

BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL - SOUTHERN ZONE,
CHENNAI

Original Application No. 39 of 2020 (SZ)

BETWEEN:

Dr. Lubna Sarwath

...Applicant

AND

The State of Telangana,
Rep. by its Chief Secretary

& 8 Others

...Respondents



MEMO FILED ON BEHALF OF THE RESPONDENT NO. 9

Filed On : 06.02.2023

Filed by:

Polkampally Pavan Kumar Rao &

S. Kishore Kumar

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COUNSELS FOR RESPONDENT NO. 9

BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL - SOUTHERN ZONE,
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2.	03.02.2023	Feasibility Report	2-

Date: 06.02.2023

Place: Hyderabad


Counsel for the Respondent No.9

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MEMO

May it please your Lordships!

1. It is most humbly submitted that, this Hon'ble Tribunal, during the course of the hearing in the present matter was pleased to seek a Feasibility report pertaining to the flow of water from a third party to be conducted on behalf of the Respondent No. 9.
2. In compliance of the same, the Respondent herein through this Memo is herewith placing the said Report on the record of this Hon'ble Tribunal.

Hence this memo.

Be pleased to consider.

Place: Chennai

Date: 06-02-2023


Counsel for the Respondent No. 9

**FEASIBILITY REPORT ON DIVERSION OF STORM WATER THROUGH THE 0.9 m
DUAL HUME PIPE CHANNEL DOWNSTREAM**

**SITUATED AT DEVELOPMENT SITE FOR IT/ITES SEZ IN
SURVEY NUMBERS 285, 286 and 287 OF PUPALLAGUDA VILLAGE,
GANDIPET MANDAL,
RR DISTRICT. T.S.**

FOR

**M/s PHOENIX SPACES PRIVATE LIMITED
Phoenix House,
Plot No 1335, Road No 45,
Jubilee Hills,
HYDERABAD – 500033. T.S.
Tel: + 91 40 23559677**

Prepared By

**Geo-Info Systems and Technologists,
Plot No.867, Road No.45,
Jubilee Hills, Hyderabad - 500 033. T.S.
Telephone: 9989659275
email: evnkumar.rqp@gmail.com**

February 2023



Geo-Info Systems and Technologists

Geological Mapping, Remote Sensing & GIS, Mine Plans,
Hydrogeological & Environmental Studies

CERTIFICATE

Certified that the Feasibility Report on Diversion of Storm Water through the 0.9 m diameter dual Hume Pipe Channel downstream situated at development site for IT/ITES SEZ in Survey Numbers 285, 286 and 287 of Pupalaguda Village, Gandipet Mandal, RR District, Telangana State of M/s Phoenix Spaces Private Limited has been prepared by me and the contents furnished are correct and factual.

Place: Hyderabad.
Date: 03 - 02 - 2023.

E.V. Nareesh Kumar

(E.V. NARESH KUMAR)
FAE- Geo & HG.

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**FEASIBILITY REPORT ON DIVERSION OF STORM WATER THROUGH THE 0.9 m DIAMETER
DUAL HUME PIPE CHANNEL DOWNSTREAM**

**SITUATED AT DEVELOPMENT SITE FOR IT/ITES SEZ IN SURVEY NUMBERS 285,
286 and 287 OF PUPPALAGUDA VILLAGE, GANDIPET MANDAL,
RR DISTRICT. T.S.**

BY M/s PHOENIX SPACES PRIVATE LIMITED

1. INTRODUCTION

M/s Phoenix Spaces Private Limited is developing site for IT/ ITSEZ in Sy. No.s 285, 286 & 287 of Puppallaguda Village, Gandipet Mandal, R.R. District, Telangana consisting of six towers spread over two land parcels i.e., North and South. The buildings have three basements extending to a depth of 14.0 to 16.0 m BGL. Most of the land holding is either graded and topography is altered suiting to the development needs of the Project in a phased manner.

M/s Phoenix Spaces Pvt. Ltd. Management desired to furnish a Feasibility Report after examining the site and the 0.9m diameter dual pipe lines laid through a channel are sufficient to carry the storm water during peak monsoon over the catchment, to conduct a study of flow of water from the culvert to the newly laid channel joining the Bulkapur channel and to come out with a feasibility report whether the existing widened water channel is sufficient for the free flow of water during heavy rains also (**Map Plate-4**).

M/s Phoenix Spaces Pvt. Ltd. have approached M/s Geo Info Systems & Technologists, Hyderabad which is a consulting Firm providing Geological, Hydrological and other allied mapping services and issued work order through email (**Annexure-1**). This study was assigned to Mr. E.V. Naresh Kumar, Consultant Hydrogeologist & QCI-NABET accredited Functional Area Expert (Geo &HG) and submit a Feasibility Report. As such this study is carried out and Feasibility Report submitted. The Field work was carried out on 31-1-2023 with the assistance of Sri Sudarshan & Sri Prahalad along with supporting staff of M/s Phoenix Spaces Pvt. Ltd.

2. OBJECTIVE OF THE STUDY

The prime objective of the study is to have an understanding and assessment of the catchment along with the project area which is a part of the watershed and quantify the available storm water during monsoon. Also, the capability of the 0.9 m diameter Dual Hume pipeline channel laid connecting the culvert to the natural stream course further southeast which is the discharge point. This evaluation covered the Storm Water Management Plan formulated by the Phoenix Project authorities to prevent run-off storm water from contacting adjoining areas, indoors or out of the Project Activity by using properly designed berms or grading.

The rainfall data of the last sixteen-year period 2017-2022 (Up to 31-10-2022) is considered in computing the runoff parameters procured from IMD, Hyderabad and is enclosed as **Annexure-II**. The maximum rainfall during the year **2020 i.e., 1,348.2 mm** is considered to estimate the runoff quantum.

3. SCOPE AND METHODOLOGY

The following data have been prepared, referred, and interpreted to prepare the Feasibility Report:

- (i) Delineation of water shed / catchment area of the Project Site on 1:50,000 Scale SOI Toposheet.
- (ii) Drainage of the catchment including downstream till the discharge point of the Hume pipes with reference to the Contour Plan of the Project site and the existing Storm water Channel.
- (iii) Collection of annual rainfall data for a period of last sixteen years to assess the quantum available run off potential.
- (iv) Assessment of the 0.9m diameter dual Hume pipeline & Computation of discharge capacity.
- (v) Preparation of Feasibility Report with Maps along with Annexures.

Initially the surveyed data along with the Flood Likelihood Evaluation Report available with the Phoenix Management, Rainfall data from IMD, Guidelines of the CGWA GOI, TSWALTA Rules have been referred to have a fair understanding of the subject. Personal interaction with the Management Personnel on 27-01-2023 was very much helpful in understanding the desired scoping requirement Subsequently field investigations have been carried out on 31-01-2023. During the field work surface lithology, geological cross sections in the road and nala cuttings, structural

information, Geomorphology and onsite field conditions, the storm water channel along with inspection chambers provided were observed. Field photographs were captured and documented.

Information already available and the data collected during the survey is collated and analyzed to comprehend the overall infiltration, subsurface stratum, spot heights and flow directions have been assessed based on the topography, infrastructure, covered areas to sky and access routes within the project area. Based on the field data, secondary data from lien departments this Feasibility Report is prepared and submitted.

4. LOCATION & EXTENT

The proposed project site lies at the intersection of N 17° 24' 21.7" - E 78° 20' 48.1 (Map Datum: WGS-84, Precision: ±3 m) with an altitude ranging from + 540 m to + 560 m above MSL and the geo-coordinates are marked on Key cum Location Plan enclosed as **Map Plates - 1**. The subject area falls on SOI Toposheet No. **56 K/7**. The Study Area is comprising two blocks namely North & South Blocks of extents 6,528 m² and 29,533 m² respectively totaling to **36,061 m² or 3.601 Hects**. The area of Water shed basin is **6,21,164 m² or 62.110 Hectares or 0.62 Sq. Kms (Plate-3)**.

5. GEOLOGY, STRUCTURE, GEOMORPHOLOGY, LAND USE & SLOPE

Geology of the study and its environs including the catchment/watershed is Grey Granites of Archaean Age. No major structures identified in the core and buffer zone except minor fractures that are acting as conduits for groundwater flow. Most of the catchment lies over the Pediment Inselberg Complex comprising boulders of variegated sized followed by massive sheet rock (Pediment Area) clearly reflected in the field photographs. The project Area lies in the pediment and partly in the Pediplain Shallow Weathered area. The stream is flowing in a narrow valley which cannot be demarcated. The land use can be classed as Built-up Area and Scrub (Which is undisturbed) and now getting converted to Construction for Infrastructure Building. Slope can be classified as moderate (10-15 %) over the catchment and gentle (< 5 %) over the lower fringes of the catchment i.e., Project site. The gradient of the water shed is 20.0 m /2.0 Kms. In general, the topography is altered for the development activity.

6. RAINFALL & CLIMATE

The highest rainfall recorded over the last seventeen years of Hyderabad city is considered for computing the net quantum availability of storm water over the catchment area. The Project Area falls in the Financial District of Hyderabad which is a SEZ Developed by the Government of Telangana. The subject area enjoys tropical climate with day temperatures ranging between 22 – 44 Degrees Centigrade during summer season while the lowest temperatures during winter would be 8 – 18 Degrees Centigrade. The year wise rainfall data is tabulated below:

S. No.	Year	Rainfall (mm) (IMD Data)
1	2007	737.9
2	2008	1,151.6
3	2009	768.2
4	2010	1,081.9
5	2011	647.2
6	2012	764.0
7	2013	1,035.7
8	2014	645.0
9	2015	603.2
10	2016	1,044.7
11	2017	1,022.3
12	2018	635.4
13	2019	866.4
14	2020	1,348.2
15	2021	1,089.3
16	2022	989.40
17	2023 Up to end of 31-10-2022)	-

7. DRAINAGE & HYDROLOGY

Three First order streams originate from the water divide portion of the catchment and form a higher order stream south of project area at about 2.0 Kms. Drainage is observed to be dendritic to sub dendritic. Dense to moderate drainage network can be observed in the buffer zone. Many perennial tanks were observed including Osman Sagar which is the drinking water supply source to the city of Hyderabad. All the stream courses culminate to Musi River south of the subject area. Both Surface and Groundwater constitute the Hydrology of the area. Monsoon is the only source of recharge to the aquifers. No canals observed over the area.

8. COMPUTATION OF AVAILABLE QUANTUM RUN OFF:

The study area has a single catchment with three first order forming a third order stream flowing from north to south draining further southeast as depicted on **Map Plate-3**. The core zone i.e., Project area has only one first order stream as depicted on Plate-1 for more clarity. The area of Water shed basin is **6,21,164 m² or 62.110 Hectares or 0.62 Sq. Kms**. The water divide elevation is + 560.0 m MSL on the Northwestern portion of the Project area while the lowest elevation is 540.0 m MSL on the SE portion. The flow direction is towards southeast. The breakup of land use is tabulated below:

8.1 Breakup of Land Use:

S. No.	Category / Land use	Extent (m ²)
1.	Built up Area	1,86,349
2	Catchment Area	3,23,006
3.	Roads and other access routes	49,693
4.	Green Belt	62,116
	TOTAL	6,21,164

8.2 Estimation of Quantum runoff available through Rainwater

S. No.	Particulars	Area (Sqm)	Rainfall (m)	Runoff Coefficient*	Quantum of Run off available (Cum/Year)
	1	2	3	4	5 (2*3*4)
1	Built up Area	1,86,349	1.348	0.85	2,13,519
2	Catchment Area	3,23,006	1.348	0.65	9,12,880
3	Roads and other access Routes	49,693	1.348	0.20	13,397
4	Green Belt	62,116	1.348	0.15	12,560
				Total Quantum of available runoff (cum/y)	11,52,356

* Ref: Manual of Artificial Recharge of Ground Water, (CGWB,2007)

9. CAPABILITY & SUSTAINABILITY OF THE DUAL HUME PIPELINE COMPUTATION

About **11,52,356 Cum/year** storm water will be available for discharge through the Channel provided with Hume Pipes over a length of **290.0 m (90.0 m +200.00 m)** on the North and the eastern boundary of the project area till the discharge point from the culvert (**Map Plate-4**). The internal diameter of the Hume Pipe is 90.0 cms or 0.90 m and dual pipes are provided in the channel with manholes for inspection and periodical maintenance.

The discharge point i.e., natural stream is observed, and the data is furnished:

The Width of the channel /stream's Bottom Width is 3.0 m, Top Width is 5.0 m and height is 2.0m that is draining further east.

About 11,52,356 cum / year is the quantum runoff estimated which is 3,157 Cum of water per day over the entire catchment is the anticipated runoff.

Discharge Capacity of Dual Pipelines:

$$Q = 1000 \times (A \times (R)^{0.67} \times (S)^{0.5}) / N$$

Q : the capacity of discharge of the drain (in l/s)

A : the cross section of the flow (in m²)

R : the hydraulic radius of the drain

S : the gradient of the drain

N : Manning's roughness coefficient: 0.015 for Hume Pipes

Considering size of the drain as 3.0 m (a) x 0.9 m (b) & (c)

A : 3.0 m x 0.9 m : 2.7 Sqm

R : surface area of cross section of the flow /total length of contact between water and drain
: (a x b)/(a + b + c) : (3.0 x 0.9)/(3.0+0.9+0.9) : 0.562

S : Gradient of the drain : 0.05

N : 0.015 for Hume Pipes

Q : 1000 x (A x (R)^{0.67} x (S)^{0.5}) / 0.015

: 1000 x (2.7 x (0.562)^{0.67} x (0.005)^{0.5}) / 0.015

: 93,740 litres/sec or 93.74 m³/sec

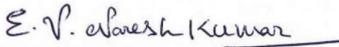
The Management have already provided dual Hume pipeline interconnected with inspection chamber over a length of 290 m (90.0 m on East West direction + 200.0 m North – South Direction) and the carrying capacity is:

97 X 93.74 m = 9,021 m³ / Sec for one Hume pipe Channel which is about 18,042 m³/sec discharge capacity for one pipeline which is 36,084 m³/sec. for the dual pipeline.

10.0 FINDINGS & CONCLUSIONS:

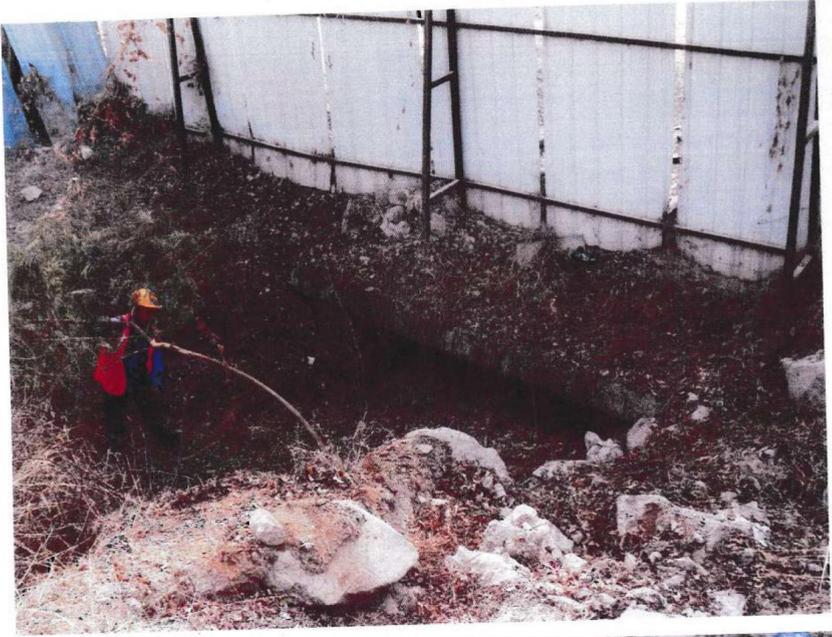
1. The catchment of the project area is a micro water shed of 6,21,164 m² or 62.110 Hectares or 0.62 Sq. Kms with topographic elevation of +540 m AMSL to +560 m AMSL.
2. Geology and rock type of the watershed and project area is Grey Granites of Peninsular Gneissic Complex of Archaean Age.
3. Geomorphology is Pediment Inselberg Complex with Tors and Boulders, Pediment areas and narrow valleys along streams.
4. Topography is altered due to construction & Development activity.
5. The run off during monsoon is not evenly distributed and the storm water over the water shed area flows to the culvert north of the project site where the dual pipe line is connected to streamline the runoff to the discharge point further south. The dual pipe line measurements are 290.0 m + 290.0 m length with 0.9 m diameter Hume Pipes with inspection chambers (Manholes) for periodical maintenance.
6. The peak flow from the micro watershed following the GEC Methodology of CGWB 2007 is 11,52,356 cum/year based on the highest rainfall of 1348.2 mm recorded at IMD Observatory, Hyderabad for the year 2020. The flow comes to 3157 cum/day on an average. But taking into the fact that the rainfall occurs only during the three months of monsoon, the average flow during the monsoon season would come to around 12,800 cum/day.
7. The discharge capacity of the dual pipeline laid is computed to be 36,084 m³/sec, which is about thrice the capacity of the requirement as calculated above. This will take care of any eventuality of sudden burst of rains for few days also.
8. In view of the findings, it is concluded that the existing infrastructure i.e. Dual Hume Pipe Line is sufficient in all aspects to discharge the peak heavy flows during monsoon and the design is aptly fit in all hydrological conditions. Certified that the contents in the report are true and factual.

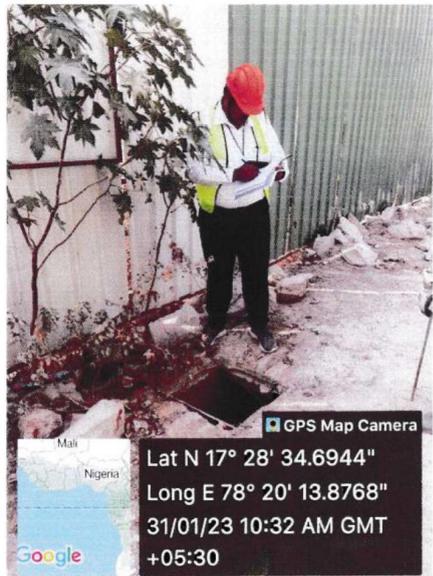
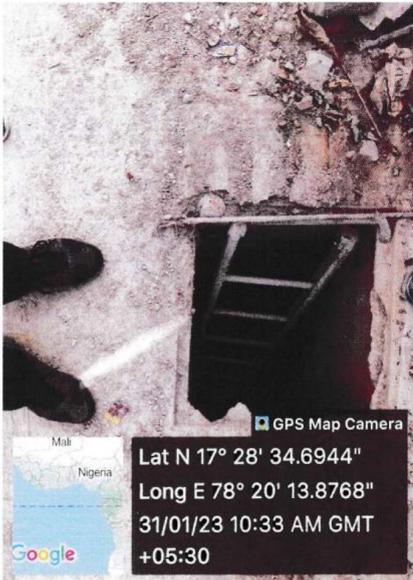
Photographs of the catchment area, manmade activities, Land use & drainage network and Storm water which are self-explanatory.

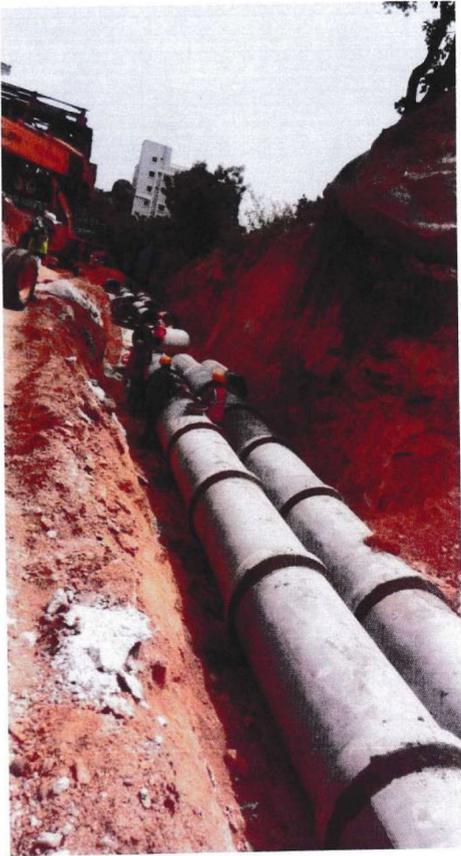

(E.V .NARESH KUMAR)
FAE-Geo & HG

PHOTOGRAPHS











Request for report - work order

Srikanth Badiga <srikanth.badiga@phoenixindia.net> Feb 1, 4:40 PM (18 hours ago)

to me, sudarshan

Dear Sir,

We Phoenix Spaces Pvt Ltd are developing a IT/ITES SEZ in survey number 285,286 and 287 of Pupallaguda Village , Gandipet Mandal , RR district . We have laid a dual pipelines for free flow of storm water as per the instructions of TSIIC. We request you to give us a report after examining the site that the water pipe lines which we have laid is sufficient for the storm water drain even in the peak monsoon season.

The widening of existing Water channel (to be changed from existing Hume Pipes to box pipes) and to conduct a study of flow of water from the culvert to the newly laid channel joining the Bulkapur channel and to come out with a report whether the existing widened of water channel is sufficient for the free flow of water during heavy rains also.

Also, we need to substantiate the aspect of there being no need of laying another channel from the west boundary of the project and that the existing channel from the culvert to the east of the project joining the Bulkapur channel is sufficient for all seasons.

We request you to kindly consider this as our work order and submit the report at the earliest .

Thanking you

With Warm Regards

Srikanth Badiga
Group Director

Director World Free Zones Organisation
Vice President, South India Council Member, Indo American Chamber of Commerce
President SEZ Association of AP and TS
Vice Chairman, EPCES, Ministry of Commerce and Industry, Govt of India
Member Baba Kalyani Committee (Appointed by Ministry of Commerce and Industry , Governemnt of India)
National Award winner of Best Business Model SEZ in India

Phoenix Group ,
Phoenix House,
Plot No 1335, Road No 45,
Jubilee Hills,

Monthly rainfall data of Hyderabad (Begumpet) observatory (2007-2022)

STATION	YEAR	MONTH	RAINFALL(MM)	STATION	YEAR	MONTH	RAINFALL(MM)
HYDERABAD	2007	1	0.0	HYDERABAD	2011	1	0.0
HYDERABAD	2007	2	0.0	HYDERABAD	2011	2	25.2
HYDERABAD	2007	3	0.0	HYDERABAD	2011	3	1.7
HYDERABAD	2007	4	23.0	HYDERABAD	2011	4	6.9
HYDERABAD	2007	5	11.5	HYDERABAD	2011	5	1.7
HYDERABAD	2007	6	113.3	HYDERABAD	2011	6	35.6
HYDERABAD	2007	7	92.8	HYDERABAD	2011	7	185.9
HYDERABAD	2007	8	214.6	HYDERABAD	2011	8	234.9
HYDERABAD	2007	9	266.6	HYDERABAD	2011	9	76.9
HYDERABAD	2007	10	18.1	HYDERABAD	2011	10	70.0
HYDERABAD	2007	11	21.0	HYDERABAD	2011	11	8.4
HYDERABAD	2007	12	0.0	HYDERABAD	2011	12	0.0
HYDERABAD	2008	1	0.0	HYDERABAD	2012	1	0.3
HYDERABAD	2008	2	69.2	HYDERABAD	2012	2	0.0
HYDERABAD	2008	3	166.0	HYDERABAD	2012	3	0.0
HYDERABAD	2008	4	13.8	HYDERABAD	2012	4	18.3
HYDERABAD	2008	5	20.8	HYDERABAD	2012	5	4.8
HYDERABAD	2008	6	40.2	HYDERABAD	2012	6	132.8
HYDERABAD	2008	7	96.0	HYDERABAD	2012	7	232.4
HYDERABAD	2008	8	464.6	HYDERABAD	2012	8	143.5
HYDERABAD	2008	9	185.0	HYDERABAD	2012	9	114.3
HYDERABAD	2008	10	48.0	HYDERABAD	2012	10	78.1
HYDERABAD	2008	11	48.0	HYDERABAD	2012	11	39.5
HYDERABAD	2008	12	0.0	HYDERABAD	2012	12	0.0
HYDERABAD	2009	1	0.0	HYDERABAD	2013	1	0.3
HYDERABAD	2009	2	0.0	HYDERABAD	2013	2	17.0
HYDERABAD	2009	3	2.1	HYDERABAD	2013	3	0.0
HYDERABAD	2009	4	23.0	HYDERABAD	2013	4	74.5
HYDERABAD	2009	5	17.3	HYDERABAD	2013	5	10.2
HYDERABAD	2009	6	69.0	HYDERABAD	2013	6	203.2
HYDERABAD	2009	7	55.5	HYDERABAD	2013	7	197.2
HYDERABAD	2009	8	353.7	HYDERABAD	2013	8	124.8
HYDERABAD	2009	9	145.6	HYDERABAD	2013	9	155.4
HYDERABAD	2009	10	69.6	HYDERABAD	2013	10	239.1
HYDERABAD	2009	11	28.0	HYDERABAD	2013	11	14.0
HYDERABAD	2009	12	4.4	HYDERABAD	2013	12	0.0
HYDERABAD	2010	1	6.3	HYDERABAD	2014	1	0.0
HYDERABAD	2010	2	2.7	HYDERABAD	2014	2	0.7
HYDERABAD	2010	3	0.0	HYDERABAD	2014	3	47.3
HYDERABAD	2010	4	0.6	HYDERABAD	2014	4	13.9
HYDERABAD	2010	5	17.4	HYDERABAD	2014	5	34.3
HYDERABAD	2010	6	150.8	HYDERABAD	2014	6	73.4
HYDERABAD	2010	7	338.8	HYDERABAD	2014	7	174.2
HYDERABAD	2010	8	216.7	HYDERABAD	2014	8	162.2
HYDERABAD	2010	9	231.1	HYDERABAD	2014	9	66.9
HYDERABAD	2010	10	55.5	HYDERABAD	2014	10	27.3
HYDERABAD	2010	11	46.8	HYDERABAD	2014	11	44.2
HYDERABAD	2010	12	15.2	HYDERABAD	2014	12	0.6




 एम. रवींद्र कुमार / M.RAVINDRA KUMAR
 मौसम विज्ञानी - 'बी' / Meteorologist 'B'
 कृते प्रमुख, मौसम केंद्र, हैदराबाद/for Head, MC Hyderabad

प्रभारी निदेशक/Director I/C
 मौसम केंद्र/Meteorological Centre
 हवाई अड्डा कालोनी/Airport Colony
 हैदराबाद-500 016

STATION	YEAR	MONTH	RAINFALL(MM)
HYDERABAD	2015	1	0.4
HYDERABAD	2015	2	0.0
HYDERABAD	2015	3	21.2
HYDERABAD	2015	4	99.2
HYDERABAD	2015	5	8.9
HYDERABAD	2015	6	167.6
HYDERABAD	2015	7	38.4
HYDERABAD	2015	8	60.1
HYDERABAD	2015	9	141.3
HYDERABAD	2015	10	65.1
HYDERABAD	2015	11	1.0
HYDERABAD	2015	12	0.0
HYDERABAD	2016	1	2.7
HYDERABAD	2016	2	0.0
HYDERABAD	2016	3	0.0
HYDERABAD	2016	4	9.0
HYDERABAD	2016	5	139.7
HYDERABAD	2016	6	141.8
HYDERABAD	2016	7	195.2
HYDERABAD	2016	8	74.1
HYDERABAD	2016	9	439.7
HYDERABAD	2016	10	37.1
HYDERABAD	2016	11	5.4
HYDERABAD	2016	12	0.0
HYDERABAD	2017	1	0.0
HYDERABAD	2017	2	0.0
HYDERABAD	2017	3	4.5
HYDERABAD	2017	4	8.9
HYDERABAD	2017	5	72.6
HYDERABAD	2017	6	202.3
HYDERABAD	2017	7	165.0
HYDERABAD	2017	8	210.1
HYDERABAD	2017	9	187.3
HYDERABAD	2017	10	171.6
HYDERABAD	2017	11	0.0
HYDERABAD	2017	12	0.0
HYDERABAD	2018	1	0.0
HYDERABAD	2018	2	0.0
HYDERABAD	2018	3	0.5
HYDERABAD	2018	4	58.4
HYDERABAD	2018	5	37.8
HYDERABAD	2018	6	101.4
HYDERABAD	2018	7	92.0
HYDERABAD	2018	8	132.0
HYDERABAD	2018	9	93.2
HYDERABAD	2018	10	72.2
HYDERABAD	2018	11	0.0
HYDERABAD	2018	12	47.9

STATION	YEAR	MONTH	RAINFALL(MM)
HYDERABAD	2019	1	11.1
HYDERABAD	2019	2	1.8
HYDERABAD	2019	3	0.0
HYDERABAD	2019	4	46.7
HYDERABAD	2019	5	27.1
HYDERABAD	2019	6	86.8
HYDERABAD	2019	7	93.2
HYDERABAD	2019	8	128.0
HYDERABAD	2019	9	321.7
HYDERABAD	2019	10	143.8
HYDERABAD	2019	11	1.9
HYDERABAD	2019	12	4.3
HYDERABAD	2020	1	38.8
HYDERABAD	2020	2	4.1
HYDERABAD	2020	3	23.5
HYDERABAD	2020	4	21.0
HYDERABAD	2020	5	42.3
HYDERABAD	2020	6	225.4
HYDERABAD	2020	7	129.2
HYDERABAD	2020	8	250.2
HYDERABAD	2020	9	204.1
HYDERABAD	2020	10	400.7
HYDERABAD	2020	11	8.9
HYDERABAD	2020	12	0.0
HYDERABAD	2021	1	1.9
HYDERABAD	2021	2	6.2
HYDERABAD	2021	3	0.0
HYDERABAD	2021	4	27.5
HYDERABAD	2021	5	34.5
HYDERABAD	2021	6	157.6
HYDERABAD	2021	7	325.6
HYDERABAD	2021	8	142.1
HYDERABAD	2021	9	220.0
HYDERABAD	2021	10	164.5
HYDERABAD	2021	11	9.4
HYDERABAD	2021	12	0.0
HYDERABAD	2022	1	3.9
HYDERABAD	2022	2	0.0
HYDERABAD	2022	3	0.1
HYDERABAD	2022	4	3.3
HYDERABAD	2022	5	80.7
HYDERABAD	2022	6	85.2
HYDERABAD	2022	7	371.6
HYDERABAD	2022	8	93.1
HYDERABAD	2022	9	180.9
HYDERABAD	2022	10	161.9
HYDERABAD	2022	11	0.5
HYDERABAD	2022	12	8.2




 एम. रवींद्र कुमार / M.RAVINDRA KUMAR
 मौसम विज्ञानी - 'बी' / Meteorologist 'B'
 कृते प्रमुख, मौसम केंद्र, हैदराबाद/for Head, MC Hyderabad

फि, प्रभारी निदेशक/Director I/C
 मौसम केंद्र/Meteorological Centre
 हवाई अड्डा कालोनी/Airport Colony
 बेगमपेट, हैदराबाद-500 016.

VENKATA NARESH KUMAR

Plot 867, Road No.45, Jubilee Hills, Hyderabad 500033.

Tel: +919989659275; email: evnkumar.rgp@gmail.com**ACCOMPLISHED SCIENTIST- GEOLOGY & HYDROGEOLOGY***Offering a sterling experience of over 25+ years, seeking assignments in the field of Earth Science across the industry.***PROFILE**

- Academically astute, dedicated & resourceful **Scientist – Geology & Hydrogeology** offering over **25+ years** of experience in various fields of Geology and Hydrogeology.
- Distinction of having worked for various Natural Resources / Infrastructure Projects, Vectorization & Digital data base creation for various applications.
- Established professional credibility in Remote Sensing and GIS, Mapping for Mineral Exploration and Field Work, Ore estimations, Topographic surveys using GPS, Total Stations and other conventional surveys, Geophysical & Hydrogeological surveys. EIA / EMP Studies for MoEF & CC related Projects.
- Dedicated individual with a reputation for consistently going beyond what is required and using personal high standards to achieve results.
- Demonstrated ability to manage human, financial and material resources towards the achievement of stated objectives, to plan and manage work programmes and to lead, motivate and provide effective guidance to a team of professionals.

Technical Competencies

- *Exploration, Pre-feasibility report, Mineral prospecting, Sampling - Geological mapping for Limestone, Iron ore, Manganese, Bauxite, Laterite, Dolomite, Quartz, Feldspar, Mica, Barytes, Phosphate, Granite, etc*
- *Interpretation of Satellite Imagery for preparing thematic layers of Geologic, Geomorphologic, Structural, Hydrogeology, Land use / Land cover, base map and their ground truth collection.*
- *Digitization and Conversion of maps, Geological use of GIS, Digital data base creation for various applications.*
- *Geology and Hydrogeology Studies related to MOEF & CC.*
- *Geophysical Resistivity surveys for Groundwater exploration, Soil profile studies for Earth work estimation in canal and pipeline projects, Foundations for huge structures, etc*
- *Groundwater resource planning, Yield tests to assess aquifer parameters, well construction and Borehole logging.*
- *OFC, Gas pipeline, Water pipeline Route alignment surveys and map preparation using Total station and GPS*
- *GCP's collection and route navigation by handheld GPS survey.*
- *Technical report writing for Application projects.*

PROFESSIONAL EXPERIENCE**M/S GEO-INFO SYSTEMS AND TECHNOLOGISTS****2001**

since March

Scientist / Project Manager- Geology & Hydrogeology

- Geological mapping for Mineral prospecting and Exploration, Evaluation of ore deposits.
- Remote sensing Applications for various Natural Resources application projects

- Perform Hydrogeological investigations & provide other technical assistance in support of interdepartmental programs & projects, including minimum flows/ levels, permitting, Land Acquisition, quality Communities & Water supply programs
- Location of Temperature specific Aquifer zones for the application in Geothermal cooling.
- Maintain groundwater level, groundwater quality & well inventory databases including data base management. Assist in scheduling field & data technicians, statistical analysis of water level & water quality data.
- Design and supervise specialized groundwater investigations including drilling, coring, water sampling, pumping tests. Create Requests for Proposals, Bids and other documents related to contractual services.
- Prepare annual groundwater data report and other reports as assigned.
- Coordinate with contractors for well drilling, coring, water sampling, Geo-physical logging, pumping tests and special projects. Provide data and technical assistance to state and local agencies, consultants, and the public.
- Coordinate for waste disposal sites, monitor well design, public supply well design and groundwater quality complaints. Develop and administer contracts for groundwater related problems.
- Review of information provided during the department's presentation, subsequent documentation, and position descriptions, to establish a progression in addition to and above the traditional Geologist series.
- Consult across-division boundaries; advise directors, the commissioner, and outside agency decision-makers on current technological advancements in specialties; develop new scientific methodology and new research programs.
- Develop avenues for geological / hydrogeological specialists, project and program managers, and executives within the department, to access new technology and methodology.
- Direct the complex, multidisciplinary research programs; provide technical expertise at the highest levels while representing the department and make presentations in national forums on scientific research involving one of the major departmental program functions.
- Provide scientific leadership to top executives and scientists of governmental, academic, and industry sectors.
- Provide maintenance and supervise others in the care, cleaning, repair, and restoration of displays, equipment, and other systems in all areas of the department including the Earth Science Lab.

**NATIONAL REMOTE SENSING AGENCY, DEPT. OF SPACE, GOVT. OF INDIA, HYDERABAD
2001**

Aug 1999 – Mar

Research Fellow, Remote Sensing Application Projects, and GIS

**THE CENTRE FOR ECONOMIC AND SOCIAL STUDIES, HYDERABAD
1998**

Feb 1996 – July

Research Associate

**INSTITUTE OF PUBLIC ENTERPRISE, OSMANIA UNIVERSITY, HYDERABAD
1999**

Aug 1998 – Aug

Field counselor, Project Social Safety Net

KEY PROJECTS HANDLED:

- *Detailed Geologic Mapping for Iron ore, Manganese, Bauxite, Limestone, Ochre, Granite, etc., covering exploration, Resource evaluation, Reserve evaluation for M/s Samala Mines and Ores Pvt. Ltd. and M/s Havya Minerals Pvt. Ltd.*

- Carried out Detailed Geologic Mapping for major and minor minerals at Marutania, Senegal, Mali, Middle East and USA.
- Hydrogeologic studies encompassing Geophysical surveys, Aquifer location for Geothermal cooling Application Viz., temperature specific, chemical quality and desired yields for Geothermal India, Pune.
- Preparation of Thematic Maps and Preliminary Report using Satellite Data in targeting possible mineralized zones for parts of Bastar District, Chhattisgarh.
- Preliminary Appraisal Report on Economic Potential of Alifokpa, Ogoja Province of Eastern Nigeria for M/s Ashapura Mining Pvt. Ltd., Mumbai by integrated approach using Satellite image interpretation and GIS.
- EIA & EMP Studies for Ken-Betwa Link Canal Project, Kelo Irrigation Project-Geology and Hydrogeology Studies.
- Catchment Area Treatment Plan preparation for Vattivagu Medium Irrigation Project, Adilabad District-Groundwater Regime Studies.
- EIA & EMP Studies for Kaleshwaram, Modikunta Vagu & PV Nareasimha Rao Kanthanapalli LIS Projects - Geology and Hydrogeology Studies.
- Detailed Groundwater Studies for M/s Tandhan Bio Chemicals Pvt. Ltd. Distillery Division, West Bengal.
- Preparation of Groundwater Prospects Maps under Rajiv Gandhi National Drinking water Mission Project for National Remote Sensing Agency, Dept. of Space, Govt. of India to narrow down the target zones for Exploration and Exploitation of Groundwater for all problem villages in India and to create a scientific data base under National Natural Resources Management services covering themes of Geology, Geomorphology, Structure, Hydrology, Land degradation, Recharge Structures suggestion, etc.
- Visual Interpretation of Satellite data, Limited Field Checks, Analysis, Quality Check, Digitization and Map Composition for final output generation in Arc Info
- Preparation of Mine Plans for Granite quarry lease and other minerals.
- Geophysical survey for profiling to estimate earth work for Canal excavation for EC Company
- Topographic survey for Generation of 1mt contours and generation of LS for pipeline alignment for lift irrigation scheme for M/s CC Geo-Engg.
- Corridor survey from Nagpur to New Delhi for proposed six lane road by National Highways Authority of India.
- OFC.Route alignment for cable laying to propose a suitable route alignment for laying OFC so that there are least obstacles in its maintenance in its future course, that entailed Survey using Total Station, GPS, Soil survey, Generation of Auto CAD drawings proposing route alignment for laying OFC, Preparation of soil report and output generation
- Digitization of Town Planning Maps, Village cadastral Maps and Water Shed Maps
- Greater Hyderabad City Project - Digitization, editing, Data base attachment and map generation
- Updating of Railway Tracks and demarcation of Railway property boundaries.
- Preparation of Mine Plans for Ms Ramco Cements, Anjani Cements, Jayajoti Cements.
- Project Solid Waste Management funded by European Economic Union, London. This entailed Environment Impact Assessment study on the management and recycling of Solid wastes such as Paper, Glass bottles and Municipal Waste
- Remote Sensing Application Projects and GIS
- Conducted various groundwater exploration surveys for Agriculture, Industry and Domestic purposes.

EDUCATIONAL CREDENTIALS

M.SC. TECH., HYDROGEOLOGY 1996 ♦ Osmania University

M.SC., GEOLOGY 1993 ♦ Osmania University

B.SC., MATHEMATICS, PHYSICS, GEOLOGY 1991 ♦ Osmania University

Post Graduate Diploma in Environmental Law & Policy, 2021 from National Law University, Delhi

Recognized by the Telangana & Andhra Pradesh Government as Registered Qualified person to prepare mining plans.

Accredited by QCI-NABET as Geo & HG Functional Area Expert to undertake A Category EIA & EMP projects.

Trainings Undergone

- *Field training with Central Ground water Board, Hyderabad involving Regional Hydrogeological studies, Collection of well inventory data and water levels using water level indicators, Drilling Rotary and DTH, Well logging and well Development, evaluation of aquifer Parameters by Pump Tests and Groundwater quality tests*
- *National Remote Sensing Agency, Dept. of Space, Govt. of India in the field of Remote sensing Applications*
- *Participated as a volunteer in the International Science Congress held at Osmania University*

Date of Birth: April 12th, 1969.

Languages Known: English, Hindi, and Telugu.

Passport: NO118046 Expiry date: 16-06-2025.

References: Sri M. Pratap Reddy, SMG- IBM Hyderabad (Retd.)

Sri Rafi Ahmed, Joint Director of Mines & Geology (Retd.) Govt. of Telangana.

E.V. Naresh Kumar

(E.V. NARESH KUMAR)

KEY CUM LOCATION MAP

M/s. Phoenix Shores Private Limited

Situated at Development Site For IT/ITES SEZ in Survey Numbers 285, 286 & 287

Pappalaguda Village, Gandipet Mandali, R.R. Dist. T. S.

PART OF SOI TOPOSHEET No **5K/07**

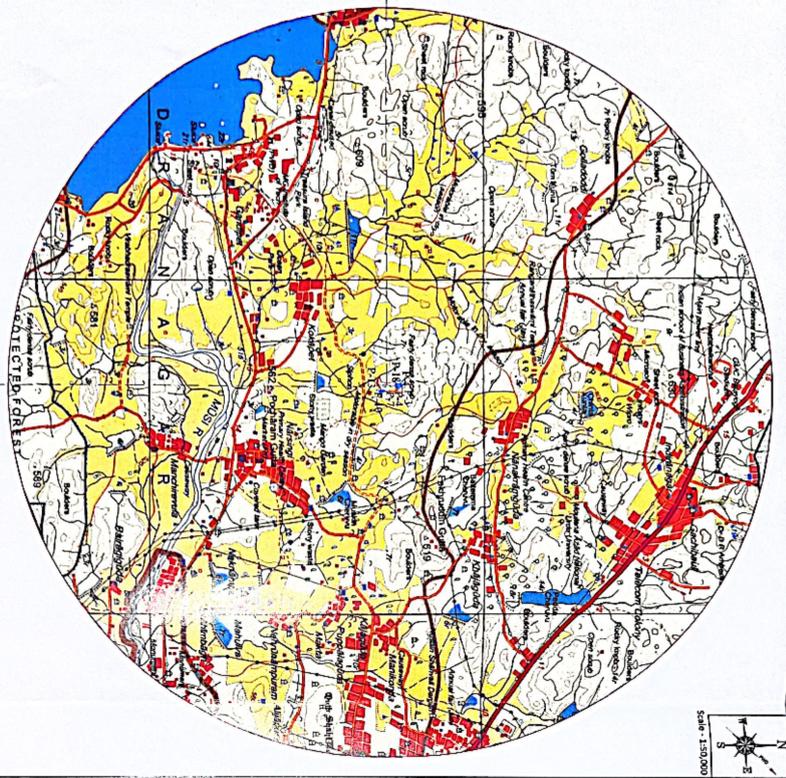
SOI TOPO SHEET INDEX

5K/07	5K/08	5K/09	5K/10
5K/06	5K/07	5K/08	5K/09

PROPOSED PLANT SITE GEO-COORDINATES

Bp. No.	LATITUDE	LONGITUDE
A	17° 24' 23.33" N	78° 20' 46.87" E
B	17° 24' 24.16" N	78° 20' 49.84" E
C	17° 24' 13.66" N	78° 20' 43.68" E
D	17° 24' 14.69" N	78° 20' 49.99" E

Map Datum WGS-84,
Precision ± 3m



LEGEND

- PROJECT AREA
- 10 Km RADIUS
- HABITATION
- STREAM
- TANK
- ROAD
- NH-18
- HT POWER LINE
- TALUK BOUNDARY
- BLIND

PROPONENT

E.N. Narasimhan
(E.N. NARASIMHAN)
FAL - Gen. R. HG

DRAINAGE AND WATERSHED MAP

PLATE - 3

M/s. Phoenix Spaces Private Limited

Situated at Development Site For IT/ITES SEZ in Survey Numbers 285, 286 & 287
Puppalguda Village, Gandipet Mandal, R.R. Dist. T. S.

PART OF SOI TOPOSHEET NO 5K07

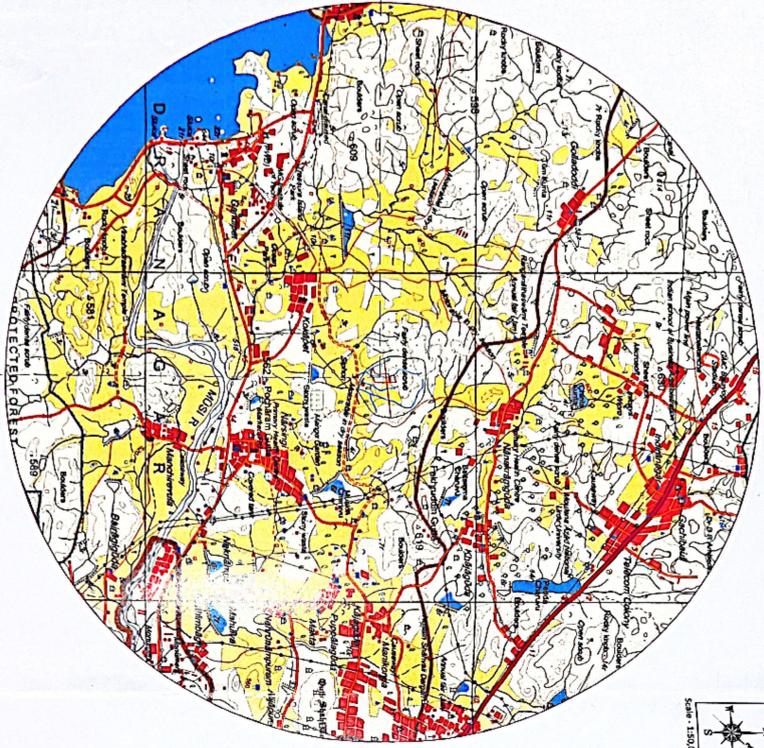
SOI TOPO SHEET INDEX



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Map Datum WGS-84,
Precision ± 3m



LEGEND

- PROJECT AREA
- 10 Km RADIUS
- HABITATION
- STREAM
- TANK
- ROAD
- NH-18
- HT POWER LINE
- TALUK BOUNDARY
- BUND
- WATERSHED

E. N. Naresht Kumar
(E.V. NARESH KUMAR)
P.A.E. - Geo & H.C.

GOOGLE SKETCH

M/s. Phoenix Spaces Private Limited

Situated at Development Site For IT/ITES SEZ in Survey Numbers 285, 286 & 287, Puppalaguda Village, Gandipet Mandal, R.R. Dist. T. S.



E. N. Nareskumar
(E.V. NARESH KUMAR)
F.A.E. - Geo & HG