	3	47	75	19	15
626.	244.89	31	22	10	75	55	0
627.	244.90	30	57	50	76	9	45
628.	245.07	31	53	45	75	9	45
629.	245.16	30	41	30	76	20	0
630.	245.45	31	54	30	75	27	0
631.	245.56	30	30	5	76	20	25
632.	245.82	30	51	0	76	4	30
633.	245.90	31	57	45	75	22	10
634.	246.50	31	2	55	76	17	50
635.	246.50	31	53	35	75	30	55
636.	246.50	31	54	0	75	14	45
637.	246.51	30	53	15	76	6	45
638.	246.85	30	36	30	76	19	0
639.	246.90	32	6	5	75	20	15
640.	247.57	30	39	0	76	24	0
641.	247.70	32	2	30	75	24	15
642.	248.60	31	0	50	76	18	30

643.	248.70	31	3	30	76	15	30
644.	248.99	30	36	20	76	25	15
645.	249.10	32	1	45	75	28	40
646.	249.30	30	21	29	76	29	0
647.	249.75	30	53	0	76	12	0
648.	250.03	30	53	0	76	12	0
649.	250.70	30	19	10	76	36	24
650.	250.96	30	56	15	76	14	40
651.	251.55	32	3	4	75	37	28
652.	251.64	30	42	45	76	22	40
653.	251.88	30	42	0	76	32	15
654.	251.89	31	30	10	75	56	50
655.	252.47	30	48	0	76	1	15
656.	252.49	30	49	10	76	11	48
657.	252.70	31	41	30	75	28	30
658.	252.84	31	3	30	76	7	30
659.	253.09	30	43	50	76	28	15
660.	253.10	30	22	40	76	40	45
661.	253.16	30	48	42	76	32	18
662.	253.49	30	20	42	76	38	30
663.	253.52	32	7	30	75	20	10
664.	253.55	30	51	10	76	7	15
665.	253.59	32	3	45	75	28	10
666.	253.75	30	54	15	76	17	20
667.	254.35	30	17	50	76	37	36
668.	255.21	30	45	45	76	23	30
669.	255.50	30	48	40	76	26	5
670.	255.81	32	3	10	75	30	45
671.	256.52	30	25	40	76	40	0
672.	257.38	30	36	45	76	37	20
673.	257.65	30	48	55	76	20	46
674.	258.20	31	57	5	75	42	54
675.	258.60	32	6	45	75	36	30
676.	258.79	32	9	45	75	22	0

677.	259.46	30	51	0	76	25	40
678.	259.55	31	3	0	76	18	0
679.	259.64	32	7	55	75	24	30
680.	260.28	32	17	59	75	36	42
681.	260.42	30	32	50	76	46	50
682.	260.70	32	15	0	75	24	25
683.	262.41	30	55	40	76	27	45
684.	262.72	30	27	37	76	43	42
685.	263.10	32	1	15	75	41	15
686.	263.15	32	19	0	75	21	20
687.	263.92	30	42	12	76	46	10
688.	264.13	30	36	15	76	44	45
689.	265.89	31	54	30	75	42	30
690.	266.00	32	17	12	75	22	42
691.	266.49	32	8	30	75	28	30
692.	266.76	30	37	45	76	49	0
693.	267.23	31	2	30	76	32	0
694.	270.40	32	18	12	75	25	18
695.	271.25	31	21	30	76	2	30
696.	271.86	30	33	35	76	39	35
697.	272.00	32	9	0	75	34	20
698.	273.19	30	27	15	76	46	15
699.	273.34	31	0	0	76	34	30
700.	274.50	32	17	15	75	27	30
701.	274.65	30	40	14	76	34	24
702.	274.76	30	38	4	76	36	35
703.	274.88	30	42	45	76	47	7
704.	275.35	32	17	26	75	23	7
705.	276.10	31	9	0	76	34	30
706.	276.20	30	36	40	76	34	40
707.	276.80	30	43	50	76	41	45
708.	276.92	31	8	0	76	31	30
709.	277.22	32	15	0	75	31	20
710.	277.25	30	38	10	76	41	5

711.	277.31	30	23	0	76	55	0
712.	278.80	32	16	45	75	29	50
713.	280.10	31	4	55	76	22	45
714.	280.27	30	39	30	76	40	50
715.	281.07	32	9	50	75	33	8
716.	281.27	31	30	10	75	56	50
717.	283.64	30	42	30	76	34	50
718.	283.86	30	37	30	76	41	45
719.	284.54	30	29	45	76	51	2
720.	286.53	30	35	30	76	50	45
721.	288.28	30	39	32	76	45	22
722.	288.85	30	41	38	76	39	40
723.	289.75	31	59	13	75	44	11
724.	290.17	31	12	40	76	28	45
725.	290.64	30	45	15	76	43	10
726.	294.36	30	57	11	76	19	31
727.	294.39	30	41	30	76	47	10
728.	295.23	30	46	20	76	33	30
729.	298.64	31	58	20	75	45	0
730.	298.70	32	16	23	75	37	0
731.	300.23	30	33	0	76	54	0
732.	300.36	30	45	34	76	48	15
733.	300.60	31	12	30	76	25	0
734.	301.14	30	47	28	76	41	35
735.	302.25	30	44	15	76	47	15
736.	302.49	31	57	47	75	48	47
737.	304.25	30	42	20	76	46	50
738.	304.89	31	49	55	75	45	5
739.	307.10	32	18	37	75	35	22
740.	307.15	30	41	17	76	42	22
741.	307.84	30	42	45	76	47	7
742.	310.17	31	16	15	76	26	45
743.	311.26	30	44	15	76	44	35
744.	312.35	30	42	20	76	46	50

745.	312.37	31	16	30	76	22	30
746.	313.07	30	44	15	76	43	40
747.	315.77	30	42	35	76	48	5
748.	316.41	30	42	12	76	46	10
749.	317.05	30	49	55	76	44	25
750.	321.60	30	42	30	76	47	40
751.	321.63	30	44	15	76	43	40
752.	324.73	30	44	15	76	44	35
753.	328.47	32	16	0	75	37	30
754.	331.90	31	8	12	76	21	32
755.	333.49	32	20	30	75	35	0
756.	334.00	31	19	50	76	24	0

757.	340.56	31	56	30	75	54	0
758.	354.80	32	19	45	75	39	45
759.	370.30	32	18	58	75	44	32
760.	370.70	32	21	2	75	39	47
761.	393.10	31	36	40	75	58	20
762.	400.30	31	51	48	75	47	22
763.	431.90	32	24	7	75	44	40
764.	536.00	32	20	51	75	45	11
765.	589.83	32	24	13	75	49	5
766.	595.90	32	23	5	75	48	12
767.	636.78	32	26	0	75	52	14

## Annexure-II

Sl No.	State	District	Location	Seasonal Fluctuation(m)			
				Jan. 2017	May-17	May-17	May-17
				May-17	Aug. 2017	Nov. 2017	Jan. 2018
1	Chandigarh	Chandigarh	Burail	0.03	-0.18	-0.31	0.08
2	Chandigarh	Chandigarh	Csio-S	0.23	-0.08	-0.04	-0.07
3	Chandigarh	Chandigarh	New Indust Area	2.34	-1.88	-1.90	-2.02
4	Chandigarh	Chandigarh	Sec-27, Ar Well	1.53	-1.43	-1.38	
5	Chandigarh	Chandigarh	Sect 31d (D)	0.92	-0.51	-0.60	-0.69
6	Chandigarh	Chandigarh	Sect 31d (S)	0.36	-0.08	-0.08	-0.02
7	Chandigarh	Chandigarh	Sect 37d (S)	0.46	-0.54	-0.58	-0.37
8	Chandigarh	Chandigarh	Sect 39d (S)	0.71	-1.28		
9	Chandigarh	Chandigarh	Sect 44d (S)	0.80	-1.31	-1.01	-0.80
10	Chandigarh	Chandigarh	Sector-46 (Shallow)		-1.56	-1.35	
1	Punjab	Amritsar	Ajnala	-0.04	1.09	1.08	0.37
2	Punjab	Amritsar	Amritsar1	-0.60	0.62	0.12	-0.02
3	Punjab	Amritsar	Bal Kalan-Pz	2.10		-1.60	-2.80
4	Punjab	Amritsar	Beas07	0.28	-0.73	-0.90	-0.60
5	Punjab	Amritsar	Bhattaywad-Pz	1.00		-11.00	
6	Punjab	Amritsar	Chak Dogra-Pz	1.00		0.70	-1.80
7	Punjab	Amritsar	Chogwan- Pz	1.36	3.24	-0.24	-0.81
8	Punjab	Amritsar	Dhulika-Pz	1.40		0.00	-0.30
9	Punjab	Amritsar	Dohan-Pz	1.30		-2.10	-1.50
10	Punjab	Amritsar	Gago Mahal- Pz	0.32	-0.17	-0.33	-0.13
11	Punjab	Amritsar	Gill Wali-Pz	1.40		-1.10	-0.90
12	Punjab	Amritsar	Jandiala Guru-Pz	0.52	0.78	0.66	1.18
13	Punjab	Amritsar	Jasrur-Pz	1.00		0.60	
14	Punjab	Amritsar	Jethuwal-Pz	1.60		-0.70	-2.10

15	Punjab	Amritsar	Kandowali-Pz	1.30		-1.00	-1.80
16	Punjab	Amritsar	Karylal-Pz	1.20		-0.70	-0.50
17	Punjab	Amritsar	Khilchian-Pz	1.20		-0.80	-1.70
18	Punjab	Amritsar	Mahima-Pz	0.90		-0.90	-1.00
19	Punjab	Amritsar	Majitha-Pz	0.70		-0.80	
20	Punjab	Amritsar	Makhan Windi-Pz	1.50		-1.20	-3.10
21	Punjab	Amritsar	Mehleykey-Pz	1.10		2.60	1.60
22	Punjab	Amritsar	Mehta	1.70		0.75	-0.16
23	Punjab	Amritsar	Mehta-Pz	1.50		1.00	-2.30
24	Punjab	Amritsar	Miran Chak-Pz	1.10		-1.40	-1.80
25	Punjab	Amritsar	Nangal Sahaul-Pz	1.50		-1.20	-1.30
26	Punjab	Amritsar	Nawan Tanal- Pz	0.70	0.43	-0.29	
27	Punjab	Amritsar	Pakhpura-Pz	1.10		-0.80	
28	Punjab	Amritsar	Ramdas-Dw	-1.07	-1.26	-1.88	-1.75
29	Punjab	Amritsar	Rampura-Pz	1.30		-1.90	-2.40
30	Punjab	Amritsar	Rupowal Brahmana-Pz	1.30		-0.90	-1.30
31	Punjab	Amritsar	Sathiala-Pz	1.70		-1.30	-1.60
32	Punjab	Amritsar	Shabura-Pz	-3.68		0.30	1.00
33	Punjab	Amritsar	Sham Nagar-Pz	1.40		-0.80	-1.60
34	Punjab	Amritsar	Talwandi Dogra-Pz	0.90		-0.60	-0.60
35	Punjab	Amritsar	Tarsika-Pz	1.50		-0.90	-2.10
36	Punjab	Amritsar	Ugar Aulakh-Pz	1.20		-0.70	-0.60
37	Punjab	Amritsar	Vadala Kalan-Pz	1.00		-0.70	-0.70
38	Punjab	Amritsar	Wandala Bittewad-Pz	0.90		-0.40	-0.30
39	Punjab	Barnala	Amla Singh Wala-Pz	-0.20		1.11	0.79
40	Punjab	Barnala	Barnala (S)	-3.05	3.48	4.03	9.14
41	Punjab	Barnala	Bhadaur-Pz	0.32	1.60	1.96	1.39
42	Punjab	Barnala	Dhanaula-Pz	-0.10		1.15	0.81

43	Punjab	Barnala	Kurar-Pz	-0.10		1.10	0.81
44	Punjab	Barnala	Lohgarh-Pz	0.10		1.70	1.41
45	Punjab	Barnala	Mahal Kalan-Pz	-0.06	1.98	2.44	2.15
46	Punjab	Barnala	Nangal-Pz	-0.10		1.16	0.83
47	Punjab	Barnala	Pakho Ke-Pz	0.00		0.95	0.61
48	Punjab	Barnala	Ramgarh-Pz	-0.10		1.42	1.03
49	Punjab	Barnala	Shekha	0.10		-15.40	1.07
50	Punjab	Barnala	Tappa Mandi-Pz	0.10			0.81
51	Punjab	Bathinda	Ablu	0.20			0.02
52	Punjab	Bathinda	Aleke Jalal-Pz	0.05			1.12
53	Punjab	Bathinda	Badiala-Pz	-0.16			
54	Punjab	Bathinda	Bagher Mohabat Singh-Pz	-0.12			0.40
55	Punjab	Bathinda	Bahman Kaur Singh-Pz	-0.10			-3.17
56	Punjab	Bathinda	Balianwali-Pz	0.11		1.73	1.64
57	Punjab	Bathinda	Balluana1	0.37	0.09	-0.10	-0.32
58	Punjab	Bathinda	Balluana-Pz	0.18		0.03	-0.22
59	Punjab	Bathinda	Bhagibandar	0.26	0.34	0.40	-3.76
60	Punjab	Bathinda	Bugran-Pz	-0.60		1.98	1.61
61	Punjab	Bathinda	Burj Gill-Pz	0.92		1.71	0.55
62	Punjab	Bathinda	Burj-Pz	-0.10			
63	Punjab	Bathinda	Deratapp		0.69	0.86	0.73
64	Punjab	Bathinda	Dhapali1	0.57	2.50	2.30	
65	Punjab	Bathinda	Dhapali-Pz	0.84	3.14	2.73	1.45
66	Punjab	Bathinda	Dialpur Mirza	-1.56	2.36	3.05	1.78
67	Punjab	Bathinda	Dialpura Bhlaike	0.52	0.05	1.73	0.90
68	Punjab	Bathinda	Dulle Wala-Pz	0.99		2.49	0.40
69	Punjab	Bathinda	Ganga-Pz	0.25	1.53	1.00	0.31
70	Punjab	Bathinda	Ghudda-Pz	0.34		0.12	-0.32

71	Punjab	Bathinda	Gill Patti-Dw	0.35			0.08
72	Punjab	Bathinda	Gulabgarh 1 (Vs)	2.26			
73	Punjab	Bathinda	Guru Sar-Pz	0.18	0.64	0.40	0.13
74	Punjab	Bathinda	Harraipur-Pz	0.26		1.50	
75	Punjab	Bathinda	Jajjal	0.25			1.30
76	Punjab	Bathinda	Jajjal_Dw	-1.00	1.73	1.64	0.26
77	Punjab	Bathinda	Jassi Bhagwali	1.03	-0.90	0.15	-0.01
78	Punjab	Bathinda	Jassi Paowali-Pz	0.43		-0.28	-0.76
79	Punjab	Bathinda	Jhanduke	1.25	0.95	1.95	0.70
80	Punjab	Bathinda	Jhanduke-Pz	0.46		2.83	1.13
81	Punjab	Bathinda	Kahan Singh Wala-Dw	0.39			
82	Punjab	Bathinda	Kalla Bandar	0.93	-1.00	-0.40	-0.64
83	Punjab	Bathinda	Koir Singh Wala-Pz	0.55		1.24	0.65
84	Punjab	Bathinda	Kot Bhaktu-Pz	0.40		0.85	0.58
85	Punjab	Bathinda	Kot Fatta-Dw	-0.20			0.35
86	Punjab	Bathinda	Kot Guru	0.40			0.14
87	Punjab	Bathinda	Kot Shamir	0.44	0.47		0.14
88	Punjab	Bathinda	Kothaguru-Pz	0.44	2.69	1.97	-17.63
89	Punjab	Bathinda	Lalliana-Pz	-0.20		1.11	0.81
90	Punjab	Bathinda	Lehra Dhulkot-Pz	1.26		0.49	-0.85
91	Punjab	Bathinda	Maihma Bhagwan-Pz	0.41		0.43	-0.95
92	Punjab	Bathinda	Maisar Khana	0.46		1.20	0.69
93	Punjab	Bathinda	Maisar Khana-Pz	0.10	1.62	0.65	0.31
94	Punjab	Bathinda	Maluka-Pz	2.12		1.18	0.94
95	Punjab	Bathinda	Mandi Kalan-Pz	0.30		0.39	0.85
96	Punjab	Bathinda	Mehraj-Pz	0.93		0.70	1.18
97	Punjab	Bathinda	Mehta-Pz	0.51		0.24	-0.27
98	Punjab	Bathinda	Multania-Pz	0.08		0.70	-0.15

99	Punjab	Bathinda	Nahinwala		0.81	0.68	
100	Punjab	Bathinda	Nathana-Pz	-0.20		5.26	2.16
101	Punjab	Bathinda	Nathena-Pz	0.00		0.83	1.91
102	Punjab	Bathinda	Pathrala-Pz	0.10		0.00	
103	Punjab	Bathinda	Phulla1	2.27	0.54	0.27	7.30
104	Punjab	Bathinda	Puhla-Pz	-0.01			1.68
105	Punjab	Bathinda	Raike Kalan		-0.25	-0.80	-1.13
106	Punjab	Bathinda	Rajgarh Kubey-Pz	-0.17		0.32	0.29
107	Punjab	Bathinda	Rayya-Pz	-0.04		2.18	1.84
108	Punjab	Bathinda	Salabatpur-Pz	0.61		2.58	0.90
109	Punjab	Bathinda	Sangat -Pz	-0.68	0.29	0.32	-0.23
110	Punjab	Bathinda	Seema-Dw	2.71			-0.22
111	Punjab	Bathinda	Sidhana	2.16			1.51
112	Punjab	Bathinda	Sooch-Pz	0.17		1.67	0.81
113	Punjab	Bathinda	Teona-Pz	0.20			-0.23
114	Punjab	Bathinda	Tungwali-Pz	0.21		1.09	
115	Punjab	Faridkot	Aryan Wala-Pz	0.33		-1.03	-0.63
116	Punjab	Faridkot	Baja Khana	0.95	2.55	7.56	-0.65
117	Punjab	Faridkot	Bead Sikhawala- Pz	0.83	-1.19	1.41	
118	Punjab	Faridkot	Behabal Kalan-Pz	-0.40		0.50	0.26
119	Punjab	Faridkot	Bir Nathuwala-Pz				0.91
120	Punjab	Faridkot	Chahd Baja	-0.21	2.04	1.58	-0.81
121	Punjab	Faridkot	Chak Kalan-Pz	0.15		-0.60	
122	Punjab	Faridkot	Deviwala Ii-Pz	1.60	-1.37	-2.06	-0.24
123	Punjab	Faridkot	Deviwala I-Pz	0.92	-0.37	-0.46	
124	Punjab	Faridkot	Deviwala-Pz	0.37	4.12	0.94	-0.29
125	Punjab	Faridkot	Dhaipai-Pz	0.30			-1.65
126	Punjab	Faridkot	Dhilwan Kalan	2.05	1.20	-0.95	0.22

127	Punjab	Faridkot	Dhudi-Pz	0.60		0.40	-0.99
128	Punjab	Faridkot	Dipsinghwala	1.85	-0.75	-1.17	-0.33
129	Punjab	Faridkot	Faridkot				-0.75
130	Punjab	Faridkot	Faridkot-Pz	0.30		-0.80	1.51
131	Punjab	Faridkot	Fatehgarh-Pz	0.00		1.85	-0.50
132	Punjab	Faridkot	Ghuiana-Pz	0.55		-0.20	0.02
133	Punjab	Faridkot	Jand Sahib-Pz	0.43	0.59	0.01	-4.85
134	Punjab	Faridkot	Karirwali	-0.35	1.13	1.64	-0.72
135	Punjab	Faridkot	Killi-Pz	1.19	-0.94	-0.77	-0.38
136	Punjab	Faridkot	Koharwala- Dw	0.10			-0.09
137	Punjab	Faridkot	Kot Kapura	0.15	0.25	0.00	0.14
138	Punjab	Faridkot	Matta	0.56	0.82	0.16	-0.54
139	Punjab	Faridkot	Mehmuana	0.53	-0.84	-0.64	-0.45
140	Punjab	Faridkot	Mumra-Pz	0.35	0.17	0.05	-0.55
141	Punjab	Faridkot	Nangal-Pz	1.20	0.05	-1.20	
142	Punjab	Faridkot	Pahluwala-Pz	0.65		0.15	-0.25
143	Punjab	Faridkot	Ratti Rori-Pz	-0.20		-0.70	-0.65
144	Punjab	Faridkot	Rorian Kapura-Pz	0.20		1.15	0.83
145	Punjab	Faridkot	Sadiq-Pz	-0.47	0.47	0.40	0.45
146	Punjab	Faridkot	Sandhwan-Pz	0.55			-0.05
147	Punjab	Faridkot	Sher Singh Wala- Pz	0.34	-0.02	-0.65	-0.81
148	Punjab	Faridkot	Sukhwala-Pz	0.09	-0.85	-0.54	-0.82
149	Punjab	Faridkot	Wara Dwarka-Pz	0.96	-0.98	-0.97	-0.88
150	Punjab	Fatehgarh Sahib	Alipur Sodhian-Pz	0.25		1.05	1.35
151	Punjab	Fatehgarh Sahib	Badalialasingh	0.03	2.24	2.32	1.14
152	Punjab	Fatehgarh Sahib	Bagga Kalan	0.60			2.10
153	Punjab	Fatehgarh Sahib	Bassi Pathana	0.28	1.86	0.63	0.37
154	Punjab	Fatehgarh Sahib	Bhaghrana	0.37	-2.35	-1.61	-0.92

155	Punjab	Fatehgarh Sahib	Bhateri1	-0.78	2.28	1.60	1.83
156	Punjab	Fatehgarh Sahib	Burj	0.20		1.10	1.10
157	Punjab	Fatehgarh Sahib	Chandiala-Pz	0.20		0.20	-1.30
158	Punjab	Fatehgarh Sahib	Chuni Khurd-Pz	-2.00			4.75
159	Punjab	Fatehgarh Sahib	Fatehgarh Sahib	-1.60			1.55
160	Punjab	Fatehgarh Sahib	Fatehgarh Sahib-Pz	1.37	0.30	0.38	0.07
161	Punjab	Fatehgarh Sahib	Jai Singh Wala	0.65		1.55	2.05
162	Punjab	Fatehgarh Sahib	Jhambela	2.20		1.30	1.80
163	Punjab	Fatehgarh Sahib	Khamanon-Pz	0.15		0.25	-0.25
164	Punjab	Fatehgarh Sahib	Khera-Pz	0.40		1.00	1.10
165	Punjab	Fatehgarh Sahib	Lohar Majra	0.15		0.60	0.20
166	Punjab	Fatehgarh Sahib	Mianpur-Pz	0.30		0.70	0.60
167	Punjab	Fatehgarh Sahib	Nalini-Pz	0.39	0.35	1.51	0.83
168	Punjab	Fatehgarh Sahib	Nandpur Kalaur-Pz	0.55		1.50	2.00
169	Punjab	Fatehgarh Sahib	Pawala	-2.46	-1.79		
170	Punjab	Fatehgarh Sahib	Sado Majra	0.20		1.65	2.05
171	Punjab	Fatehgarh Sahib	Shahpur	0.30		1.00	1.40
172	Punjab	Fatehgarh Sahib	Sirhind-Pz	0.65		-0.10	1.10
173	Punjab	Fatehgarh Sahib	Tahalpur	0.50		1.70	1.70
174	Punjab	Fatehgarh Sahib	Talwara	0.40		2.40	2.90
175	Punjab	Fatehgarh Sahib	Timber Pur-Pz	0.15		-1.45	-2.00
176	Punjab	Fazilka	Abohar	0.53	-0.33	-0.13	-0.36
177	Punjab	Fazilka	Alamgarh	0.38	-0.29	0.02	-0.58
178	Punjab	Fazilka	Asifwala-Pz	-0.22		0.52	0.40
179	Punjab	Fazilka	Baman Wali-Pz	0.93			0.50
180	Punjab	Fazilka	Bazirdpura	-2.68	-0.05	-0.12	
181	Punjab	Fazilka	Chak Khere Wala-Pz	-0.27		0.55	0.42
182	Punjab	Fazilka	Chak Pune Wala-Pz	-0.29			5.37

183	Punjab	Fazilka	Danewal Satkosi	0.07	0.02	-1.13	-0.38
184	Punjab	Fazilka	Danger Khera-Pz	-0.13		0.19	
185	Punjab	Fazilka	Dipulana-Pz	0.39	-0.46	-1.02	
186	Punjab	Fazilka	Fattu Wala-Pz	-0.58		1.34	1.33
187	Punjab	Fazilka	Fazilka-Pz	0.00			0.65
188	Punjab	Fazilka	Ghananga Kalan-Pz	-0.32		0.72	0.67
189	Punjab	Fazilka	Giddran Wali-Pz	-0.72		1.52	
190	Punjab	Fazilka	Godiwala-Pz	-0.16		0.48	0.42
191	Punjab	Fazilka	Guru Harsahai			0.78	0.70
192	Punjab	Fazilka	Guru Harsahai-Pz			0.62	0.50
193	Punjab	Fazilka	Hamed Saidoke-Pz	-0.44		0.34	0.24
194	Punjab	Fazilka	Himmatpura-Pz	-0.04	-3.69		0.51
195	Punjab	Fazilka	Jaimal Singhwala Pz	0.07			
196	Punjab	Fazilka	Jand Wala Johian-Pz	-0.22		0.40	0.33
197	Punjab	Fazilka	Jandwala Watan-Pz	-0.21		0.49	0.47
198	Punjab	Fazilka	Kaler Khera-Pz	-0.20		0.28	
199	Punjab	Fazilka	Kandh Wala-Pz	-0.07			0.12
200	Punjab	Fazilka	Kathgarh-Pz	-0.35			0.47
201	Punjab	Fazilka	Khore Ki Uttar-Pz	-1.43		1.53	1.33
202	Punjab	Fazilka	Khuiansarwar- Pz	0.46	-0.36	-0.55	
203	Punjab	Fazilka	Kundal1	0.23	0.00	0.17	-0.33
204	Punjab	Fazilka	Ladhuwala	0.32	-1.45	-0.88	-0.72
205	Punjab	Fazilka	Malukpur-Pz	-0.08		0.19	0.16
206	Punjab	Fazilka	Markhiwa Bhamni-Pz				0.38
207	Punjab	Fazilka	Muradwala Dal-Pz	-0.17		0.30	0.29
208	Punjab	Fazilka	Nihalkhera	0.32	-0.47	-0.21	-0.90
209	Punjab	Fazilka	Nure-Ki-Uttar 07pz	-0.06		1.04	1.36
210	Punjab	Fazilka	Pancha Wali-Pz	-0.33		0.51	0.45

211	Punjab	Fazilka	Pattiwalla-Pz	-0.16		0.29	
212	Punjab	Fazilka	Ramsara-Pz	-0.01		0.19	0.06
213	Punjab	Fazilka	Roran Wala-Pz	-0.22			0.52
214	Punjab	Fazilka	Sham Singhwala-Pz	0.22	-0.24		
215	Punjab	Fazilka	Shatriwala-Pz	-0.19		0.50	
216	Punjab	Fazilka	Sherewala-Pz	-0.13		0.13	0.03
217	Punjab	Fazilka	Singhpura-Pz	0.77			-0.68
218	Punjab	Fazilka	Sitoganno	0.32	-0.49	-0.29	-0.57
219	Punjab	Fazilka	Sohangarh Ratte	0.78	-0.68	-0.72	-0.65
220	Punjab	Fazilka	Swah Wala- Pz	0.37	0.59	0.00	-0.25
221	Punjab	Firozpur	Bara Mansur Wala-Pz	-1.41		1.67	2.30
222	Punjab	Firozpur	Chak Kandhe Shah-Pz	-0.88		0.78	0.67
223	Punjab	Firozpur	Chamb-Pz	-1.05		1.15	0.60
224	Punjab	Firozpur	Dulchi Ke-Pz	-0.39		1.20	1.01
225	Punjab	Firozpur	Gogiani-Pz	-0.48		0.65	0.45
226	Punjab	Firozpur	Jaimal Wala-Pz	-0.42		0.73	0.56
227	Punjab	Firozpur	Jang-Pz	-1.82		0.64	0.56
228	Punjab	Firozpur	Lauhke Kalan- Pz	-1.89	2.19	1.75	
229	Punjab	Firozpur	Lohere Khurd-Pz	-1.15		1.26	1.26
230	Punjab	Firozpur	Machi Bugra/ Gujran-Pz	-1.00		1.14	1.00
231	Punjab	Firozpur	Mallanwala Khas-Pz	-0.50		11.50	0.46
232	Punjab	Firozpur	Malluwala-Pz	-2.35		2.28	2.05
233	Punjab	Firozpur	Malsian-Pz	-0.36	1.78	0.78	0.13
234	Punjab	Firozpur	Mana Singh Wala-Pz	-0.78		0.67	0.62
235	Punjab	Firozpur	Mohkam Khan Wala-Pz	-0.74		0.89	0.72
236	Punjab	Firozpur	Mudki-Pz	-0.68		0.80	0.56
237	Punjab	Firozpur	Piyarana	0.66	0.09	-0.90	-0.61
238	Punjab	Firozpur	Rala Hazi- Pz	-1.40		0.92	0.83

239	Punjab	Firozpur	Rukne Wala-Pz	2.47		0.96	1.05
240	Punjab	Firozpur	Sadhusha Wala-Pz	-0.95		0.65	0.44
241	Punjab	Firozpur	Sultan Khan Wala Urf-Pz	-1.78			1.90
242	Punjab	Firozpur	Talwandi Jalle Khan-Pz	-2.08		2.40	2.33
243	Punjab	Firozpur	Tibbi Kalan-Pz	-1.15		1.35	1.09
244	Punjab	Firozpur	Tibbi Taiwan Laluwalla-Pz	-0.57		0.57	0.47
245	Punjab	Firozpur	Wage Wala-Pz	-0.87		0.49	0.32
246	Punjab	Gurdaspur	Bariyar	0.20		-0.55	-0.30
247	Punjab	Gurdaspur	Bhagowal	0.44	-1.97	-1.15	-0.79
248	Punjab	Gurdaspur	Bham	1.35	-0.07		
249	Punjab	Gurdaspur	Bilasbal-Pz	0.50		-0.40	-0.80
250	Punjab	Gurdaspur	Chahal Kalan-Pz	0.80		-0.45	-0.50
251	Punjab	Gurdaspur	Chahgill-Pz	1.20		0.10	-0.30
252	Punjab	Gurdaspur	Chone-Pz	1.25		0.50	0.25
253	Punjab	Gurdaspur	Dakoha-Pz	0.66	0.73	-0.05	-0.47
254	Punjab	Gurdaspur	Dera Baba Nanak	-0.06	-0.44	-0.22	0.01
255	Punjab	Gurdaspur	Dhianpur			-0.43	-0.83
256	Punjab	Gurdaspur	Dinanagar	-3.73	-2.41	3.63	-0.95
257	Punjab	Gurdaspur	Dostpur-Pz	0.40		-0.60	-0.40
258	Punjab	Gurdaspur	Gajikort-Pz	0.50		-1.70	-1.50
259	Punjab	Gurdaspur	Galri		-2.25	-1.05	-0.73
260	Punjab	Gurdaspur	Ghania Ki Bangar- Pz	0.03	0.15	-0.30	-0.39
261	Punjab	Gurdaspur	Ghumani Khurd-Pz	0.45		-0.75	-0.80
262	Punjab	Gurdaspur	Gurdaspur-Pz			0.25	0.70
263	Punjab	Gurdaspur	Hargobindpur	2.81	-0.17	0.14	
264	Punjab	Gurdaspur	Hargobindpur1	-0.25			
265	Punjab	Gurdaspur	Hassanpur Kalan-Pz	0.25		-0.60	-0.30
266	Punjab	Gurdaspur	Jhabkra	0.50		-1.60	-1.10

267	Punjab	Gurdaspur	Jhandalbana-Pz	0.40		-1.40	-0.90
268	Punjab	Gurdaspur	Kahnuwan	0.10			
269	Punjab	Gurdaspur	Kala Afgana-Pz	0.80		-1.05	-0.85
270	Punjab	Gurdaspur	Kalanaur-Dw	-1.36	0.86	1.06	-0.80
271	Punjab	Gurdaspur	Kalanaur-Pz	-3.35	2.08	-1.15	-1.00
272	Punjab	Gurdaspur	Kaure-Pz	0.25		1.60	0.80
273	Punjab	Gurdaspur	Khan Fatta-Pz	0.55		-0.70	-0.50
274	Punjab	Gurdaspur	Khanmalik-Pz	0.40		-0.40	-0.20
275	Punjab	Gurdaspur	Khatgarh-Pz	0.50		-1.80	-1.30
276	Punjab	Gurdaspur	Lakankala-Pz	0.60		-0.45	-0.15
277	Punjab	Gurdaspur	Langurwal-Pz	0.85		-0.55	-0.40
278	Punjab	Gurdaspur	Madipur Fatehgarhchuria	0.28	0.57	0.06	-0.13
279	Punjab	Gurdaspur	Malikpur-Pz	0.95		0.80	1.00
280	Punjab	Gurdaspur	Mallewal-Pz	0.50			-1.00
281	Punjab	Gurdaspur	Maman-Pz	0.40		-0.90	-0.40
282	Punjab	Gurdaspur	Masana-Pz	0.35		-0.90	-0.75
283	Punjab	Gurdaspur	Massit-Pz	0.40		-1.00	-0.75
284	Punjab	Gurdaspur	Mirza Jaan-Pz	0.55			-0.25
285	Punjab	Gurdaspur	Nangal-Pz	0.50		-0.85	-0.70
286	Punjab	Gurdaspur	Pandoritalab	-0.81	-0.19	-0.17	-1.14
287	Punjab	Gurdaspur	Paniar			-0.55	
288	Punjab	Gurdaspur	Parcha-Pz	0.50		-0.10	-0.30
289	Punjab	Gurdaspur	Patti Atwal-Pz	0.95			0.10
290	Punjab	Gurdaspur	Raipur	-0.70		-1.05	-0.10
291	Punjab	Gurdaspur	Saidowal Kalan-Dw	0.82	-0.63	-0.92	-1.16
292	Punjab	Gurdaspur	Sathial-Pz	0.87	-0.33	-0.91	-1.60
293	Punjab	Gurdaspur	Shahpur Jattan-Pz	0.10		-0.85	-0.80
294	Punjab	Gurdaspur	Shahpur-Pz	0.30		-0.50	-0.30

295	Punjab	Gurdaspur	Shezada Kalan-Pz	0.60		-1.00	-0.80
296	Punjab	Gurdaspur	Shikar-Pz	0.55		-0.90	-0.60
297	Punjab	Gurdaspur	Sohal	0.35			-0.60
298	Punjab	Gurdaspur	Tikriwala-Pz	2.10		0.20	0.50
299	Punjab	Hoshiarpur	Chak Sheru-Dw	0.80	-1.95	-1.24	-1.03
300	Punjab	Hoshiarpur	Chohal	-0.01	-2.50	-0.33	-0.16
301	Punjab	Hoshiarpur	Dagan-Dw	2.44	-0.80	0.52	2.38
302	Punjab	Hoshiarpur	Dasuya2 (S)			1.14	0.39
303	Punjab	Hoshiarpur	Durimiwal	0.92	-0.90	-0.30	0.39
304	Punjab	Hoshiarpur	Garhshankar (S)	-2.76	-1.46	7.22	4.47
305	Punjab	Hoshiarpur	Haler Rampur-Dw	0.88	-0.95	1.20	0.30
306	Punjab	Hoshiarpur	Hazipur	1.15	-4.98	-6.46	-1.58
307	Punjab	Hoshiarpur	Jhir Da Khuh-Dw	0.43	-2.26	-1.23	
308	Punjab	Hoshiarpur	Mahilpur-Pz	1.00	-0.54	-1.34	-0.90
309	Punjab	Hoshiarpur	Nangal Bihala- Dw	-1.72	-0.70	-0.60	-0.80
310	Punjab	Hoshiarpur	Pan Khuh-Dw	1.79	-4.35	-3.20	-1.76
311	Punjab	Hoshiarpur	Phuglana- Pz	3.01	-0.57	0.18	-2.27
312	Punjab	Hoshiarpur	Rampur Colony (Hsp) Pz-Medium	2.34	-2.78	-3.12	
313	Punjab	Hoshiarpur	Samraj Tanda-Dw		-1.20	-2.22	-2.24
314	Punjab	Hoshiarpur	Sham Chaurasi	0.41	-2.21	0.04	0.21
315	Punjab	Hoshiarpur	Sibo Chak- Dw	0.17	-1.45	-1.03	-0.43
316	Punjab	Hoshiarpur	Simibli- Ow	1.00	5.10	1.46	-0.01
317	Punjab	Hoshiarpur	Simibli-Pz	2.96	2.99	-2.01	-2.58
318	Punjab	Hoshiarpur	Talwara1	1.95	-2.14	-2.54	-2.07
319	Punjab	Hoshiarpur	Thakarwala	2.21	1.27	-3.33	-2.95
320	Punjab	Jalandhar	Adampur 3(S)	-0.45	0.70	0.43	0.40
321	Punjab	Jalandhar	Adarman-Pz	0.25		0.60	7.20
322	Punjab	Jalandhar	Akalpur-Pz	0.00		1.00	0.70

323	Punjab	Jalandhar	Allawalpur	-1.69		0.24	0.75
324	Punjab	Jalandhar	Bilga-Pz	-0.15			
325	Punjab	Jalandhar	Billi Chahrami-Pz	0.60		1.10	0.70
326	Punjab	Jalandhar	Chania-Pz	1.20		0.50	0.25
327	Punjab	Jalandhar	Dhanda-Pz	0.40		1.65	0.80
328	Punjab	Jalandhar	Dhirowal-Pz	0.60		1.50	1.20
329	Punjab	Jalandhar	Fateh Jalal-Pz	-0.55			0.60
330	Punjab	Jalandhar	Gehlan-Pz	0.00		1.05	-3.35
331	Punjab	Jalandhar	Gillian-Pz	0.45		0.80	0.10
332	Punjab	Jalandhar	Gohiran			0.75	0.55
333	Punjab	Jalandhar	Hardo Pharwal-Pz	0.00			
334	Punjab	Jalandhar	Hardo Sheikh-Pz	-0.55		3.00	5.70
335	Punjab	Jalandhar	Jalandhar-Pz(Vs)	3.16		2.60	2.20
336	Punjab	Jalandhar	Jalbhe		-4.69	-0.51	-1.91
337	Punjab	Jalandhar	Jandiala-Pz	-0.31	0.05	2.03	1.60
338	Punjab	Jalandhar	Jandu Singha-Pz	1.60		1.50	0.90
339	Punjab	Jalandhar	Janian-Pz	2.70		2.70	2.40
340	Punjab	Jalandhar	Kakar Kalan-Pz	0.20		2.00	1.50
341	Punjab	Jalandhar	Kala-Pz	0.40		0.60	-1.20
342	Punjab	Jalandhar	Kalyanpur-Pz	0.35		1.30	1.00
343	Punjab	Jalandhar	Kang Sahib Rai-Pz	0.20		2.00	1.80
344	Punjab	Jalandhar	Kartarpur 2(S)	1.20	1.93	3.01	0.50
345	Punjab	Jalandhar	Kharal Kalan Pz-S	0.02	-1.75	1.13	0.39
346	Punjab	Jalandhar	Kot Wadal Khan-Pz	-0.20		1.90	1.60
347	Punjab	Jalandhar	Kurla-Pz	-0.20		0.50	-0.50
348	Punjab	Jalandhar	Lallian Kalan Pz-S	0.38	-2.10	1.29	0.97
349	Punjab	Jalandhar	Mahmuwal-Pz	0.50		1.80	1.35
350	Punjab	Jalandhar	Mehsampur-Pz	0.30		3.60	1.90

351	Punjab	Jalandhar	Nakodar 2(M)		-2.20	-1.56	1.70
352	Punjab	Jalandhar	Nangal Shaman	1.15		0.85	0.55
353	Punjab	Jalandhar	Nasirpur-Pz	0.70		1.10	0.60
354	Punjab	Jalandhar	Nussi-Pz	0.50		1.50	-0.25
355	Punjab	Jalandhar	Pathial-Pz	0.55		0.05	-0.55
356	Punjab	Jalandhar	Pharwala-Pz	-0.35		1.90	0.70
357	Punjab	Jalandhar	Rahimpur-Pz	1.45		1.85	-0.95
358	Punjab	Jalandhar	Rurka Kalan- Pz	-0.30		2.70	-0.10
359	Punjab	Jalandhar	Samarahi-Pz	-0.20		-0.20	-0.50
360	Punjab	Jalandhar	Shahkot-Pz-Pb	-0.10		0.90	-0.70
361	Punjab	Jalandhar	Skarar Pur-Pz	0.40		1.50	-2.10
362	Punjab	Jalandhar	Sultanpur-Pz	1.10		1.00	0.50
363	Punjab	Jalandhar	Talwan-Pz	1.25		1.90	0.40
364	Punjab	Jalandhar	Thanda-Pz	0.60		1.10	0.60
365	Punjab	Jalandhar	Udhopur		-1.30	-1.72	-0.82
366	Punjab	Kapurthala	Amanipur-Pz	0.90			-0.20
367	Punjab	Kapurthala	Balera-Pz				1.05
368	Punjab	Kapurthala	Bauril Harnampur-Pz	1.30		0.85	0.00
369	Punjab	Kapurthala	Begowal-Pz	0.70		0.50	0.00
370	Punjab	Kapurthala	Bhanoki-Pz	1.50		0.90	-1.00
371	Punjab	Kapurthala	Bhatnura Khurd- S	0.75	2.27	-0.23	
372	Punjab	Kapurthala	Bhawanipur-Pz	1.10		0.92	-0.70
373	Punjab	Kapurthala	Bholath M	0.87	-0.10	-1.20	-0.67
374	Punjab	Kapurthala	Bholath S	0.70	-0.07	-0.48	-6.60
375	Punjab	Kapurthala	Chakoke-Pz	0.35		0.62	0.10
376	Punjab	Kapurthala	Hamira-Pz	0.80		1.10	0.60
377	Punjab	Kapurthala	Hazipur-Pz	0.90		0.25	-0.45
378	Punjab	Kapurthala	Kapurthala2 (S)	2.02	2.47	3.96	1.21

379	Punjab	Kapurthala	Karnail Ganju-Pz	0.15		1.25	0.55
380	Punjab	Kapurthala	Kishanpur	2.20		-0.20	-1.70
381	Punjab	Kapurthala	Maheru-Pz	3.00		1.00	-0.20
382	Punjab	Kapurthala	Miani Bola-Pz	0.30		0.20	-0.15
383	Punjab	Kapurthala	Mithra-Pz	0.20			1.50
384	Punjab	Kapurthala	Nathu Chahal-Pz	0.50		1.30	-2.50
385	Punjab	Kapurthala	Nurpur Janoa-Pz	0.25		0.90	-0.05
386	Punjab	Kapurthala	Paazian-Pz	0.90			0.90
387	Punjab	Kapurthala	Phagwara2 (S)	-0.77			2.25
388	Punjab	Kapurthala	Rawalpindi-Pz	0.80		1.00	-0.40
389	Punjab	Kapurthala	Saiflabad-Pz	0.18			0.17
390	Punjab	Kapurthala	Sangatpur-Pz	1.40		4.60	1.90
391	Punjab	Kapurthala	Shalapur Dona-Pz	1.00			0.00
392	Punjab	Kapurthala	Sultanpur2 (S)	-2.16	3.64	3.28	3.09
393	Punjab	Kapurthala	Talwandi Chaudary -Pz	-0.79	1.81	-0.37	1.56
394	Punjab	Kapurthala	Thikriwali-Pz	0.50		0.65	0.15
395	Punjab	Ludhiana	Alamgir-Pz	0.20		0.95	0.80
396	Punjab	Ludhiana	Aliwal-Pz	0.15		0.90	0.60
397	Punjab	Ludhiana	Bhagwanpur-Pz	0.25		0.60	-0.15
398	Punjab	Ludhiana	Bhahlolpur-Dw	0.67	-1.02	-0.97	-0.47
399	Punjab	Ludhiana	Bharthala Randhawa-Pz	0.54		0.83	0.41
400	Punjab	Ludhiana	Bhikhi Khatron-Pz	0.25		0.90	0.90
401	Punjab	Ludhiana	Bilaspur-Pz	0.20		0.10	0.00
402	Punjab	Ludhiana	Chaminala-Pz	0.00		1.70	1.30
403	Punjab	Ludhiana	Chankian Khurd-Pz	-0.05		-0.25	-0.29
404	Punjab	Ludhiana	Chattar Singh Park-Ldh	0.27	0.48		
405	Punjab	Ludhiana	Chaunta-Pz	0.00		0.10	-0.05
406	Punjab	Ludhiana	Chhapar-Pz	0.05		2.05	1.15

407	Punjab	Ludhiana	Dinnamder-Pz	0.15		1.95	0.95
408	Punjab	Ludhiana	Dodpur-Pz	0.50		0.70	0.40
409	Punjab	Ludhiana	Doraha-Pz	0.23	-0.18	-0.63	-0.59
410	Punjab	Ludhiana	Galibkalan-Pz	-0.15		1.90	2.00
411	Punjab	Ludhiana	Gohaur-Pz	1.20		-0.10	-0.15
412	Punjab	Ludhiana	Gopalpur 2(S)	0.28	1.78	0.17	0.34
413	Punjab	Ludhiana	Hambowal-Pz	0.00		-0.10	-0.40
414	Punjab	Ludhiana	Harnampur	0.65		0.63	0.15
415	Punjab	Ludhiana	Hedon-Pz	0.30		0.80	-0.30
416	Punjab	Ludhiana	Ikloha-Pz	0.60	1.40	0.85	1.77
417	Punjab	Ludhiana	Katanikalan-Pz	0.35		-0.65	-0.95
418	Punjab	Ludhiana	Khandur	0.23		1.27	1.07
419	Punjab	Ludhiana	Kishangarh-Pz	0.10		0.75	0.40
420	Punjab	Ludhiana	Kishanpur-Pz	-0.80		2.70	1.25
421	Punjab	Ludhiana	Lalan1	1.30		-1.68	
422	Punjab	Ludhiana	Lelon-Pz	0.00		-0.75	-0.25
423	Punjab	Ludhiana	Lil- Ii Pz	-2.75	2.88	3.12	
424	Punjab	Ludhiana	Lodhiwal-Pz	-0.11		0.61	-0.50
425	Punjab	Ludhiana	Lohara-Pz	0.28		0.70	0.80
426	Punjab	Ludhiana	Manak Majra-Pz	-0.50			0.70
427	Punjab	Ludhiana	Mangat-Pz	-0.20		1.40	0.05
428	Punjab	Ludhiana	Manoke-Pz	-0.60		3.45	
429	Punjab	Ludhiana	Mehma Singh Wala-Pz	0.00		1.42	1.20
430	Punjab	Ludhiana	Nurpur-Pz	0.00		2.00	2.20
431	Punjab	Ludhiana	P.A.U.Ludhiana 2(S)	0.97	3.84	5.18	4.85
432	Punjab	Ludhiana	Pabbian-Pz	-0.50		1.40	1.00
433	Punjab	Ludhiana	Pandori-Pz	0.40		1.90	0.75
434	Punjab	Ludhiana	Payal-Pz	0.30		1.00	0.85

435	Punjab	Ludhiana	Ragba-Pz	0.18		1.78	1.17
436	Punjab	Ludhiana	Raikot-Pz	0.56		2.04	1.64
437	Punjab	Ludhiana	Rajona Khurd	0.35		3.95	0.90
438	Punjab	Ludhiana	Rashiana-Pz	-0.20		1.75	0.90
439	Punjab	Ludhiana	Rattewal-Pz	-0.20		2.50	1.25
440	Punjab	Ludhiana	Roomi-Pz	0.30		3.50	0.50
441	Punjab	Ludhiana	Sajaywal-Pz	0.45		4.25	0.55
442	Punjab	Ludhiana	Samrala 2(S)		0.07	-0.43	-0.55
443	Punjab	Ludhiana	Sanewal-Pz	0.35		0.35	0.25
444	Punjab	Ludhiana	Sangatpura-Pz			0.15	-0.45
445	Punjab	Ludhiana	Sherian	-0.28	0.05	-0.20	0.00
446	Punjab	Ludhiana	Sherpur-Pz	0.30		-0.50	-0.50
447	Punjab	Ludhiana	Sidhwan Bet-Pz	0.69	-0.44	-0.44	-0.58
448	Punjab	Ludhiana	Talwandi Kalan-Pz	-0.15		1.85	1.10
449	Punjab	Ludhiana	Udonwal-Pz	0.20		-0.40	-0.55
450	Punjab	Ludhiana	Upplan	0.25		-0.15	-0.50
451	Punjab	Ludhiana	Utlan	0.54	0.10	0.22	
452	Punjab	Mansa	Aklia-Pz	-0.71		3.16	1.88
453	Punjab	Mansa	Alampur Mandran-Pz	0.46		0.46	0.22
454	Punjab	Mansa	Alisher Khurd-Pz	0.11		1.29	1.19
455	Punjab	Mansa	Bahadur Pur-Pz	0.25		1.47	0.98
456	Punjab	Mansa	Bareh-Pz	0.41		0.06	-0.04
457	Punjab	Mansa	Behniwala-Pz	-0.23		0.77	0.60
458	Punjab	Mansa	Bhamme Kalan-Pz	-0.19		-0.83	-0.12
459	Punjab	Mansa	Bhikhi 1 (S)	2.15	-1.33	-0.10	-0.37
460	Punjab	Mansa	Budhlada	2.10			2.59
461	Punjab	Mansa	Budhlada-Pz	0.40		0.85	
462	Punjab	Mansa	Burj Rathi-Pz	-0.08		1.27	0.94

463	Punjab	Mansa	Fattamaluka	1.29	-1.45	-1.26	-1.62
464	Punjab	Mansa	Gehlan-Pz	0.02			
465	Punjab	Mansa	Gharangne-Pz	-0.21		0.29	0.23
466	Punjab	Mansa	Hero Kalan-Pz	-0.53		3.19	3.09
467	Punjab	Mansa	Hirke-Pz	0.10		1.20	0.37
468	Punjab	Mansa	Joga -Dp-Pz	1.32			6.60
469	Punjab	Mansa	Khiala Kalan-Pz	0.00		0.74	0.85
470	Punjab	Mansa	Khokhar Kalan-Pz	-0.08		0.73	0.45
471	Punjab	Mansa	Kot Dhamru	0.15	-0.49	-0.62	-0.71
472	Punjab	Mansa	Kotra	0.23	0.79	0.94	0.54
473	Punjab	Mansa	Kusla-Pz	0.50		-0.55	-1.02
474	Punjab	Mansa	Lakhiwal-Pz	-0.15		1.13	1.13
475	Punjab	Mansa	Makha-[Pz	-0.11		0.13	0.07
476	Punjab	Mansa	Mansa	-0.05			0.43
477	Punjab	Mansa	Phaphare Bhaike-Pz	0.04		1.47	1.29
478	Punjab	Mansa	Raipur-Pz	0.35	-0.20	-0.50	-0.75
479	Punjab	Mansa	Ralla		3.35	0.76	0.57
480	Punjab	Mansa	Sangha-Pz	0.29			
481	Punjab	Mansa	Tibbi Hari Singh-Pz	0.37		0.76	-0.09
482	Punjab	Moga	Baje Ke-Pz	-0.22	2.71	0.23	0.01
483	Punjab	Moga	Baraghan-Pz	-0.10			0.51
484	Punjab	Moga	Bilaspur-Pz	-0.17		1.07	0.79
485	Punjab	Moga	Bir Chirk-Pz				-0.81
486	Punjab	Moga	Budh Singh Wala-Pz	2.11	0.88	0.19	0.64
487	Punjab	Moga	Chand Nawan-Pz	-0.20		1.00	0.78
488	Punjab	Moga	Chogawan-Pz	-2.45	3.07	1.85	0.27
489	Punjab	Moga	Dagru- Pz	1.53	0.47	0.83	
490	Punjab	Moga	Damru Khurd	0.87	1.64	1.48	

491	Punjab	Moga	Darapur 07pz	-0.20			3.60
492	Punjab	Moga	Daulatpur Niwan-Pz	-0.15		1.15	0.78
493	Punjab	Moga	Dhudi Ke-Pz	-0.50		1.00	0.67
494	Punjab	Moga	Dinna-Pz	-0.20		1.30	1.01
495	Punjab	Moga	Indergarh-Pz	-0.08		0.24	-0.12
496	Punjab	Moga	Jhandewala-Pz	-0.35		0.95	0.63
497	Punjab	Moga	Kamalke-Pz	-0.95		1.25	1.09
498	Punjab	Moga	Khokri Kalan-Pz	-0.25		1.10	0.76
499	Punjab	Moga	Khosa Randhir-Pz	-1.15		0.90	0.60
500	Punjab	Moga	Mandar-Pz	-1.05		1.45	1.45
501	Punjab	Moga	Mangewala-Pz	-0.35		1.45	1.02
502	Punjab	Moga	Mari Mustfa-Pz	0.10			1.30
503	Punjab	Moga	Meemana-Pz	-0.25		1.05	0.82
504	Punjab	Moga	Mehron-Pz	-0.14		0.84	0.60
505	Punjab	Moga	Nathu Wala-Pz	-1.00		1.41	1.13
506	Punjab	Moga	Nihalsinghwala-Pz	-0.72	0.47	2.75	2.10
507	Punjab	Moga	Raonke Kalan-Pz	-0.25		0.90	0.62
508	Punjab	Moga	Samad Bhai-Pz	-0.20		9.45	1.09
509	Punjab	Moga	Samalsar-Pz	-0.10		1.61	1.21
510	Punjab	Moga	Thathe Bhai-Pz	-0.25		1.31	0.98
511	Punjab	Moga	Tota Singh Wala-Pz	-1.10		1.45	1.40
512	Punjab	Muktsar	Abulkharana-Pz	0.67		-0.09	-0.12
513	Punjab	Muktsar	Alam Wala	0.45			-0.55
514	Punjab	Muktsar	Balocha Khera(Rasoolpur)	0.59	0.29	-0.07	-0.44
515	Punjab	Muktsar	Bhaliana	-0.65	0.62	0.63	0.32
516	Punjab	Muktsar	Bhiti Wala-Pz	0.53		0.52	0.42
517	Punjab	Muktsar	Chaktam Kot-Pz	0.48		-0.33	-0.38
518	Punjab	Muktsar	Dhalkot-Pz	0.50		0.17	-0.30

519	Punjab	Muktsar	Doda	-2.17	-1.30	-0.43	0.33
520	Punjab	Muktsar	Doda-Pz	0.08	-0.53	-0.57	
521	Punjab	Muktsar	Husnar-Pz	0.40		-0.10	-0.20
522	Punjab	Muktsar	Jhurar-Pz	0.40			-0.60
523	Punjab	Muktsar	Kabar Wala	0.66	-1.12	-1.62	-1.77
524	Punjab	Muktsar	Kattianwali-Pz	0.35		-0.20	-0.15
525	Punjab	Muktsar	Khirkian Wala-Pz	0.30		-0.50	-0.45
526	Punjab	Muktsar	Khunde Halal-Pz	-0.01	-0.74	-0.86	-0.86
527	Punjab	Muktsar	Killian Wali-Pz	0.22			
528	Punjab	Muktsar	Kot Bhai- Dw	0.33			-3.03
529	Punjab	Muktsar	Labanianwali	-1.62	-0.31	-0.58	0.82
530	Punjab	Muktsar	Lambi	-2.14		0.89	0.88
531	Punjab	Muktsar	Lambi-Pz	-0.05	-0.41	-0.41	
532	Punjab	Muktsar	Muktsar	-0.49	0.03	-0.15	-2.41
533	Punjab	Muktsar	Phulu Khera-Pz	0.40		0.13	0.10
534	Punjab	Muktsar	Ratta Khera Chota-Pz	-0.40		-0.50	-0.45
535	Punjab	Muktsar	Sheikh-Pz	0.28		0.37	0.07
536	Punjab	Muktsar	Sohiwal-Pz	-0.25			0.33
537	Punjab	Pathankot	Bamyal	-0.35	-1.37	-0.31	0.10
538	Punjab	Pathankot	Bhoa	0.38	-1.60	-0.53	-0.50
539	Punjab	Pathankot	Dhar Khurd	1.50			-1.65
540	Punjab	Pathankot	Gharotakalan	2.71	-2.75	-1.05	
541	Punjab	Pathankot	Ghoh Dw	2.52			-2.03
542	Punjab	Pathankot	Jainpur-Pz	-0.35		0.10	0.10
543	Punjab	Pathankot	Jandwala	-2.10		-2.70	-1.80
544	Punjab	Pathankot	Khanikhui		-1.60	-1.05	
545	Punjab	Pathankot	Khogaki Chaka-Pz	0.40		-1.65	-1.30
546	Punjab	Pathankot	Kiari- Dw	0.97	-0.19	-2.73	-1.83

547	Punjab	Pathankot	Kirian Khurd-Pz	0.20		-1.70	-1.40
548	Punjab	Pathankot	Kui-Dw	1.52	0.08	-2.92	
549	Punjab	Pathankot	Kuther-Pz	-1.90		0.10	-0.55
550	Punjab	Pathankot	Malikpur	0.40			-0.30
551	Punjab	Pathankot	Matti-Pz	-1.55		-10.00	-6.70
552	Punjab	Pathankot	Mirthal	0.95		-1.10	-1.10
553	Punjab	Pathankot	Mirthal-Dw				1.00
554	Punjab	Pathankot	Muthi	0.40			0.05
555	Punjab	Pathankot	Narot Jaimalsingh-Pz	0.55		-0.55	-0.25
556	Punjab	Pathankot	Nawan Pind	-0.55	-2.30	-0.08	0.28
557	Punjab	Pathankot	Parmota-Dw	2.53	0.23	-5.45	-5.42
558	Punjab	Pathankot	Pathankot1	-0.13	-2.42	-1.55	0.55
559	Punjab	Pathankot	Philora-Pz	-0.90		-1.30	-0.60
560	Punjab	Pathankot	Phulpiara	0.50			-0.30
561	Punjab	Pathankot	Rakawal-Pz	0.70		-0.65	-0.40
562	Punjab	Pathankot	Rani Pur-Pz	0.70		-2.50	-1.60
563	Punjab	Pathankot	Sujanpur-Pz	0.50		-1.80	-1.35
564	Punjab	Patiala	Bassma Pipla		-0.13		-3.21
565	Punjab	Patiala	Bhankhar-Pz	0.30		2.20	2.95
566	Punjab	Patiala	Bhojo Majri 07pz	0.30	3.37	4.25	3.10
567	Punjab	Patiala	Birkauli		2.61	3.88	
568	Punjab	Patiala	Challeta-Pz	0.55		0.30	0.70
569	Punjab	Patiala	Devigarh 1pz	1.30	6.19	0.71	0.79
570	Punjab	Patiala	Devigarh lipz	0.70		1.51	1.27
571	Punjab	Patiala	Devigarh-lli Pz	0.60		1.77	1.38
572	Punjab	Patiala	Dhakdaba 07	-0.95	3.26		
573	Punjab	Patiala	Dhaneta-Pz	0.85		1.40	1.90
574	Punjab	Patiala	Gharam-Pz	0.65		1.20	1.15

575	Punjab	Patiala	Gulwatti-Pz	1.80		0.00	1.00
576	Punjab	Patiala	Haluka	0.63	0.48	0.51	
577	Punjab	Patiala	Handesaran-S	3.00	-2.25	-0.50	
578	Punjab	Patiala	Hari Majra		1.09		
579	Punjab	Patiala	Harion Kalan-Pz	1.95		1.35	-16.45
580	Punjab	Patiala	Jainagar-Pz	-0.90		1.20	0.60
581	Punjab	Patiala	Kakrala-Pz	1.90		1.85	2.30
582	Punjab	Patiala	Kalyan 07pz	0.17	-0.10	1.08	0.69
583	Punjab	Patiala	Kami Kalan	0.05	-0.30	1.23	-0.13
584	Punjab	Patiala	Kheri Pandte-Pz	-0.95		0.25	1.65
585	Punjab	Patiala	Kulburcha-Pz	0.50		2.45	2.95
586	Punjab	Patiala	Kutha Kheri-Pz	0.70		0.35	0.20
587	Punjab	Patiala	Lacharu Kalan		-1.38	-1.10	-0.85
588	Punjab	Patiala	Lachkani-Pz	0.70	1.44	0.80	0.47
589	Punjab	Patiala	Mehmood Pur-Pz	0.45		1.45	0.15
590	Punjab	Patiala	Mongowal-Pz	0.40		1.30	1.30
591	Punjab	Patiala	Nanhera-Pz	-0.20		7.80	1.25
592	Punjab	Patiala	Passiana-Pz	0.30		0.25	0.30
593	Punjab	Patiala	Patran-Pz	0.15	0.60	1.17	1.28
594	Punjab	Patiala	Rajpura-Pzst	0.55	3.77		4.00
595	Punjab	Patiala	Rasoolpur Jaura-Pz	0.00		0.75	0.60
596	Punjab	Patiala	Samana-Pz	0.20	1.02	1.20	6.23
597	Punjab	Patiala	Samaspur-Pz	0.10		1.85	1.05
598	Punjab	Patiala	Sangatpura-Pz	-0.03	2.38	1.63	
599	Punjab	Patiala	Sauja-Pz	0.70		1.70	1.45
600	Punjab	Patiala	Surala Kalan-Pz	0.80		-0.05	-0.55
601	Punjab	Patiala	Thua	-0.62	1.68	8.35	1.10
602	Punjab	Rupnagar	Ahmedpur	1.44	-3.03	-1.65	

603	Punjab	Rupnagar	Amrali-Pz	1.41		0.50	0.10
604	Punjab	Rupnagar	Attari-Pz	0.25		-0.60	-1.15
605	Punjab	Rupnagar	Bains	0.45		1.15	0.90
606	Punjab	Rupnagar	Bera Chauta	0.10	-0.74	-1.40	-0.33
607	Punjab	Rupnagar	Bhalan	0.13	-1.90		-0.75
608	Punjab	Rupnagar	Bhatto-Pz	0.15		-0.35	-0.80
609	Punjab	Rupnagar	Braham Pur	0.66	-2.07	-1.02	-0.59
610	Punjab	Rupnagar	Chakdera	0.72	-0.89	-0.97	-0.88
611	Punjab	Rupnagar	Chatamli- Pz		2.84		0.97
612	Punjab	Rupnagar	Dhair	0.39	-0.77	-1.04	-0.60
613	Punjab	Rupnagar	Dumewal	1.28	0.05	-0.66	-0.63
614	Punjab	Rupnagar	Hardinamoh	0.90	-2.00	-0.95	-1.04
615	Punjab	Rupnagar	Kiwan-Pz	0.50		0.10	0.35
616	Punjab	Rupnagar	Kotla	0.10		-0.50	-0.80
617	Punjab	Rupnagar	Morinda-Pz	0.25		0.50	0.60
618	Punjab	Rupnagar	Rajgiri-Pz	0.50		1.70	1.50
619	Punjab	Rupnagar	Rampur-Pz	0.30			0.10
620	Punjab	Rupnagar	Rurki Heeran-Pz	1.24	1.41	0.21	-0.42
621	Punjab	Sangrur	Bagarian-Pz	2.72	-1.39	-1.67	-1.62
622	Punjab	Sangrur	Bakshiwala-Pz	1.45		0.45	1.00
623	Punjab	Sangrur	Balang-Pz	1.70			
624	Punjab	Sangrur	Banbhaura-Pz	-0.40		3.15	1.65
625	Punjab	Sangrur	Bhojowali-Pz	0.50	4.10	2.92	2.25
626	Punjab	Sangrur	Bhunerheri-Pz	0.45		3.75	3.85
627	Punjab	Sangrur	Bugra 1	0.14	2.32	2.00	2.20
628	Punjab	Sangrur	Chatha Nanhera-Pz	0.60		0.60	1.45
629	Punjab	Sangrur	Chural Kalan M	0.22	2.67	2.10	1.28
630	Punjab	Sangrur	Dharamgarh-Pz	1.50		0.40	2.20

631	Punjab	Sangrur	Ghaghlo-Pz	1.65			
632	Punjab	Sangrur	Ghanauri Kalan-Pz	1.04	0.73	-0.42	0.33
633	Punjab	Sangrur	Hassanpur-Pz	0.35		2.35	1.15
634	Punjab	Sangrur	Isra-Pz	0.05			
635	Punjab	Sangrur	Kala Jhar-Pz	1.65		1.90	3.25
636	Punjab	Sangrur	Khanpur Fakiran-Pz	0.90		0.60	0.90
637	Punjab	Sangrur	Kheri Naran-Pz	1.30		1.45	2.05
638	Punjab	Sangrur	Khurni-Pz	0.95		1.60	2.20
639	Punjab	Sangrur	Kila Hakima	0.00		2.30	1.60
640	Punjab	Sangrur	Kokahar-Pz	0.35		1.10	2.00
641	Punjab	Sangrur	Kuler Khurd-Pz	1.80		0.10	0.60
642	Punjab	Sangrur	Lehal Kalan-Pz	1.50		1.30	1.85
643	Punjab	Sangrur	Longowal-Pz	0.33	1.42	0.94	1.04
644	Punjab	Sangrur	Malerkotla-Dw	0.62	0.59	0.45	
645	Punjab	Sangrur	Manvi-Pz	-0.73	1.37	0.73	0.51
646	Punjab	Sangrur	Mehsampur-Pz	0.90		0.30	0.20
647	Punjab	Sangrur	Panjgaraiyan- Pz	-0.15		2.85	1.85
648	Punjab	Sangrur	Patiala Kalan-Pz	0.80			
649	Punjab	Sangrur	Rajo Majra-Pz	0.15		4.55	1.45
650	Punjab	Sangrur	Rampur Channa-Pz	0.10		2.50	1.30
651	Punjab	Sangrur	Rurgarh-Pz	0.28		1.87	1.52
652	Punjab	Sangrur	Rurki Kalan-Pz	0.10		1.90	1.20
653	Punjab	Sangrur	Sekhpur Khurd-Pz	-0.50		2.00	1.55
654	Punjab	Sangrur	Sekhwas-Pz	1.40		1.30	1.45
655	Punjab	Sangrur	Sikandarpur-Pz	0.00		1.60	1.15
656	Punjab	Sangrur	Sunam-Pz	0.22	1.46	1.24	1.20
657	Punjab	Sas Nagar	Antala	0.29	-2.02	-1.00	-0.67
658	Punjab	Sas Nagar	Ballopur	0.25			

659	Punjab	Sas Nagar	Balungi-Pz	-0.20		-0.15	-1.35
660	Punjab	Sas Nagar	Barauli-Pz			1.45	0.65
661	Punjab	Sas Nagar	Chandiala-Pz			1.15	1.80
662	Punjab	Sas Nagar	Dera Bassi 07pz	1.20	-0.37	-0.52	-0.32
663	Punjab	Sas Nagar	Dheri	0.75	-0.34	-0.87	-0.49
664	Punjab	Sas Nagar	Gharoon	0.80		-0.50	-2.15
665	Punjab	Sas Nagar	Ghoga				
666	Punjab	Sas Nagar	Joli	1.07	-0.33	-1.87	1.33
667	Punjab	Sas Nagar	Kurrha-Pz	0.60		-0.25	-0.20
668	Punjab	Sas Nagar	Landran-Pz	1.04	0.12	-0.47	
669	Punjab	Sas Nagar	Malkpur-Pz	1.65		-2.00	-3.75
670	Punjab	Sas Nagar	Manoli-Pz	-0.65		1.05	0.80
671	Punjab	Sas Nagar	Palheri-Pz	0.26		-0.81	-1.56
672	Punjab	Sas Nagar	Pedol-Pz	-1.20		2.25	2.45
673	Punjab	Sas Nagar	Raipur Kalan	0.65		-0.55	-0.05
674	Punjab	Sas Nagar	Rurkan-Pz	0.00			-0.65
675	Punjab	Sas Nagar	Singhpura-Pz			1.50	0.85
676	Punjab	Sas Nagar	Sirsini	0.38	-0.55	-0.57	
677	Punjab	Sas Nagar	Sohana-Pz	2.25			-0.40
678	Punjab	Sbs Nagar	Alowal-Pz	0.30		0.20	-0.30
679	Punjab	Sbs Nagar	Aur-Pz	1.00		0.80	0.50
680	Punjab	Sbs Nagar	Badhwan-Pz			2.10	1.80
681	Punjab	Sbs Nagar	Baharam-Pz	-1.30		3.75	3.10
682	Punjab	Sbs Nagar	Bahara-Pz	0.40		0.30	-0.05
683	Punjab	Sbs Nagar	Bahua-Pz	0.70		2.10	1.60
684	Punjab	Sbs Nagar	Balachore			-3.96	-4.26
685	Punjab	Sbs Nagar	Balaipur-Pz	-0.20		3.20	2.80
686	Punjab	Sbs Nagar	Bhadi-Pz			1.70	1.30

687	Punjab	Sbs Nagar	Dhan Wala-Pz			1.30	1.10
688	Punjab	Sbs Nagar	Dugri Garol-Pz			-0.50	-1.50
689	Punjab	Sbs Nagar	Hakimpur-Pz	-0.15		2.15	1.65
690	Punjab	Sbs Nagar	Jethu Majra-Pz	0.70		1.00	0.70
691	Punjab	Sbs Nagar	Kariam-Pz	0.40		0.50	0.20
692	Punjab	Sbs Nagar	Langoya-Pz	1.30		1.20	0.70
693	Punjab	Sbs Nagar	Mahalpur-Pz			0.00	-0.70
694	Punjab	Sbs Nagar	Mauhra-Pz	1.62	-0.29	-0.16	-1.17
695	Punjab	Sbs Nagar	Padmaiwal-Pz	0.10		2.70	2.10
696	Punjab	Sbs Nagar	Rahon	-0.38			1.70
697	Punjab	Sbs Nagar	Raipur Dhaba-Pz	1.00	-0.55	1.15	0.06
698	Punjab	Sbs Nagar	Torewal-Pz	0.85			
699	Punjab	Taran Taran	Aima Khurd-Pz	1.50		0.70	-1.10
700	Punjab	Taran Taran	Attari-Pz	0.90		-3.30	-4.00
701	Punjab	Taran Taran	Bakipur-Pz	1.20		-0.30	-2.20
702	Punjab	Taran Taran	Bath-Pz	1.60		0.80	-0.80
703	Punjab	Taran Taran	Bhagala-Pz	1.80		0.30	
704	Punjab	Taran Taran	Bhagwanpur-Pz	1.30		0.10	
705	Punjab	Taran Taran	Bhalaipur-Pz	1.40		0.10	-1.20
706	Punjab	Taran Taran	Bhankar Kalan-Pz	1.20		-0.50	-0.90
707	Punjab	Taran Taran	Bhikiwind- Pz	0.13	1.68	1.45	
708	Punjab	Taran Taran	Bhura-Pz	1.40			
709	Punjab	Taran Taran	Bhure-Pz	1.10		0.90	1.60
710	Punjab	Taran Taran	Bhusse-Pz	2.20		-1.70	-2.20
711	Punjab	Taran Taran	Brahmpur-Pz	1.00			-1.70
712	Punjab	Taran Taran	Chakkare Khan-Pz	1.40		0.50	-0.40
713	Punjab	Taran Taran	Chola Sahib-Pz	0.30	2.91	1.11	
714	Punjab	Taran Taran	Choudhary Wala-Pz	1.90			

715	Punjab	Taran Taran	Chuselawad-Pz	2.00		-0.70	
716	Punjab	Taran Taran	Dholan-Pz	1.70		-0.70	
717	Punjab	Taran Taran	Ekalgoda-Pz	0.90		-0.50	-1.90
718	Punjab	Taran Taran	Fatehabad- Pz	0.60		0.00	0.90
719	Punjab	Taran Taran	Gandi Wind-Pz	0.39	1.36	1.05	
720	Punjab	Taran Taran	Goindwal 07	0.34	-0.81	0.47	
721	Punjab	Taran Taran	Jalalabad-Pz	0.90			3.00
722	Punjab	Taran Taran	Jandoke-Pz	1.50		-0.60	-1.40
723	Punjab	Taran Taran	Kairon-Pz	1.50		-0.40	
724	Punjab	Taran Taran	Kalsia Kalan07	2.00	0.22	1.43	
725	Punjab	Taran Taran	Khadur Sahib-Pz	0.12	1.41	1.34	
726	Punjab	Taran Taran	Khalra-Pz	1.10		-0.50	
727	Punjab	Taran Taran	Kotbudda-Pz	1.70		-0.10	
728	Punjab	Taran Taran	Kotli Sur Singh-Pz	1.40		-0.80	
729	Punjab	Taran Taran	Mahendipur-Pz	1.60		-0.70	
730	Punjab	Taran Taran	Marhona-Pz	1.20		-0.80	-3.60
731	Punjab	Taran Taran	Mohawa	-0.50	1.89	1.45	
732	Punjab	Taran Taran	Pindan-Pz	0.70		0.10	-0.60
733	Punjab	Taran Taran	Rajoke-Pz			-0.50	
734	Punjab	Taran Taran	Ratoke-Pz	-0.12	3.39	2.16	
735	Punjab	Taran Taran	Sabran-Pz			1.40	
736	Punjab	Taran Taran	Sahab Pura- Pz	0.30	0.38	0.81	
737	Punjab	Taran Taran	Sheron-Pz	1.10		0.40	0.40
738	Punjab	Taran Taran	Sugga-Pz	1.40		-0.10	
739	Punjab	Taran Taran	Thatha- Pz	2.90			

Annexure-III

				ANNUAL FLUCTUATION(M)			
1	Chandigarh	Chandigarh	BURAIL	-0.03	0.09	0.38	-0.11
2	Chandigarh	Chandigarh	CSIO-S				-0.16
3	Chandigarh	Chandigarh	NEW INDUST AREA	-2.10	-0.42	-0.16	-0.32
4	Chandigarh	Chandigarh	SECT 10C (D)		2.21	1.15	
5	Chandigarh	Chandigarh	SECT 10C (S)		0.52		
6	Chandigarh	Chandigarh	SECT 31D (D)	-4.42	2.63	-0.22	-0.23
7	Chandigarh	Chandigarh	SECT 31D (S)	-0.20	-0.43	-2.61	-0.34
8	Chandigarh	Chandigarh	SECT 37D (S)	-0.25	-0.35	0.29	-0.09
9	Chandigarh	Chandigarh	SECT 39D (S)	-0.71	0.47		
10	Chandigarh	Chandigarh	SECT 44D (S)	-1.26	-0.41		0.00
11	Chandigarh	Chandigarh	Sector-46 (shallow)	-0.91	0.10	-1.72	
1	Punjab	AMRITSAR	Ajnala	-0.66	-1.02	-0.72	-0.33
2	Punjab	AMRITSAR	Amritsar1	1.94	-0.70	0.01	0.62
3	Punjab	AMRITSAR	Bal Kalan-Pz	-2.90	0.42	0.30	0.70
4	Punjab	AMRITSAR	Beas07	-0.11		0.72	0.32
5	Punjab	AMRITSAR	Bhattaywad-Pz	-1.40		10.70	
6	Punjab	AMRITSAR	Boparai Khurd-Pz			-1.10	-0.60
7	Punjab	AMRITSAR	Chak Dogra-Pz	-1.90		-1.30	0.80
8	Punjab	AMRITSAR	ChogWan- Pz	-3.04	-3.06	-0.68	-0.55
9	Punjab	AMRITSAR	Dhulika-Pz	-0.80		-0.70	-1.10
10	Punjab	AMRITSAR	Dohan-Pz	-1.80		1.00	0.20
11	Punjab	AMRITSAR	Gago Mahal- Pz	-0.55	0.16	-0.12	-0.19
12	Punjab	AMRITSAR	Gill wali-Pz	-1.90		0.10	-0.50
13	Punjab	AMRITSAR	Jandiala Guru-Pz	-0.10	-0.66	-0.60	-1.70
14	Punjab	AMRITSAR	Jasrur-Pz	-1.60		-1.00	
15	Punjab	AMRITSAR	Jethuwal-Pz	-2.80		-0.20	0.50
16	Punjab	AMRITSAR	Kandowali-Pz	-2.30		0.20	0.50
17	Punjab	AMRITSAR	Karyl-Pz	-1.30		0.20	-0.70
18	Punjab	AMRITSAR	Khilchian-Pz	-1.70		0.00	0.50
19	Punjab	AMRITSAR	Mahima-Pz				0.10
20	Punjab	AMRITSAR	Makhan Windi-Pz	-1.20		0.40	1.60
21	Punjab	AMRITSAR	Mehleykey-Pz	-1.50		-3.30	-2.70
22	Punjab	AMRITSAR	Mehta			-1.95	-1.54

23	Punjab	AMRITSAR	Mehta-Pz	-1.40		-2.10	0.80
24	Punjab	AMRITSAR	Miran Chak-Pz	-1.00		0.90	0.70
25	Punjab	AMRITSAR	Nangal Sahaul-Pz	-1.40		0.40	-0.20
26	Punjab	AMRITSAR	Nawan Tanal- Pz	-0.45	-0.18	1.19	
27	Punjab	AMRITSAR	Pakharpura-Pz	-1.40		0.20	
28	Punjab	AMRITSAR	Ramdas-DW	0.72	2.30		2.82
29	Punjab	AMRITSAR	Rampura-Pz	-1.40		1.40	1.10
30	Punjab	AMRITSAR	Rupowal Brahmana-Pz	-1.30		-0.20	0.00
31	Punjab	AMRITSAR	Sathiala-Pz	-2.10		0.00	-0.10
32	Punjab	AMRITSAR	Shabura-Pz	-0.70		0.00	2.68
33	Punjab	AMRITSAR	Sham Nagar-Pz	-1.70		0.00	0.20
34	Punjab	AMRITSAR	Talwandi Dogra-Pz	-0.60		0.30	-0.30
35	Punjab	AMRITSAR	Tarsika-Pz	-1.40		-0.20	0.60
36	Punjab	AMRITSAR	Ugar Aulakh-Pz	-1.10		0.10	-0.60
37	Punjab	AMRITSAR	Vadala Kalan-Pz	-1.10		0.40	-0.30
38	Punjab	AMRITSAR	Wandala Bittewad-Pz	-0.60		0.60	-0.60
39	Punjab	BARNALA	Amla Singh Wala-PZ	-0.90		-0.71	-0.59
40	Punjab	BARNALA	Barnala (s)	1.25	-2.75	-1.27	-6.09
41	Punjab	BARNALA	Bhadaur-Pz	-1.62	-1.99	-1.60	-1.71
42	Punjab	BARNALA	Dhanaula			-0.35	
43	Punjab	BARNALA	Dhanaula-Pz				-0.71
44	Punjab	BARNALA	Kurar-Pz	-1.50		-1.00	-0.71
45	Punjab	BARNALA	Lohgarh-Pz	-1.00		-1.20	-1.51
46	Punjab	BARNALA	Mahal Kalan-Pz		-2.99	-2.70	-2.09
47	Punjab	BARNALA	Nangal-Pz	-1.14		-0.76	-0.73
48	Punjab	BARNALA	Pakho Ke-Pz	-0.50		-0.35	-0.61
49	Punjab	BARNALA	Ramgarh-Pz	-0.70		-1.12	-0.93
50	Punjab	BARNALA	Shekha	-0.54		15.90	-1.17
51	Punjab	BARNALA	Tappa Mandi-Pz				-0.91
52	Punjab	BATHINDA	Ablu	-0.69	2.28	-0.40	-0.22
53	Punjab	BATHINDA	Aleke Jalal-Pz	-1.74		-0.94	-1.17
54	Punjab	BATHINDA	Badiala-Pz	-1.02	-1.61	-2.25	
55	Punjab	BATHINDA	Bagher Mohabat Singh-Pz	0.10		-0.03	-0.28
56	Punjab	BATHINDA	Bahman Kaur Singh-Pz	0.05		0.28	3.27
57	Punjab	BATHINDA	Balianwali-Pz	-1.28		-0.18	-1.75

58	Punjab	BATHINDA	Balluana1	-0.28			-0.05
59	Punjab	BATHINDA	Balluana-Pz	-0.64		0.45	0.04
60	Punjab	BATHINDA	Banbhiha-Pz				
61	Punjab	BATHINDA	Bhagibandar	-0.32	-2.59	-0.60	3.50
62	Punjab	BATHINDA	Bugran-Pz	-1.46		-0.84	-1.01
63	Punjab	BATHINDA	Burj Gill-Pz	-1.87		-1.44	-1.47
64	Punjab	BATHINDA	Burj-Pz	-0.20			
65	Punjab	BATHINDA	Deratapp	0.36	-0.53	-2.10	
66	Punjab	BATHINDA	Dhapali1	-2.20	-5.25	-2.00	
67	Punjab	BATHINDA	Dhapali-Pz		-3.31	-3.40	-2.29
68	Punjab	BATHINDA	Dialpur Mirza	-0.63	-3.36	-0.32	-0.22
69	Punjab	BATHINDA	Dialpura Bhlaike	-1.82	-2.72	-1.19	-1.42
70	Punjab	BATHINDA	Dulle Wala-Pz	-2.08		-1.75	-1.39
71	Punjab	BATHINDA	Ganga-Pz	-0.75	-0.66	-1.50	-0.56
72	Punjab	BATHINDA	Ghudda-Pz	-0.27		0.37	-0.02
73	Punjab	BATHINDA	Gill Patti-DW				-0.43
74	Punjab	BATHINDA	Gulabgarh 2 (s)			-0.46	
75	Punjab	BATHINDA	Gulabgarh 1 (vs)	-1.98			
76	Punjab	BATHINDA	Guru Sar-Pz	-0.04	-1.05	-0.32	-0.31
77	Punjab	BATHINDA	Harraipur-Pz	0.08		-0.60	
78	Punjab	BATHINDA	Jajjal	0.65			-1.55
79	Punjab	BATHINDA	Jajjal_DW			-1.54	0.74
80	Punjab	BATHINDA	Jassi Bhagwali	-1.19		-0.65	-1.02
81	Punjab	BATHINDA	Jassi Paowali-Pz	-0.10		0.11	0.33
82	Punjab	BATHINDA	Jhanduke	-0.68		-0.45	-1.95
83	Punjab	BATHINDA	Jhanduke-Pz	-2.03		-1.07	-1.59
84	Punjab	BATHINDA	Kahan Singh Wala-DW				
85	Punjab	BATHINDA	Kalla Bandar	-1.56	-1.00	-1.45	-0.29
86	Punjab	BATHINDA	Koir Singh Wala-Pz	-1.12		-1.15	-1.20
87	Punjab	BATHINDA	Kot Bhaktu-Pz	-0.50		-0.90	-0.98
88	Punjab	BATHINDA	Kot Fatta-DW				-0.15
89	Punjab	BATHINDA	Kot Guru				-0.54
90	Punjab	BATHINDA	Kot Shamir	-0.64	0.79		-0.58
91	Punjab	BATHINDA	Kothaguru-Pz	-1.58	-4.12	-1.70	17.19
92	Punjab	BATHINDA	Lalliana-Pz	0.00		-0.61	-0.61

93	Punjab	BATHINDA	Lehra Dhulkot-Pz	-2.78		-0.39	-0.41
94	Punjab	BATHINDA	Maihma Bhagwan-PZ	-0.41		0.10	0.54
95	Punjab	BATHINDA	Maisar Khana	-0.88		-1.23	-1.15
96	Punjab	BATHINDA	Maisar Khana-Pz	-0.65		-0.15	-0.41
97	Punjab	BATHINDA	Maluka-Pz	-1.62		-0.58	-3.06
98	Punjab	BATHINDA	Mandi Kalan-Pz	-1.66		0.28	-1.15
99	Punjab	BATHINDA	Mehraj-Pz	-1.61			
100	Punjab	BATHINDA	Mehta-Pz	-0.22		-1.34	-2.11
101	Punjab	BATHINDA	Multania-Pz	0.07		-0.07	-0.24
102	Punjab	BATHINDA	Nahinwala	-0.30	-1.45	-0.11	0.07
103	Punjab	BATHINDA	Nathana-Pz	-0.64		-0.92	-1.96
104	Punjab	BATHINDA	Nathena-Pz	-0.15		-1.62	-1.91
105	Punjab	BATHINDA	Pathrala-PZ	-0.01		-0.43	
106	Punjab	BATHINDA	Phul	-0.45		0.14	-9.57
107	Punjab	BATHINDA	Phulla1	-3.62		-1.88	
108	Punjab	BATHINDA	Puhla-Pz				-1.67
109	Punjab	BATHINDA	Raike Kalan	-1.50	-1.40	-0.65	
110	Punjab	BATHINDA	Rajgarh Kubey-Pz	-1.23		0.40	-0.12
111	Punjab	BATHINDA	Rampura				
112	Punjab	BATHINDA	Rayya-Pz	-1.67		-1.50	-1.80
113	Punjab	BATHINDA	Salabatpur-Pz	-1.49		-2.04	-1.51
114	Punjab	BATHINDA	Sangat -Pz	-0.51	-1.02		0.91
115	Punjab	BATHINDA	Seema-DW				-2.49
116	Punjab	BATHINDA	Sidhana				-3.67
117	Punjab	BATHINDA	Sooch-Pz	-1.49		-1.16	-0.98
118	Punjab	BATHINDA	Teona-Pz				0.03
119	Punjab	BATHINDA	Tungwali-Pz	0.25		-0.25	
120	Punjab	FARIDKOT	Aryan Wala-Pz	-0.23		0.62	0.30
121	Punjab	FARIDKOT	Baja Khana	-13.20	-3.01	-7.56	-0.30
122	Punjab	FARIDKOT	Bead Sikhawala- Pz	-0.79	1.29	-2.35	
123	Punjab	FARIDKOT	Behabal Kalan-Pz	-0.60		0.40	0.14
124	Punjab	FARIDKOT	Bir Nathuwala-Pz				
125	Punjab	FARIDKOT	Chahd Baja	0.11	-0.96	-0.45	-0.70
126	Punjab	FARIDKOT	Chak Kalan-Pz	0.30		0.20	0.66
127	Punjab	FARIDKOT	Deviwala li-Pz	-2.17	0.65	0.62	

128	Punjab	FARIDKOT	Deviwala I-Pz	-0.34			-0.68
129	Punjab	FARIDKOT	Deviwala-Pz	0.57	-3.10	-1.27	
130	Punjab	FARIDKOT	Dhaipai-Pz				-0.01
131	Punjab	FARIDKOT	Dhilwan Kalan	-3.08	-2.95	-0.60	-0.40
132	Punjab	FARIDKOT	Dhudi-Pz	-0.17		-0.20	-0.82
133	Punjab	FARIDKOT	Dipsinghwala	-0.53	0.23	0.01	-0.86
134	Punjab	FARIDKOT	Faridkot				
135	Punjab	FARIDKOT	Faridkot-Pz			0.90	0.45
136	Punjab	FARIDKOT	Fatehgarh-Pz	-1.20		-1.25	-1.51
137	Punjab	FARIDKOT	Ghuiana-Pz	-0.32		0.60	-0.05
138	Punjab	FARIDKOT	Jand Sahib-Pz	0.12	-0.20	-0.39	-0.45
139	Punjab	FARIDKOT	Karirwali	-0.75	-0.21	-1.37	5.20
140	Punjab	FARIDKOT	Killi-Pz	-0.32	0.71	-0.23	-0.47
141	Punjab	FARIDKOT	Koharwala- DW				0.28
142	Punjab	FARIDKOT	Kot Kapura	-0.50	-0.25	0.03	-0.06
143	Punjab	FARIDKOT	Matta	-0.41	-0.23	-0.45	-0.70
144	Punjab	FARIDKOT	Mehmuana	0.26	0.55	-0.10	0.01
145	Punjab	FARIDKOT	Mumra-Pz	-0.65	0.63	-0.30	0.10
146	Punjab	FARIDKOT	Nangal-Pz	-0.27	6.28	0.05	-0.65
147	Punjab	FARIDKOT	Nawan Killa-Pz				
148	Punjab	FARIDKOT	Pahluwala-Pz	-0.35		0.05	-0.40
149	Punjab	FARIDKOT	Ratti Rori-Pz	-0.20		0.10	0.85
150	Punjab	FARIDKOT	Rorian Kapura-Pz	-0.20		-0.65	-1.03
151	Punjab	FARIDKOT	Sadiq-Pz	0.70	0.35	0.10	0.02
152	Punjab	FARIDKOT	Sandhwan-Pz				-0.50
153	Punjab	FARIDKOT	Sher Singh Wala- Pz	-0.31	0.48	0.26	0.47
154	Punjab	FARIDKOT	Sukhwala-Pz	-0.10	1.25	0.29	0.73
155	Punjab	FARIDKOT	Tehna-Pz		-0.97	-0.07	
156	Punjab	FARIDKOT	Wara Dwarka-Pz	-1.01	0.02	0.04	-0.08
157	Punjab	FATEHGARH SAHIB	Alipur Sodhian-Pz	-0.55		-1.25	-1.60
158	Punjab	FATEHGARH SAHIB	Badalialasingh	-4.84	-0.77	-1.59	-1.17
159	Punjab	FATEHGARH SAHIB	Bagga Kalan	-1.10			-2.70
160	Punjab	FATEHGARH SAHIB	Bassi Pathana	-1.38	-1.94	-0.66	-0.65
161	Punjab	FATEHGARH SAHIB	Bhagрана	-0.02	2.25	0.64	0.55
162	Punjab	FATEHGARH SAHIB	Bhateri1	-1.20		-0.71	-1.05

163	Punjab	FATEHGARH SAHIB	Burj	-0.60		-1.30	-1.30
164	Punjab	FATEHGARH SAHIB	Chandiala-Pz	-0.75		-0.40	1.10
165	Punjab	FATEHGARH SAHIB	Chuni Khurd-PZ				-2.75
166	Punjab	FATEHGARH SAHIB	Chunni Kalan		0.23	0.25	
167	Punjab	FATEHGARH SAHIB	Fatehgarh Sahib				0.05
168	Punjab	FATEHGARH SAHIB	Fatehgarh Sahib-Pz	-0.16	-0.87	-0.47	-1.44
169	Punjab	FATEHGARH SAHIB	Jai Singh Wala	-1.15		-2.25	-2.70
170	Punjab	FATEHGARH SAHIB	Jhambela	-0.65		-1.67	-4.00
171	Punjab	FATEHGARH SAHIB	Khamanon-pz	-0.45		-0.35	0.10
172	Punjab	FATEHGARH SAHIB	Khara				-1.50
173	Punjab	FATEHGARH SAHIB	Khera-Pz				
174	Punjab	FATEHGARH SAHIB	Lohar Majra	-0.35		-0.80	-0.35
175	Punjab	FATEHGARH SAHIB	Mianpur-Pz	-1.25		-1.65	-0.90
176	Punjab	FATEHGARH SAHIB	Nalini-Pz	-1.49	0.64	-0.66	-1.22
177	Punjab	FATEHGARH SAHIB	Nandpur Kalaur-Pz	-1.60		-2.65	-2.55
178	Punjab	FATEHGARH SAHIB	Pawala	1.20	2.75		
179	Punjab	FATEHGARH SAHIB	Sado Majra	-0.55		-1.88	-2.25
180	Punjab	FATEHGARH SAHIB	Shahpur	-0.50		-1.25	-1.70
181	Punjab	FATEHGARH SAHIB	Sirhind-Pz	-0.90		-0.45	-1.75
182	Punjab	FATEHGARH SAHIB	Tahalpur	-1.50		-2.88	-2.20
183	Punjab	FATEHGARH SAHIB	Talwara	-0.70		-2.80	-3.30
184	Punjab	FATEHGARH SAHIB	Timber Pur-Pz	-0.20		1.42	1.85
185	Punjab	FAZILKA	Abohar	-0.88	0.20	-0.35	-0.17
186	Punjab	FAZILKA	Alamgarh	-0.74	0.56	0.00	0.20
187	Punjab	FAZILKA	Asifwala-Pz			-0.24	-0.18
188	Punjab	FAZILKA	Baman Wali-Pz		0.14		-1.43
189	Punjab	FAZILKA	Bannawala		0.13		0.07
190	Punjab	FAZILKA	Bazirdpura	0.25		0.30	
191	Punjab	FAZILKA	Chak Khere Wala-Pz			-0.20	-0.15
192	Punjab	FAZILKA	Chak Pune Wala-Pz				-5.08
193	Punjab	FAZILKA	Danewal Satkosi	-1.98	-0.27	0.77	0.31
194	Punjab	FAZILKA	Danger Khera-Pz			-0.04	
195	Punjab	FAZILKA	Dipulana-Pz	-0.70	0.78	0.85	
196	Punjab	FAZILKA	Fattu Wala-Pz			-0.62	-0.75
197	Punjab	FAZILKA	Fazilka-Pz				-0.65

198	Punjab	FAZILKA	Ghananga Kalan-Pz	-0.03		-0.35	-0.35
199	Punjab	FAZILKA	Giddran Wali-Pz				
200	Punjab	FAZILKA	Godiwala-Pz			-0.28	-0.26
201	Punjab	FAZILKA	Guru Harsahai-Pz	-0.07		-0.25	
202	Punjab	FAZILKA	Hamed Saidoke-Pz			-0.12	-0.06
203	Punjab	FAZILKA	Himmatpura-Pz	-0.46		-0.15	-0.20
204	Punjab	FAZILKA	Jaimal Singhwala Pz	-0.45	3.50		-0.58
205	Punjab	FAZILKA	Jand Wala Johian-Pz			-0.15	-0.11
206	Punjab	FAZILKA	Jandwala Watan-Pz	-0.03		-0.22	-0.26
207	Punjab	FAZILKA	Kaler Khera-Pz			-0.04	
208	Punjab	FAZILKA	Kandh Wala-Pz				-0.05
209	Punjab	FAZILKA	Kathgarh-Pz				-0.12
210	Punjab	FAZILKA	Khere Ki Uttar-Pz	-0.12		0.13	0.10
211	Punjab	FAZILKA	Khuiansarwar- Pz	-0.81	0.38	-0.74	
212	Punjab	FAZILKA	Kundal1	-0.73	0.05	-0.50	0.10
213	Punjab	FAZILKA	Ladhuwala	-0.33	-0.03	0.10	0.41
214	Punjab	FAZILKA	Malukpur-Pz	-0.32		-0.06	-0.08
215	Punjab	FAZILKA	Markhiwa Bhamni-Pz				
216	Punjab	FAZILKA	Motiwala 07pz				
217	Punjab	FAZILKA	Muradwala Dal-Pz	-0.51		-0.11	-0.12
218	Punjab	FAZILKA	Nihalkhera	-1.80	-0.08	-0.24	0.58
219	Punjab	FAZILKA	Nure-Ki-Uttar 07pz	-0.89		-0.96	-1.30
220	Punjab	FAZILKA	Pancha Wali-Pz			-0.13	-0.12
221	Punjab	FAZILKA	Pattiwalla-Pz			-0.12	
222	Punjab	FAZILKA	Ramsara-Pz	-0.74		-0.05	-0.05
223	Punjab	FAZILKA	Roran Wala-pz				-0.30
224	Punjab	FAZILKA	Sham Singhwala-Pz	-0.44	-0.53		
225	Punjab	FAZILKA	Shatriwala-Pz			-0.29	
226	Punjab	FAZILKA	Sherewala-Pz	-0.47		0.15	0.10
227	Punjab	FAZILKA	Singhpura-Pz				-0.09
228	Punjab	FAZILKA	Sitoganno	-0.47	0.47	-0.03	0.25
229	Punjab	FAZILKA	Sohangarh Ratte	0.91	0.05	-0.16	-0.13
230	Punjab	FAZILKA	Swah Wala- Pz	-1.25	-0.60	-0.55	-0.12
231	Punjab	FIROZPUR	Bara Mansur Wala-Pz	-0.15		-0.16	-0.89
232	Punjab	FIROZPUR	Chak Kandhe Shah-Pz	-0.12		0.22	0.21

233	Punjab	FIROZPUR	Chamb-Pz	-0.05		-0.01	0.45
234	Punjab	FIROZPUR	Dulchi Ke-Pz	-0.04		-0.70	-0.62
235	Punjab	FIROZPUR	Gogiani-Pz	-0.05		-0.09	0.03
236	Punjab	FIROZPUR	Jaimal wala-Pz			-0.26	-0.14
237	Punjab	FIROZPUR	Jang-Pz	-0.08		1.33	1.26
238	Punjab	FIROZPUR	Lauhke Kalan- Pz	-1.36	2.55	-0.04	
239	Punjab	FIROZPUR	Lohere Khurd-Pz	-0.05		-0.02	-0.11
240	Punjab	FIROZPUR	Machi Bugra/ Gujran-Pz	-0.10		-0.02	0.00
241	Punjab	FIROZPUR	Mallanwala Khas-Pz	-0.40		-10.94	0.04
242	Punjab	FIROZPUR	Malluwala-Pz	-0.10		0.18	0.30
243	Punjab	FIROZPUR	Malsian-Pz	-0.65	-1.49	-0.63	0.23
244	Punjab	FIROZPUR	Mana Singh Wala-Pz	-0.20		0.20	0.16
245	Punjab	FIROZPUR	Mohkam Khan Wala-Pz	-0.06		0.00	0.02
246	Punjab	FIROZPUR	Mohre Wala-Pz		-0.41	-0.18	0.49
247	Punjab	FIROZPUR	Mudki-Pz	-0.07		0.03	0.12
248	Punjab	FIROZPUR	Piyarana	-0.16	0.55	0.36	-0.05
249	Punjab	FIROZPUR	Rala Hazi- Pz	-0.10		0.68	0.57
250	Punjab	FIROZPUR	Rukne Wala-Pz	-0.05		-0.33	-3.52
251	Punjab	FIROZPUR	Sadhusha Wala-Pz	-2.05		0.50	0.51
252	Punjab	FIROZPUR	Sultan Khan Wala Urf-Pz	-0.10			-0.12
253	Punjab	FIROZPUR	Talwandi Jalle Khan-pz	-0.07		-0.20	-0.25
254	Punjab	FIROZPUR	Tibbi Kalan-Pz	-3.05		-0.01	0.06
255	Punjab	FIROZPUR	Tibbi Taiwan Laluwalla-Pz	-0.03		0.04	0.10
256	Punjab	FIROZPUR	Wage Wala-Pz	0.37		0.53	0.55
257	Punjab	GURDASPUR	Aulakhkalan				
258	Punjab	GURDASPUR	Bariyar	0.00		0.55	0.10
259	Punjab	GURDASPUR	Bhagowal	-0.39	2.53	1.73	0.36
260	Punjab	GURDASPUR	Bham	-1.70	-0.58		
261	Punjab	GURDASPUR	Bilasbal-Pz	-0.20		0.10	0.30
262	Punjab	GURDASPUR	Chahal Kalan-Pz	-0.60		-0.10	-0.30
263	Punjab	GURDASPUR	Chahgill-Pz	-1.00		-1.20	-0.90
264	Punjab	GURDASPUR	Chone-Pz	-1.25		-1.70	-1.50
265	Punjab	GURDASPUR	Dakoha-Pz	-1.56	-0.32	-0.33	-0.19
266	Punjab	GURDASPUR	Dera Baba Nanak	-0.67	-0.33	-0.11	0.05
267	Punjab	GURDASPUR	Dhianpur	4.08		4.57	

268	Punjab	GURDASPUR	Dinanagar	1.64	0.97	-4.72	4.68
269	Punjab	GURDASPUR	Dostpur-Pz	-0.40		0.30	0.00
270	Punjab	GURDASPUR	Gajikort-Pz	-0.60		1.10	1.00
271	Punjab	GURDASPUR	Galri	-0.07	0.13	0.03	
272	Punjab	GURDASPUR	Ghania Ki bangar- Pz	-0.65	-0.06	0.48	0.36
273	Punjab	GURDASPUR	Ghumani Khurd-Pz	-0.50		0.25	0.35
274	Punjab	GURDASPUR	Gurdaspur-Pz	-0.30		-0.85	
275	Punjab	GURDASPUR	Hargobindpur	-0.45	0.07	-0.34	
276	Punjab	GURDASPUR	Hargobindpur1				
277	Punjab	GURDASPUR	Hassanpur Kalan-Pz	-0.10		0.55	0.05
278	Punjab	GURDASPUR	Jhabkra	-0.70		1.00	0.60
279	Punjab	GURDASPUR	Jhandalbana-Pz	-0.20		1.20	0.50
280	Punjab	GURDASPUR	Kahnuwan	-0.40			
281	Punjab	GURDASPUR	Kala Afagna-Pz	-0.80			0.05
282	Punjab	GURDASPUR	Kalanaur-DW	0.63	-0.05	-0.93	2.16
283	Punjab	GURDASPUR	Kalanaur-Pz		-0.63	3.40	4.35
284	Punjab	GURDASPUR	Kaure-Pz	-0.40		-2.00	-1.05
285	Punjab	GURDASPUR	Khan Fatta-Pz	-0.30		0.35	-0.05
286	Punjab	GURDASPUR	Khanmalik-Pz	-0.30		0.10	-0.20
287	Punjab	GURDASPUR	Khatgarh-Pz	-0.60		1.20	0.80
288	Punjab	GURDASPUR	Lakankala-Pz	-0.60		-0.15	-0.45
289	Punjab	GURDASPUR	Langurwal-Pz	-0.70		-0.25	-0.45
290	Punjab	GURDASPUR	Madipur Fatehgarhchuria	-0.22	-0.35	0.34	-0.15
291	Punjab	GURDASPUR	Malikpur-Pz	-1.05		-1.70	-1.95
292	Punjab	GURDASPUR	Mallewal-Pz				0.50
293	Punjab	GURDASPUR	Maman-Pz	-0.50		0.40	0.00
294	Punjab	GURDASPUR	Masana-Pz	-0.30		0.60	0.40
295	Punjab	GURDASPUR	Massit-Pz	-0.30		0.50	0.35
296	Punjab	GURDASPUR	Mirza Jaan-Pz				-0.30
297	Punjab	GURDASPUR	Mullowali 2(m)			0.43	-0.40
298	Punjab	GURDASPUR	Nangal-Pz	-0.30		-0.19	0.20
299	Punjab	GURDASPUR	Nishayara		-0.12	0.25	
300	Punjab	GURDASPUR	Pandoritalab	1.04	-1.85		1.95
301	Punjab	GURDASPUR	Paniar			0.06	0.00
302	Punjab	GURDASPUR	Parcha-Pz	-0.60		-0.05	-0.20

303	Punjab	GURDASPUR	Patti Atwal-Pz	-1.15		-0.85	-1.05
304	Punjab	GURDASPUR	Raipur	0.55			0.80
305	Punjab	GURDASPUR	Saidowal Kalan-DW	-0.33	-0.97	1.75	0.34
306	Punjab	GURDASPUR	Saleh Chak-S		-0.47	0.18	-0.73
307	Punjab	GURDASPUR	Salehchak(vs)		0.35	-0.56	-0.03
308	Punjab	GURDASPUR	Sathial-Pz	-0.38		0.05	0.73
309	Punjab	GURDASPUR	Shahpur Jattan-Pz	-0.20		0.06	0.70
310	Punjab	GURDASPUR	Shahpur-Pz	-0.30		0.65	0.00
311	Punjab	GURDASPUR	Shezada Kalan-Pz	-0.80		0.10	0.20
312	Punjab	GURDASPUR	Shikar-Pz	-0.25		0.30	0.05
313	Punjab	GURDASPUR	Sohal			0.40	0.25
314	Punjab	GURDASPUR	Tikriwala-Pz	-1.90		-2.20	-2.60
315	Punjab	HOSHIARPUR	Aallo Batti-Pz				
316	Punjab	HOSHIARPUR	Adowal Garhi-Pz		-0.58	-1.10	-4.37
317	Punjab	HOSHIARPUR	Bhamnaur			0.00	-10.98
318	Punjab	HOSHIARPUR	Bhangala-Chhota-DW		-1.30	0.18	0.40
319	Punjab	HOSHIARPUR	Chak Sheru-DW	-0.33	-0.10	0.19	0.23
320	Punjab	HOSHIARPUR	Chohal	0.02	2.30	-1.70	0.17
321	Punjab	HOSHIARPUR	Dadan-Pz				
322	Punjab	HOSHIARPUR	DAGAN-DW	2.72	-1.33	1.01	-4.82
323	Punjab	HOSHIARPUR	Dallewal-Pz				
324	Punjab	HOSHIARPUR	Dasuya2 (s)	0.17		0.51	
325	Punjab	HOSHIARPUR	Durimiwal	-0.73	-0.70	-0.91	-1.31
326	Punjab	HOSHIARPUR	Fattowal-Pz				
327	Punjab	HOSHIARPUR	Garh Di Wala-Pz		-0.39	0.73	
328	Punjab	HOSHIARPUR	Garhshankar (s)	2.97	3.88	-3.61	-1.72
329	Punjab	HOSHIARPUR	Grahaya-Pz				
330	Punjab	HOSHIARPUR	Haler Rampur-DW	-0.66	1.20		-1.18
331	Punjab	HOSHIARPUR	Hazipur	-0.86	2.32	4.70	0.43
332	Punjab	HOSHIARPUR	Heer Beh-PZ				
333	Punjab	HOSHIARPUR	Ittian-Pz				
334	Punjab	HOSHIARPUR	Jahidpur-PZ				
335	Punjab	HOSHIARPUR	Jalalpur-Pz				
336	Punjab	HOSHIARPUR	Jattpur-Pz				
337	Punjab	HOSHIARPUR	Jhir Da Khuh-DW	0.41	1.00	0.66	

338	Punjab	HOSHIARPUR	Kharkan-Pz				
339	Punjab	HOSHIARPUR	Khera-Pz				
340	Punjab	HOSHIARPUR	Mahil Baltohian-Pz				
341	Punjab	HOSHIARPUR	Mahilpur-Pz	-1.16	0.99	-0.02	-0.10
342	Punjab	HOSHIARPUR	Maranwali-PZ				
343	Punjab	HOSHIARPUR	Mianipur-Pz				
344	Punjab	HOSHIARPUR	Mukerian Dw		-2.50	0.89	
345	Punjab	HOSHIARPUR	Naharpur-Pz				
346	Punjab	HOSHIARPUR	Namoli-PZ				
347	Punjab	HOSHIARPUR	Nangal Bihala- DW	-0.50	3.04	0.18	2.52
348	Punjab	HOSHIARPUR	Nangal Thathal-Pz				
349	Punjab	HOSHIARPUR	Pan Khuh-DW	-0.31	-0.36	-0.36	-0.03
350	Punjab	HOSHIARPUR	Pandori Mehal-Pz				
351	Punjab	HOSHIARPUR	Parshote-Pz				
352	Punjab	HOSHIARPUR	Phuglana- Pz		0.44	-4.17	-0.74
353	Punjab	HOSHIARPUR	Rampur Colony (HSP) pz-medium	1.18		2.87	
354	Punjab	HOSHIARPUR	Samraj Tanda-DW	-0.75		0.43	
355	Punjab	HOSHIARPUR	Satnoh-PZ.				
356	Punjab	HOSHIARPUR	Sham Chaurasi	-4.30	-1.90	-0.64	-0.62
357	Punjab	HOSHIARPUR	Sibo Chak- DW	0.80	1.10	0.96	0.26
358	Punjab	HOSHIARPUR	Simibli- OW	0.33	-3.10	-1.16	-0.99
359	Punjab	HOSHIARPUR	Simibli-Pz	-4.48	-2.47	-0.94	-0.38
360	Punjab	HOSHIARPUR	Talwara1	-1.97	-0.49	0.08	0.12
361	Punjab	HOSHIARPUR	Tanda				
362	Punjab	HOSHIARPUR	Thakarwala	-2.50	-4.05	-0.66	0.74
363	Punjab	JALANDHAR	Adampur 3(s)	0.07	-0.53	-0.21	0.05
364	Punjab	JALANDHAR	Adarman-Pz	-0.35		0.05	-7.45
365	Punjab	JALANDHAR	Akalpur-Pz	-0.45		-0.10	-0.70
366	Punjab	JALANDHAR	Allawalpur	1.70		1.21	0.94
367	Punjab	JALANDHAR	Bilga-Pz	-2.20			-0.55
368	Punjab	JALANDHAR	Billi Chahrami-Pz	-1.50		0.30	-0.85
369	Punjab	JALANDHAR	Chania-Pz	-0.45		-0.50	-2.00
370	Punjab	JALANDHAR	Dhanda-Pz	-1.00		-0.95	-1.60
371	Punjab	JALANDHAR	Dhirowal-Pz			-0.95	-1.20
372	Punjab	JALANDHAR	Fateh Jalal-Pz	-3.75			3.90

373	Punjab	JALANDHAR	Gehlan-pz	-1.90		1.50	-0.10
374	Punjab	JALANDHAR	Gillian-Pz	-0.75		0.30	-1.00
375	Punjab	JALANDHAR	Gohiran			0.30	-2.60
376	Punjab	JALANDHAR	Hardo Pharwal-Pz	0.20		-1.28	-5.70
377	Punjab	JALANDHAR	Hardo Sheikh-Pz	-2.00		0.30	-1.65
378	Punjab	JALANDHAR	Jalandhar-Pz(VS)	-3.57	-1.33	-1.30	-1.25
379	Punjab	JALANDHAR	Jalbhe			-4.62	
380	Punjab	JALANDHAR	Jandiala-Pz	-2.03		-1.02	-1.29
381	Punjab	JALANDHAR	Jandu Singha-Pz	-4.50		-1.70	-2.50
382	Punjab	JALANDHAR	Janian-Pz	-6.35		-4.80	-5.10
383	Punjab	JALANDHAR	Kakar Kalan-Pz			-0.70	-1.70
384	Punjab	JALANDHAR	Kala-Pz	-1.40		1.00	0.80
385	Punjab	JALANDHAR	Kalyanpur-Pz	-0.95		-0.80	-1.35
386	Punjab	JALANDHAR	Kang Sahib Rai-Pz	-0.60		-1.20	-2.00
387	Punjab	JALANDHAR	Kartarpur 2(s)	-0.13	-1.60	-3.26	-1.70
388	Punjab	JALANDHAR	Kharal Kalan Pz-S	-0.31		-0.48	-0.41
389	Punjab	JALANDHAR	Kot Wadal Khan-Pz	-1.10		-0.30	-1.40
390	Punjab	JALANDHAR	Kurla-Pz	-1.20		1.50	0.70
391	Punjab	JALANDHAR	Lallian kalan Pz-S	-1.04		-1.08	-1.35
392	Punjab	JALANDHAR	Mahmuwal-Pz	-0.90		-1.10	-1.85
393	Punjab	JALANDHAR	Mehsampur-Pz	0.00		-2.50	-2.20
394	Punjab	JALANDHAR	Nakodar 2(m)	-8.41	-0.66	0.10	
395	Punjab	JALANDHAR	Nakodar 3(s)				-4.09
396	Punjab	JALANDHAR	Nangal Shaman	-2.00		-1.20	-1.70
397	Punjab	JALANDHAR	Nasirpur-Pz	-1.10		-1.05	-1.30
398	Punjab	JALANDHAR	Nussi-Pz	-2.10		-0.30	-0.25
399	Punjab	JALANDHAR	Pathial-Pz	-1.75		0.30	0.00
400	Punjab	JALANDHAR	Pharwala-Pz	-1.50		-0.60	-0.35
401	Punjab	JALANDHAR	Phillaur 2(s)		0.77	-0.55	-0.81
402	Punjab	JALANDHAR	Rahimpur-Pz	-3.75		-0.80	-0.50
403	Punjab	JALANDHAR	Rurka Kalan- Pz	-0.50		-1.45	0.40
404	Punjab	JALANDHAR	Samarahi-Pz	-0.40		1.40	0.70
405	Punjab	JALANDHAR	Shahkot-Pz-Pb	-1.50		-0.20	0.80
406	Punjab	JALANDHAR	Skarar Pur-Pz	-4.90		-0.20	1.70
407	Punjab	JALANDHAR	Sultanpur-Pz	-0.70		-1.10	-1.60

408	Punjab	JALANDHAR	Talwan-Pz	-1.90		-1.40	-1.65
409	Punjab	JALANDHAR	Thanda-Pz	-0.50		-0.50	-1.20
410	Punjab	JALANDHAR	Udhopur	-0.10			
411	Punjab	KAPURTHALA	Amanipur-Pz				-0.70
412	Punjab	KAPURTHALA	Balera-Pz				
413	Punjab	KAPURTHALA	Bauril Harnampur-Pz	-0.96		0.55	-1.30
414	Punjab	KAPURTHALA	Begowal-Pz	-0.62		-0.50	-0.70
415	Punjab	KAPURTHALA	Bhanoki-Pz	-1.33		-0.30	-0.50
416	Punjab	KAPURTHALA	Bhatnura Khurd- S	-1.77	-1.56	-2.25	
417	Punjab	KAPURTHALA	Bhawanipur-Pz	-0.50		0.23	-0.40
418	Punjab	KAPURTHALA	Bholath M	-1.57	-0.36	0.09	-0.20
419	Punjab	KAPURTHALA	Bholath S	-0.87	-0.29	0.36	5.90
420	Punjab	KAPURTHALA	Chakoke-Pz	-0.05		-0.02	-0.45
421	Punjab	KAPURTHALA	Dalla				
422	Punjab	KAPURTHALA	Hamira-Pz	-0.20		-0.62	-1.40
423	Punjab	KAPURTHALA	Hazipur-Pz	-1.45		-0.20	-0.45
424	Punjab	KAPURTHALA	Hussainpura-S Pz		-0.30	3.53	-2.33
425	Punjab	KAPURTHALA	Hussainpura-VS Pz				-2.13
426	Punjab	KAPURTHALA	Kapurthala2 (s)	2.09	-0.10	-4.87	-3.23
427	Punjab	KAPURTHALA	Karnail Ganju-Pz	-0.34	0.50	-0.35	-0.70
428	Punjab	KAPURTHALA	Kishanpur	-3.90		2.15	-0.50
429	Punjab	KAPURTHALA	Maheru-Pz	-1.80		-1.00	-2.80
430	Punjab	KAPURTHALA	Miani Bola-Pz	-0.58		0.40	-0.15
431	Punjab	KAPURTHALA	Mithra-Pz				-1.70
432	Punjab	KAPURTHALA	Nathu Chahal-Pz	-1.30		1.90	2.00
433	Punjab	KAPURTHALA	Nurpur Janoa-Pz	-0.27		-0.25	-0.20
434	Punjab	KAPURTHALA	Paazian-Pz				-1.80
435	Punjab	KAPURTHALA	Phagwara2 (s)	0.08			-1.48
436	Punjab	KAPURTHALA	Rawalpindi-Pz	-4.50		2.20	-0.40
437	Punjab	KAPURTHALA	Saiflabad-Pz				-0.35
438	Punjab	KAPURTHALA	Sangatpur-Pz			-0.40	-3.30
439	Punjab	KAPURTHALA	Shalapur Dona-Pz				-1.00
440	Punjab	KAPURTHALA	Sheikh Manga-Pz				
441	Punjab	KAPURTHALA	Sultanpur2 (s)	-1.46	-3.50	-0.10	-0.93
442	Punjab	KAPURTHALA	Talwandi Chaudary -Pz	1.80		1.73	-0.77

443	Punjab	KAPURTHALA	Thikriwali-Pz	-0.21	0.17	-0.40	-0.65
444	Punjab	LUDHIANA	Alamgir-Pz	-0.30		-0.35	-1.00
445	Punjab	LUDHIANA	Aliwal-Pz	-0.75		-1.10	-0.75
446	Punjab	LUDHIANA	Begowal				
447	Punjab	LUDHIANA	Bhagwanpur-Pz	-0.90		-0.10	-0.10
448	Punjab	LUDHIANA	Bhahlolpur-DW	-0.33	1.26	0.16	-0.20
449	Punjab	LUDHIANA	Bharthala Randhawa-Pz	-0.69		-0.32	-0.95
450	Punjab	LUDHIANA	Bhikhi Khatron-Pz	0.00		-0.64	-1.15
451	Punjab	LUDHIANA	Bilaspur-Pz	-0.60		-0.20	-0.20
452	Punjab	LUDHIANA	Chaminala-Pz	-0.75		-0.90	-1.30
453	Punjab	LUDHIANA	Chankian Khurd-Pz	-0.65		0.55	0.34
454	Punjab	LUDHIANA	Chattar Singh Park-ldh	-1.19			
455	Punjab	LUDHIANA	Chaunta-Pz	-0.30		0.27	0.05
456	Punjab	LUDHIANA	Chhapar-Pz	-1.15		-1.40	-1.20
457	Punjab	LUDHIANA	Dinnamder-Pz	-1.65		-2.10	-1.10
458	Punjab	LUDHIANA	Dodpur-Pz	-0.20		-0.40	-0.90
459	Punjab	LUDHIANA	Doraha-Pz	-0.46	-0.10	0.42	0.36
460	Punjab	LUDHIANA	Galibkalan-Pz	-0.73		0.00	-1.85
461	Punjab	LUDHIANA	Gohaur-Pz	-0.95		-0.55	-1.05
462	Punjab	LUDHIANA	Gopalpur 2(s)	-1.73	-1.93	-0.10	-0.62
463	Punjab	LUDHIANA	Hambowal-Pz	-0.50		0.20	0.40
464	Punjab	LUDHIANA	Harnampur	-0.55		0.72	-0.80
465	Punjab	LUDHIANA	Hedon-Pz	-0.55		-0.30	0.00
466	Punjab	LUDHIANA	Ikloha-Pz	-0.98	-1.45		-2.37
467	Punjab	LUDHIANA	Jagraon 2(s)				
468	Punjab	LUDHIANA	Kalsian			5.40	-1.40
469	Punjab	LUDHIANA	Katanikalan-Pz	-0.55		0.50	0.60
470	Punjab	LUDHIANA	Khandur	-1.03		-1.05	-1.30
471	Punjab	LUDHIANA	Kishangarh-Pz	-0.40		0.35	-0.50
472	Punjab	LUDHIANA	Kishanpur-Pz	-1.20		-0.13	-0.45
473	Punjab	LUDHIANA	Lalan1	-1.25		0.78	
474	Punjab	LUDHIANA	Lelon-Pz	-0.45		0.10	0.25
475	Punjab	LUDHIANA	Lil- II Pz	2.41	-0.38	-2.98	
476	Punjab	LUDHIANA	Lil-Pz III		0.64	-1.02	1.01
477	Punjab	LUDHIANA	Lodhiwal-Pz	-0.45		-0.51	0.61

478	Punjab	LUDHIANA	Lohara-Pz	-0.55		-0.75	-1.08
479	Punjab	LUDHIANA	Maksudra-Pz				
480	Punjab	LUDHIANA	Manak Majra-Pz	-0.90		-0.95	-0.20
481	Punjab	LUDHIANA	Mangat-Pz	-1.00		-2.80	0.15
482	Punjab	LUDHIANA	Manoke-Pz	-2.02			
483	Punjab	LUDHIANA	Mehma Singh Wala-Pz	-1.28		-0.92	-1.20
484	Punjab	LUDHIANA	Mushkabad		0.06	1.17	0.36
485	Punjab	LUDHIANA	Nurpur-Pz	-1.00		-0.70	-2.20
486	Punjab	LUDHIANA	P.A.U.Ludhiana 2(s)	3.78	-4.56	-5.77	-5.82
487	Punjab	LUDHIANA	Pabbian-Pz	-0.75		-0.30	-0.50
488	Punjab	LUDHIANA	Pandori-Pz	-0.20		0.30	-1.15
489	Punjab	LUDHIANA	Payal-Pz	-0.64		-1.03	-1.15
490	Punjab	LUDHIANA	Punjeta			-1.14	
491	Punjab	LUDHIANA	Ragba-Pz	-0.41		-1.06	-1.35
492	Punjab	LUDHIANA	Raikot-Pz	-1.11		-0.80	-2.20
493	Punjab	LUDHIANA	Rajona Khurd	-1.15		-0.40	-1.25
494	Punjab	LUDHIANA	Rashiana-Pz	-1.20		-0.85	-0.70
495	Punjab	LUDHIANA	Rashin			-1.25	-2.15
496	Punjab	LUDHIANA	Rattewal-Pz	-1.13		-1.55	-1.05
497	Punjab	LUDHIANA	Roomi-Pz	-1.00		0.05	-0.80
498	Punjab	LUDHIANA	Sajaywal-Pz	-0.49		0.85	-1.00
499	Punjab	LUDHIANA	Samrala 2(s)	-0.29	-0.77	0.19	
500	Punjab	LUDHIANA	Sanewal-Pz	-0.55		-0.50	-0.60
501	Punjab	LUDHIANA	Sangatpura-Pz	-0.25		1.20	
502	Punjab	LUDHIANA	Sherian	-0.25	0.05	-0.10	0.28
503	Punjab	LUDHIANA	Sherpur-Pz	-0.80		0.40	0.20
504	Punjab	LUDHIANA	Sidhwan Bet-Pz	-2.04	-0.95	-1.15	-0.11
505	Punjab	LUDHIANA	Talwandi Kalan-Pz	-0.45		-1.00	-0.95
506	Punjab	LUDHIANA	Udonwal-Pz	-0.45		0.20	0.35
507	Punjab	LUDHIANA	Upplan	0.05		0.40	0.25
508	Punjab	LUDHIANA	Utlan	0.70		1.32	
509	Punjab	MANSA	Aklia-Pz	-0.16		-0.38	-1.17
510	Punjab	MANSA	Alampur Mandran-Pz	-0.40		0.10	-0.68
511	Punjab	MANSA	Alisher Khurd-Pz	-0.06		-0.20	-1.30
512	Punjab	MANSA	Bahadur Pur-Pz	-0.56		-0.90	-1.23

513	Punjab	MANSA	Bareh-Pz	0.17		0.05	-0.37
514	Punjab	MANSA	Behniwala-Pz	0.02		-0.22	-0.37
515	Punjab	MANSA	Bhamme Kalan-Pz	-0.16		1.02	0.31
516	Punjab	MANSA	Bhikhi 1 (s)			-2.04	-1.78
517	Punjab	MANSA	Bhikhi 2 (s)				
518	Punjab	MANSA	Budhlada	0.83			-4.69
519	Punjab	MANSA	Budhlada-Pz	-0.65		-1.08	
520	Punjab	MANSA	Burj Bhalaike		2.38		
521	Punjab	MANSA	Burj Rathi-Pz	-0.19		-0.53	-0.86
522	Punjab	MANSA	Fattamaluka	-1.24	-2.37	0.11	0.33
523	Punjab	MANSA	Gehlan-Pz				
524	Punjab	MANSA	Gharangne-Pz	-0.13		0.06	-0.02
525	Punjab	MANSA					
526	Punjab	MANSA	Hero Kalan-Pz	-0.57		-1.39	-2.56
527	Punjab	MANSA	Hirke-Pz	-0.29		-2.37	-0.47
528	Punjab	MANSA	Joga -Dp-PZ				-7.92
529	Punjab	MANSA	Khiala Kalan-Pz	-0.23		-0.80	-0.85
530	Punjab	MANSA	Khokhar Kalan-Pz	-0.17		-0.03	-0.37
531	Punjab	MANSA	Kot Dhamru	-0.64		0.40	0.56
532	Punjab	MANSA	Kotra	-0.78	-1.32	-5.32	-0.77
533	Punjab	MANSA	Kusla-Pz	-0.50		0.40	0.52
534	Punjab	MANSA	Lakhiwal-Pz	-0.31		-0.40	-0.98
535	Punjab	MANSA	Makha-[PZ	-0.04		-0.10	0.04
536	Punjab	MANSA	Mansa				-0.38
537	Punjab	MANSA	Phaphare Bhaike-Pz	0.08		0.03	-1.33
538	Punjab	MANSA	Raipur-Pz	-0.85	-1.15	-1.00	0.40
539	Punjab	MANSA	Ralla	-0.84	-5.19	-1.12	
540	Punjab	MANSA	Sangha-Pz	-1.88			
541	Punjab	MANSA	Tandian-Pz				
542	Punjab	MANSA	Tibbi Hari Singh-PZ	0.01		-0.41	-0.28
543	Punjab	MOGA	Baje Ke-Pz	-0.40		-0.35	0.21
544	Punjab	MOGA	Baraghari-Pz				-0.41
545	Punjab	MOGA	Bilaspur-PZ	-0.60		-0.37	-0.62
546	Punjab	MOGA	Budh Singh Wala-Pz	-2.80	-1.34	-1.25	-1.30
547	Punjab	MOGA	Chand Nawan-PZ	-0.80		-0.10	-0.44

548	Punjab	MOGA	Chogawan-Pz	-0.97	-2.04	-0.82	1.67
549	Punjab	MOGA	Dagru- Pz	-2.33	-2.07	-0.53	-1.80
550	Punjab	MOGA	Damru Khurd	-1.93	-2.04	-0.88	
551	Punjab	MOGA	Darapur 07pz	2.48			-3.40
552	Punjab	MOGA	Daulatpur Niwan-Pz	-0.75		0.00	-0.63
553	Punjab	MOGA	Dhudi Ke-PZ	-0.80		0.10	-0.17
554	Punjab	MOGA	Dinna-PZ	-0.80		-0.60	-0.81
555	Punjab	MOGA	Ghoha Khurd-Pz				-0.69
556	Punjab	MOGA	Himatpura-Pz			-0.34	-0.79
557	Punjab	MOGA	Indergarh-Pz	-0.07		-0.04	0.20
558	Punjab	MOGA	Jhandewala-Pz	-0.90		-0.05	-0.28
559	Punjab	MOGA	Kamalke-Pz	-0.05		-0.24	-0.14
560	Punjab	MOGA	Khokri Kalan-Pz	-0.90		-0.15	-0.51
561	Punjab	MOGA	Khosa Randhir-Pz	0.00		0.32	0.55
562	Punjab	MOGA	Mandar-Pz	-0.05		-0.30	-0.40
563	Punjab	MOGA	Mangewala-Pz	-0.15		-0.40	-0.67
564	Punjab	MOGA	Mari Mustfa-PZ				-1.40
565	Punjab	MOGA	Meemana-PZ	-0.55		-0.15	-0.57
566	Punjab	MOGA	Mehron-PZ	-0.36		0.10	-0.46
567	Punjab	MOGA	Nathu Wala-Pz	0.10		0.14	-0.13
568	Punjab	MOGA	Nihalsinghwala-Pz	-0.63	-0.32	-1.37	-1.38
569	Punjab	MOGA	Raonke Kalan-Pz	-0.80		-0.15	-0.37
570	Punjab	MOGA	Samad Bhai-Pz	-0.90		-8.80	-0.89
571	Punjab	MOGA	Samalsar-Pz	-0.70		-0.91	-1.11
572	Punjab	MOGA	Thathe Bhai-Pz	-0.65		-0.56	-0.73
573	Punjab	MOGA	Tota Singh Wala-Pz	-0.05		-0.26	-0.30
574	Punjab	MUKTSAR	Abulkharana-Pz	-0.42		-0.08	-0.55
575	Punjab	MUKTSAR	Alam Wala				0.10
576	Punjab	MUKTSAR	Balocha Khera(rasoolpur)	-0.69	0.72	-0.32	-0.15
577	Punjab	MUKTSAR	Bhaliana	-0.54	-0.17	-0.48	0.33
578	Punjab	MUKTSAR	Bhiti Wala-Pz	-0.39		-0.05	-0.95
579	Punjab	MUKTSAR	Chaktam Kot-Pz	-0.27		0.45	-0.10
580	Punjab	MUKTSAR	Dhalkot-Pz	-0.01		0.23	-0.20
581	Punjab	MUKTSAR	Doda	0.21	1.20	-1.37	1.84
582	Punjab	MUKTSAR	Doda-Pz	-0.65	-0.43	-0.75	

583	Punjab	MUKTSAR	Husnar-Pz	-0.10		0.30	-0.20
584	Punjab	MUKTSAR	Jhurar-Pz				0.20
585	Punjab	MUKTSAR	Kabar Wala	-1.60	0.73	0.00	1.11
586	Punjab	MUKTSAR	Kattianwali-Pz	-0.15		0.05	-0.20
587	Punjab	MUKTSAR	Khirkian Wala-Pz	-0.40		0.18	0.15
588	Punjab	MUKTSAR	Khunde Halal-Pz	-0.06	2.65	0.00	0.87
589	Punjab	MUKTSAR	Killian Wali-Pz	-0.14			
590	Punjab	MUKTSAR	Kollian Wali-pz			-0.10	-0.35
591	Punjab	MUKTSAR	Kot Bhai- DW				2.70
592	Punjab	MUKTSAR	Kuttianwali				
593	Punjab	MUKTSAR	Labanianwali	-0.82	0.86	0.63	0.80
594	Punjab	MUKTSAR	Lambi	0.58			1.26
595	Punjab	MUKTSAR	Lambi-Pz	-0.57	1.25	0.39	
596	Punjab	MUKTSAR	Muktsar	0.46	-0.80	-0.87	2.90
597	Punjab	MUKTSAR	Phulu Khera-Pz	-0.35		-0.03	-0.50
598	Punjab	MUKTSAR	Ratta Khera Chota-Pz	-0.06		0.35	0.85
599	Punjab	MUKTSAR	Sheikh-Pz	-0.29		-0.20	-0.35
600	Punjab	MUKTSAR	Sohiwal-Pz				-0.08
601	Punjab	PATHANKOT	Bamyal		0.55	0.31	0.25
602	Punjab	PATHANKOT	Bhoa	0.17	-1.41	0.08	0.12
603	Punjab	PATHANKOT	Dhar Khurd				0.15
604	Punjab	PATHANKOT	Gharotakalan	1.55	0.61	-0.97	
605	Punjab	PATHANKOT	Ghoh DW	-0.23			-0.49
606	Punjab	PATHANKOT	Jainpur-PZ	0.20		0.30	0.25
607	Punjab	PATHANKOT	Jandwala	0.00		4.50	3.90
608	Punjab	PATHANKOT	Jhakolahri		-2.40		
609	Punjab	PATHANKOT	Khanikhui	-0.24	0.35	0.07	
610	Punjab	PATHANKOT	Khogaki Chaka-PZ	-0.20		1.40	0.90
611	Punjab	PATHANKOT	Kiari- DW	-2.12	-4.10	-0.11	0.86
612	Punjab	PATHANKOT	Kirian Khurd-PZ	-1.30		1.45	1.20
613	Punjab	PATHANKOT	Kui-DW	-0.37	-2.00	0.89	
614	Punjab	PATHANKOT	Kuther-PZ	0.60		1.75	2.45
615	Punjab	PATHANKOT	Malikpur				-0.10
616	Punjab	PATHANKOT	Matti-PZ	-0.80		11.50	8.25

617	Punjab	PATHANKOT	Mirthal	-1.10		0.05	0.15
618	Punjab	PATHANKOT	Mirthal-DW				
619	Punjab	PATHANKOT	Muthi				-0.45
620	Punjab	PATHANKOT	Narot Jaimalsingh-Pz	-1.55		-0.10	-0.30
621	Punjab	PATHANKOT	Nawan Pind	0.79	0.15	0.17	0.27
622	Punjab	PATHANKOT	Parmota-DW	-0.80	-9.68	0.88	2.89
623	Punjab	PATHANKOT	Pathankot1	-1.13	0.29	1.00	-0.43
624	Punjab	PATHANKOT	Philora-PZ	0.90		2.25	1.50
625	Punjab	PATHANKOT	Phulpia				-0.20
626	Punjab	PATHANKOT	Rakawal-PZ	-0.90		0.10	-0.30
627	Punjab	PATHANKOT	Rani Pur-PZ	-1.10		1.70	0.90
628	Punjab	PATHANKOT	Sarna		1.22	0.10	1.42
629	Punjab	PATHANKOT	Sujanpur-PZ	-0.30		1.35	0.85
630	Punjab	PATIALA	Bassma Pipla				
631	Punjab	PATIALA	Bhankhar-Pz	-0.60		-2.30	-3.25
632	Punjab	PATIALA	Bhojo majri 07pz		-1.62	-1.65	-3.40
633	Punjab	PATIALA	Birkauli	-1.88	1.60	-1.39	
634	Punjab	PATIALA	Challeta-PZ	-1.65		-1.25	-1.25
635	Punjab	PATIALA	Devigarh 1Pz	-3.75	-13.34	-0.15	-2.09
636	Punjab	PATIALA	Devigarh IIPz	-2.23		-1.39	-1.97
637	Punjab	PATIALA	Devigarh-III Pz	-2.75		-0.57	-1.98
638	Punjab	PATIALA	Dhakdaba 07	-1.05	-3.76		
639	Punjab	PATIALA	Dhaneta-PZ	-0.50		-1.50	-2.75
640	Punjab	PATIALA	Gharam-PZ	-0.50		-1.55	-1.80
641	Punjab	PATIALA	Gulwatti-PZ	-1.45		-1.20	-2.80
642	Punjab	PATIALA	Haluka	-2.63	-1.33	-1.18	
643	Punjab	PATIALA	Handesaran-s	-3.15		-0.76	
644	Punjab	PATIALA	Hari Majra				
645	Punjab	PATIALA	Harion Kalan-Pz	-1.60		-2.95	14.50
646	Punjab	PATIALA	Jainagar-PZ	-1.50		-0.90	0.30
647	Punjab	PATIALA	Kakrala-Pz	-1.75		-3.05	-4.20
648	Punjab	PATIALA	Kalyan 07pz	-1.43	0.12	-1.10	-0.86
649	Punjab	PATIALA	Kami Kalan	-0.31	-0.46	-1.72	0.08
650	Punjab	PATIALA	Kami Khurd-PZ			-1.20	-2.95
651	Punjab	PATIALA	Kheri Pandte-PZ	-1.30		-0.75	-0.70

652	Punjab	PATIALA	Kulburcha-Pz	-0.25		-2.10	-3.45
653	Punjab	PATIALA	Kutha Kheri-Pz	-4.45		-1.80	-0.90
654	Punjab	PATIALA	Lacharu Kalan	-1.20	-0.02	-0.12	
655	Punjab	PATIALA	Lachkani-Pz	-1.59	-1.28	-1.43	-1.17
656	Punjab	PATIALA	Mehmood Pur-PZ	-1.90		-1.40	-0.60
657	Punjab	PATIALA	Miranpur- Pz				
658	Punjab	PATIALA	Mongowal-PZ	-0.35		-1.25	-1.70
659	Punjab	PATIALA	Nanhera-Pz	-0.10		-7.40	-1.05
660	Punjab	PATIALA	Passiana-PZ	-0.40		-0.05	-0.60
661	Punjab	PATIALA	Patran-Pz	-1.10	-1.38	-1.47	-1.43
662	Punjab	PATIALA	Rajpura-PzSt	-1.72	-10.50		-4.55
663	Punjab	PATIALA	Rasoolpur Jaura-PZ	-1.20		-1.30	-0.60
664	Punjab	PATIALA	Samana-Pz	-1.88	-1.61	-1.38	-6.43
665	Punjab	PATIALA	Samaspur-Pz	0.40		-0.90	-1.15
666	Punjab	PATIALA	Sangatpura-Pz	-5.17	-1.67	6.56	
667	Punjab	PATIALA	Sauja-PZ	-0.55		-2.20	-2.15
668	Punjab	PATIALA	Surala Kalan-PZ	-0.65		-0.35	-0.25
669	Punjab	PATIALA	Thua	-0.97	-0.83	-7.43	-0.48
670	Punjab	RUPNAGAR	Ahmedpur	-2.81	4.72	-1.41	
671	Punjab	RUPNAGAR	Amrali-PZ	-0.70		-0.75	-1.51
672	Punjab	RUPNAGAR	Attari-PZ	-0.90		0.20	0.90
673	Punjab	RUPNAGAR	Bains	-1.90		-1.85	-1.35
674	Punjab	RUPNAGAR	Bera Chauta	0.40		1.05	0.23
675	Punjab	RUPNAGAR	Bhalan		0.30		0.62
676	Punjab	RUPNAGAR	Bhatto-PZ	-0.85		0.20	0.65
677	Punjab	RUPNAGAR	Braham Pur	-0.55	0.45	1.50	-0.07
678	Punjab	RUPNAGAR	Chakdera	0.08	1.07	0.55	0.16
679	Punjab	RUPNAGAR	Chatamli- Pz				
680	Punjab	RUPNAGAR	Dhair	3.86	3.23	0.35	0.21
681	Punjab	RUPNAGAR	Dumewal	-0.68	-0.73	-0.37	-0.65
682	Punjab	RUPNAGAR	Hardinamoh	0.20	0.47	0.03	0.14
683	Punjab	RUPNAGAR	Klwan-PZ			-0.50	-0.85
684	Punjab	RUPNAGAR	Kotla	-0.30		0.50	0.70
685	Punjab	RUPNAGAR	Morinda-PZ	-0.60		-0.63	-0.85
686	Punjab	RUPNAGAR	Rajgiri-PZ	-2.50		-2.70	-2.00

687	Punjab	RUPNAGAR	Rampur-PZ				-0.40
688	Punjab	RUPNAGAR	Rurki Heeran-Pz	-0.56	-1.14	-0.94	-0.82
689	Punjab	SANGRUR	Bagarian-Pz	-3.66	-0.88	-0.57	-1.10
690	Punjab	SANGRUR	Bakshiwala-PZ	-1.35		-1.65	-2.45
691	Punjab	SANGRUR	Balang-PZ	-1.75			
692	Punjab	SANGRUR	Banbhaura-PZ	0.65			-1.25
693	Punjab	SANGRUR	Bapla-Pz				
694	Punjab	SANGRUR	Bhojowali-Pz	-2.52	-1.90	-1.92	-2.75
695	Punjab	SANGRUR	Bhunerheri-PZ	-1.50		-4.10	-4.30
696	Punjab	SANGRUR	Bopla-PZ				-3.10
697	Punjab	SANGRUR	Bugra 1	-1.21		-1.25	-2.34
698	Punjab	SANGRUR	Chatha Nanhera-PZ	-0.35		-0.85	-2.05
699	Punjab	SANGRUR	Chural Kalan M	-1.60	-2.47	-1.82	-1.50
700	Punjab	SANGRUR	Dharamgarh-Pz	-1.65		-1.55	-3.70
701	Punjab	SANGRUR	Ghaghlo-PZ	-1.45			
702	Punjab	SANGRUR	Ghanauri Kalan-Pz	-2.44	2.21	-0.32	-1.37
703	Punjab	SANGRUR	Haryao-DW				-1.50
704	Punjab	SANGRUR	Hassanpur-Pz	-0.95		-2.10	
705	Punjab	SANGRUR	Isra-Pz				-4.90
706	Punjab	SANGRUR	Kala Jhar-Pz	-1.50		-3.00	-1.80
707	Punjab	SANGRUR	Khanpur Fakiran-PZ	-2.90		-1.80	-3.35
708	Punjab	SANGRUR	Kheri Naran-PZ	-1.25		-2.55	-3.15
709	Punjab	SANGRUR	Khurni-PZ	-2.80		-2.60	-1.60
710	Punjab	SANGRUR	Kila Hakima	-0.70		-1.90	-2.35
711	Punjab	SANGRUR	Kokahar-PZ	-0.70		-1.60	-2.40
712	Punjab	SANGRUR	Kuler Khurd-Pz	-1.60		-1.60	-1.24
713	Punjab	SANGRUR	Ladda-Pz		2.24	-0.99	-3.35
714	Punjab	SANGRUR	Lehal Kalan-Pz	-2.50		-2.50	-1.37
715	Punjab	SANGRUR	Longowal-Pz	-1.19	-1.94	-1.31	
716	Punjab	SANGRUR	Malerkotla-DW	-2.89	-1.40		0.22
717	Punjab	SANGRUR	Manvi-Pz	-3.47	-1.34	-0.62	-1.10
718	Punjab	SANGRUR	Mehsampur-Pz	-1.00		-1.10	
719	Punjab	SANGRUR	Panjgaraian- Pz	-0.60		-1.70	-1.70
720	Punjab	SANGRUR	Patiala Kalan-PZ	-0.50			
721	Punjab	SANGRUR	Rajo Majra-PZ	-1.35		-4.80	-1.60

722	Punjab	SANGRUR	Rampur Channa-Pz				-1.40
723	Punjab	SANGRUR	Rurgarh-PZ	-1.78		-2.15	-1.80
724	Punjab	SANGRUR	Rurki Kalan-Pz	-0.90		-0.80	-1.30
725	Punjab	SANGRUR	Sekhpur Khurd-PZ	-0.60		-1.50	-1.05
726	Punjab	SANGRUR	Sekhwas-PZ	-2.40		-2.40	-2.85
727	Punjab	SANGRUR	Sikandarpur-PZ	-1.10		-1.40	-1.15
728	Punjab	SANGRUR	Sunam-Pz	-1.30	-1.97	-1.42	-1.42
729	Punjab	SAS NAGAR	Antala	-1.48	-1.36	0.02	0.38
730	Punjab	SAS NAGAR	Ballopur	-0.70			
731	Punjab	SAS NAGAR	Balongi-PZ	-1.50		0.60	1.55
732	Punjab	SAS NAGAR	Barauli-PZ	5.60		1.40	
733	Punjab	SAS NAGAR	Chandiala-Pz	-0.75		-0.05	
734	Punjab	SAS NAGAR	Dera Bassi 07pz	-1.25		-0.60	-0.88
735	Punjab	SAS NAGAR	Dheri	-1.45	-0.51	-0.28	-0.26
736	Punjab	SAS NAGAR	Gharoon	-0.35		2.05	1.35
737	Punjab	SAS NAGAR	Ghoga		1.16	1.30	1.37
738	Punjab	SAS NAGAR	Joli	-1.12	-0.78	1.91	-2.40
739	Punjab	SAS NAGAR	Kurrha-Pz	-0.75		0.00	-0.40
740	Punjab	SAS NAGAR	Landran		0.12	1.18	
741	Punjab	SAS NAGAR	Landran-Pz	-0.90	-0.39	0.27	
742	Punjab	SAS NAGAR	Malkpur-Pz	-1.50			2.10
743	Punjab	SAS NAGAR	Manoli-PZ	-0.30		-0.25	-0.15
744	Punjab	SAS NAGAR	Palheri-PZ	-1.91		-0.25	1.30
745	Punjab	SAS NAGAR	Pedol-PZ	1.70		1.60	-1.25
746	Punjab	SAS NAGAR	Raipur Kalan	-0.75		0.05	-0.60
747	Punjab	SAS NAGAR	Rurkan-PZ				0.65
748	Punjab	SAS NAGAR	Singhpura-Pz	-1.95		-1.70	
749	Punjab	SAS NAGAR	Sirsini	0.30	-0.15	0.27	
750	Punjab	SAS NAGAR	Sohana-PZ				-1.85
751	Punjab	SBS NAGAR	Alowal-Pz	-0.20		0.00	0.00
752	Punjab	SBS NAGAR	Aur-PZ	-1.00		-0.90	-1.50
753	Punjab	SBS NAGAR	Badhwan-Pz	-1.20		-1.90	
754	Punjab	SBS NAGAR	Baharam-Pz	-1.60		-2.25	-1.80
755	Punjab	SBS NAGAR	Bahara-Pz	-1.00		-0.20	-0.35
756	Punjab	SBS NAGAR	Bahlora Kallan- Pz		-1.16	-0.11	-0.26

757	Punjab	SBS NAGAR	Bahua-Pz	-1.70		-1.70	-2.30
758	Punjab	SBS NAGAR	Balachore	-1.11		1.40	
759	Punjab	SBS NAGAR	Balaipur-PZ	-2.00		-2.00	-2.60
760	Punjab	SBS NAGAR	Bhadi-PZ	-0.60		-0.30	
761	Punjab	SBS NAGAR	Dhan Wala-PZ	-1.80		-1.30	
762	Punjab	SBS NAGAR	Dugri Garol-PZ	-1.40		0.60	
763	Punjab	SBS NAGAR	Hakimpur-Pz	-0.85		-0.90	-1.50
764	Punjab	SBS NAGAR	Jethu Majra-PZ	-0.80		-0.85	-1.40
765	Punjab	SBS NAGAR	Kariam-Pz	-0.40		-0.20	-0.60
766	Punjab	SBS NAGAR	Langoya-PZ	-0.80		-1.50	-2.00
767	Punjab	SBS NAGAR	Mahalpur-PZ	-1.45		0.70	
768	Punjab	SBS NAGAR	Mauhra-Pz	-0.85	-0.85	-0.31	-0.45
769	Punjab	SBS NAGAR	Padmaiwal-PZ	-2.60		-1.80	-2.20
770	Punjab	SBS NAGAR	Rahon	-0.05			-1.32
771	Punjab	SBS NAGAR	Raipur Dhaba-Pz	-3.12	0.26	-1.90	-1.06
772	Punjab	SBS NAGAR	Torewal-PZ	-4.95			
773	Punjab	TARAN TARAN	Aima Khurd-Pz	-1.30		-1.60	-0.40
774	Punjab	TARAN TARAN	Attari-Pz	-0.80		3.00	3.10
775	Punjab	TARAN TARAN	Bakipur-Pz	-1.00		0.00	
776	Punjab	TARAN TARAN	Bath-PZ				1.00
777	Punjab	TARAN TARAN	Bath-Pz				-0.80
778	Punjab	TARAN TARAN	Bhagala-Pz	-3.10			
779	Punjab	TARAN TARAN	Bhagwanpur-Pz	-2.30		-0.70	
780	Punjab	TARAN TARAN	Bhalaipur-Pz			-0.30	-0.20
781	Punjab	TARAN TARAN	Bhankar Kalan-Pz	-1.30		0.20	-0.30
782	Punjab	TARAN TARAN	Bhikiwind- Pz	0.58	-0.86	-1.20	
783	Punjab	TARAN TARAN	Bhura-Pz	-2.30			
784	Punjab	TARAN TARAN	Bhure-Pz	-1.60		-0.90	-2.70
785	Punjab	TARAN TARAN	Bhusse-Pz	-1.80		0.60	0.00
786	Punjab	TARAN TARAN	Brahmpur-Pz	-1.50			0.70
787	Punjab	TARAN TARAN	Chakkare Khan-Pz	-0.70		-0.80	-1.00
788	Punjab	TARAN TARAN	Chola Sahib-Pz	-0.60	-1.97	-1.16	
789	Punjab	TARAN TARAN	Choudhary Wala-Pz	-2.50			
790	Punjab	TARAN TARAN	Chuselawad-Pz	-3.40		-0.20	
791	Punjab	TARAN TARAN	Dholan-Pz	-2.30		-0.70	

792	Punjab	TARAN TARAN	Ekalgoda-Pz	-1.20		0.50	1.00
793	Punjab	TARAN TARAN	Fatehabad- PZ	-0.70		0.60	-1.50
794	Punjab	TARAN TARAN	Gandi Wind-Pz	-0.74	-0.93	-0.75	
795	Punjab	TARAN TARAN	Goindwal 07	-0.51	0.41	-0.69	
796	Punjab	TARAN TARAN	Jalalabad-PZ				-3.90
797	Punjab	TARAN TARAN	Jandoke-Pz	-3.20		-0.40	-0.10
798	Punjab	TARAN TARAN	Kairon-PZ	-1.80		-0.40	
799	Punjab	TARAN TARAN	Kalsia Kalan07	-0.41	0.90	-0.52	
800	Punjab	TARAN TARAN	Khadur Sahib-Pz	-0.39	-0.41	-0.85	
801	Punjab	TARAN TARAN	Khalra-Pz	-1.20		0.10	
802	Punjab	TARAN TARAN	Kotbudda-Pz	-1.00		-0.50	
803	Punjab	TARAN TARAN	Kotli Sur Singh-Pz	-2.10		-0.20	
804	Punjab	TARAN TARAN	Mahendipur-Pz	-3.60		-2.10	
805	Punjab	TARAN TARAN	Marhona-Pz	-2.10			2.40
806	Punjab	TARAN TARAN	Mari Kamboke-Pz			-0.70	
807	Punjab	TARAN TARAN	Mohawa	-0.28	-0.63	-0.98	
808	Punjab	TARAN TARAN	Pindan-Pz	-0.80		-0.40	-0.10
809	Punjab	TARAN TARAN	Rajoke-Pz	-1.30		0.20	
2	Punjab	TARAN TARAN	Ratoke-Pz	-0.64	-0.13	-0.81	
3	Punjab	TARAN TARAN	Sabran-Pz	-3.30		-3.20	
4	Punjab	TARAN TARAN	Sahab Pura- Pz	-1.47	-0.14	-1.22	
5	Punjab	TARAN TARAN	Sheron-Pz	-2.50		-1.10	-1.50
814	Punjab	TARAN TARAN	Sugga-Pz	-2.10		-0.70	
815	Punjab	TARAN TARAN	Thatha- Pz	-5.40			
Sl. No.	STATE	DISTRICT	LOCATION	MAY-2016-MAY 2017	AUG.-2016-AUG.-2017	NOV.-2016-NOV. 2017	JAN.-2017-JAN.-2018

## Annexure-IV

Sl.No	State	District	Location	Fluctuation(m)			
				Decadal Mean			
				May (2007-2016)	August (2007-2016)	November (2007-2016)	January (2008-201)
				May 2017	Aug. 2017	Nov. 2017	Jan. 2017
1	Chandigarh	Chandigarh	BURAIL	0.02	-0.09	-0.27	0.05
2	Chandigarh	Chandigarh	CSIO-S	2.69	1.35	2.14	1.98
3	Chandigarh	Chandigarh	NEW INDUST AREA	3.46	3.83	2.50	2.42
4	Chandigarh	Chandigarh	Sec-27, Ar Well	4.24	3.28	3.97	
5	Chandigarh	Chandigarh	SECT 10C (D)		-1.54	2.62	
6	Chandigarh	Chandigarh	SECT 10C (S)		0.81	-0.55	
7	Chandigarh	Chandigarh	SECT 31D (D)	1.47	0.36	0.79	1.32
8	Chandigarh	Chandigarh	SECT 31D (S)	0.91	1.29	1.19	1.07
9	Chandigarh	Chandigarh	SECT 37D (S)	0.26	0.76	0.49	1.09
10	Chandigarh	Chandigarh	SECT 39D (S)	1.89	1.06		
11	Chandigarh	Chandigarh	SECT 44D (S)	1.65	1.07	1.26	1.20
12	Chandigarh	Chandigarh	Sector-46 (shallow)	1.67	-0.36	0.67	
13	Punjab	AMRITSAR	Ajnala	0.71	1.07	1.19	0.94
14	Punjab	AMRITSAR	Amritsar1	0.91	1.59	1.50	1.07
15	Punjab	AMRITSAR	Bal Kalan-Pz	2.80		0.73	0.40
16	Punjab	AMRITSAR	Beas07	0.53	0.10	0.01	0.40
17	Punjab	AMRITSAR	Bhattaywad-Pz	1.63		-9.67	
18	Punjab	AMRITSAR	Boparai Khurd-Pz			2.23	1.31
19	Punjab	AMRITSAR	Chak Dogra-Pz	2.43		2.20	0.23
20	Punjab	AMRITSAR	ChogWan- Pz	0.96	2.05	1.28	0.83
21	Punjab	AMRITSAR	Dhulika-Pz	0.97		1.17	1.23
22	Punjab	AMRITSAR	Dohan-Pz	2.37		-0.27	0.93
23	Punjab	AMRITSAR	Gago Mahal- Pz	0.25	-0.61	0.38	0.27
24	Punjab	AMRITSAR	Gill wali-Pz	2.30		0.97	2.08

25	Punjab	AMRITSAR	Jandiala Guru-Pz	0.50	0.53	0.96	1.96
26	Punjab	AMRITSAR	Jasrur-Pz	2.23		2.43	
27	Punjab	AMRITSAR	Jethuwal-Pz	2.70		1.47	0.70
28	Punjab	AMRITSAR	Kandowali-Pz	2.50		1.07	0.90
29	Punjab	AMRITSAR	Karyl-Pz	1.23		0.43	1.43
30	Punjab	AMRITSAR	Khilchian-Pz	2.23		0.78	0.53
31	Punjab	AMRITSAR	Majitha- Pz				0.90
32	Punjab	AMRITSAR	Mahima-Pz	3.85		2.85	2.25
33	Punjab	AMRITSAR	Makhan Windi-Pz	1.67		0.27	-0.65
34	Punjab	AMRITSAR	Mehleykey-Pz	2.75		4.73	2.95
35	Punjab	AMRITSAR	Mehta	1.65		1.37	2.22
36	Punjab	AMRITSAR	Mehta-Pz	1.70		2.50	0.19
37	Punjab	AMRITSAR	Miran Chak-Pz	1.33		-1.00	-0.53
38	Punjab	AMRITSAR	Nangal Sahaul-Pz	1.80		0.50	0.70
39	Punjab	AMRITSAR	Nawan Tanal- Pz	0.71	0.28	0.45	
40	Punjab	AMRITSAR	Pakhpura-Pz	1.23		0.50	
41	Punjab	AMRITSAR	Ramdas-DW	-0.72	-2.14	1.45	-2.53
42	Punjab	AMRITSAR	Rampura-Pz	1.40		-0.50	-0.11
43	Punjab	AMRITSAR	Rupowal Brahmana-Pz	2.31		0.67	0.81
44	Punjab	AMRITSAR	Sathiala-Pz	2.10		0.83	0.85
45	Punjab	AMRITSAR	Shabura-Pz	1.63		1.50	-0.67
46	Punjab	AMRITSAR	Sham Nagar-Pz	1.60		1.10	0.55
47	Punjab	AMRITSAR	Talwandi Dogra-Pz	2.88		0.47	1.53
48	Punjab	AMRITSAR	Tarsika-Pz	1.23		0.27	0.06
49	Punjab	AMRITSAR	Ugar Aulakh-Pz	0.63		0.10	1.88
50	Punjab	AMRITSAR	Vadala Kalan-Pz	1.50		0.70	1.20
51	Punjab	AMRITSAR	Wandala Bittewad-Pz	0.97		0.37	0.93
52	Punjab	BARNALA	Amla Singh Wala-PZ	0.90		0.71	0.59
53	Punjab	BARNALA	Barnala (s)	4.29	6.90	7.15	12.27
54	Punjab	BARNALA	Bhadaur-Pz	4.92	3.73	4.39	5.25

55	Punjab	BARNALA	Daula-Pz			8.24	7.15
56	Punjab	BARNALA	Dhanaula-Pz			0.35	0.71
57	Punjab	BARNALA	Kurar-Pz	4.98		3.97	4.96
58	Punjab	BARNALA	Lohgarh-Pz	2.04		2.17	2.81
59	Punjab	BARNALA	Mahal Kalan-Pz	5.73	3.78	4.93	5.88
60	Punjab	BARNALA	Nangal-Pz	3.89		3.44	3.90
61	Punjab	BARNALA	Pakho Ke-Pz	0.50		0.35	0.61
62	Punjab	BARNALA	Patti Dwarka-Pz			8.00	0.68
63	Punjab	BARNALA	Raisar-Pz			7.35	7.10
64	Punjab	BARNALA	Ramgarh-Pz	2.97		3.15	3.65
65	Punjab	BARNALA	Shekha	1.67		-15.50	1.92
66	Punjab	BARNALA	Tappa Mandi-Pz	3.72			3.78
68	Punjab	BATHINDA	Ablu	2.06	-0.45	2.44	1.88
69	Punjab	BATHINDA	Aleke Jalal-Pz	2.77		2.35	2.16
70	Punjab	BATHINDA	Badiala-Pz	2.89	1.48	3.91	
71	Punjab	BATHINDA	Bagher Mohabat Singh-Pz	0.02		0.27	0.52
72	Punjab	BATHINDA	Bahman Kaur Singh-Pz	0.05		-0.06	-2.99
73	Punjab	BATHINDA	Balianwali-Pz	3.58		1.06	3.83
74	Punjab	BATHINDA	Balluana1	0.77	1.03	1.07	0.82
75	Punjab	BATHINDA	Balluana-Pz	-1.25		0.12	0.52
76	Punjab	BATHINDA	Bhagibandar	0.33	0.80	0.87	-3.36
77	Punjab	BATHINDA	Bugran-Pz	3.27		1.44	3.05
78	Punjab	BATHINDA	Burj Gill-Pz	3.64		2.72	3.89
79	Punjab	BATHINDA	Burj-Pz	0.16			
80	Punjab	BATHINDA	Deratapp	0.72	1.66	1.69	1.60
81	Punjab	BATHINDA	Dhapali1	8.06	9.64	8.72	
82	Punjab	BATHINDA	Dhapali-Pz	6.10	5.68	6.19	5.58
83	Punjab	BATHINDA	Dialpur Mirza	4.22	5.82	6.49	5.83
84	Punjab	BATHINDA	Dialpura Bhlaike	6.07	4.68	5.97	6.03
85	Punjab	BATHINDA	Dulle Wala-Pz	3.39		3.33	3.28

86	Punjab	BATHINDA	Ganga-Pz	1.34	1.60	0.73	1.49
87	Punjab	BATHINDA	Ghudda-Pz	0.29		0.26	0.04
88	Punjab	BATHINDA	Gill Patti-DW	2.47			2.22
89	Punjab	BATHINDA	Gulabgarh 1 (vs)	3.27			
90	Punjab	BATHINDA	Gulabgarh 2 (s)			1.30	
91	Punjab	BATHINDA	Guru Sar-Pz	0.10	-0.19	0.19	0.42
92	Punjab	BATHINDA	Harraipur-Pz	0.33		1.07	
93	Punjab	BATHINDA	Jajjal_DW				-0.74
94	Punjab	BATHINDA	Jajjal	-1.18		1.54	0.66
95	Punjab	BATHINDA	Jassi Bhagwali	-2.03	-3.04	-1.45	-1.34
96	Punjab	BATHINDA	Jassi Paowali-Pz	0.66		-0.23	-0.29
97	Punjab	BATHINDA	Jhanduke	4.51	4.17	5.13	4.86
98	Punjab	BATHINDA	Jhanduke-Pz	2.35		2.16	3.16
99	Punjab	BATHINDA	Kahan Singh Wala-DW	3.04			
100	Punjab	BATHINDA	Kalla Bandar	-1.34	-2.03	-1.91	-2.13
101	Punjab	BATHINDA	Koir Singh Wala-Pz	2.28		1.33	2.07
102	Punjab	BATHINDA	Kot Bhaktu-Pz	0.58		0.98	1.14
103	Punjab	BATHINDA	Kot Fatta-DW				0.15
104	Punjab	BATHINDA	Kot Guru	0.18			0.77
105	Punjab	BATHINDA	Kot Shamir	0.72	0.33		0.74
106	Punjab	BATHINDA	Kothaguru-Pz	3.51	4.85	3.78	-15.02
107	Punjab	BATHINDA	Lalliana-Pz	0.13		0.89	0.84
108	Punjab	BATHINDA	Lehra Dhulkot-Pz	4.66		1.84	3.38
109	Punjab	BATHINDA	Maihma Bhagwan-PZ	0.45		0.14	-0.35
110	Punjab	BATHINDA	Maisar Khana	2.42	2.27	3.73	3.41
111	Punjab	BATHINDA	Maisar Khana-Pz	0.55		1.09	0.83
112	Punjab	BATHINDA	Maluka-Pz	2.58		1.42	2.48
113	Punjab	BATHINDA	Mandi Kalan-Pz	3.34		0.35	3.11
114	Punjab	BATHINDA	Mehraj-Pz	2.82		1.72	3.44
115	Punjab	BATHINDA	Mehta-Pz	0.04		0.21	-0.06

116	Punjab	BATHINDA	Multania-Pz	0.25		0.42	0.25
117	Punjab	BATHINDA	Nahinwala	2.28	3.39	2.77	
118	Punjab	BATHINDA	Nathana-Pz	1.67		3.35	3.37
119	Punjab	BATHINDA	Nathena-Pz	0.09		0.65	2.09
120	Punjab	BATHINDA	Pathrala-PZ	0.01		-0.14	
121	Punjab	BATHINDA	Phul	6.62			
122	Punjab	BATHINDA	Phulla1	7.56	7.04	5.84	13.84
123	Punjab	BATHINDA	Puhla-Pz	3.42		-0.19	4.89
124	Punjab	BATHINDA	Raike Kalan	0.87	-0.40	0.37	-0.12
125	Punjab	BATHINDA	Rampura				8.79
126	Punjab	BATHINDA	Rajgarh Kubey-Pz	0.37		9.04	0.32
127	Punjab	BATHINDA	Rayya-Pz	3.02		2.71	4.35
128	Punjab	BATHINDA	Salabatpur-Pz	2.96		2.81	2.36
129	Punjab	BATHINDA	Sangat -Pz	0.21	0.42	0.22	-0.46
130	Punjab	BATHINDA	Seema-DW	4.60			4.19
131	Punjab	BATHINDA	Sidhana	3.16			4.78
132	Punjab	BATHINDA	Sooch-Pz	2.14		1.45	2.37
133	Punjab	BATHINDA	Teona-Pz	0.07			0.30
134	Punjab	BATHINDA	Tungwali-Pz	0.61		0.70	
135	Punjab	FARIDKOT	Aryan Wala-Pz	0.23		-0.62	-0.30
136	Punjab	FARIDKOT	Baja Khana	13.20	3.25	7.81	0.48
137	Punjab	FARIDKOT	Bead Sikhawala- Pz	0.80	-1.05	2.72	
138	Punjab	FARIDKOT	Behabal Kalan-Pz	0.73		-0.30	0.49
139	Punjab	FARIDKOT	Chahd Baja	0.80	1.35	1.38	1.21
140	Punjab	FARIDKOT	Chak Kalan-Pz	-0.30		-0.10	-0.86
141	Punjab	FARIDKOT	Deviwala Ii-Pz	2.17	-0.65	-0.62	0.68
142	Punjab	FARIDKOT	Deviwala I-Pz	0.34	3.10		
143	Punjab	FARIDKOT	Deviwala-Pz	-0.57		1.27	
144	Punjab	FARIDKOT	Dhaipai-Pz	0.16			-0.15
145	Punjab	FARIDKOT	Dhilwan Kalan	3.16	3.69	1.55	1.46

146	Punjab	FARIDKOT	Dhudi-Pz	0.79		0.50	0.88
147	Punjab	FARIDKOT	Dipsinghwala	1.46	1.26	1.02	1.25
148	Punjab	FARIDKOT	Faridkot-Pz	0.18		-0.57	-0.48
149	Punjab	FARIDKOT	Fatehgarh-Pz	1.33		1.57	2.26
150	Punjab	FARIDKOT	Ghuiana-Pz	0.14		-0.37	-0.11
151	Punjab	FARIDKOT	Jand Sahib-Pz	-0.12	0.20	0.39	0.45
152	Punjab	FARIDKOT	Karirwali	2.46	2.73	4.05	-2.53
153	Punjab	FARIDKOT	Killi-Pz	0.32	-0.71	0.23	0.47
154	Punjab	FARIDKOT	Koharwala- DW	-0.30			-0.64
155	Punjab	FARIDKOT	Kot Kapura	0.72	0.99	0.56	0.77
156	Punjab	FARIDKOT	Matta	1.70	1.51	1.52	1.64
157	Punjab	FARIDKOT	Mehmuana	-1.09	-1.46	-1.24	-1.08
158	Punjab	FARIDKOT	Mumra-Pz	0.65	-0.63	0.30	-0.10
159	Punjab	FARIDKOT	Nangal-Pz	0.27	-6.28	-0.05	0.65
160	Punjab	FARIDKOT	Pahluwala-Pz	0.82		0.72	0.88
161	Punjab	FARIDKOT	Ratti Rori-Pz	0.07		-0.17	-0.51
162	Punjab	FARIDKOT	Rorian Kapura-Pz	0.23		1.48	1.01
163	Punjab	FARIDKOT	Sadiq-Pz	-0.70	-0.35	-0.10	-0.02
164	Punjab	FARIDKOT	Sandhwan-Pz	0.60			1.09
165	Punjab	FARIDKOT	Sher Singh Wala- Pz	0.33	-0.08	-0.30	-0.56
166	Punjab	FARIDKOT	Tehna-Pz		0.97	0.07	
167	Punjab	FARIDKOT	Sukhwala-Pz	0.10	-1.25	-0.29	-0.73
168	Punjab	FARIDKOT	Wara Dwarka-Pz	1.01	-0.02	-0.04	0.08
169	Punjab	FATEHGARH SAHIB	Alipur Sodhian-Pz	1.05		1.62	1.88
170	Punjab	FATEHGARH SAHIB	Amloh1				3.89
171	Punjab	FATEHGARH SAHIB	Badialialasingh	5.27	3.33	3.69	4.54
172	Punjab	FATEHGARH SAHIB	Bagga Kalan	3.78		6.17	5.23
173	Punjab	FATEHGARH SAHIB	Bassi Pathana	2.77	3.57	2.56	3.24
174	Punjab	FATEHGARH SAHIB	Bhagrana	-1.19	-3.45	-1.14	-1.14
175	Punjab	FATEHGARH SAHIB	Bhateri1	3.25	4.59	4.27	4.60

176	Punjab	FATEHGARH SAHIB	Burj	1.62		2.53	2.63
177	Punjab	FATEHGARH SAHIB	Chandiala-Pz	1.52		0.85	-0.65
178	Punjab	FATEHGARH SAHIB	Chunni Kalan		0.13	-0.03	2.75
179	Punjab	FATEHGARH SAHIB	Fatehgarh Sahib	1.49		2.84	2.61
180	Punjab	FATEHGARH SAHIB	Fatehgarh Sahib-Pz	3.09	2.92		3.21
181	Punjab	FATEHGARH SAHIB	Jai Singh Wala	3.12		4.14	4.24
182	Punjab	FATEHGARH SAHIB	Jhambela	2.31		3.27	4.02
183	Punjab	FATEHGARH SAHIB	Kalewal			2.50	1.70
184	Punjab	FATEHGARH SAHIB	Khamanon-pz	0.45		0.35	-0.10
185	Punjab	FATEHGARH SAHIB	Ladpur			3.98	1.50
186	Punjab	FATEHGARH SAHIB	Lohar Majra	2.24		2.30	3.53
187	Punjab	FATEHGARH SAHIB	Mianpur-Pz	1.72		1.85	1.70
188	Punjab	FATEHGARH SAHIB	Nalini-Pz	2.55	2.09	2.60	1.39
189	Punjab	FATEHGARH SAHIB	Nandpur Kalaur-Pz	2.60		3.43	2.37
190	Punjab	FATEHGARH SAHIB	Pawala	0.34	-0.62		3.56
191	Punjab	FATEHGARH SAHIB	Sado Majra	1.88		3.18	3.25
192	Punjab	FATEHGARH SAHIB	Salempur			6.55	6.23
193	Punjab	FATEHGARH SAHIB	Shahpur	1.93		2.64	2.73
194	Punjab	FATEHGARH SAHIB	Sirhind-Pz	1.50		0.78	2.00
195	Punjab	FATEHGARH SAHIB	Tahalpur	3.83		5.01	4.49
196	Punjab	FATEHGARH SAHIB	Talwara	1.60		3.65	4.13
197	Punjab	FATEHGARH SAHIB	Timber Pur-Pz	0.08		-1.59	-2.08
198	Punjab	FAZILKA	Abohar	0.85	0.44	0.69	0.62
199	Punjab	FAZILKA	Alamgarh	0.28	0.22	0.35	-0.04
200	Punjab	FAZILKA	Asifwala-Pz	-0.72		-0.18	-0.32
201	Punjab	FAZILKA	Bannawala		0.63	0.02	0.19
202	Punjab	FAZILKA	Baman Wali-Pz	0.32			1.57
203	Punjab	FAZILKA	Bulla Rai Uttar-Pz				-5.30
204	Punjab	FAZILKA	Bazirdpura	-1.69	-2.08	-1.78	
205	Punjab	FAZILKA	Chak Khore Wala-Pz	0.38		-5.51	0.15

206	Punjab	FAZILKA	Chak Pune Wala-Pz	0.11		0.20	5.42
207	Punjab	FAZILKA	Danewal Satkosi	0.76	0.26	-0.71	0.06
208	Punjab	FAZILKA	Danger Khera-Pz	0.59		0.26	
209	Punjab	FAZILKA	Dipulana-Pz	0.40	-0.32	0.01	
210	Punjab	FAZILKA	Fattu Wala-Pz	1.13		0.67	1.87
211	Punjab	FAZILKA	Fazilka-Pz	-1.17			-0.54
212	Punjab	FAZILKA	Ghananga Kalan-Pz	-0.01		1.12	0.78
213	Punjab	FAZILKA	Giddran Wali-Pz	-0.17		1.39	
214	Punjab	FAZILKA	Godiwala-Pz	0.68		0.59	0.94
215	Punjab	FAZILKA	Guru Harsahai-Pz	0.31		1.10	1.70
216	Punjab	FAZILKA	Hamed Saidoke-Pz	-0.31		-0.46	-0.05
217	Punjab	FAZILKA	Himmatpura-Pz	0.01		-0.30	-0.27
218	Punjab	FAZILKA	Jaimal Singhwala Pz	0.35	-4.00		0.85
219	Punjab	FAZILKA	Jand Wala Johian-Pz	0.26		1.37	1.05
220	Punjab	FAZILKA	Jandwala Watan-Pz	0.18		1.51	0.93
221	Punjab	FAZILKA	Kaler Khera-Pz	0.47		0.32	
222	Punjab	FAZILKA	Kandh Wala-Pz	-0.76			-0.50
223	Punjab	FAZILKA	Kathgarh-Pz	0.98			1.16
224	Punjab	FAZILKA	Khere Ki Uttar-Pz	-0.48		-0.38	0.28
225	Punjab	FAZILKA	Khuiansarwar- Pz	0.64	0.61	0.41	
226	Punjab	FAZILKA	Kundal1	0.47	0.45	0.68	0.27
227	Punjab	FAZILKA	Ladhuwala	0.40	0.26	0.33	0.16
228	Punjab	FAZILKA	Malukpur-Pz	0.48		0.39	0.67
229	Punjab	FAZILKA	Markhiwa Bhamni-Pz	1.01			1.54
230	Punjab	FAZILKA	Muradwala Dal-Pz	0.56		0.17	0.50
231	Punjab	FAZILKA	Nihalkhera	0.33	-0.17	0.21	-0.09
232	Punjab	FAZILKA	Nure-Ki-Uttar 07pz	1.21		1.80	2.34
233	Punjab	FAZILKA	Pancha Wali-Pz	-1.20		-0.64	-0.70
234	Punjab	FAZILKA	Pattiwalla-Pz	-0.68		-0.45	
235	Punjab	FAZILKA	Ramsara-Pz	0.67		0.42	0.60

236	Punjab	FAZILKA	Roran Wala-pz	0.66			1.10
237	Punjab	FAZILKA	Sham Singhwala-Pz	0.48	0.81		
238	Punjab	FAZILKA	Shatriwala-Pz	0.00		0.49	
239	Punjab	FAZILKA	Sherewala-Pz	0.50		0.10	0.34
240	Punjab	FAZILKA	Singhpura-Pz	1.52			0.63
241	Punjab	FAZILKA	Sitoganno	-2.10	-2.12	-1.79	-2.25
242	Punjab	FAZILKA	Sohangarh Ratte	0.51	0.41	0.46	0.50
243	Punjab	FAZILKA	Swah Wala- Pz	1.21	1.03	1.36	1.05
244	Punjab	FIROZPUR	Bara Mansur Wala-Pz	0.46		0.54	1.66
245	Punjab	FIROZPUR	Chak Kandhe Shah-Pz	-0.05		-0.66	0.29
246	Punjab	FIROZPUR	Chamb-Pz	0.89		0.71	0.94
247	Punjab	FIROZPUR	Dulchi Ke-Pz	-0.25		0.67	0.71
248	Punjab	FIROZPUR	Gogiani-Pz	1.39		1.06	2.00
249	Punjab	FIROZPUR	Jaimal wala-Pz	0.05		0.28	0.44
250	Punjab	FIROZPUR	Jang-Pz	-0.13		-0.07	-0.05
251	Punjab	FIROZPUR	Katoran-Pz			3.87	3.66
252	Punjab	FIROZPUR	Lauhke Kalan- Pz	1.27	-1.11	0.81	
253	Punjab	FIROZPUR	Lohere Khurd-Pz	-0.02		-0.08	0.65
254	Punjab	FIROZPUR	Machi Bugra/ Gujran-Pz	0.27		-0.32	0.82
255	Punjab	FIROZPUR	Mallanwala Khas-Pz	0.05		10.65	0.11
256	Punjab	FIROZPUR	Malluwala-Pz	0.19		1.09	1.53
257	Punjab	FIROZPUR	Malsian-Pz	1.15	1.63	1.89	1.33
258	Punjab	FIROZPUR	Mana Singh Wala-Pz	0.33		1.39	1.06
259	Punjab	FIROZPUR	Mohkam Khan Wala-Pz	-0.24		0.08	0.55
260	Punjab	FIROZPUR	Mohre Wala-Pz		0.15	0.13	-0.68
261	Punjab	FIROZPUR	Mudki-Pz	0.05		0.14	0.46
262	Punjab	FIROZPUR	Piyarana	0.60	0.59	0.13	0.41
263	Punjab	FIROZPUR	Rala Hazi- Pz	-0.50		-0.06	-0.17
264	Punjab	FIROZPUR	Rukne Wala-Pz	0.15		0.41	2.04
265	Punjab	FIROZPUR	Sadhusha Wala-Pz	1.15		0.35	0.90

266	Punjab	FIROZPUR	Sultan Khan Wala Urf-Pz	-0.27			0.12
267	Punjab	FIROZPUR	Talwandi Jalle Khan-pz	0.41		0.60	1.71
268	Punjab	FIROZPUR	Tibbi Kalan-Pz	0.79		0.16	0.29
269	Punjab	FIROZPUR	Tibbi Taiwan Laluwalla-Pz	-0.18		0.06	0.02
270	Punjab	FIROZPUR	Wage Wala-Pz	-0.07		-0.46	-0.13
271	Punjab	GURDASPUR	Bariyar	0.00		-0.55	-0.10
272	Punjab	GURDASPUR	Bhagowal	1.34	0.08	0.72	0.61
273	Punjab	GURDASPUR	Bham	2.65	2.42		
274	Punjab	GURDASPUR	Bilasbal-Pz	0.89		0.37	0.07
275	Punjab	GURDASPUR	Chahal Kalan-Pz	1.16		0.67	0.88
276	Punjab	GURDASPUR	Chahgill-Pz	0.57		0.67	0.60
277	Punjab	GURDASPUR	Chone-Pz	1.72		2.30	2.02
278	Punjab	GURDASPUR	Dakoha-Pz	1.80	1.22	1.58	1.53
279	Punjab	GURDASPUR	Dera Baba Nanak	0.07	0.26	0.06	0.36
280	Punjab	GURDASPUR	Dhianpur	-0.46		-2.22	-0.97
281	Punjab	GURDASPUR	Dinanagar	0.12	-0.24	5.61	-0.61
282	Punjab	GURDASPUR	Dostpur-Pz	1.07		0.33	0.73
283	Punjab	GURDASPUR	Gajikort-Pz	1.15		-0.90	-0.67
284	Punjab	GURDASPUR	Galri	0.63	0.04	0.31	0.50
285	Punjab	GURDASPUR	Ghania Ki bangar- Pz	0.77	0.17	0.57	0.53
286	Punjab	GURDASPUR	Ghumani Khurd-Pz	0.89		0.25	0.32
287	Punjab	GURDASPUR	Gurdaspur-Pz	1.25		0.98	1.70
288	Punjab	GURDASPUR	Harchowal-Pz			-2.88	-1.19
289	Punjab	GURDASPUR	Hargobindpur	1.48	1.15	2.00	
290	Punjab	GURDASPUR	Hargobindpur1	-10.79			
291	Punjab	GURDASPUR	Hassanpur Kalan-Pz	1.07		0.15	0.40
292	Punjab	GURDASPUR	Jhabkra	0.70		-1.00	-0.60
293	Punjab	GURDASPUR	Jhandalbana-Pz	0.40		-1.27	-0.53
294	Punjab	GURDASPUR	Kahnuwan	0.40			
295	Punjab	GURDASPUR	Kala Afgana-Pz	1.31		0.00	0.15

296	Punjab	GURDASPUR	Kalanaur-DW	0.01	1.29	1.18	-0.50
297	Punjab	GURDASPUR	Kalanaur-Pz	1.29	2.24	-0.21	-3.00
298	Punjab	GURDASPUR	Kalerkalan-Pz			-1.20	-0.40
299	Punjab	GURDASPUR	Kaure-Pz	1.21		2.53	1.62
300	Punjab	GURDASPUR	Khan Fatta-Pz	0.30		-0.23	0.03
301	Punjab	GURDASPUR	Khanmalik-Pz	0.48		0.10	0.43
302	Punjab	GURDASPUR	Khatgarh-Pz	1.18		-0.77	-0.13
303	Punjab	GURDASPUR	Lakankala-Pz	1.33		0.55	0.98
304	Punjab	GURDASPUR	Langurwal-Pz	0.90		0.25	0.42
305	Punjab	GURDASPUR	Madipur Fatehgarhchuria	1.04	0.72	1.07	0.90
306	Punjab	GURDASPUR	Malikpur-Pz	0.67		1.93	2.13
307	Punjab	GURDASPUR	Mallewal-Pz	0.78			0.19
308	Punjab	GURDASPUR	Maman-Pz	1.38		0.23	0.77
309	Punjab	GURDASPUR	Masana-Pz	0.39		-0.26	0.26
310	Punjab	GURDASPUR	Massit-Pz	0.81		-0.09	0.11
311	Punjab	GURDASPUR	Mirza Jaan-Pz	1.32			1.03
312	Punjab	GURDASPUR	Mullowali 1(vs)			0.37	0.40
313	Punjab	GURDASPUR	Mullowali 2(m)			0.50	0.74
314	Punjab	GURDASPUR	Nangal-Pz	0.60		-0.42	-0.17
315	Punjab	GURDASPUR	Nishayara		0.77		-1.26
316	Punjab	GURDASPUR	Pandoritalab	-0.37	0.46	-0.36	0.20
317	Punjab	GURDASPUR	Parcha-Pz	0.81		0.12	0.33
318	Punjab	GURDASPUR	Patti Atwal-Pz	1.45		1.23	1.43
319	Punjab	GURDASPUR	Quaddian -Pz			2.01	2.59
320	Punjab	GURDASPUR	Raipur	-0.55		-1.75	-0.80
321	Punjab	GURDASPUR	Saidowal Kalan-DW	0.33	0.47	-0.21	-0.27
322	Punjab	GURDASPUR	Saleh Chak-S		0.88	1.09	1.23
323	Punjab	GURDASPUR	Salehchak(vs)		0.29	0.58	0.56
324	Punjab	GURDASPUR	Sathial-Pz	0.37	0.73	-0.04	-0.11
325	Punjab	GURDASPUR	Shahpur Jattan-Pz	0.81		-0.12	-0.12

326	Punjab	GURDASPUR	Shahpur-Pz	1.05		0.40	0.67
327	Punjab	GURDASPUR	Shezada Kalan-Pz	1.00		-0.27	0.02
328	Punjab	GURDASPUR	Shikar-Pz	-0.42		-1.09	-0.52
329	Punjab	GURDASPUR	Sohal	0.45			-0.23
330	Punjab	GURDASPUR	Tikriwala-Pz	1.99		2.37	2.83
331	Punjab	HOSHIARPUR	Adowal Garhi-Pz		3.03	4.38	8.32
332	Punjab	HOSHIARPUR	Bhamnaur		3.08	1.63	2.46
333	Punjab	HOSHIARPUR	Bhangala-Chhota-DW		-0.08	0.22	-0.17
334	Punjab	HOSHIARPUR	Chak Sheru-DW	0.90	-0.45	-0.10	0.12
335	Punjab	HOSHIARPUR	Chohal	0.25	-2.29	0.22	0.04
336	Punjab	HOSHIARPUR	DAGAN-DW	-2.65	0.90	-0.39	4.82
337	Punjab	HOSHIARPUR	Dasuya2 (s)	1.57		2.94	2.16
338	Punjab	HOSHIARPUR	Durimiwal	1.89	2.01	2.29	2.72
339	Punjab	HOSHIARPUR	Garh Di Wala-Pz		1.40	2.72	2.71
340	Punjab	HOSHIARPUR	Garhshankar (s)	-1.16	-3.19	7.07	5.13
341	Punjab	HOSHIARPUR	Haler Rampur-DW	0.95	-1.20	2.39	1.63
342	Punjab	HOSHIARPUR	Hazipur	0.79	-2.30	-4.81	-0.61
343	Punjab	HOSHIARPUR	Jhir Da Khuh-DW	-0.41	-1.00	-0.56	
344	Punjab	HOSHIARPUR	Mahilpur-Pz	3.39	2.54	2.00	3.18
345	Punjab	HOSHIARPUR	Mukerian Dw		1.35	0.70	
346	Punjab	HOSHIARPUR	Nangal Bihala- DW	0.79	0.61	0.88	0.59
347	Punjab	HOSHIARPUR	Pan Khuh-DW	0.52	0.36	0.55	1.29
348	Punjab	HOSHIARPUR	Phuglana- Pz	1.16	-0.42	3.24	2.95
349	Punjab	HOSHIARPUR	Rampur Colony (HSP) pz-medium	4.70	2.39	1.61	
350	Punjab	HOSHIARPUR	Samraj Tanda-DW	1.01	1.16	-0.01	0.02
351	Punjab	HOSHIARPUR	Sham Chaurasi	1.69	0.32	1.42	1.64
352	Punjab	HOSHIARPUR	Sibo Chak- DW	-0.45	-0.51	-0.62	-0.07
353	Punjab	HOSHIARPUR	Simibli- OW	0.78	2.63	0.85	1.24
354	Punjab	HOSHIARPUR	Simibli-Pz	5.17	4.95	2.37	2.32

355	Punjab	HOSHIARPUR	Talwara1	1.79	0.76	-0.19	0.14
356	Punjab	HOSHIARPUR	Thakarwala	4.46	6.12	1.68	2.31
357	Punjab	JALANDHAR	Adampur 3(s)	-0.50	0.07	0.63	1.07
358	Punjab	JALANDHAR	Adarman-Pz	0.64		0.76	7.61
359	Punjab	JALANDHAR	Akalpur-Pz	0.18		0.32	1.20
360	Punjab	JALANDHAR	Allawalpur	0.01		0.88	0.66
361	Punjab	JALANDHAR	Bhogpur-Pz				3.10
362	Punjab	JALANDHAR	Bilga-Pz	3.07		3.70	2.33
363	Punjab	JALANDHAR	Billi Chahrami-Pz	2.23		1.73	2.48
364	Punjab	JALANDHAR	Chania-Pz	1.82		1.90	2.27
365	Punjab	JALANDHAR	Dhanda-Pz	2.17		1.87	2.87
366	Punjab	JALANDHAR	Dhirowal-Pz	2.55		2.08	1.97
367	Punjab	JALANDHAR	Fateh Jalal-Pz	4.95		2.53	-0.32
368	Punjab	JALANDHAR	Gehlan-pz	2.68		1.43	1.72
369	Punjab	JALANDHAR	Gillian-Pz	0.58		-0.55	0.33
370	Punjab	JALANDHAR	Gohiran		5.12	5.81	5.96
371	Punjab	JALANDHAR	Hardo Pharwal-Pz	1.61		3.40	7.00
372	Punjab	JALANDHAR	Hardo Sheikh-Pz	2.10		2.55	3.22
373	Punjab	JALANDHAR	Jalandhar-Pz(VS)	8.24	4.12	7.01	6.74
374	Punjab	JALANDHAR	Jandiala-Pz	3.09	2.85	3.91	4.09
375	Punjab	JALANDHAR	Jandu Singha-Pz	6.33		4.23	4.57
376	Punjab	JALANDHAR	Janian-Pz	7.48		7.23	7.85
377	Punjab	JALANDHAR	Kakar Kalan-Pz	2.45		1.83	2.57
378	Punjab	JALANDHAR	Kala-Pz	1.37		-0.20	-0.57
379	Punjab	JALANDHAR	Kalyanpur-Pz	2.68		3.26	3.16
380	Punjab	JALANDHAR	Kang Sahib Rai-Pz	1.53		2.00	2.77
381	Punjab	JALANDHAR	Kartarpur 2(s)	1.79	2.58	5.42	3.25
382	Punjab	JALANDHAR	Kharal Kalan Pz-S	1.95	0.14	3.37	2.65
383	Punjab	JALANDHAR	Kot Wadal Khan-Pz	1.47		1.60	2.33
384	Punjab	JALANDHAR	Kurla-Pz	2.53		0.73	1.00

385	Punjab	JALANDHAR	Lallian kalan Pz-S	4.53	-1.19	3.27	4.70
386	Punjab	JALANDHAR	Mahmuwal-Pz	2.27		2.33	2.97
387	Punjab	JALANDHAR	Mehsampur-Pz	0.43		2.88	2.08
388	Punjab	JALANDHAR	Nakodar 2(m)	7.32	2.73	4.13	9.33
389	Punjab	JALANDHAR	Nakodar3(s)		1.55	2.30	7.91
390	Punjab	JALANDHAR	Nangal Shaman	4.31		3.66	3.67
391	Punjab	JALANDHAR	Nasirpur-Pz	1.98		2.68	2.41
392	Punjab	JALANDHAR	Nussi-Pz	0.38		0.74	-0.18
393	Punjab	JALANDHAR	Pathial-Pz	2.88		0.82	0.93
394	Punjab	JALANDHAR	Pharwala-Pz	1.77		1.90	1.78
395	Punjab	JALANDHAR	Phillaur 2(s)		0.44	1.62	1.49
396	Punjab	JALANDHAR	Rahimpur-Pz	3.45		1.67	0.93
397	Punjab	JALANDHAR	Rurka Kalan- Pz	-0.07		1.69	-0.49
398	Punjab	JALANDHAR	Samarahi-Pz	0.83		-1.13	-0.35
399	Punjab	JALANDHAR	Shahkot-Pz-Pb	2.20	-0.35	1.25	0.33
400	Punjab	JALANDHAR	Skrar Pur-Pz	4.53		2.57	0.83
401	Punjab	JALANDHAR	Sultanpur-Pz	0.07		1.20	1.77
402	Punjab	JALANDHAR	Talwan-Pz	2.64		3.85	2.81
403	Punjab	JALANDHAR	Thanda-Pz	1.43		0.25	0.80
404	Punjab	JALANDHAR	Udhopur	0.42	0.44	-0.17	0.23
405	Punjab	KAPURTHALA	Amanipur-Pz	1.95			1.13
406	Punjab	KAPURTHALA	Balera-Pz	6.75			5.40
407	Punjab	KAPURTHALA	Bauril Harnampur-Pz	2.50		2.33	2.48
408	Punjab	KAPURTHALA	Begowal-Pz	0.67		0.83	0.94
409	Punjab	KAPURTHALA	Bhanoki-Pz	2.58		1.63	1.10
410	Punjab	KAPURTHALA	Bhatnura Khurd- S	2.01	1.88	2.29	
411	Punjab	KAPURTHALA	Bhawanipur-Pz	1.52		0.90	1.30
412	Punjab	KAPURTHALA	Bholath M	2.62	1.96	1.31	1.97
413	Punjab	KAPURTHALA	Bholath S	1.58	1.32	1.21	-4.49
414	Punjab	KAPURTHALA	Dalla		0.07		0.81

415	Punjab	KAPURTHALA	Hussainpura-S Pz		0.96	-0.97	1.94
416	Punjab	KAPURTHALA	Hussainpura-VS Pz		0.91	1.46	1.80
417	Punjab	KAPURTHALA	Chakoke-Pz	0.40		0.91	3.88
418	Punjab	KAPURTHALA	Hamira-Pz	0.97		1.98	2.67
419	Punjab	KAPURTHALA	Hazipur-Pz	2.18		1.79	4.77
420	Punjab	KAPURTHALA	Kapurthala2 (s)	2.61	4.21	5.90	1.42
421	Punjab	KAPURTHALA	Karnail Ganju-Pz	1.03		1.67	3.83
422	Punjab	KAPURTHALA	Kishanpur	7.02		2.36	2.70
423	Punjab	KAPURTHALA	Maheru-Pz	4.03		2.12	1.01
424	Punjab	KAPURTHALA	Miani Bola-Pz	1.21		0.80	2.00
425	Punjab	KAPURTHALA	Mithra-Pz	0.85			1.69
426	Punjab	KAPURTHALA	Nadala			2.38	0.50
427	Punjab	KAPURTHALA	Nangal Lubhana-Pz			0.95	2.13
428	Punjab	KAPURTHALA	Nathu Chahal-Pz	5.47		2.98	0.53
429	Punjab	KAPURTHALA	Nurpur Janoa-Pz	0.56		1.02	2.60
430	Punjab	KAPURTHALA	Paazian-Pz	2.93			5.12
431	Punjab	KAPURTHALA	Phagwara2 (s)	2.98	4.44	6.70	5.74
432	Punjab	KAPURTHALA	Rawalpindi-Pz	5.97		0.70	2.83
433	Punjab	KAPURTHALA	Saiflabad-Pz	1.03			0.78
434	Punjab	KAPURTHALA	Sangatpur-Pz	5.30		2.93	5.20
435	Punjab	KAPURTHALA	Shalapur Dona-Pz	4.20			2.27
436	Punjab	KAPURTHALA	Sultanpur2 (s)	0.88	3.37	1.15	3.08
437	Punjab	KAPURTHALA	Talwandi Chaudary -Pz	-0.78		-1.15	1.24
438	Punjab	KAPURTHALA	Thikriwali-Pz	0.49			0.78
439	Punjab	LUDHIANA	Alamgir-Pz	0.56		0.80	1.46
440	Punjab	LUDHIANA	Aliwal-Pz	1.51		1.40	1.29
441	Punjab	LUDHIANA	Bassian MGOW			9.16	9.30
442	Punjab	LUDHIANA	Begowal			0.54	
443	Punjab	LUDHIANA	Bhagwanpur-Pz	0.48		0.33	0.05
444	Punjab	LUDHIANA	Bhahlolpur-DW	0.67	-0.27	0.32	0.58

445	Punjab	LUDHIANA	Bharthala Randhawa-Pz	1.76		1.39	1.80
446	Punjab	LUDHIANA	Bhikhi Khatron-Pz	0.81		1.41	1.72
447	Punjab	LUDHIANA	Bilaspur-Pz	1.10		0.69	0.67
448	Punjab	LUDHIANA	Chaminala-Pz	1.37		1.97	2.37
449	Punjab	LUDHIANA	Chankian Khurd-Pz	1.31		0.63	0.69
450	Punjab	LUDHIANA	Chattar Singh Park-Idh	2.31	5.41		
451	Punjab	LUDHIANA	Chaunta-Pz	-0.40		-1.04	-0.67
452	Punjab	LUDHIANA	Chhapar-Pz	1.85		2.27	2.22
453	Punjab	LUDHIANA	Dinnamder-Pz	2.34		2.90	2.20
454	Punjab	LUDHIANA	Dodpur-Pz	1.18		1.08	1.04
455	Punjab	LUDHIANA	Doraha-Pz	0.99	0.56	0.05	0.32
456	Punjab	LUDHIANA	Galibkalan-Pz	2.41		0.93	2.73
457	Punjab	LUDHIANA	Gohaur-Pz	1.66		1.18	1.52
458	Punjab	LUDHIANA	Gopalpur 2(s)	4.29	5.39	3.69	3.94
459	Punjab	LUDHIANA	Hambowal-Pz	0.46		-0.67	-0.62
460	Punjab	LUDHIANA	Harnampur	1.51		1.30	1.59
461	Punjab	LUDHIANA	Hedon-Pz	0.42		0.40	-0.47
462	Punjab	LUDHIANA	Ikloha-Pz	2.35	2.87	3.33	4.10
463	Punjab	LUDHIANA	Kalsian			-1.86	4.60
464	Punjab	LUDHIANA	Kaonke Kalan			5.09	
465	Punjab	LUDHIANA	Katanikalan-Pz	0.57		0.03	-0.22
466	Punjab	LUDHIANA	Khandur				
467	Punjab	LUDHIANA	Khandur	3.14		3.63	3.41
468	Punjab	LUDHIANA	Kishangarh-Pz	1.10		0.82	1.23
469	Punjab	LUDHIANA	Kishanpur-Pz	2.07		1.95	1.57
470	Punjab	LUDHIANA	Lalan1	1.68		0.27	
471	Punjab	LUDHIANA	Lelon-Pz	0.50		-0.31	0.12
472	Punjab	LUDHIANA	Lil- II Pz	0.03	3.50	3.55	
473	Punjab	LUDHIANA	Lil-Pz III		-0.43	0.59	-0.43
474	Punjab	LUDHIANA	Lodhiwal-Pz	1.08		1.13	0.23

475	Punjab	LUDHIANA	Lohara-Pz	1.62		1.52	1.88
476	Punjab	LUDHIANA	Machhiwara-Pz			-0.59	-0.91
477	Punjab	LUDHIANA	Manak Majra-Pz	1.21		1.38	1.20
478	Punjab	LUDHIANA	Mangat-Pz	1.15		3.57	0.39
479	Punjab	LUDHIANA	Manoke-Pz	3.52			
480	Punjab	LUDHIANA	Mansuran-MGOW			6.68	5.04
481	Punjab	LUDHIANA	Mehduda			1.25	1.09
482	Punjab	LUDHIANA	Mehma Singh Wala-Pz	1.89		1.22	1.75
483	Punjab	LUDHIANA	Mushkabad		0.39	-0.23	0.56
484	Punjab	LUDHIANA	Nurpur-Pz	2.39		2.20	3.17
485	Punjab	LUDHIANA	P.A.U.Ludhiana 2(s)	0.41	5.07	6.96	6.83
486	Punjab	LUDHIANA	Pabbian-Pz	1.57		2.00	2.23
487	Punjab	LUDHIANA	Pandori-Pz	1.43		1.78	1.93
488	Punjab	LUDHIANA	Payal-Pz	1.41		1.61	1.78
489	Punjab	LUDHIANA	Punjeta			1.79	
490	Punjab	LUDHIANA	Ragba-Pz	1.49		2.01	2.25
491	Punjab	LUDHIANA	Raikot-Pz	2.88		2.17	3.77
492	Punjab	LUDHIANA	Rajona Khurd	3.65		5.57	3.46
493	Punjab	LUDHIANA	Rashiana-Pz	1.62		1.70	1.58
494	Punjab	LUDHIANA	Rashin			4.97	4.86
495	Punjab	LUDHIANA	Rasulpur			3.45	3.13
496	Punjab	LUDHIANA	Rattewal-Pz	2.40		2.76	2.32
497	Punjab	LUDHIANA	Roomi-Pz	3.48		2.63	2.73
498	Punjab	LUDHIANA	Sajaywal-Pz	2.63		1.73	2.73
499	Punjab	LUDHIANA	Samrala 2(s)	2.05	2.43	1.44	1.16
500	Punjab	LUDHIANA	Sanewal-Pz	1.19		1.03	1.07
501	Punjab	LUDHIANA	Sangatpura-Pz	-0.11		-1.12	-0.99
502	Punjab	LUDHIANA	Sherian	-0.20	-0.51	-0.16	0.01
503	Punjab	LUDHIANA	Sherpur-Pz	1.32		0.36	0.57
504	Punjab	LUDHIANA	Sidhwan Bet-Pz	0.64	1.51	1.31	1.36

505	Punjab	LUDHIANA	Talwandi Kalan-Pz	1.67		2.02	2.07
506	Punjab	LUDHIANA	Tandari Kallon			4.20	3.99
507	Punjab	LUDHIANA	Udonwal-Pz	1.05		0.18	0.17
508	Punjab	LUDHIANA	Upplan	0.16		-0.14	-0.44
509	Punjab	LUDHIANA	Utlan	-0.74	-0.82	-0.83	
510	Punjab	MANSA	Aklia-Pz	1.10		1.29	1.42
511	Punjab	MANSA	Alampur Mandran-Pz	0.85		0.16	0.90
512	Punjab	MANSA	Alisher Khurd-Pz	0.95		0.66	1.51
513	Punjab	MANSA	Bahadur Pur-Pz	1.28		1.30	1.25
514	Punjab	MANSA	Bareh-Pz	0.22		-0.13	0.17
515	Punjab	MANSA	Behniwala-Pz	-0.13		0.31	0.42
516	Punjab	MANSA	Bhamme Kalan-Pz	0.55		-0.83	-0.02
517	Punjab	MANSA	Bhikhi 1 (s)		2.23	2.78	2.56
518	Punjab	MANSA	Budhlada	1.26		4.15	4.18
519	Punjab	MANSA	Budhlada-Pz	2.38		2.54	
520	Punjab	MANSA	Burj Bhalaike		-3.40	-2.54	-1.02
521	Punjab	MANSA	Burj Rathi-Pz	0.67		0.65	0.95
522	Punjab	MANSA	Fattamaluka	1.32	-0.16	0.07	-0.37
523	Punjab	MANSA	Gehlan-Pz	1.25			
524	Punjab	MANSA	Gharangne-Pz	0.22		-0.02	1.06
525	Punjab	MANSA	Hero Kalan-Pz	1.61		2.40	3.32
526	Punjab	MANSA	Hirke-Pz	1.50		1.53	0.62
527	Punjab	MANSA	Khiala Kalan-Pz	0.66		0.86	7.92
528	Punjab	MANSA	Khokhar Kalan-Pz	0.33		-0.68	1.03
529	Punjab	MANSA	Kot Dhamru	1.36	0.83	0.63	0.49
530	Punjab	MANSA	Kotra	3.91	4.68	5.05	0.63
531	Punjab	MANSA	Kusla-Pz	0.92		-0.25	4.32
532	Punjab	MANSA	Lakhiwal-Pz	0.79		0.66	-0.60
533	Punjab	MANSA	Makha-[PZ	0.04		0.10	1.03
534	Punjab	MANSA	Mansa	0.72			-0.04

535	Punjab	MANSA	Phaphare Bhaike-Pz	0.58		0.44	0.92
536	Punjab	MANSA	Raipur-Pz	1.03	0.10	0.21	1.47
537	Punjab	MANSA	Ralla	3.33	6.76	4.14	0.18
538	Punjab	MANSA	Sangha-Pz	1.88			4.25
539	Punjab	MANSA	Tibbi Hari Singh-PZ	-0.01		0.41	0.28
540	Punjab	MOGA	Baje Ke-Pz	0.32	0.38	0.15	-0.06
541	Punjab	MOGA	Baraghari-Pz	1.15		0.37	0.44
542	Punjab	MOGA	Bilaspur-PZ	0.60		2.94	0.62
543	Punjab	MOGA	Budh Singh Wala-Pz	4.49	2.90	0.10	3.26
544	Punjab	MOGA	Chand Nawan-PZ	0.80		2.09	0.44
545	Punjab	MOGA	Chogawan-Pz	3.13	3.39	2.13	1.88
546	Punjab	MOGA	Dagru- Pz	3.96	2.51	4.86	2.74
547	Punjab	MOGA	Damru Khurd	5.37	5.45		
548	Punjab	MOGA	Darapur				2.25
549	Punjab	MOGA	Darapur 07pz	0.98			4.60
550	Punjab	MOGA	Daulatpur Niwan-Pz	2.28		1.93	2.42
551	Punjab	MOGA	Dhudi Ke-PZ	0.80		-0.10	0.17
552	Punjab	MOGA	Dinna-PZ	0.80		0.60	0.81
553	Punjab	MOGA	Ghoha Khurd-Pz				1.09
554	Punjab	MOGA	Himatpura-Pz			2.77	3.82
555	Punjab	MOGA	Indergarh-Pz	1.46		0.04	-0.20
556	Punjab	MOGA	Jhandewala-Pz	2.59		1.81	2.31
557	Punjab	MOGA	Kamalke-Pz	0.28		0.24	0.14
558	Punjab	MOGA	Khokri Kalan-Pz	2.93		1.63	2.82
559	Punjab	MOGA	Khosa Randhir-Pz	0.22		-0.32	-0.55
560	Punjab	MOGA	Mandar-Pz	0.06		0.30	0.40
561	Punjab	MOGA	Mangewala-Pz	1.94		1.60	2.12
562	Punjab	MOGA	Mari Mustfa-PZ				1.40
563	Punjab	MOGA	Meemana-PZ	0.55		0.15	0.57
564	Punjab	MOGA	Mehron-PZ	0.36		-0.10	0.46

565	Punjab	MOGA	Nathu Wala-Pz	0.57		-0.27	0.38
566	Punjab	MOGA	Nihalsinghwala-Pz	2.97	1.55	3.55	3.40
567	Punjab	MOGA	Raonke Kalan-Pz	3.27		2.38	3.32
568	Punjab	MOGA	Samad Bhai-Pz	1.09		8.88	1.19
569	Punjab	MOGA	Samalsar-Pz	2.12		2.69	3.23
570	Punjab	MOGA	Thathe Bhai-Pz	1.25		0.66	1.28
571	Punjab	MOGA	Tota Singh Wala-Pz	0.23		0.26	0.30
572	Punjab	MUKTSAR	Abulkharana-Pz	0.62		0.47	0.59
573	Punjab	MUKTSAR	Alam Wala	0.48			0.19
574	Punjab	MUKTSAR	Balocha Khera(rasoolpur)	0.49	0.55	0.43	0.14
575	Punjab	MUKTSAR	Bhaliana	1.36	1.55	2.14	1.70
576	Punjab	MUKTSAR	Bhiti Wala-Pz	0.73		0.95	1.13
577	Punjab	MUKTSAR	Chaktam Kot-Pz	0.24		-0.22	0.16
578	Punjab	MUKTSAR	Dhalkot-Pz	-0.44		-0.38	-0.52
579	Punjab	MUKTSAR	Doda	-0.13	-1.14	0.16	0.46
580	Punjab	MUKTSAR	Doda-Pz	0.28	-0.10	0.43	
581	Punjab	MUKTSAR	Husnar-Pz	-0.10		-0.34	-0.19
582	Punjab	MUKTSAR	Jhurar-Pz	0.54			0.10
583	Punjab	MUKTSAR	Kabar Wala	1.90	0.55	0.23	-0.02
584	Punjab	MUKTSAR	Kattianwali-Pz	0.18		0.38	0.45
585	Punjab	MUKTSAR	Khirkian Wala-Pz	0.12		-0.52	-0.26
586	Punjab	MUKTSAR	Khunde Halal-Pz	0.16	-1.56	-0.42	-0.47
587	Punjab	MUKTSAR	Killian Wali-Pz	-0.65			0.58
588	Punjab	MUKTSAR	Kot Bhai- DW	0.43			-2.64
589	Punjab	MUKTSAR	Kuttianwali	1.02			
590	Punjab	MUKTSAR	Labanianwali	0.42	-0.34	-0.23	0.99
591	Punjab	MUKTSAR	Lambi	-0.19		0.77	0.54
592	Punjab	MUKTSAR	Lambi-Pz	0.40	-0.57	-0.06	
593	Punjab	MUKTSAR	Muktsar	0.56	0.98	0.82	-1.50
594	Punjab	MUKTSAR	Phulu Khera-Pz	0.54		0.55	0.64

595	Punjab	MUKTSAR	Ratta Khera Chota-Pz	0.05		0.01	-0.21
596	Punjab	MUKTSAR	Sheikh-Pz	0.26		0.46	0.36
597	Punjab	MUKTSAR	Sohiwal-Pz	0.47			0.64
598	Punjab	MUKTSAR	Kollian Wali-pz			0.67	
599	Punjab	MUKTSAR	Gidderbaha			-0.04	
600	Punjab	PATHANKOT	Bamyal	-1.11	-0.82	-0.63	-0.22
601	Punjab	PATHANKOT	Bhoa	-0.11	-0.23	-0.18	0.02
602	Punjab	PATHANKOT	Dhar Khurd	1.80			-0.02
603	Punjab	PATHANKOT	Gharotakalan	0.32	-1.43	0.25	
604	Punjab	PATHANKOT	Ghoh		-5.05	-4.43	
605	Punjab	PATHANKOT	Ghoh DW	-2.53			-1.28
606	Punjab	PATHANKOT	Jainpur-PZ	-0.20		-0.30	-0.25
607	Punjab	PATHANKOT	Jandwala	3.90		-2.40	-1.37
608	Punjab	PATHANKOT	Jhakolahri		1.65		
609	Punjab	PATHANKOT	Khanikhui	0.60	-0.11	-0.07	
610	Punjab	PATHANKOT	Khogaki Chaka-PZ	0.20		-1.40	-0.90
611	Punjab	PATHANKOT	Kiari- DW	2.12	4.10	0.06	-1.26
612	Punjab	PATHANKOT	Kirian Khurd-PZ	1.30		-1.45	-1.20
613	Punjab	PATHANKOT	Kui-DW	0.37	2.00	-0.79	
614	Punjab	PATHANKOT	Kuther-PZ	-0.60		-1.75	-2.45
615	Punjab	PATHANKOT	Malikpur	0.00			0.15
616	Punjab	PATHANKOT	Matti-PZ	0.80		-11.50	-8.25
617	Punjab	PATHANKOT	Mirthal	1.75		0.12	0.28
618	Punjab	PATHANKOT	Mirthal-DW	-0.90			0.05
619	Punjab	PATHANKOT	Muthi	0.50			0.55
620	Punjab	PATHANKOT	Narot Jaimalsingh-Pz	0.98		0.43	0.70
621	Punjab	PATHANKOT	Nawan Pind	-0.52	0.14	0.44	-0.09
622	Punjab	PATHANKOT	Parmota-DW	0.80	9.68	-0.44	-2.68
623	Punjab	PATHANKOT	Pathankot1	-0.25	-1.07	-1.11	0.18
624	Punjab	PATHANKOT	Philora-PZ	-0.90		-2.25	-1.50

625	Punjab	PATHANKOT	Phulpiara	0.55		-0.10	0.30
626	Punjab	PATHANKOT	Rakawal-PZ	0.90		-1.70	0.30
627	Punjab	PATHANKOT	Rani Pur-PZ	1.10		-0.20	-0.90
628	Punjab	PATHANKOT	Sujanpur-PZ	0.30		-1.35	-0.85
629	Punjab	PATHANKOT	Sarna1		-0.89		-1.13
630	Punjab	PATIALA	Bassma Pipla	4.62	4.36		1.31
631	Punjab	PATIALA	Bhankhar-Pz	2.00		2.00	1.08
632	Punjab	PATIALA	Bhojo majri 07pz	2.32	5.24	6.47	5.29
633	Punjab	PATIALA	Bhora-Pz			4.40	
634	Punjab	PATIALA	Bhunerheri-Pz			6.23	
635	Punjab	PATIALA	Birkauli	4.01	4.75	6.86	5.03
636	Punjab	PATIALA	Challeta-PZ	1.65		1.25	6.98
637	Punjab	PATIALA	Devigarh 1Pz	6.95	9.90	5.54	1.25
638	Punjab	PATIALA	Devigarh IIPz	6.20		5.49	7.45
639	Punjab	PATIALA	Devigarh-III Pz	6.26		5.81	7.11
640	Punjab	PATIALA	Dhakdaba 07	6.75	9.41		7.51
641	Punjab	PATIALA	Dhaneta-PZ	0.50		1.50	2.75
642	Punjab	PATIALA	Gharam-PZ	0.50		1.55	1.80
643	Punjab	PATIALA	Gulwatti-PZ	1.45		1.20	2.80
644	Punjab	PATIALA	Haluka	2.07	2.45	2.79	
645	Punjab	PATIALA	Handesaran-s	2.96	0.79	1.18	
646	Punjab	PATIALA	Hari Majra	-1.91	-0.48		
647	Punjab	PATIALA	Harion Kalan-Pz	5.08		6.59	-11.83
648	Punjab	PATIALA	Jainagar-PZ	1.50		0.90	-0.30
649	Punjab	PATIALA	Kakrala-Pz	4.91		6.81	6.66
650	Punjab	PATIALA	Kalyan 07pz	4.45	3.76	5.00	5.37
651	Punjab	PATIALA	Kami Kalan	-1.96	-0.57	-0.60	-0.89
652	Punjab	PATIALA	Kami Khurd-PZ			1.20	2.95
653	Punjab	PATIALA	Kheri Pandte-PZ	1.30		0.75	0.70
654	Punjab	PATIALA	Kulburcha-Pz	4.49		6.18	6.52

655	Punjab	PATIALA	Kutha Kheri-Pz	5.22		4.47	3.63
656	Punjab	PATIALA	Lacharu Kalan	0.35	-0.56	-0.00	0.08
657	Punjab	PATIALA	Lachkani-Pz	3.19	4.51	3.49	3.37
658	Punjab	PATIALA	Mehmood Pur-PZ	1.90		1.40	0.60
659	Punjab	PATIALA	Mongowal-PZ	0.35		1.25	1.70
660	Punjab	PATIALA	Nanhera-Pz	1.93		9.67	3.41
661	Punjab	PATIALA	Passiana-PZ	0.40		0.05	0.60
662	Punjab	PATIALA	Patran-Pz	3.49	4.11	4.41	4.98
663	Punjab	PATIALA	Rajpura-PzSt	0.71	4.44		4.28
664	Punjab	PATIALA	Rakhra-Pz			6.69	6.37
665	Punjab	PATIALA	Randhwara-Pz			11.05	10.90
666	Punjab	PATIALA	Rasoolpur Jaura-PZ	1.20		1.30	0.60
667	Punjab	PATIALA	Samana-Pz	4.34	4.43	4.32	9.93
668	Punjab	PATIALA	Samaspur-Pz	1.27		2.87	2.35
669	Punjab	PATIALA	Sangatpura-Pz	4.05	4.16	1.85	
670	Punjab	PATIALA	Sauja-PZ	0.55		2.20	2.15
671	Punjab	PATIALA	Surala Kalan-PZ	0.65		0.35	0.25
672	Punjab	PATIALA	Thua	4.41	3.18	10.26	3.74
673	Punjab	RUPNAGAR	Ahmedpur	3.30	-0.09	1.90	
674	Punjab	RUPNAGAR	Amrali-PZ	0.70		0.75	1.51
675	Punjab	RUPNAGAR	Attari-PZ	0.90		-0.20	-0.90
676	Punjab	RUPNAGAR	Badali-Pz				-8.23
677	Punjab	RUPNAGAR	Bains	1.90		3.08	2.63
678	Punjab	RUPNAGAR	Bera Chauta	0.07	-0.32	-1.17	-0.12
679	Punjab	RUPNAGAR	Bhalan	2.08	1.22		1.80
680	Punjab	RUPNAGAR	Bhatto-PZ	0.85		-0.20	-0.65
681	Punjab	RUPNAGAR	Braham Pur	0.65	0.53	0.12	0.60
682	Punjab	RUPNAGAR	Chakdera	0.61	0.27	-0.16	0.38
683	Punjab	RUPNAGAR	Chatamli- Pz	6.02	6.47		6.72
684	Punjab	RUPNAGAR	Dhair	0.18	0.72	1.53	1.43

685	Punjab	RUPNAGAR	Dumewal	2.57	3.26	3.23	3.13
686	Punjab	RUPNAGAR	Hardinamoh	0.29	-0.29	0.11	0.14
687	Punjab	RUPNAGAR	Klwan-PZ			0.50	0.85
688	Punjab	RUPNAGAR	Kotla	0.17		0.10	-0.06
689	Punjab	RUPNAGAR	Morinda-PZ	0.60		0.63	0.85
690	Punjab	RUPNAGAR	Rajgiri-PZ	2.50		2.70	2.00
691	Punjab	RUPNAGAR	Rurki Heeran-Pz	1.10	1.19	1.71	1.21
692	Punjab	RUPNAGAR	Salempur				2.53
693	Punjab	RUPNAGAR	Singh Bhagwant Pur				4.83
694	Punjab	RUPNAGAR	Rampur-PZ				0.40
695	Punjab	RUPNAGAR	Kakrali				-0.09
696	Punjab	SANGRUR	Bagarian-Pz	4.76	3.08	2.23	2.84
697	Punjab	SANGRUR	Bakshiwala-PZ	1.35		1.65	2.45
698	Punjab	SANGRUR	Balang-PZ	1.75			
699	Punjab	SANGRUR	Banbhaura-PZ	-0.65			1.25
700	Punjab	SANGRUR	Bapla-Pz	7.68			
701	Punjab	SANGRUR	Bhogiwal- Pz				6.99
702	Punjab	SANGRUR	Bhojowali-Pz	4.01	4.62	4.64	5.12
703	Punjab	SANGRUR	Bhunerheri-PZ	1.50		4.10	4.30
704	Punjab	SANGRUR	Bopla-PZ				3.10
705	Punjab	SANGRUR	Bugra 1	6.37	5.68	6.70	7.31
706	Punjab	SANGRUR	Chatha Nanhera-PZ	0.35		0.85	2.05
707	Punjab	SANGRUR	Chural Kalan M	6.88	8.47	7.49	7.57
708	Punjab	SANGRUR	Dharamgarh-Pz	5.74		5.47	7.29
709	Punjab	SANGRUR	Ghaghlo-PZ	1.45			
710	Punjab	SANGRUR	Ghanauri Kalan-Pz	3.35	0.77	2.11	2.91
711	Punjab	SANGRUR	Haryao-DW	9.51			
712	Punjab	SANGRUR	Hassanpur-Pz	5.73		7.20	6.14
713	Punjab	SANGRUR	Isra-Pz	5.44			
714	Punjab	SANGRUR	Kala Jhar-Pz	5.21		6.38	7.85

715	Punjab	SANGRUR	Khanpur Fakiran-PZ	2.90		1.80	1.80
716	Punjab	SANGRUR	Kheri Naran-PZ	1.25		2.55	3.35
717	Punjab	SANGRUR	Khurni-PZ	2.80		2.60	3.15
718	Punjab	SANGRUR	Kila Hakima	0.70		1.90	1.60
719	Punjab	SANGRUR	Kokahar-PZ	0.70		1.60	2.35
720	Punjab	SANGRUR	Kuler Khurd-Pz	4.85		4.39	4.74
721	Punjab	SANGRUR	Ladda-Pz		5.22	3.76	5.45
722	Punjab	SANGRUR	Lehal Kalan-Pz	6.38		6.89	7.51
723	Punjab	SANGRUR	Lehal Kalan-Pz				
724	Punjab	SANGRUR	Longowal-Pz	3.64	4.04	3.02	4.23
725	Punjab	SANGRUR	Malerkotla-DW	6.65	7.41	7.87	
726	Punjab	SANGRUR	Manvi-Pz	2.27	2.74	2.48	4.50
727	Punjab	SANGRUR	Mehsampur-Pz	3.97		4.05	3.51
728	Punjab	SANGRUR	Minsa-Pz				8.97
729	Punjab	SANGRUR	Panjaraian- Pz	5.35		7.12	5.84
730	Punjab	SANGRUR	Patiala Kalan-PZ	0.50			
731	Punjab	SANGRUR	Rajo Majra-PZ	1.35		4.80	1.60
732	Punjab	SANGRUR	Rampur Channa-Pz	4.59		6.65	4.39
733	Punjab	SANGRUR	Rurgarh-PZ	1.78		2.15	1.80
734	Punjab	SANGRUR	Rurki Kalan-Pz	4.40		5.38	4.43
735	Punjab	SANGRUR	Sekhpur Khurd-PZ	0.60		1.50	1.05
736	Punjab	SANGRUR	Sekhwas-PZ	2.40		2.40	2.85
737	Punjab	SANGRUR	Sikandarpur-PZ	1.10		1.40	1.15
738	Punjab	SANGRUR	Sunam-Pz	2.97	4.44	4.26	4.57
739	Punjab	SAS NAGAR	Antala	-0.04	-0.48	-0.27	-0.54
740	Punjab	SAS NAGAR	Ballopur	-0.05			
741	Punjab	SAS NAGAR	Balongi-PZ	1.50		-0.60	-1.55
742	Punjab	SAS NAGAR	Barauli-PZ	-5.60		-1.40	
743	Punjab	SAS NAGAR	Chandiala-Pz	0.78		1.05	1.84
744	Punjab	SAS NAGAR	Dera Bassi 07pz	-0.12	-0.63	-0.30	0.49

745	Punjab	SAS NAGAR	Dheri	0.17	0.80	0.22	0.26
746	Punjab	SAS NAGAR	Gharoon	-0.43		-0.90	-2.00
747	Punjab	SAS NAGAR	Ghoga		-1.00	-0.91	-0.71
748	Punjab	SAS NAGAR	Joli	-0.34	-0.04	-0.59	2.13
749	Punjab	SAS NAGAR	Kurrrha-Pz	3.01		1.63	1.60
750	Punjab	SAS NAGAR	Landran		-0.08	-0.11	
751	Punjab	SAS NAGAR	Landran-Pz	1.02	0.92	0.23	
752	Punjab	SAS NAGAR	Malkpur-Pz	2.03		0.55	-1.13
753	Punjab	SAS NAGAR	Manoli-PZ	0.30		0.25	0.15
754	Punjab	SAS NAGAR	Palheri-PZ	1.91		0.25	-1.30
755	Punjab	SAS NAGAR	Pedol-PZ	-1.70		-1.60	1.25
756	Punjab	SAS NAGAR	Raipur Kalan	1.36		0.79	1.19
757	Punjab	SAS NAGAR	Rurkan-PZ				-0.65
758	Punjab	SAS NAGAR	Singhpura-Pz	8.22		6.49	7.28
759	Punjab	SAS NAGAR	Sirsini	0.22	0.21	0.12	
760	Punjab	SAS NAGAR	Sohana-PZ				1.85
761	Punjab	SAS NAGAR	Sundran-Pz			-2.58	-2.58
762	Punjab	SBS NAGAR	Alowal-Pz	0.47		0.17	0.13
763	Punjab	SBS NAGAR	Aur-PZ	1.00		0.90	1.50
764	Punjab	SBS NAGAR	Badhwan-Pz	1.00		1.35	2.25
765	Punjab	SBS NAGAR	Baharam-Pz	2.49		5.41	4.70
766	Punjab	SBS NAGAR	Bahara-Pz	1.87		0.73	1.45
767	Punjab	SBS NAGAR	Bahlora Kallan- Pz		0.80	0.14	0.38
768	Punjab	SBS NAGAR	Bahua-Pz	1.87		2.98	2.83
769	Punjab	SBS NAGAR	Balachore	0.87		-2.80	-2.98
770	Punjab	SBS NAGAR	Balaipur-PZ	2.00		2.00	2.60
771	Punjab	SBS NAGAR	Bhadi-PZ	0.60		0.30	
772	Punjab	SBS NAGAR	Dhan Wala-PZ	1.80		1.30	
773	Punjab	SBS NAGAR	Dugri Garol-PZ	1.40		-0.60	
774	Punjab	SBS NAGAR	Hakimpur-Pz	1.02		1.57	1.85

775	Punjab	SBS NAGAR	Jethu Majra-PZ	0.80		0.85	1.40
776	Punjab	SBS NAGAR	Kariam-Pz	0.52		1.00	1.06
777	Punjab	SBS NAGAR	Langoya-PZ	0.80		1.50	2.00
778	Punjab	SBS NAGAR	Mahalpur-PZ	1.45		-0.70	
779	Punjab	SBS NAGAR	Mauhra-Pz	2.72	2.62	3.00	3.32
780	Punjab	SBS NAGAR	Padmaiwal-PZ	2.60		1.80	2.20
781	Punjab	SBS NAGAR	Rahon	-0.01			1.84
782	Punjab	SBS NAGAR	Raipur Dhaba-Pz	3.22	1.21	3.63	3.18
783	Punjab	SBS NAGAR	Torewal-PZ	4.95			
784	Punjab	SBS NAGAR	Ramgarh-Pz			5.60	3.93
785	Punjab	SBS NAGAR	Saroya-Pz			1.00	0.50
786	Punjab	TARAN TARAN	Aima Khurd-Pz	2.15		2.97	1.30
787	Punjab	TARAN TARAN	Attari-Pz	1.33		-2.03	-2.54
788	Punjab	TARAN TARAN	Bakipur-Pz	2.05		1.72	0.25
789	Punjab	TARAN TARAN	Bath-PZ				0.80
790	Punjab	TARAN TARAN	Bhagala-Pz	4.85		5.60	
791	Punjab	TARAN TARAN	Bhagwanpur-Pz	3.66		3.41	
792	Punjab	TARAN TARAN	Bhalaipur-Pz	1.57		1.35	0.68
793	Punjab	TARAN TARAN	Bhankar Kalan-Pz	3.09		2.12	2.36
794	Punjab	TARAN TARAN	Bhikiwind- Pz	0.94	1.73	2.06	
795	Punjab	TARAN TARAN	Bhura-Pz	3.42			
796	Punjab	TARAN TARAN	Bhure-Pz	2.66		3.05	4.44
797	Punjab	TARAN TARAN	Bhusse-Pz	2.87		0.97	1.11
798	Punjab	TARAN TARAN	Brahmpur-Pz	2.49			0.93
799	Punjab	TARAN TARAN	Chakkare Khan-Pz	1.37		1.90	1.58
800	Punjab	TARAN TARAN	Chola Sahib-Pz	1.14	2.26	1.95	
801	Punjab	TARAN TARAN	Choudhary Wala-Pz	3.28			
802	Punjab	TARAN TARAN	Chuselawad-Pz	5.00		3.02	
803	Punjab	TARAN TARAN	Dholan-Pz	3.43		2.73	
804	Punjab	TARAN TARAN	Ekalgoda-Pz	2.66		1.50	0.73

805	Punjab	TARAN TARAN	Fatehabad- PZ	0.70		-0.60	1.50
806	Punjab	TARAN TARAN	Gandi Wind-Pz	1.37	1.74	2.34	
807	Punjab	TARAN TARAN	Goindwal 07	0.41	-0.46	1.30	
808	Punjab	TARAN TARAN	Jalalabad-PZ				3.90
809	Punjab	TARAN TARAN	Jandoke-Pz	4.16		3.10	2.71
810	Punjab	TARAN TARAN	Kairon-PZ	1.80		0.40	
811	Punjab	TARAN TARAN	Kalsia Kalan07	1.73	0.80	2.50	
812	Punjab	TARAN TARAN	Khadur Sahib-Pz	0.98	1.19	1.68	
813	Punjab	TARAN TARAN	Khalra-Pz	1.70		0.46	
814	Punjab	TARAN TARAN	Kotbudda-Pz	0.70		0.92	
815	Punjab	TARAN TARAN	Kotli Sur Singh-Pz	3.62		2.09	
816	Punjab	TARAN TARAN	Mahendipur-Pz	5.37		3.00	
817	Punjab	TARAN TARAN	Marhona-Pz	2.70		2.45	-0.79
818	Punjab	TARAN TARAN	Mari Kamboke-Pz			2.41	
819	Punjab	TARAN TARAN	Mohawa	0.43	0.84	1.40	
820	Punjab	TARAN TARAN	Pindan-Pz	0.72		0.83	0.51
821	Punjab	TARAN TARAN	Rajoke-Pz	2.09		0.65	
822	Punjab	TARAN TARAN	Ratoke-Pz	2.09	0.99	3.64	
823	Punjab	TARAN TARAN	Sabran-Pz	4.57		5.53	
824	Punjab	TARAN TARAN	Sahab Pura- Pz	1.75	1.26	2.26	
825	Punjab	TARAN TARAN	Sheron-Pz	2.87		3.00	3.31
826	Punjab	TARAN TARAN	Sugga-Pz	2.98		2.87	
827	Punjab	TARAN TARAN	Thatha- Pz	5.42			

## **4.0 GROUND WATER QUALITY IN PUNJAB**

Evaluation of ground water quality through concentration of its physical, chemical and biological parameters is essential to determine its suitability for the intended use. It helps not only in finding its suitability; it also helps in taking effective remedial measures for its improvement on scientific lines. In most of rural and semi-urban areas of Punjab State, ground water is a major resource for drinking and irrigation uses especially in areas where surface water is inadequate or unavailable. Acknowledging the importance of this aspect of ground water, C.G.W.B., N.W.R., Chandigarh annually monitors the ground water quality through dedicated Ground Water Monitoring Stations consisting of dug wells and/or hand pumps of shallow depth. During May 2017, 286 no. ground water samples were collected from these structures spread uniformly over 21 districts of Punjab in two sets of 1 liter each and one of the sets of samples was acidified '*in situ*' with 1:1 Nitric Acid to bring the pH of the sample to below 2. as acidification or filtration was given at the time of sampling. The water samples were analyzed for major cations (Ca, Mg, Na, K) and anions (CO<sub>3</sub>, HCO<sub>3</sub>, Cl, NO<sub>3</sub>, SO<sub>4</sub>) in addition to pH, EC, F, SiO<sub>2</sub>, PO<sub>4</sub> and TH as CaCO<sub>3</sub> and Heavy Metals analysis such as Cd, Cu, Mn, Pb, Zn in the Regional Chemical Laboratory by following 'Standard analytical procedures' as given in APHA 2017. Results of chemical analysis of water samples are placed in Annexure-I & II

### **4.1 Composition of Water**

Chemical analysis shows that the ground water is slightly to moderately alkaline in nature. The pH values range from 7.01 at Bajakhana in Faridkot district to 9.71 at Fatta Maluka in Mansa district. Salinity of ground water is measured in terms of EC. The ground water is found to have low to very high salt content as the EC of well water ranges from 145 µS/cm at Kotoguru in district Bhatinda to 8806 µS/cm at Sadique in district Faridkot. Hardness reported in terms of CaCO<sub>3</sub> ranges from 11 to 1622 mg/l. The lowest hardness value is found at Kotoguru in district Bhatinda and highest at Dansewal in district Firozepur. The concentration of calcium ranges between BDL and 287mg/l. Calcium below detection level has been found at a few places in the State while the highest value is observed at Doda in district Muktsar. Magnesium concentration ranges between BDL at Kotoguru district Bhatinda and 703mg/l at Parmota in district Pathankot. In majority of ground water samples, calcium concentration is less than 100 mg/l (90%). Calcium is very low in some districts, though it is very essential element for drinking and irrigation purposes. However, magnesium is less than the desirable limit of 30 mg/l in 50% samples and less than the maximum permissible limit of 100 mg/l for drinking waters (BIS 1991) in 92%

samples. In more than half of well waters examined, Ca + Mg are the dominant cations having their concentration almost 50% of the total cation determined.

Sodium is the dominant cation in majority of ground waters of districts Bhathinda, Faridkot, Ferozepur, Mansa, Moga, Muktsar, Patiala, Sangrur, SAS Nagar and Tarantaran. Its concentration varies widely from 2.8 mg/l at Nalini, district Fatehgarh sahib to 2267 mg/l at Sadique in district Pathankot. Sodium concentration is less than 100 mg/l in more than half of well waters under consideration. Potassium is found to be present in low concentration. In majority of the samples analyzed, the potassium content is less than 10 mg/l (65%). It ranges from BDL mg/l at Derabassi, district SAS Nagar to 561 mg/l at Lachkari, district patiala. High concentration of potassium (>100mg/l) is found in 7% samples. Its higher concentration indicates contamination of ground water from various point (industry, sewage) as well as non-point sources (agriculture).

Carbonate is found in a few samples and it varies from 0 to 180mg/l at Kotmir in district Bathinda, . Bicarbonate is the dominant anion and it ranges from 24 mg/l at Kothoguru, district Bhatinda to 2489 mg/l at DeepSinghwala district Faridkot. The chloride concentration in ground water varies between 7.0 mg/l at Kothoguru, district Bhatinda and 1720 mg/l at Abohar in district Firozpur. The Sulphate ( $\text{SO}_4$ ) content in ground waters was found to be BDL at several places in the State. The highest value of 3580 mg/l of sulphate has been observed at Sadique in district Faridkot. In majority of ground water samples (77%), the concentration of sulphate is below 200 mg/l. Nitrate, an indicator of domestic, irrigation and industrial contamination, is found in significant number of samples. Its concentration in groundwater ranges from BDL at a few places to 617 mg/l at Danewal Satkosi, district Firozpur. The fluoride (F) content in ground water of the State is generally less than 1.0 mg/l (82%). It ranges from BDL at few places in the State to 5.63 mg/l at Bhateri, district FatehgarhShahib. Phosphate concentration varies from BDL to 0.29 mg/l while Silica concentration, measured as  $\text{SiO}_2$ , ranged between 2.3 to 35 mg/l.

The district-wise concentration range of various chemical components in ground water is depicted in Table 1.

**Table-1 : Range of Chemical Constituents in Groundwater of Punjab State**

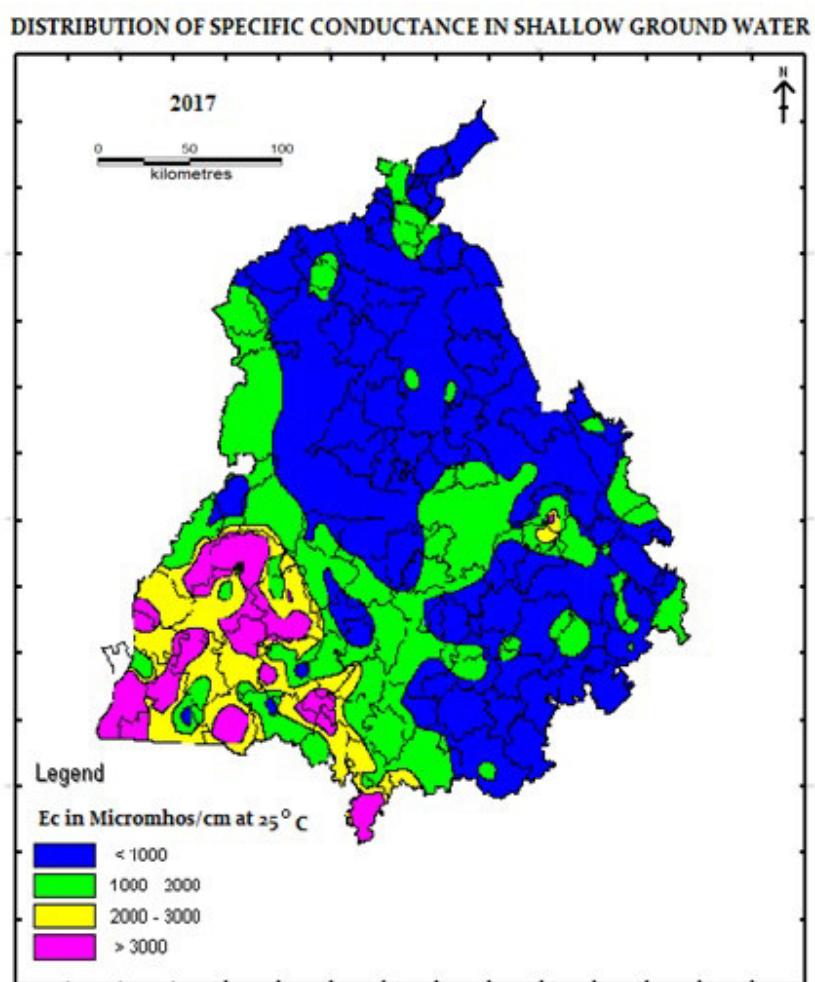
Sr. No	DISTRICT	No. of	Conc	pH	EC in $\mu\text{S}/\text{cm}$ at 25°C	CO <sub>3</sub>	HCO <sub>3</sub>	Cl	SO <sub>4</sub>	NO <sub>3</sub>	F	PO <sub>4</sub>	Ca	Mg	Na	K	SiO <sub>2</sub>	TH as CaCO <sub>3</sub>	SAR	RSC
		Samples	Range			<----- mg/l ----->														
1	AMRITSAR	9	Min	7.76	430	0	232	14	16	1	0.12	0	40	17	15	4	20	22	0.28	-5.64
			Max	8.84	1600	24	635	99	272	45	0.75	0	136	63	189	21	25	560	4.91	3.76
2	BARNALA	3	Min	8.16	1013	0	146	77	24	0.9	0.37	0.04	21	7.7	151	4.2	15	115	4.26	0.88
			Max	8.59	1111	36	512	84	280	25	0.52	0.09	75	45	211	14	26	239	8.53	3.64
3	BHATHINDA	27	Min	7.46	145	0	24	7	5	0.04	0	0	4.2	0	6.2	0.5	2.3	11	0.25	-5.19
			Max	8.84	5192	180	1305	547	930	530	3.45	0.25	116	111	826	560	32	676	24.63	21.66
4	FARIDKOT	20	Min	7.01	509	0	256	14	2	5.6	0.36	0	8.4	23	16	5.1	12	146	0.47	-15.9
			Max	8.30	8806	0	2489	1341	3580	410	4.67	0.21	99	331	2267	307	29	1446	28.41	25.8
5	FATEHGARH SAHIB	11	Min	7.90	251	0	90	7	0	0	0.24	0	21	5	2.8	2	15	72	0.11	-3.22
			Max	8.95	1305	67	522	222	288	55	5.63	0.09	83	43	317	20	26	381	16.15	5.79
6	FIROZEPUR	20	Min	7.34	554	0	268	21	34	0	0.18	0	8.3	5.1	37	3.4	16	52	1.07	-22.2
			Max	8.30	8638	0	891	1495	2170	617	3.42	0.06	233	253	1800	197	30	1622	36.23	9.46
7	GURDASPUR	20	Min	7.63	350	0	159	7	0	0	0.1	0	12	10	9	1	11	100	0.29	-2.23
			Max	8.67	1590	12	635	156	170	56	0.65	0	88	78	150	200	27	540	4.04	4.18
8	HOSHIARPUR	23	Min	7.60	195	0	61	7	0	0	0	0	16	7	8.3	0.2	11	80	0.24	-2.82
			Max	8.42	1150	6	427	71	72	138	0.7	0.02	64	63	112	68	35	370	3.64	3.22
9	JALANDHAR	16	Min	7.54	420	0	146	14	19	0	0	0	12	22	8.6	3.5	12	130	0.26	-3.64

				Max	8.27	1640	0	879	199	135	85	0.93	0	88	80	206	16	28	400	6.94	6.43
10	KAPURTHALA	7	Min	7.83	465	0	232	21	13	0.1	0	0	8	7	42	2.2	11	50	1.44	-0.38	
			Max	8.41	930	6	378	64	46	74	0.21	0	40	48	105	11	28	260	6.28	3.4	
11	LUDHIANA	18	Min	7.74	575	0	193	14	8	0.13	0.26	0	21	2	12	1	15	72	0.29	-11.1	
			Max	8.54	3635	89	806	354	1022	130	5.34	0.08	194	103	500	77	25	907	14.52	11.06	
12	MANSA	11	Min	7.69	495	0	207	21	62	2.9	0.34	0	4.2	2.4	54	2.8	15	31	1.3	-12.1	
			Max	9.71	4898	132	720	681	1256	208	3.83	0.29	150	136	771	144	34	936	18.81	9.9	
13	MOGA	7	Min	7.96	336	0	134	7	12	0	0.092	0	8.3	7.5	8.8	4.5	15	52	0.32	-0.7	
			Max	8.53	1346	36	695	84	160	42	0.87	0.04	87	28	225	12	26	333	13.33	5.16	
14	MUKTSAR	9	Min	7.11	1497	0	451	84	198	25	0.35	0	21	7.7	163	8	18	125	2.44	-22.2	
			Max	8.26	7060	0	1037	1221	1068	465	5.16	0.07	287	230	1019	496	31	1498	32.58	14.51	
15	NAWANSHAHR	6	Min	7.57	540	0	281	14	0	0	0	0	28	12	20	5.2	15	220	0.55	0.02	
			Max	8.04	1290	0	439	78	117	82	0.62	0	100	54	114	67	28	310	3.35	2.6	
16	PATHANKOT	12	Min	7.20	200	0	73	21	0	2	0.01	0	20	0	9	1	8	80	0.17	-57.2	
			Max	8.82	1590	12	513	199	64	61	1.16	0	92	703	188	31	27	380	4.19	0.8	
17	PATIALA	17	Min	7.50	464	0	204	7	0	0.14	0.06	0.05	33	13	5	0.5	12	144	0.13	-1.42	
			Max	9.03	1949	112	544	125	178	70	1.04	0.12	144	43	175	561	26	453	5.32	9.77	
18	ROPAR	11	Min	7.33	503	0	256	21	0	0	0.08	0.12	48	7	9	0.4	16	170	0.25	-0.94	
			Max	8.31	1583	38	602	135	78	100	0.7	0.12	180	61	143	20	22	540	2.68	2.91	
19	SANGRUR	14	Min	7.60	472	0	250	10	0	6.71	0	0.03	12	18	10	4.3	17	155	0.23	-2.86	
			Max	8.04	1511	0	602	129	418	52	3.55	0.09	124	50	205	155	29	429	7.2	6.8	

20	SAS NAGAR	12	Min	7.43	233	0	90	21	0	0	0.06	0.02	8	5	6	0	5	60	0.25	-1.86
			Max	8.55	1603	25	794	149	73	47	1.15	24	136	58	245	9.6	24	480	10.8	6.99
21	TARANTARAN	13	Min	7.31	280	0	98	14	3	0	0.19	0	8	20	7.1	4	13	140	0.26	-1.24
			Max	8.77	1900	24	806	142	229	74	1.51	0	60	107	284	72	28	560	8.85	6.9
	TOTAL	286	Min	7.01	145	0	24	7	0	0	0	0	4	0	2.8	0	2	11	0.11	-57.2
			Max	9.71	8806	180	2489	1495	3580	617	5.63	24	287	703	2267	561	35	1622	36.23	25.8

#### 4.2 Distribution of EC

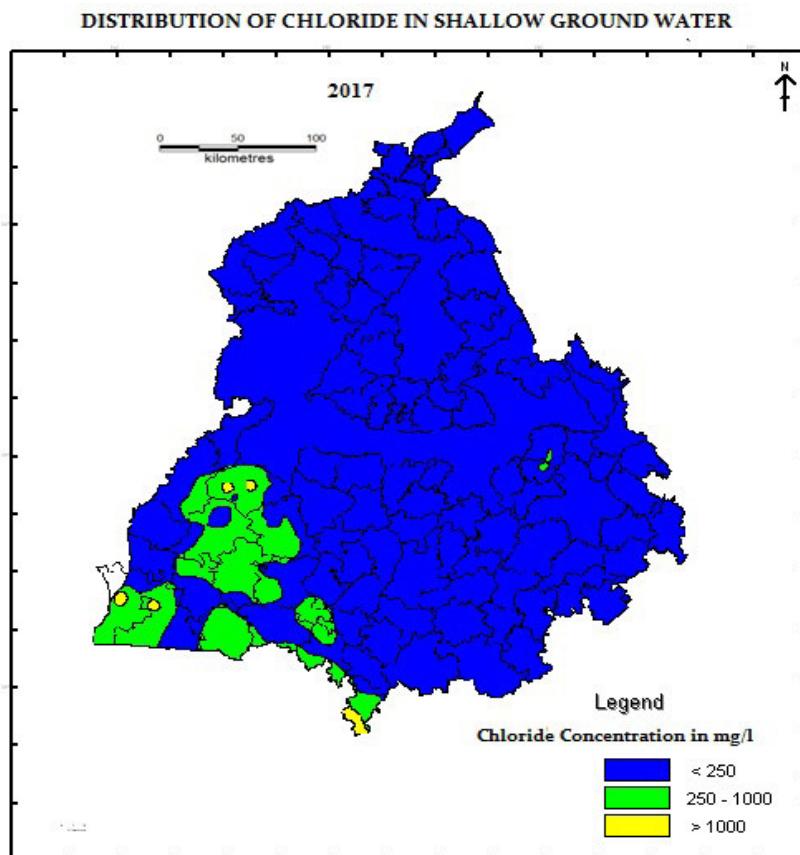
The EC value of ground waters in the State varies from 145 to 8806  $\mu\text{S}/\text{cm}$  at 25°C. Grouping water samples based on EC values, it is found that 36.7 % of them have EC less than 750, 51.9 % have between 750 and 3000 and the remaining 11.3% of the samples have EC above 3000  $\mu\text{S}/\text{cm}$ . The Plate showing aerial distribution of EC with intervals corresponding to limits assigned for desirable, permissible and unsuitable classes of waters indicates that desirable class of waters occur in northern and central area of the State. The ground water occurring in the southern and southwestern parts comprising of Bhatinda, Faridkot, Ferozepur, Ludhiana, Muktsar and Sangrur districts is mostly saline and not suitable for drinking uses (Fig ).



Fig

### **4.3 Distribution of Chloride (Cl)**

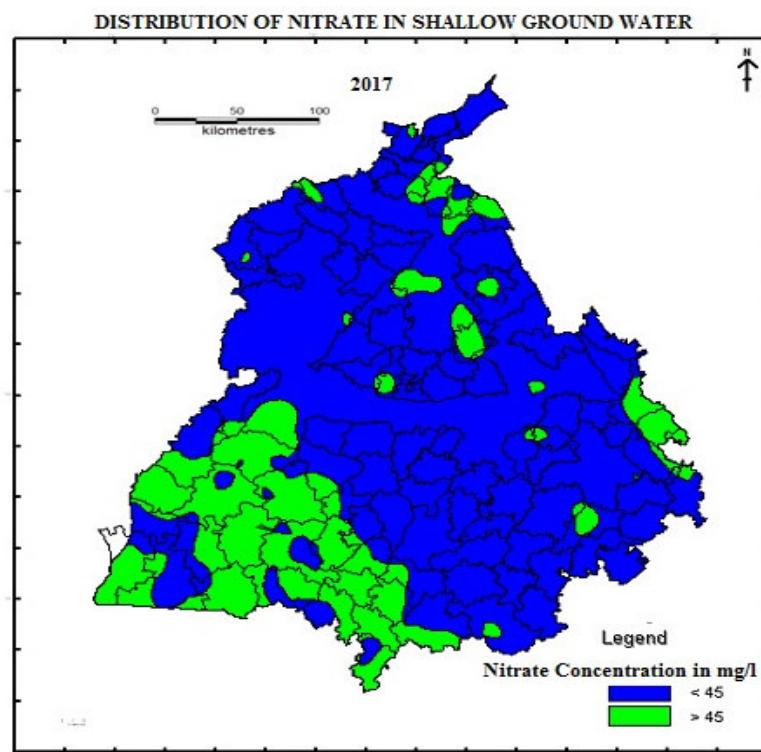
Chloride content of ground water normally follows the distribution pattern of EC and it ranges from 7.0 mg/L to 1495 mg/L in the entire State. Chloride concentration above 400 mg/L gives salty taste to water and based on these aesthetic considerations, BIS has recommended a desirable limit of 250 mg/L for chloride in drinking water. This limit can be extended to 1000 mg/L in case of absence of a source with desirable concentration. Grouping of samples in these categories based on chloride content, it is found that Chloride is less than 250 mg/L in 88.9 % of the samples, between 250 and 1000 mg/L in 9.6% samples and only 1.8 % of the samples are found to have Chloride above 1000 mg/L. Map showing spatial distribution of Cl contents in ground water (Fig 20) indicates that Cl is below 250 mg/L in most of the districts, it is between 250 and 1000 mg/L in Patiala , SAS Nagar and in southern and southwestern districts of the State. Cl is more than 1000 mg/L in isolated places in Faridkot, Ferozepur and Muktsar districts. (Fig ).



Fig

#### **4.4 Distribution of Nitrate ( $\text{NO}_3$ )**

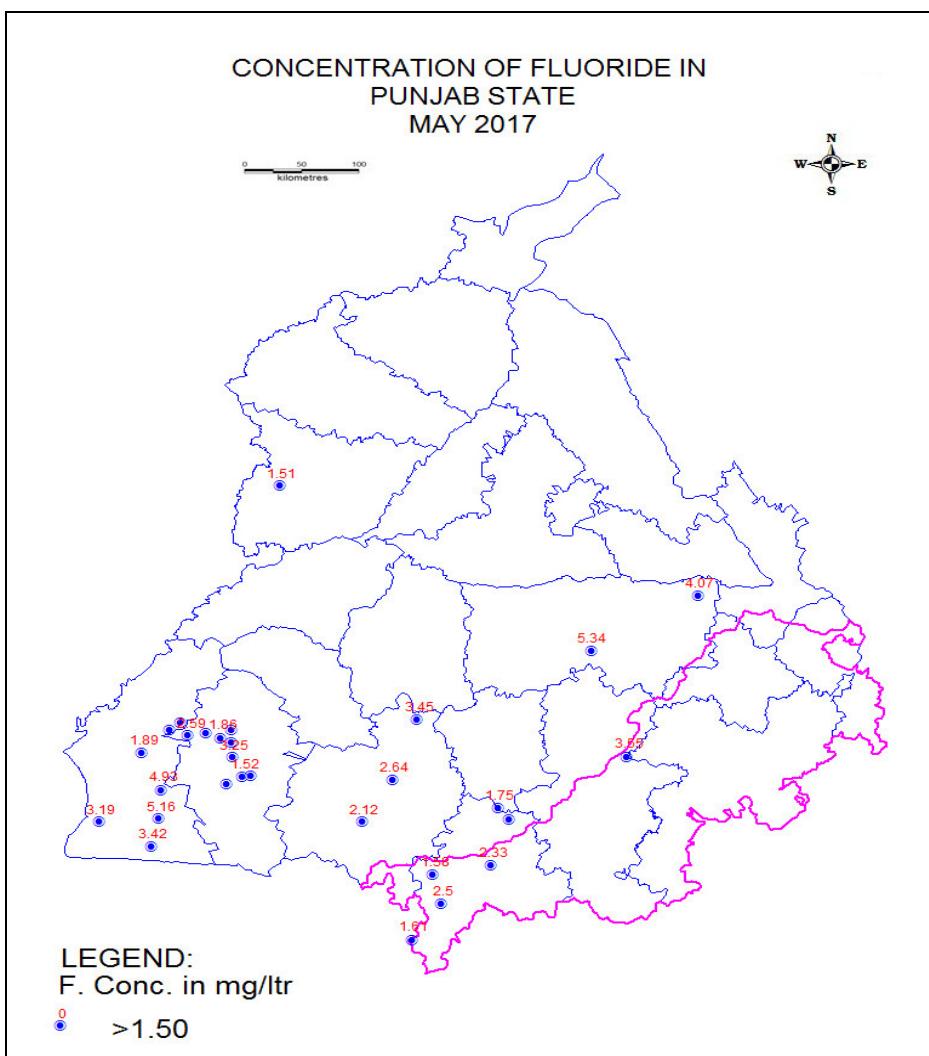
Occurrence of nitrate in ground water above 5.0 mg/L reflects contamination at some stage of its percolation and circulation. The probable sources of nitrate contamination of ground water are through excessive application of fertilizers, bacterial nitrification of organic nitrogen, and seepage from animal and human wastes and atmospheric inputs. In the State, nitrate in water samples varies from traces to 617 mg/L. BIS permits a maximum concentration of 45 mg/L nitrate in drinking water. Considering this limit, it is found that 75% of the samples, spread over the entire State, have nitrate below 45 and 24.9% have more than 45 mg/L. Spatial distribution of nitrate indicates that ground water with permissible nitrate content generally occurs in the northern and central parts with a few isolated patches with nitrate above 45mg/L. A considerable area of the southern and southwestern part of the state have nitrate concentration exceeding 45 mg/L (Fig 21). Furthermore, quite a significant number water samples from, Bhatinda, Faridkot, Fatehgarh sahib, Ferozepur, Mansa, Muktsar and SAS nagar districts are found to have nitrate above 100 mg/L. Fig



Fig

#### 4.5 Distribution of Fluoride (F)

Fluoride in small amounts in drinking water is beneficial while in large amounts it is injurious. The fluoride content in ground water ranges from BDL to 5.63 mg/L. BIS recommends that fluoride concentration up to 1.0 mg/L in drinking water is desirable, up to 1.5 mg/L is permitted and above 1.5 mg/L is injurious. Classification of samples based on this recommendation, it is found that 81.5% samples have fluoride in desirable range, 7.5% in the permissible and the remaining 10.7% have fluoride above 1.5 mg/L. Map showing spatial distribution of fluoride contents in ground water (Fig 22) indicates that ground water in most parts of the State has desirable concentration of fluoride. Ground waters with fluoride above 1.5 mg/L are found mainly in Bathinda, Faridkot, Fatehgarh Sahib, Ferozepur, Mansa, Muktsar, Patiala, Sangrur, and Tarantaran districts of the State. It is worth mentioning that high fluoride waters are encountered in areas where agriculture activities are predominant. It indicates the possibility that fluoride has come from the phosphatic fertilizers, which have fluoride as impurity. Fig



Fig

#### 4.6 Type of Ground water

Considering the predominance of the cation and anion in the chemical composition of ground water, its type is determined and its relation with its occurrence in an area as well as with its salinity is studied. It is found that no discernible relationship between type of water and its occurrence in any particular area could be established. Nearly all types of waters are available in each district of the State. However, study of relation of water type with salinity of the water clearly indicates that nearly 45% ground waters of the State are fresh, have low salinity and predominance of calcium + magnesium cations and bicarbonate as anion. About 50 % ground waters having intermediate salinity and are of mixed type. In these waters, mostly  $\text{HCO}_3^-$  as anion dominates but no individual

cation predominates. At some places  $\text{HCO}_3^-$ -type of waters with sodium as dominant cation are also encountered in low to moderately saline ground waters. This can be attributed either to precipitation of  $\text{CaCO}_3$  due to loss of  $\text{CO}_2$  or dissolution of Na-salts from the topsoil layers or to ion exchange reaction during the downward percolation of water.

At some isolated locations, sulphate is found to be dominant anion. In the remaining ground waters, where salinity is high; mostly Na is the dominant cation and  $\text{Cl}^-$  or  $\text{Cl}^- + \text{SO}_4^{2-} + \text{NO}_3^-$  (Mixed anion) are dominant. Nevertheless, a few exceptions have also been found in these simple and well-defined types of ground waters.

#### 4.7 Suitability of Groundwater for Drinking

Salinity, chloride, fluoride and nitrate are the important parameters that are normally considered for evaluating the suitability of ground water for drinking uses. Based on recommendations made for these parameters by BIS, it is found that ground water at quite a few places is not suitable for drinking uses because of either EC/ $\text{Cl}^-$ / $\text{F}^-$ / $\text{NO}_3^-$  or all of them.

It is observed that unsuitable quality of ground water occurs in the southern and southwestern regions, while in the northern and central areas ground water is of suitable quality for drinking uses. Table-2 below shows district-wise distribution of ground waters in different classes of suitability based upon EC, Cl, F and  $\text{NO}_3^-$  contents. District-wise availability of potable ground waters is also shown as bar diagram in Fig .

**Table-2:Distribution of Well Waters of Punjab State in Different Classes of Drinking Water Suitability**

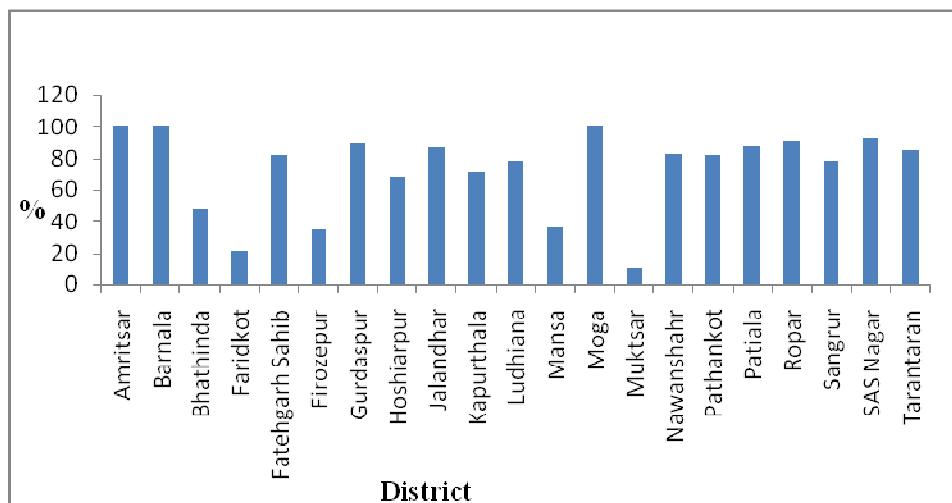
Sr. No	District	No. of Sample s	EC in $25^\circ\text{C}$ in $\mu\text{S}/\text{cm}$			Cl in mg/L			$\text{NO}_3^-$ in mg/L			F in mg/L		
			<750	750-3000	>3000	<25 0	250-1000	>1000	<45	45-100	>10 0	<1.0	1.0-1.5	>1.5
1	Amritsar	8	2	6	0	8	0	0	8	0	0	8	0	0
2	Barnala	3	0	3	0	3	0	0	3	0	0	3	0	0

3	Bhathinda	27	5	16	6	22	5	0	15	3	9	18	5	4
4	Faridkot	19	2	6	11	8	9	2	7	5	7	6	2	11
5	Fatehgarh Sahib	11	3	8	0	11	0	0	10	1	0	9	1	1
6	Firozepur	20	2	12	6	14	4	2	9	3	8	14	3	3
7	Gurdaspur	19	10	9	0	19	0	0	17	2	0	19	0	0
8	Hoshiarpur	22	19	3	0	22	0	0	15	4	3	22	0	0
9	Jalandhar	15	7	8	0	15	0	0	13	2	0	15	0	0
10	Kapurthala	7	3	4	0	7	0	0	5	2	0	7	0	0
11	Ludhiana	18	5	12	1	16	2	0	17	0	1	16	0	2
12	Mansa	11	1	9	1	10	1	0	7	3	1	5	1	5
13	Moga	7	3	4	0	7	0	0	7	0	0	7	0	0
14	Muktsar	9	0	3	6	2	6	1	2	3	4	3	4	2
15	Nawanshahr	6	3	3	0	6	0	0	5	1	0	6	0	0
16	Pathankot	12	9	2	1	12	0	0	11	1	0	11	1	0
17	Patiala	17	8	9	0	17	0	0	15	2	0	15	2	0
18	Ropar	11	5	6	0	11	0	0	10	1	0	11	0	0
19	Sangrur	14	7	7	0	14	0	0	12	2	0	12	1	1
20	SAS Nagar	12	5	7	0	12	0	0	11	1	0	11	1	0
21	Tarantaran	13	4	9	0	13	0	0	12	1	0	12	0	1
	TOTAL	281	103	146	32	249	27	5	211	37	33	230	21	30

The bar diagram clearly shows that most of the groundwater occurring in the districts Gurdaspur, Hoshiarpur, Jallandhar, Ludhiana, Kapurthala, Moga, Nawanshar, Patiala, Ropar and Tarantaran occupy almost 75% length of the bar and has almost all the parameters within desirable limit for drinking purposes, thus can be considered as potable. Ground waters from the districts of Bhatinda, Firozpur, Faridkot Mansa and Muktsar have bar length less than 50% indicating low potable rating.

Fig,

### Districtwise Distribution of Potable Waters in Punjab



#### 4.8 Suitability of Groundwater for Irrigation

The suitability of ground water for irrigation is generally assessed considering salinity expressed as EC, sodium in relation to calcium and magnesium in terms of SAR, sodium in relation to carbonate in terms of RSC. EC and SAR range from 145 to 8806  $\mu\text{S}/\text{cm}$  at  $25^{\circ}\text{C}$  and 0.11 to 36.2 respectively. Waters having high values of EC and SAR causes salinity and sodium hazards respectively when used for customary irrigation.

USSL: Plot of USSL diagram based on EC and SAR, it is observed that ground water occurring in the northern and central parts of the State falls under  $\text{C}_2\text{S}_1$  and  $\text{C}_3\text{S}_1$  classes of irrigation waters. It indicates that most of these waters are suitable for irrigating semi-salt tolerant crops on all soils. Ground water mostly from the southern and southwestern parts comprising of Bhatinda, Faridkot, Ferozepur, Mansa, Moga, Muktsar, districts falls under  $\text{C}_3\text{S}_2, \text{C}_3\text{S}_3, \text{C}_3\text{S}_4, \text{C}_4\text{S}_1, \text{C}_4\text{S}_2, \text{C}_4\text{S}_3$  and  $\text{C}_4\text{S}_4$  classes of irrigation classification. Such waters when used continuously for irrigation, they are likely to cause salinity hazards and lead to reduction in crop yields. They may also cause sodium hazards and lead to hardening of soils when used for irrigation without the addition of adequate quantity of gypsum.

RSC: Alkali hazards of irrigation ground waters are estimated through the computation of Residual Sodium Carbonate (RSC), also known as Eaton's Index. Waters with RSC value  $<1.25$  meq/L are safe for irrigational uses, RSC between 1.25 and 2.5 are marginal and waters with RSC value  $>2.5$  meq/L are unsafe. Based on RSC values of ground waters, it is found that 58% of the waters are

safe, 11.7% marginal and the remaining 30% are unfit for irrigational uses. RSC of ground waters are found to vary from below zero (-57.2) to 25.8 meq/l (Deepsinghwala, Faridkot district).

The district wise distribution of ground waters in different categories of suitability for irrigational uses based on USSL and RSC considerations is given in Table-3.

**Table No.3 : Irrigation Rating of Well Waters of Punjab  
(Based on Eaton's index and USSL Classification)**

Sl.no.	District				IRRIGATION SUITABILITY
		EATON's INDEX (RSC in meq/L)			USSL Classification
		Safe	Marginal	Unsafe	
		<1.25	1.25-2.5	>2.5	
1	Amritsar	7	0	1	C2S1, C3S1, C3S2,C3S3
2	Barnala	1	0	2	C2S1, C3S1, C3S2
3	Bhathinda	15	3	9	C1S1, C2S1, C3S1, C3S2,C3S3, C3S4, C4S2, C4S4
4	Faridkot	9	1	9	C2S1, C3S1, C3S2,C3S3, C4S1,C4S3,C4S4
5	Fatehgarh Sahib	7	2	2	C1S1,C2S2, C3S1
6	Firozepur	12	2	6	C2S1,C3S1, C3S2, C3S3,C4S1, C4S2, , C4S4
7	Gurdaspur	16	0	3	C2S1, C3S1,
8	Hoshiarpur	18	3	1	C1S1,C2S1, C3S1
9	Jalandhar	8	3	4	C2S1, C3S1,C3S2
10	Kapurthala	5	1	1	C2S1,C3S1
11	Ludhiana	3	2	13	C2S1, C3S1, , C3S2,C4S2,C4S3
12	Mansa	5	0	6	C2S2, C3S1, C3S2, C3S4, C4S4
13	Moga	2	1	4	C2S1, C3S1, C3S2, C3S3,
14	Muktsar	6	1	2	C3S1, C3S3,C3S3,C3S2,C4S1,C4S2,C4S4
15	Nawanshahr	4	1	1	C2S1, C3S1

16	Pathankot	12	0	0	C1S1, C2S1,C3S1
17	Patiala	11	3	3	C2S1, C3S1
18	Ropar	7	1	3	C2S1, C3S1
19	Sangrur	10	2	2	C2S1, C3S1,C3S2
20	SAS Nagar	4	2	6	C1S1C2S1,C3S1, C3S2
21	Tarantaran	1	5	7	C2S1,C3S1,C3S2

Most of ground waters from Amritsar, Fatehgarh Sahib, Gurdaspur, Hoshiarpur, Jallandhar, Kapurthala Ropar and Patiala are suitable for irrigation for semi-salt tolerant crops on adequately drained soils. The waters from districts of Bhatinda, Faridkot, Ferozepur, Mansa, Muktsar, and Sangrur show wide variability in irrigation rating.

#### **4.9 Suitability of Groundwater for Industries**

Industries, in general, use water for variety of works depending upon the nature and size of the industry. As such specifications for suitability of water for industries vary widely depending upon the process in each industry. Therefore, chemical quality of water and its suitability could not be discussed due to diversified nature of industries.

#### **4.10 Temporal Variation**

The temporal changes in ground water quality are studied through percent of well water falling in different categories of suitability criteria based on concentration of important parameters such as salinity (EC), chloride, nitrate and fluoride contents. The percent well waters falling in desirable, permissible and unsuitable classes of BIS-1991 standards during 2017 are compared with percent well waters in same classes during 2013, 2014, 2015, 2016 & 2017. Table 4 shows both positive and negative change in percent well waters in different suitability classes based on above parameters and overall variation in % wells from 2013 to 2017.

On perusal of the Table-4, it is evident that there is deterioration in the quality of ground water from 2016 to 2017 with respect to Specific conductance as there decrease by 6.65% in samples falling in low salinity category while there is an increase in samples falling in medium (2%) salinity categories. There has also been an increase in concentration of Chloride and Fluoride indicating

deterioration by 2% , in ground water quality with reference to these parameters. Similarly there is a slight deterioration (by 2%) in ground water quality with respect to Nitrate. However, when percent samples are compared with those of 2013, it is found that there is not much change in water quality with respect EC, Cl and F as indicated by no change in percent of water samples falling in various classes. However, nitrate has slightly decreased during this period as depicted by percent reduction of samples with high nitrate (1.2%).

**Table 4: Periodic Variation in Suitability Classes of Well Waters of Punjab**

Parameter	Class	% of Samples					Periodic Variation 2013-2017
		2013 (n=261)	2014 (n=276)	2015 (n=284)	2016 (n=289)	2017 (n=281)	
Salinity as EC	<750 $\mu\text{S}/\text{cm}$	53	40	50.3	43.3	36.7	-16.3
	750-3000	40	51	42.3	49.1	51.9	+11.9
	>3000	7	9	7.4	7.6	11.3	+4.3
Chloride as Cl	<250 mg/l	90	86	89.4	87.5	88.9	-1.5
	250 - 1000	9.5	13	9.2	10.4	9.6	+0.4
	>1000 mg/l	1	1	1.4	2.1	1.8	+1.1
Nitrate as $\text{NO}_3$	< 45 mg/l	75	74	69.4	77.2	75	+3.2
	> 45 mg/l	25	26	30.6	22.8	24.9	-3.2
Fluoride as F	<1.0 mg/l	87	84	82.4	84.4	81.8	-0.6
	1.0 - 1.50	6	5	8.1	4.8	7.5	+0.8
	>1.50 mg/l	7	11	9.5	10.7	10.7	-0.3

**4.11 Ground Water Quality in respect of Heavy metals:**Occurrence of Heavy metals in ground water is also periodically monitored by CGWB and as per studies carried out during 2017, some elements such as Fe, Mn, Zn, Cu, Se, Sn, Mo are essential in trace amounts for growth and development of living organisms as well as plants. Nevertheless, these are hazardous in large amounts. In addition, some metals like Pb, As, Cd, Hg, Cr, Be, Ba, are hazardous even in small amounts. The minimum and maximum Concentration of Heavy Metals has been despite in Table 5:

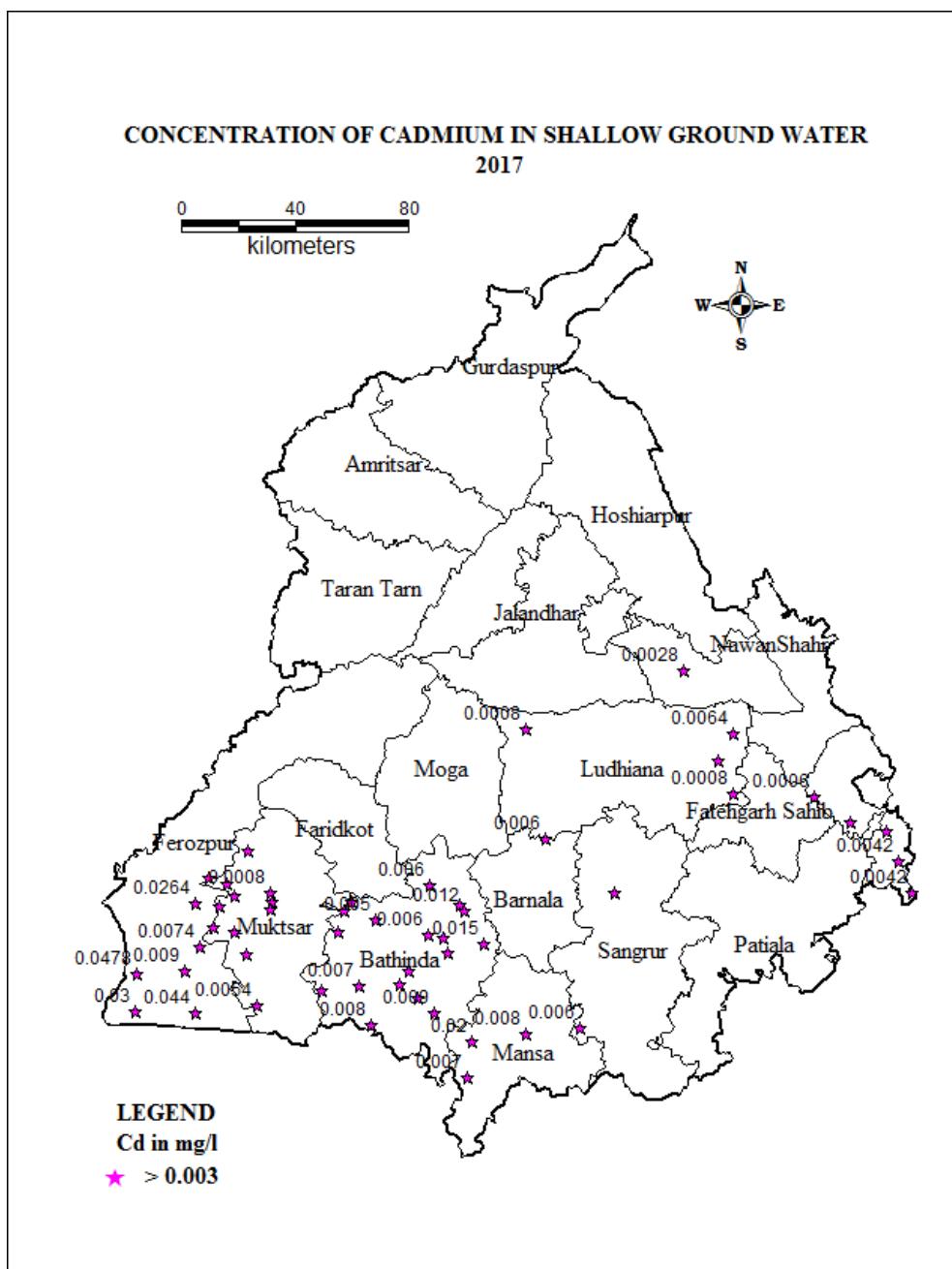
**Table-5 : Range of Heavy Metals in Groundwater of Punjab State**

S. No	District	No.of	Conc	Cd	Cu	Mn	Pb	Zn
		Sample	Range	mg/l				
1	AMRITSAR	9	Min	BDL	BDL	ND	ND	ND

			Max	0.003	0.056	0.238	0.040	0.686
2	BARNALA	3	Min	0.003	0.007	0.009	0.012	0.014
			Max	0.006	0.009	0.176	0.014	0.043
3	BHATHINDA	27	Min	BDL	BDL	0.002	BDL	BDL
			Max	0.024	0.105	0.807	0.120	2.687
4	FARIDKOT	20	Min	ND	ND	ND	ND	ND
			Max	0.089	0.052	0.116	0.070	0.121
5	FATEHGARH SAHIB	11	Min	BDL	BDL	BDL	BDL	0.003
			Max	BDL	0.006	0.297	0.017	0.128
6	FIROZEPUR	20	Min	ND	ND	ND	ND	ND
			Max	0.062	0.061	0.293	0.067	1.611
7	GURDASPUR	20	Min	BDL	BDL	BDL	BDL	0.002
			Max	0.003	0.045	0.991	0.010	0.801
8	HOSHIARPUR	23	Min	BDL	BDL	BDL	BDL	BDL
			Max	BDL	0.143	0.575	0.018	2.300
9	JALANDHAR	16	Min	BDL	BDL	0.005	BDL	0.007
			Max	0.003	0.255	0.570	0.063	6.915
10	KAPURTHALA	7	Min	BDL	0.004	0.002	BDL	0.009
			Max	BDL	0.008	1.096	BDL	0.812
11	LUDHIANA	18	Min	BDL	0.002	BDL	BDL	0.003
			Max	0.006	0.016	0.417	0.021	0.448
12	MANSA	11	Min	BDL	BDL	BDL	BDL	BDL
			Max	0.020	0.307	0.004	0.085	0.395
13	MOGA	7	Min	BDL	BDL	BDL	BDL	BDL
			Max	BDL	0.065	0.006	0.085	0.042
14	MUKTSAR	9	Min	ND	ND	ND	ND	ND
			Max	0.015	0.006	0.822	0.100	0.096
15	NAWANSHAHR	6	Min	BDL	BDL	0.005	BDL	0.027

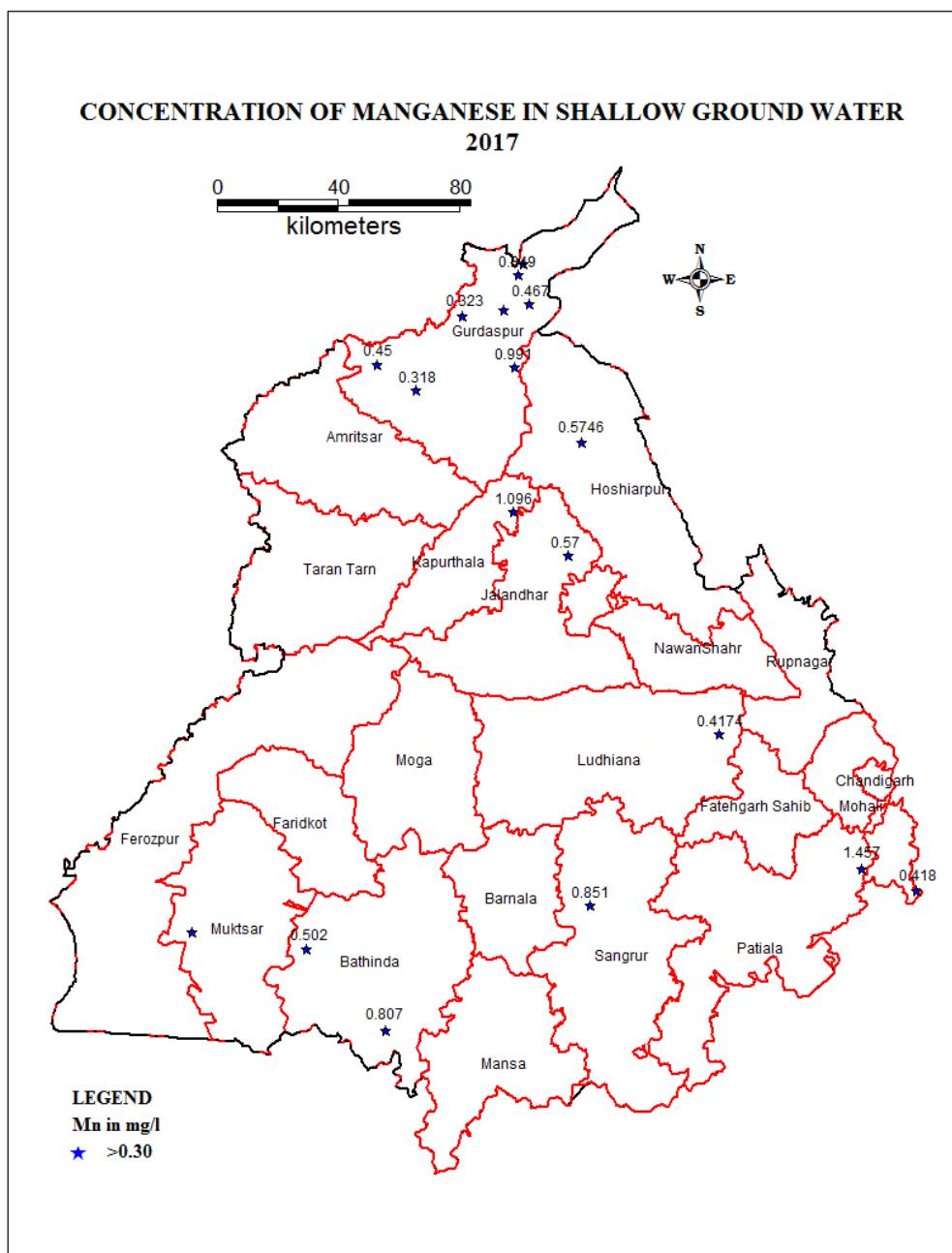
			Max	0.003	0.286	0.216	0.146	2.910
16	PATHANKOT	12	Min	BDL	BDL	0.008	BDL	0.005
			Max	BDL	0.004	2.391	BDL	3.720
17	PATIALA	17	Min	BDL	BDL	BDL	BDL	BDL
			Max	BDL	0.172	1.457	0.190	4.000
18	ROPAR	11	Min	ND	ND	ND	BDL	ND
			Max	0.003	0.003	0.060	0.010	0.006
19	SANGRUR	14	Min	BDL	BDL	0.001	BDL	BDL
			Max	0.006	0.083	0.851	0.036	5.615
20	SAS NAGAR	12	Min	ND	ND	ND	BDL	ND
			Max	0.004	2.702	0.418	0.123	0.481
21	TARANTARAN	13	Min	BDL	BDL	BDL	ND	ND
			Max	0.003	0.074	0.155	0.040	0.737
	TOTAL	286						

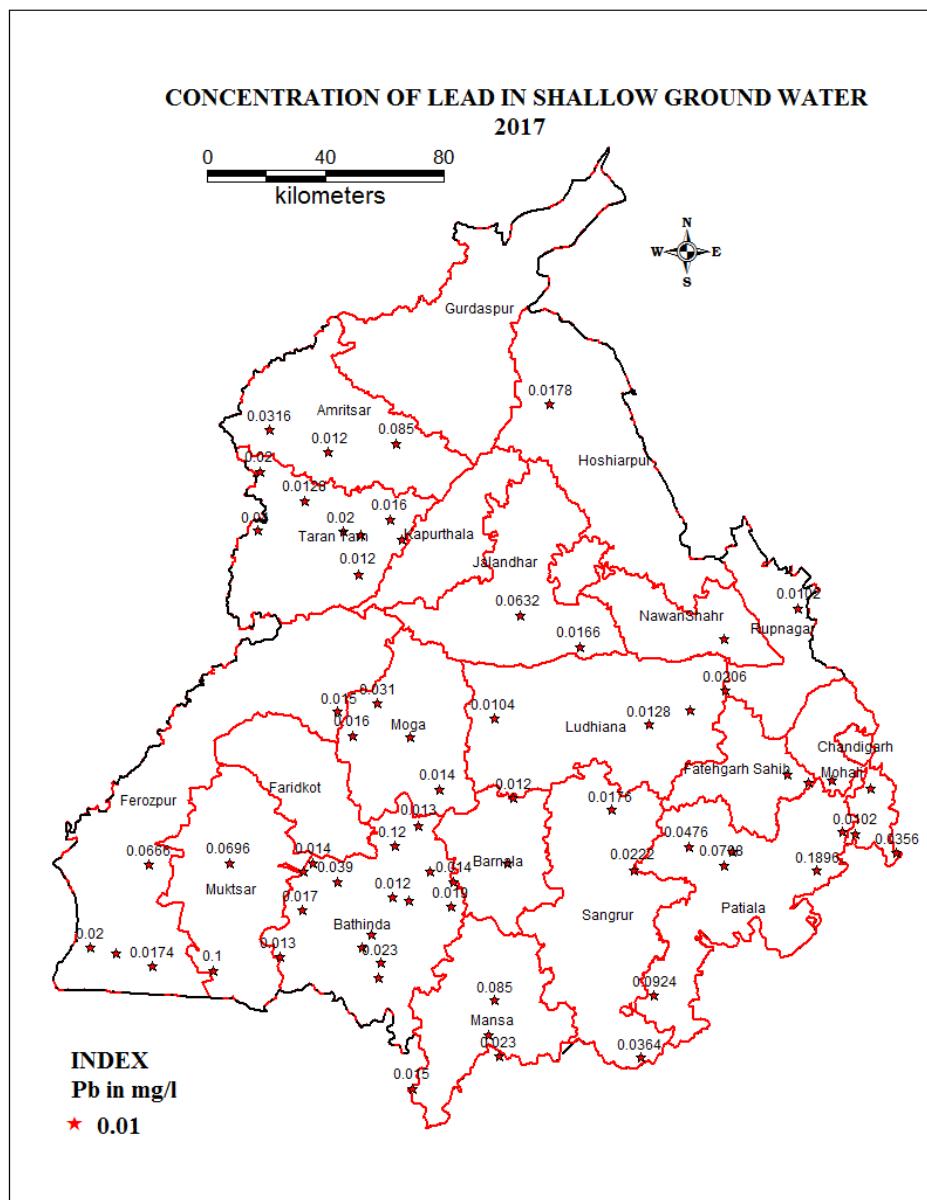
**Cadmium** The concentration of cadmium in shallow ground water in Punjab State 76% Water Samples are BDL and 26.1% water samples has been observed above permissible limit as per BIS Limit 0.003mg/l. The affected districts are namely Bathinda, Faridkot, Firozepur, Ludhiana, Mansa, Muktsar,Sangrur SAS Nagar. Concentration of Cadmium above permissible limit 0.003mg/l Sown in Fig.



**Copper** Copper concentration is generally below 1.5mg/l as BIS limits in groundwater of the State.

**Manganese** Manganese above 0.3mg/l with higher concentration being reported from Bhatinda, Gurdaspur, Hoshiarpur Jallandhar, Pathankot. Sporadic cases of high manganese have been reported from in Hoshiarpur, Jalandhar, Kapurthala, Patiala and sangrur districts. Concentration of Mang above permissible limit 0.30mg/l Sown in Fig.





**Arsenic** highest concentration of arsenic has been recorded in groundwater of Bara chaunta (0.0375 mg/l) village in Roopnagar district.

#### **4.11 Conclusion & Recommendations on Groundwater Quality**

Conclusion drawn for quality evaluations of ground water and its suitability for various uses is based on macro level studies through monitoring stations sampled during 2017. It can be concluded that in Punjab

- Ground water is generally suitable for drinking uses except at few places in the southern and south western parts where it is not suitable due to high EC or high fluoride or nitrate or combination of all.
- Almost all waters are suitable for irrigation on well-drained soils for growing salt tolerant crops like wheat, mustard, rice, barley and maize etc. However, at few places where EC of ground water goes beyond 5000  $\mu\text{S}/\text{cm}$  and SAR is more than 10, such waters are not suitable for customary irrigation.
- It is recommended that areas identified with unsuitable or marginally suitable water quality should be monitored on micro level to effectively delineate such areas and use suitable management measures.

#### **4.11 Conclusion & Recommendations on Groundwater Quality**

Conclusion drawn for quality evaluations of ground water and its suitability for various uses is based on macro level studies through monitoring stations sampled during 2016. It can be concluded that in Punjab

- Ground water is generally suitable for drinking uses except at few places in the southern and south western parts where it is not suitable due to high EC or high fluoride or nitrate or combination of all.
- Almost all waters are suitable for irrigation on well-drained soils for growing salt tolerant crops like wheat, mustard, rice, barley and maize etc. However, at few places where EC of ground water goes beyond 5000  $\mu\text{S}/\text{cm}$  and SAR is more than 10, such waters are not suitable for customary irrigation.
- It is recommended that areas identified with unsuitable or marginally suitable water quality should be monitored on micro level to effectively delineate such areas and use suitable management measures.

