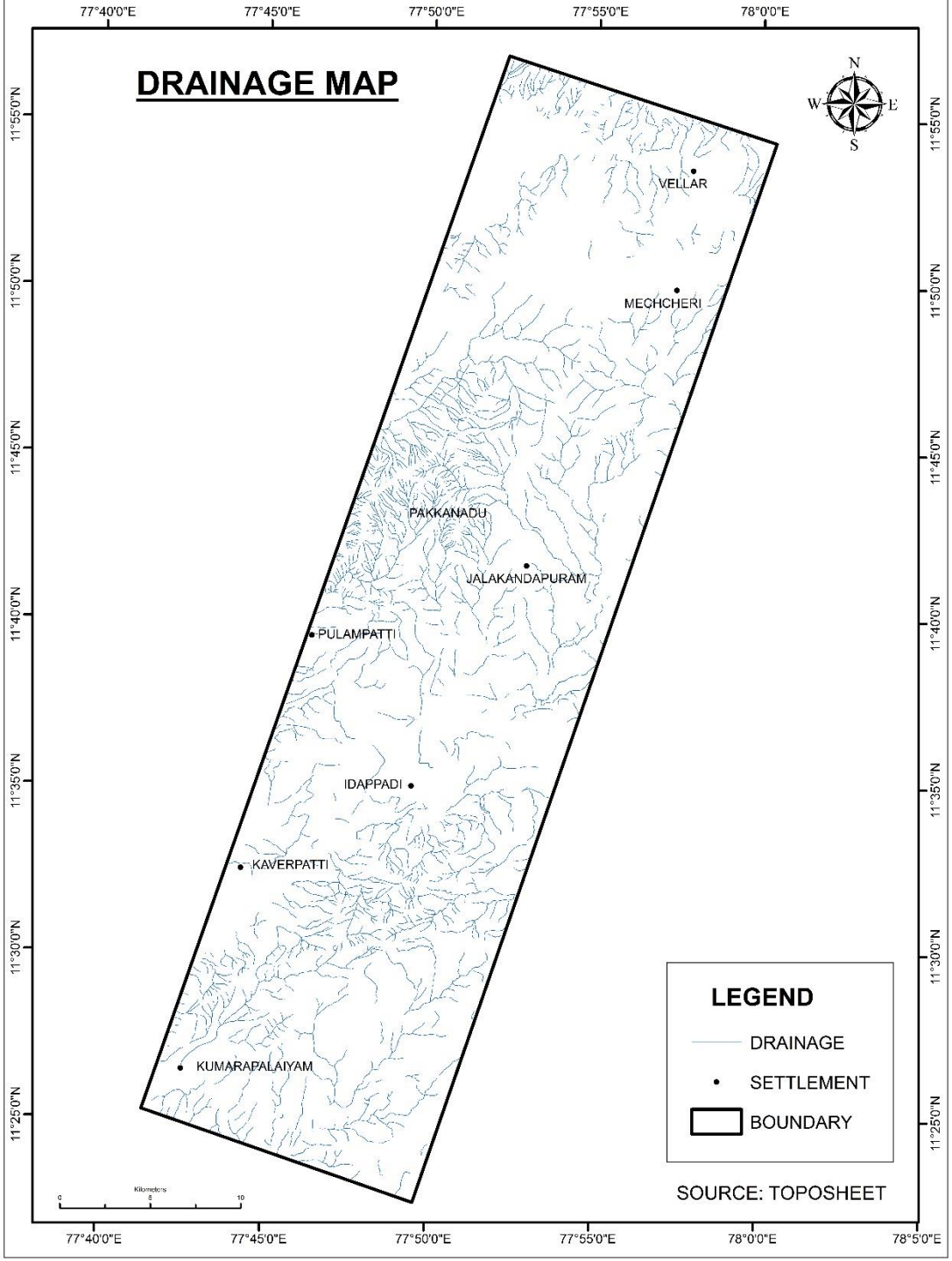
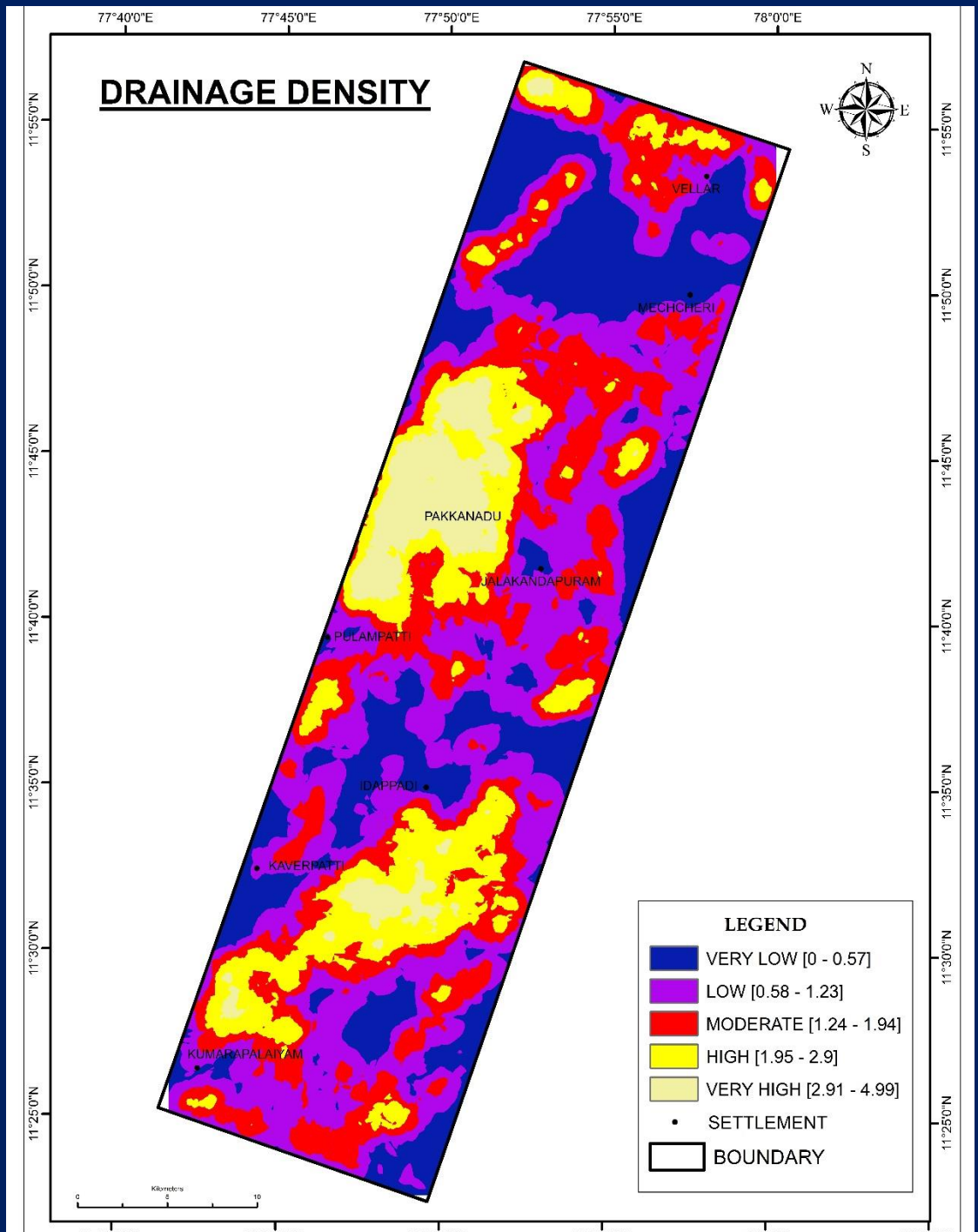
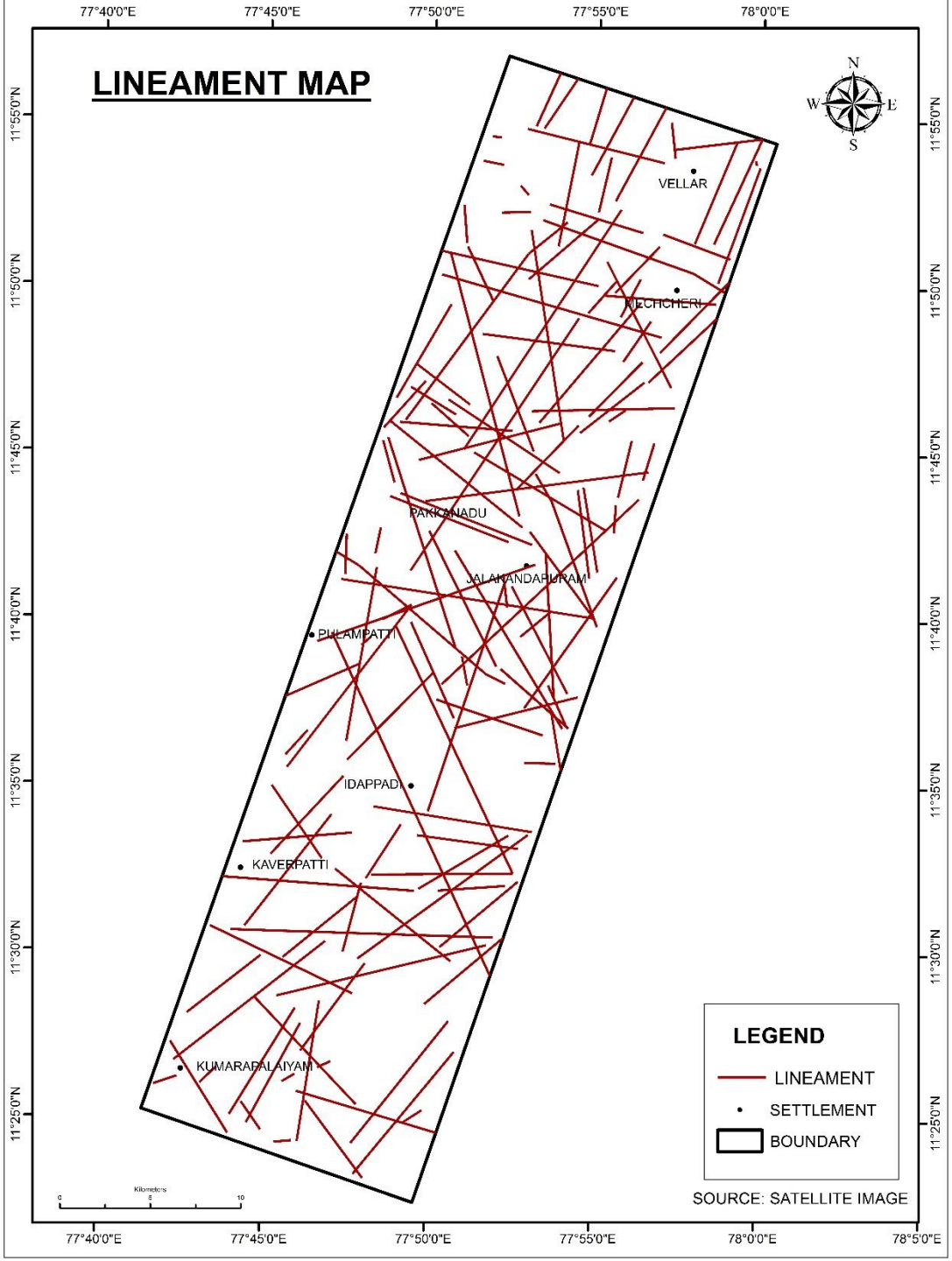
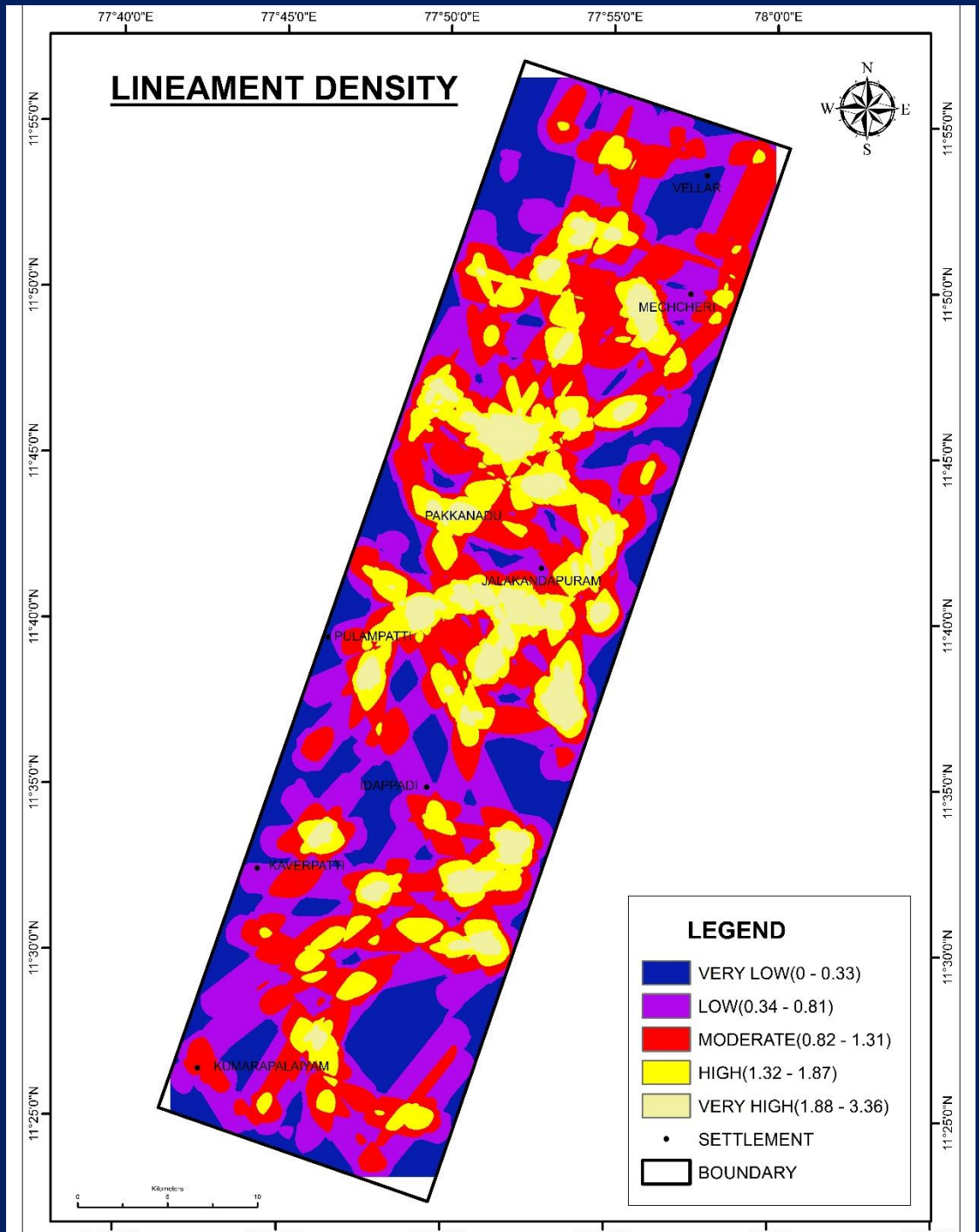
Mineral Exploration
Unit-5

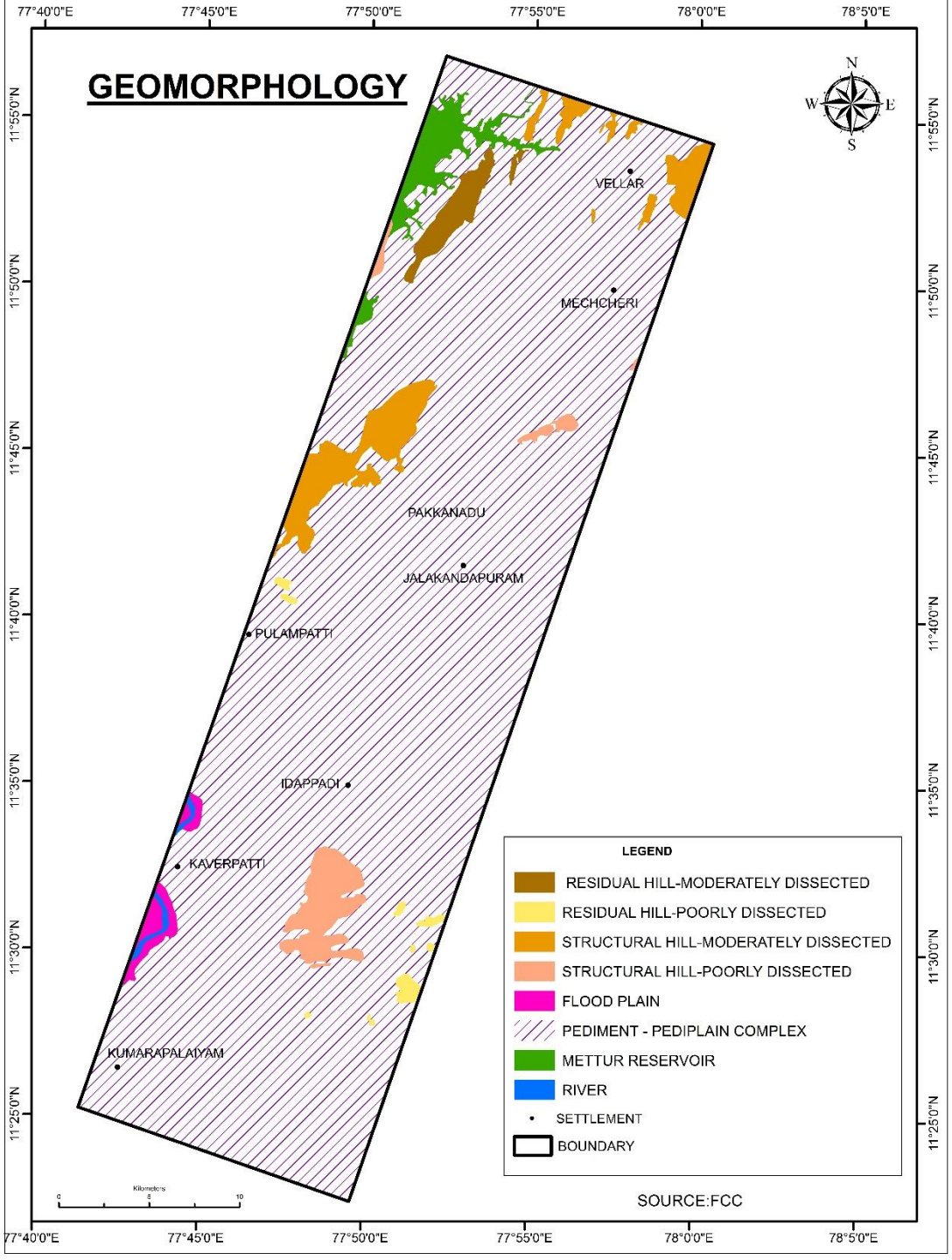
Multidisciplinary Approach

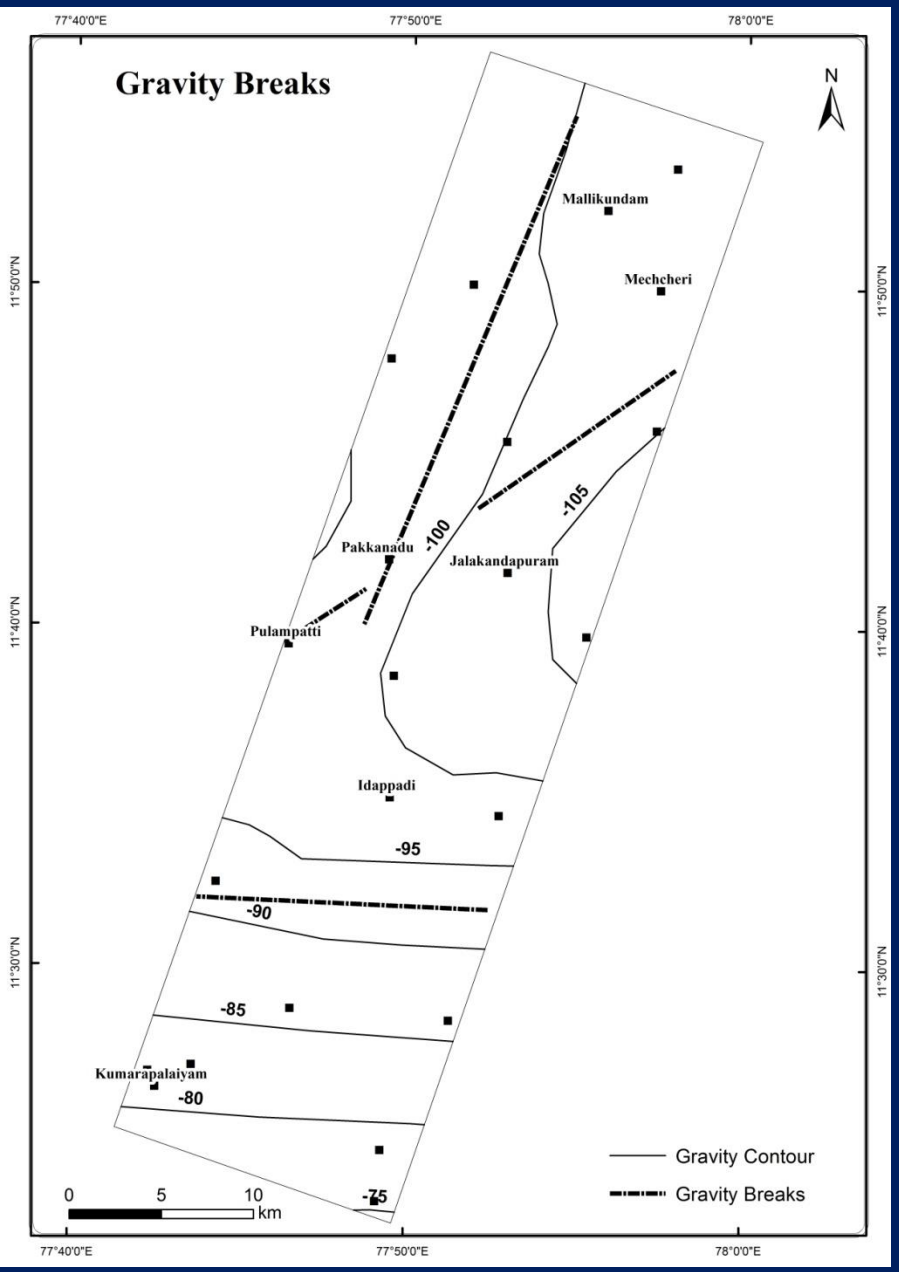

DRAINAGE MAP
N
W
E
S
VELLAR
MECHCHERI
PAKKANADU
JALAKANDAPURAM
PULAMPATTI
IDAPPADI
KAVERPATTI
KUMARAPALAIYAM
77°40'0"E
77°45'0"E
77°50'0"E
77°55'0"E
78°0'0"E
78°5'0"E
11°55'0"N
11°50'0"N
11°45'0"N
11°40'0"N
11°35'0"N
11°30'0"N
11°25'0"N
Kilometers
0
5
10
LEGEND
DRAINAGE
SETTLEMENT
BOUNDARY
SOURCE: TOPOSHEET

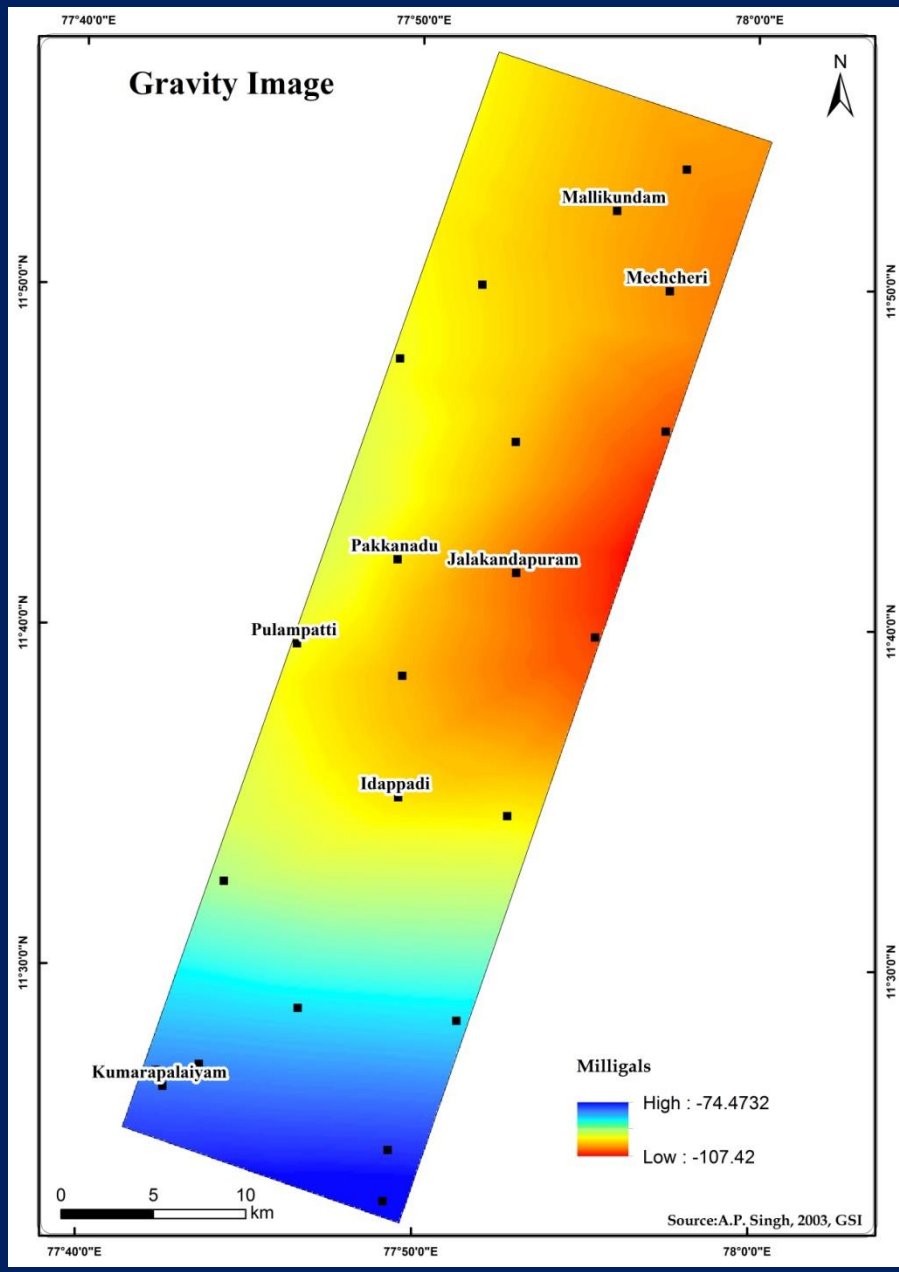

DRAINAGE DENSITY
77°40'0"E
77°45'0"E
77°50'0"E
77°55'0"E
78°0'0"E
11°55'0"N
11°50'0"N
11°45'0"N
11°40'0"N
11°35'0"N
11°30'0"N
11°25'0"N
N
W
E
S
VELLAR
MECHCHERI
PAKKANADU
JALAKANDAPURAM
PULAMPATTI
IDAPPADI
KAVERPATTI
KUMARAPALAYAM
Kilometers
LEGEND
VERY LOW [0 - 0.57]
LOW [0.58 - 1.23]
MODERATE [1.24 - 1.94]
HIGH [1.95 - 2.9]
VERY HIGH [2.91 - 4.99]
SETTLEMENT
BOUNDARY


LINEAMENT MAP
N
W
E
S
77°40'0"E
77°45'0"E
77°50'0"E
77°55'0"E
78°0'0"E
78°5'0"E
11°55'0"N
11°50'0"N
11°45'0"N
11°40'0"N
11°35'0"N
11°30'0"N
11°25'0"N
VELLAR
VELICHERI
PAKKANADU
JALAKANDAPURAM
PULAMPATTI
IDAPPADI
KAVERPATTI
KUMARAPALAIYAM
Kilometers
0
5
10
LEGEND
LINEAMENT
SETTLEMENT
BOUNDARY
SOURCE: SATELLITE IMAGE

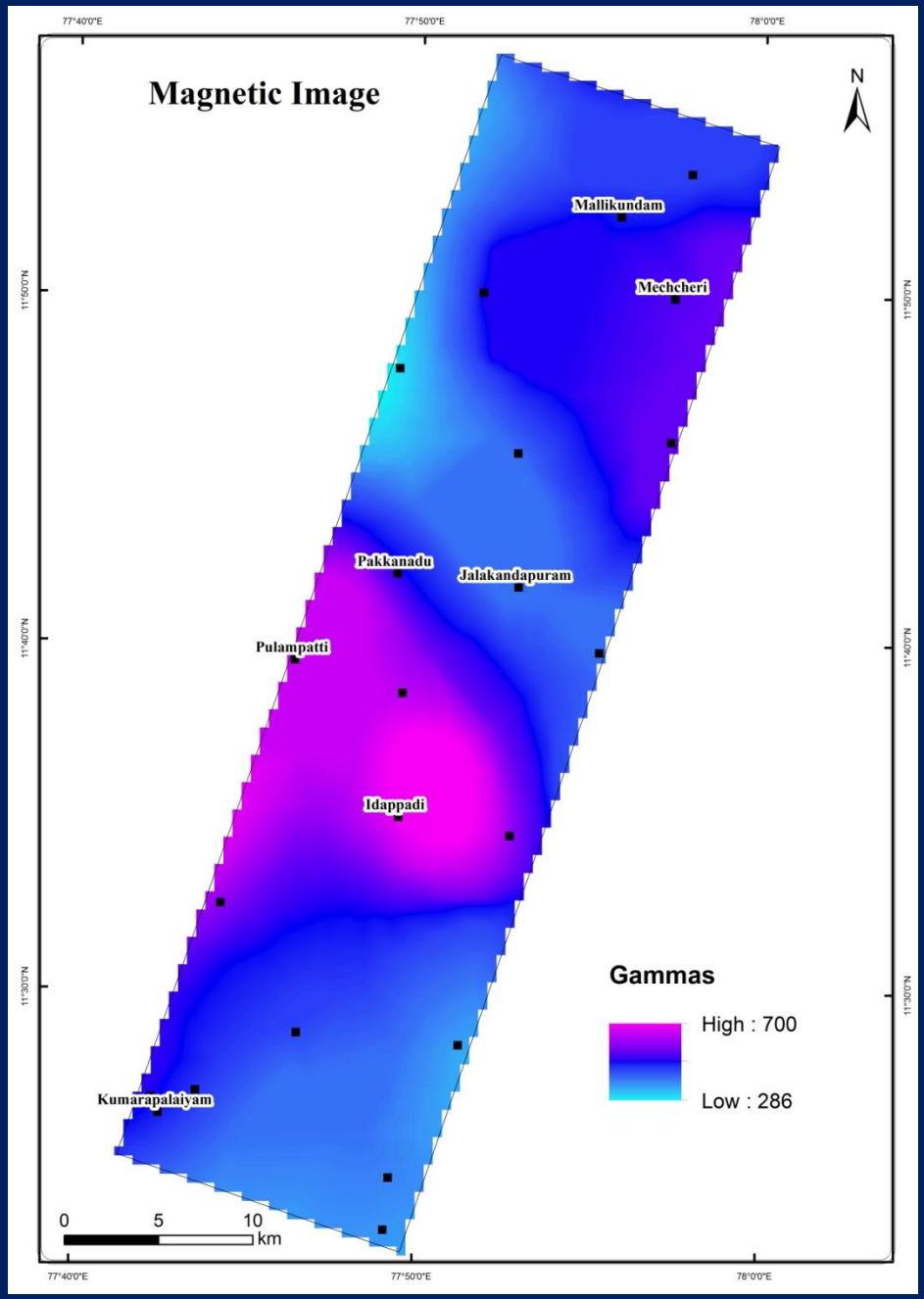

LINEAMENT DENSITY
77°40'0"E
77°45'0"E
77°50'0"E
77°55'0"E
78°0'0"E
11°55'0"N
11°50'0"N
11°45'0"N
11°40'0"N
11°35'0"N
11°30'0"N
11°25'0"N
N
W
E
S
VELLAR
MECHCHERI
PAKKANADU
JALAKANDAPURAM
PULAMPATTI
IDAPPADI
KAVERPATTI
KUMARAPALAIYAM
Kilometers
LEGEND
VERY LOW(0 - 0.33)
LOW(0.34 - 0.81)
MODERATE(0.82 - 1.31)
HIGH(1.32 - 1.87)
VERY HIGH(1.88 - 3.36)
SETTLEMENT
BOUNDARY

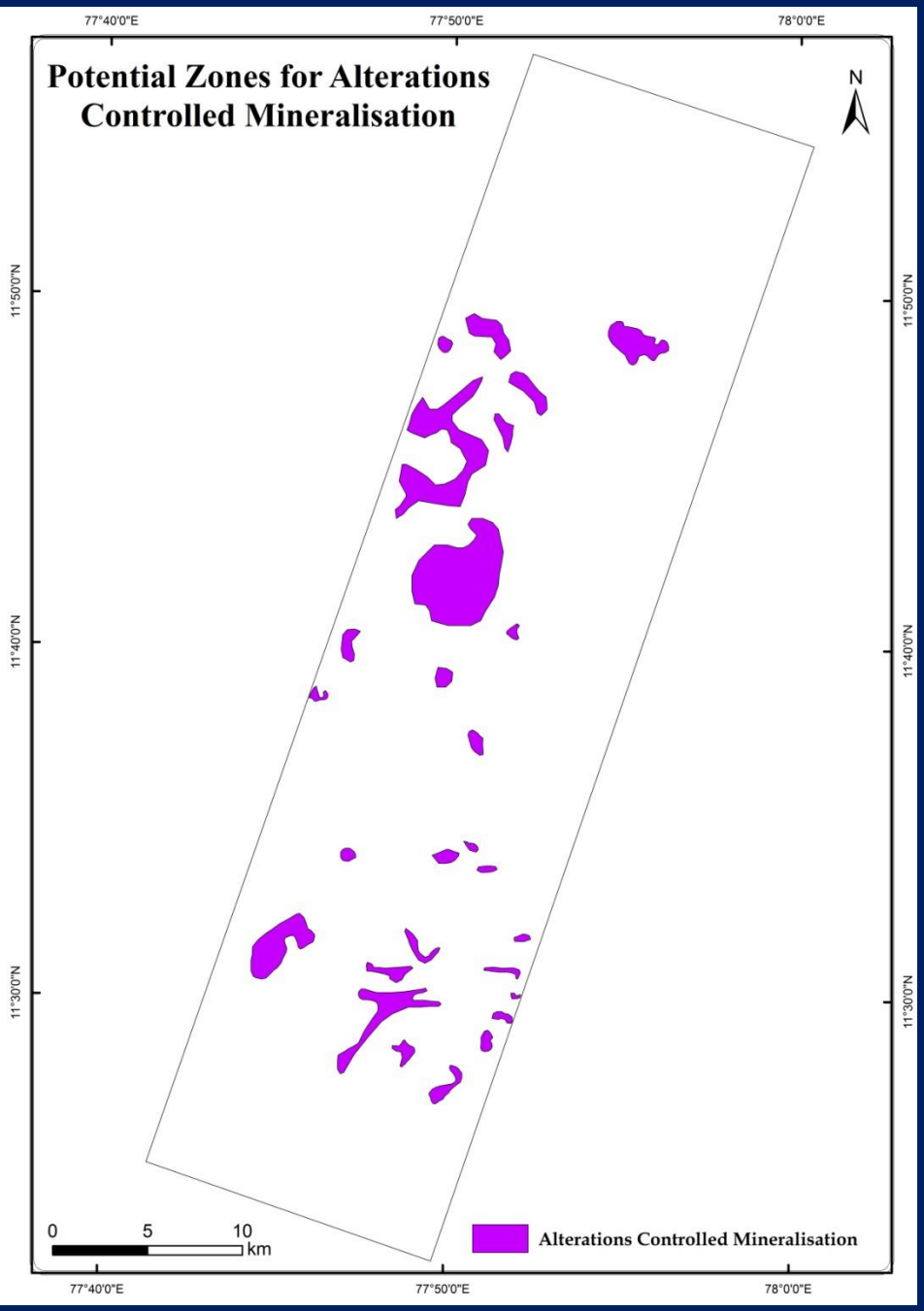

GEOMORPHOLOGY
77°40'0"E
77°45'0"E
77°50'0"E
77°55'0"E
78°0'0"E
78°5'0"E
11°55'0"N
11°50'0"N
11°45'0"N
11°40'0"N
11°35'0"N
11°30'0"N
11°25'0"N
N
S
E
W
VELLAR
MECHCHERI
PAKKANADU
JALAKANDAPURAM
PULAMPATTI
IDAPPADI
KAVERPATTI
KUMARAPALAIYAM
LEGEND
RESIDUAL HILL-MODERATELY DISSECTED
RESIDUAL HILL-POORLY DISSECTED
STRUCTURAL HILL-MODERATELY DISSECTED
STRUCTURAL HILL-POORLY DISSECTED
FLOOD PLAIN
PEDIMENT - PEDIPLAIN COMPLEX
METTUR RESERVOIR
RIVER
SETTLEMENT
BOUNDARY
Kilometers
0
5
10
SOURCE:FCC

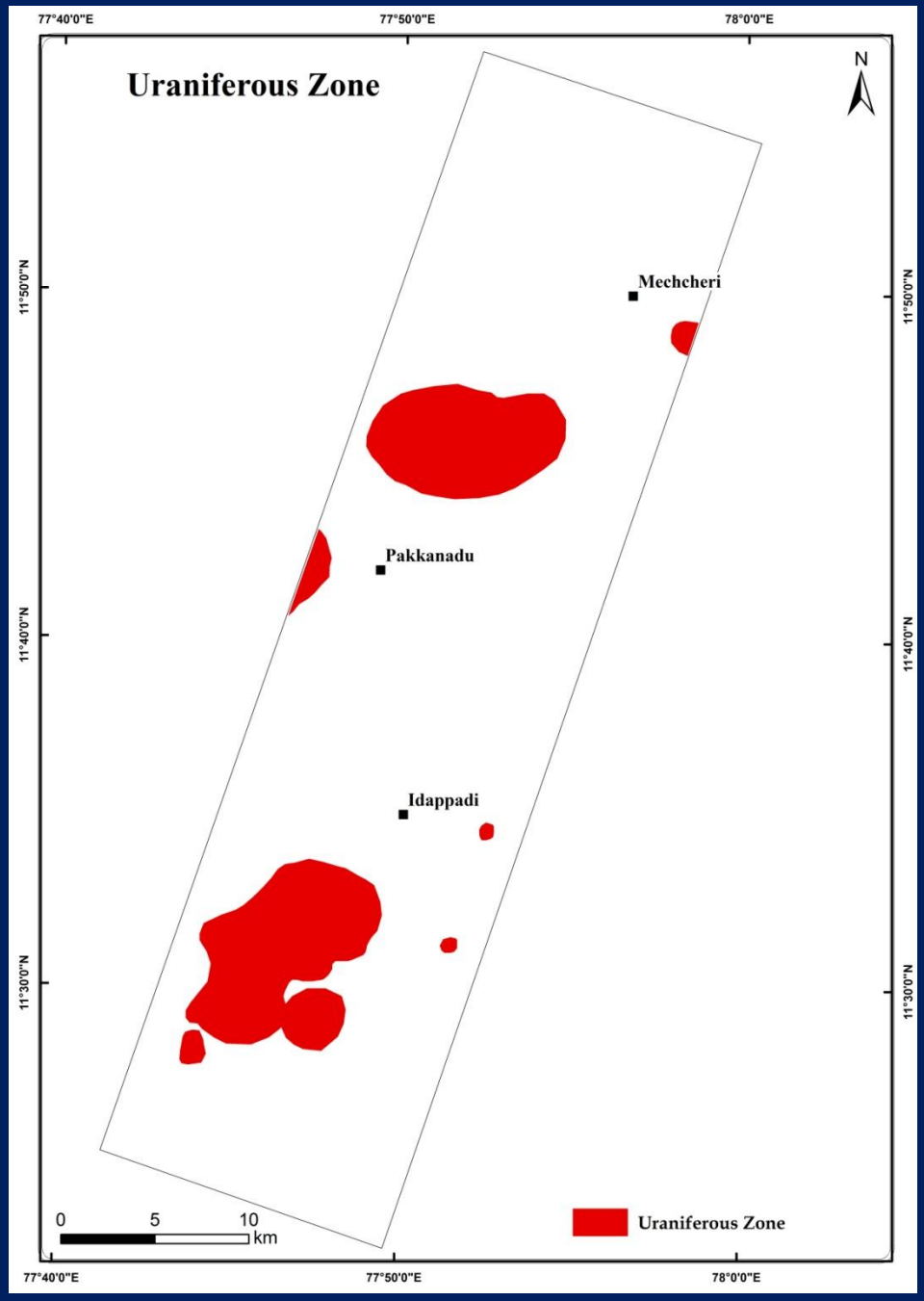

Gravity Breaks
N
77°40'0"E
77°50'0"E
78°0'0"E
11°50'0"N
11°40'0"N
11°30'0"N
Mallikundam
Mechcheri
Pakkanadu
Jalakandapuram
Pulampatti
Idappadi
Kumarapalaiyam
-100
-105
-95
-90
-85
-80
-75
0
5
10
km
Gravity Contour
Gravity Breaks

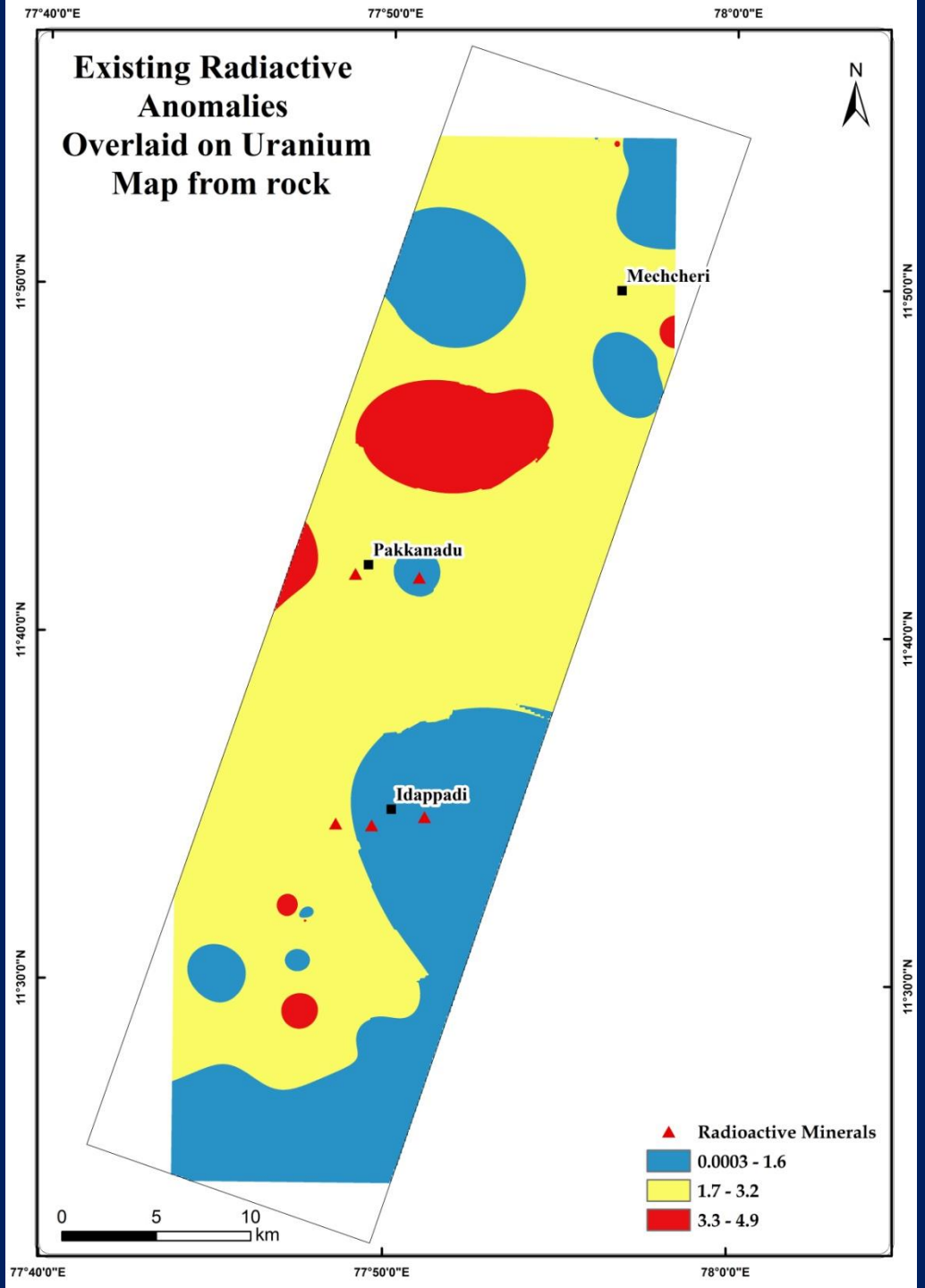

Gravity Image
N
77°40'0"E
77°50'0"E
78°0'0"E
11°50'0"N
11°40'0"N
11°30'0"N
Mallikundam
Mechcheri
Pakkanadu
Jalakandapuram
Pulampatti
Idappadi
Kumarapalaiyam
Milligals
High : -74.4732
Low : -107.42
0
5
10
km
Source:A.P. Singh, 2003, GSI

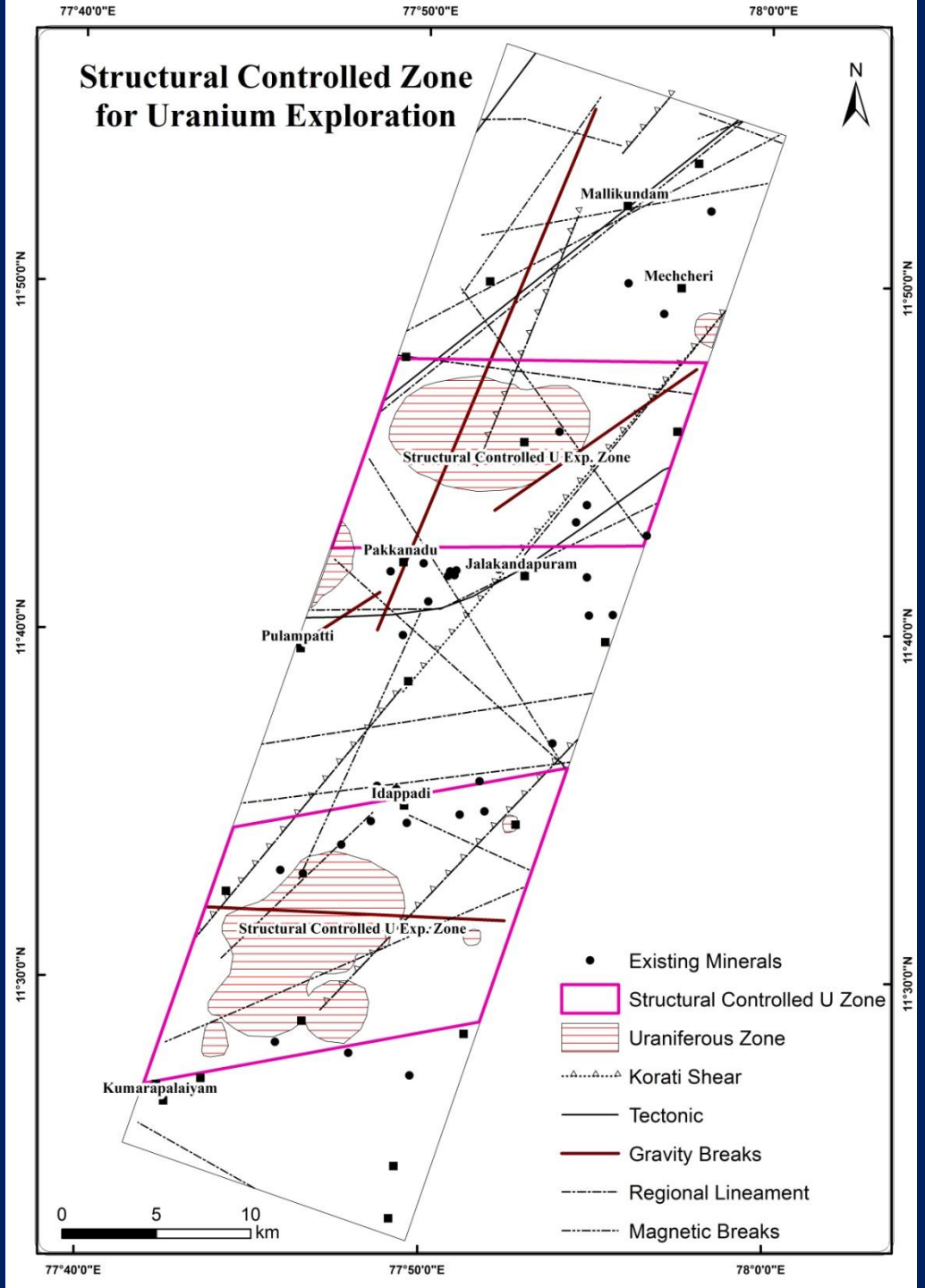

Magnetic Contour
N
77°40'0"E
77°50'0"E
78°0'0"E
11°50'0"N
11°40'0"N
11°30'0"N
450
500
350
300
550
400
600
700
650
650
550
500
450
400
350
Magnetic Breaks
Magnetic Contour
0
5
10
km

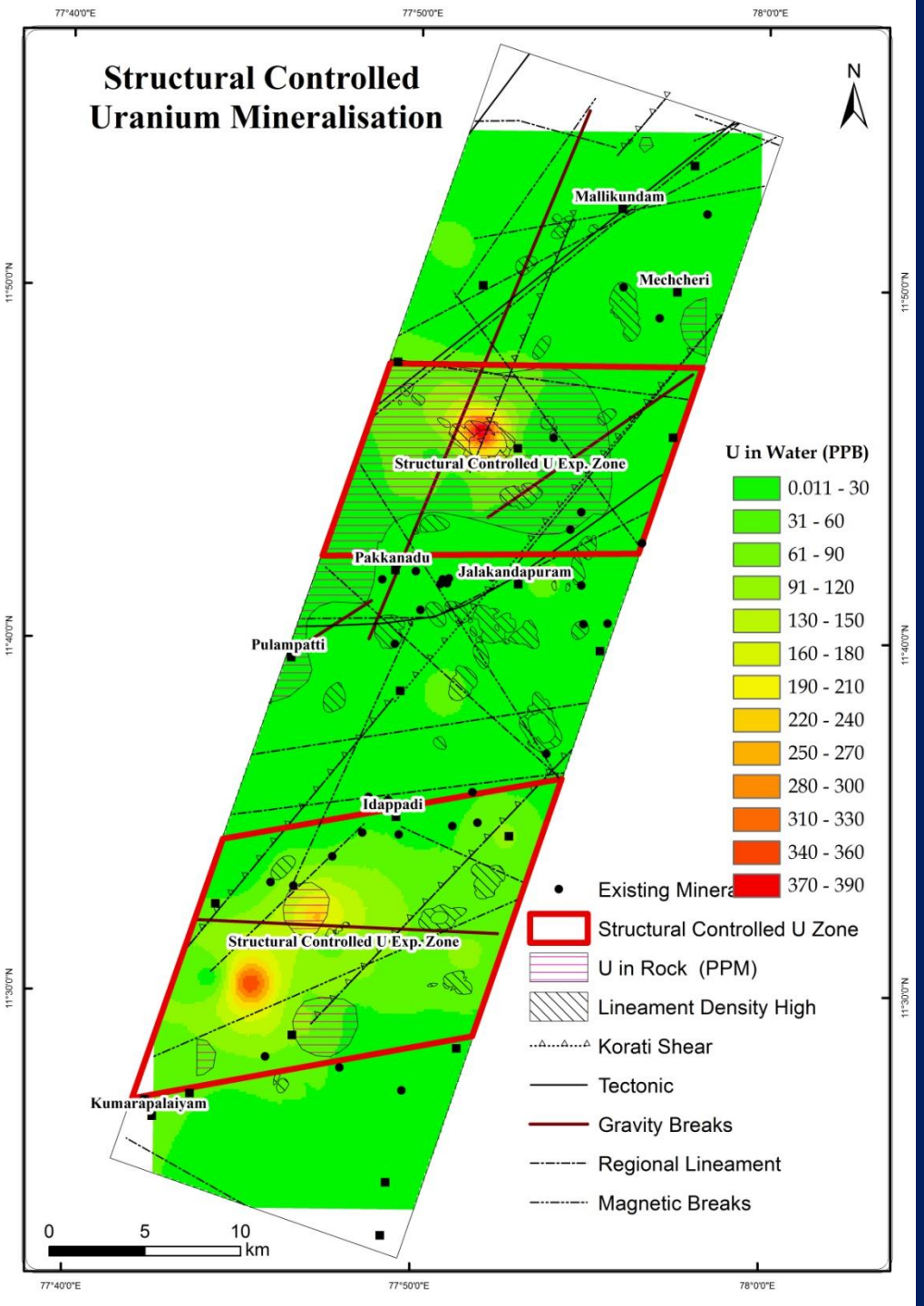

Magnetic Image
N
77°40'0"E
77°50'0"E
78°0'0"E
11°50'0"N
11°40'0"N
11°30'0"N
Mallikundam
Mechcheri
Pakkanadu
Jalakandapuram
Pulampatti
Idappadi
Kumarapalaiyam
Gammas
High : 700
Low : 286
0
5
10
km


Potential Zones for Alterations
Controlled Mineralisation
N
77°40'0"E
77°50'0"E
78°0'0"E
11°50'0"N
11°40'0"N
11°30'0"N
0
5
10
km
Alterations Controlled Mineralisation

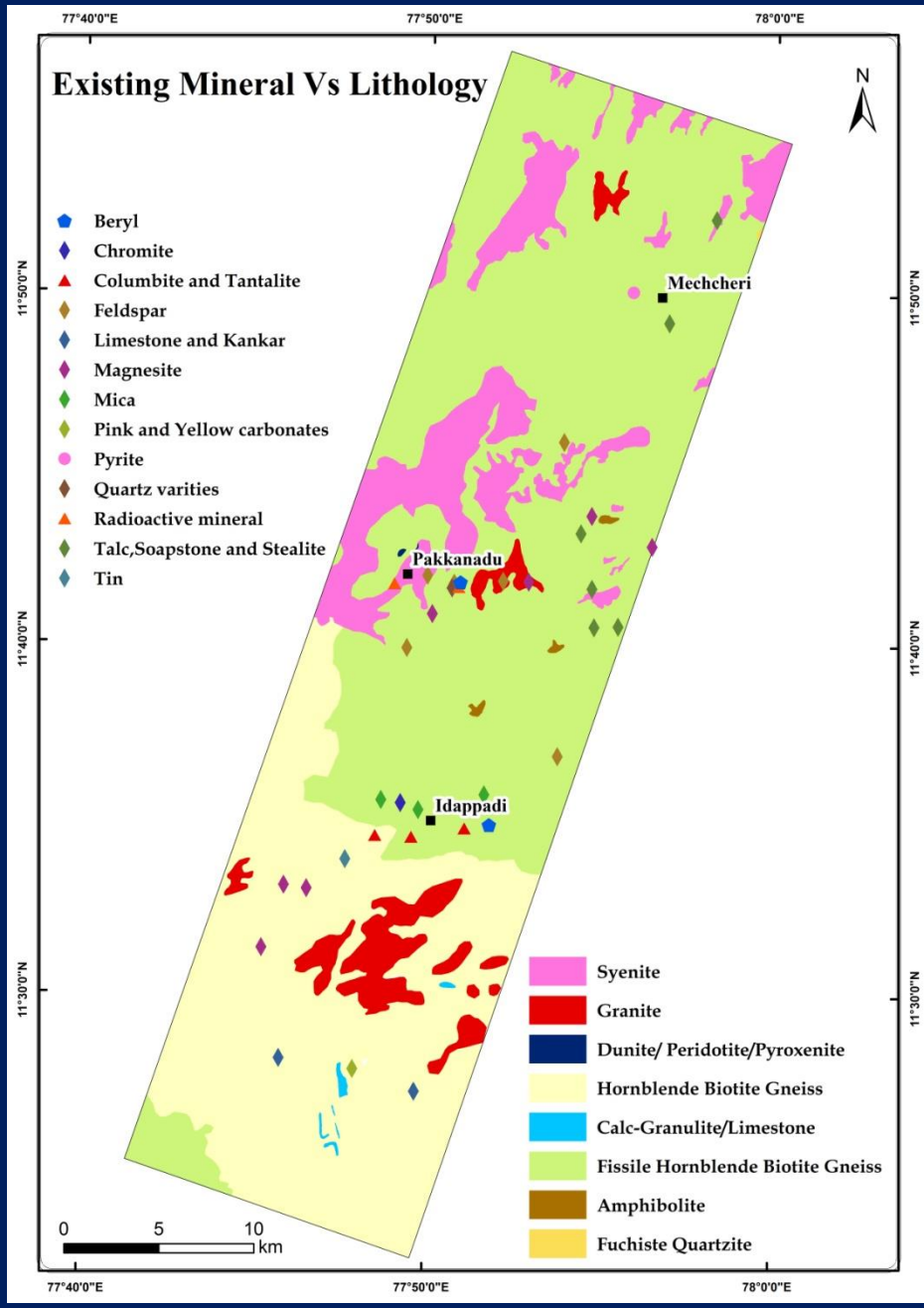

Uraniferous Zone
N
77°40'0"E
77°50'0"E
78°0'0"E
11°50'0"N
11°40'0"N
11°30'0"N
Mechcheri
Pakkanadu
Idappadi
0
5
10
km
Uraniferous Zone

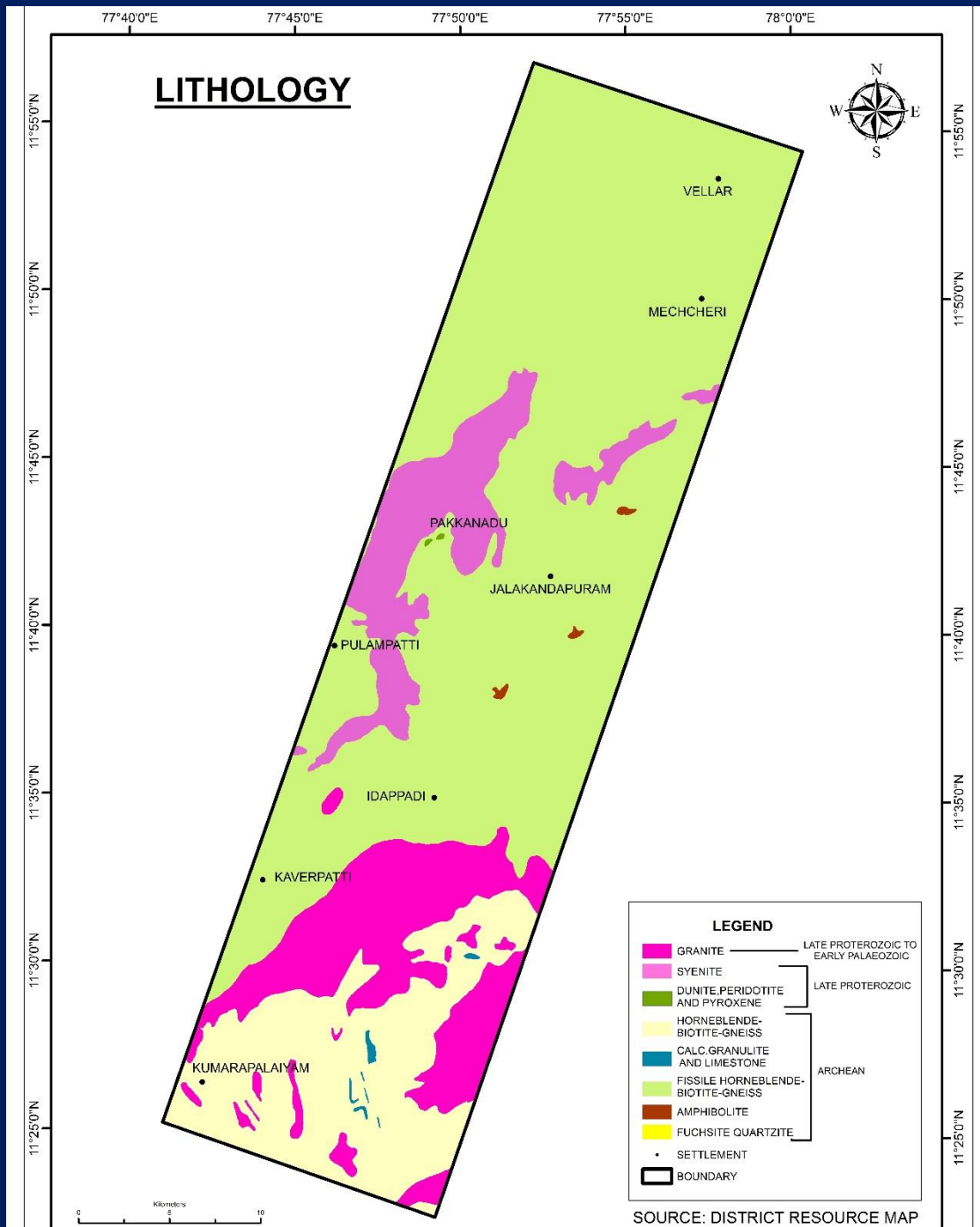

Existing Radiactive Anomalies Overlaid on Uranium Map from rock
N
77°40'0"E
77°50'0"E
78°0'0"E
11°50'0"N
11°40'0"N
11°30'0"N
Mechcheri
Pakkanadu
Idappadi
0
5
10
km
Radioactive Minerals
0.0003 - 1.6
1.7 - 3.2
3.3 - 4.9

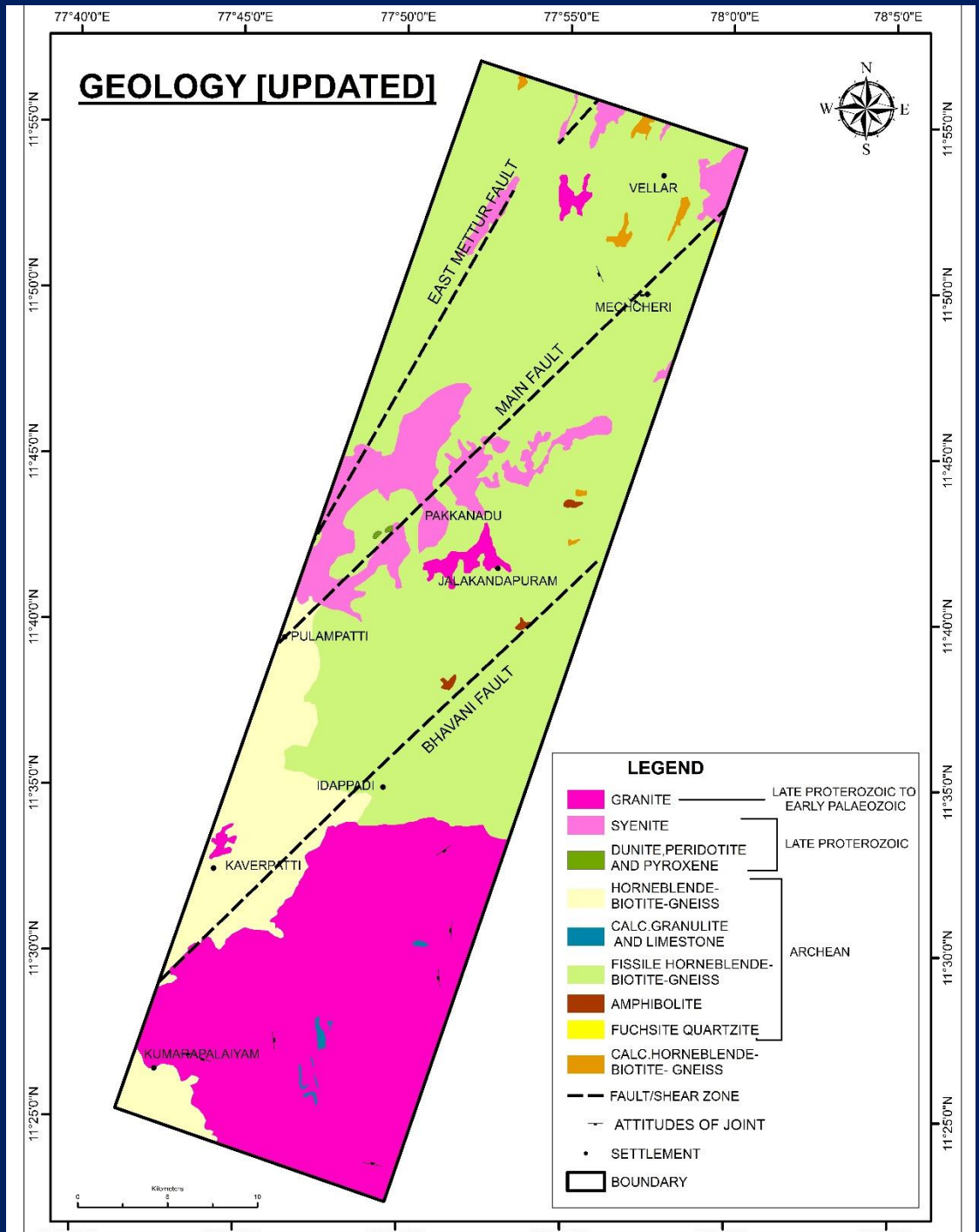

Structural Controlled Zone
for Uranium Exploration
N
77°40'0"E
77°50'0"E
78°0'0"E
11°50'0"N
11°40'0"N
11°30'0"N
Mallikundam
Mechcheri
Structural Controlled U Exp. Zone
Pakkanadu
Jalakandapuram
Pulampatti
Idappadi
Structural Controlled U Exp. Zone
Kumarapalaiyam
0
5
10
km
Existing Minerals
Structural Controlled U Zone
Uraniferous Zone
Korati Shear
Tectonic
Gravity Breaks
Regional Lineament
Magnetic Breaks

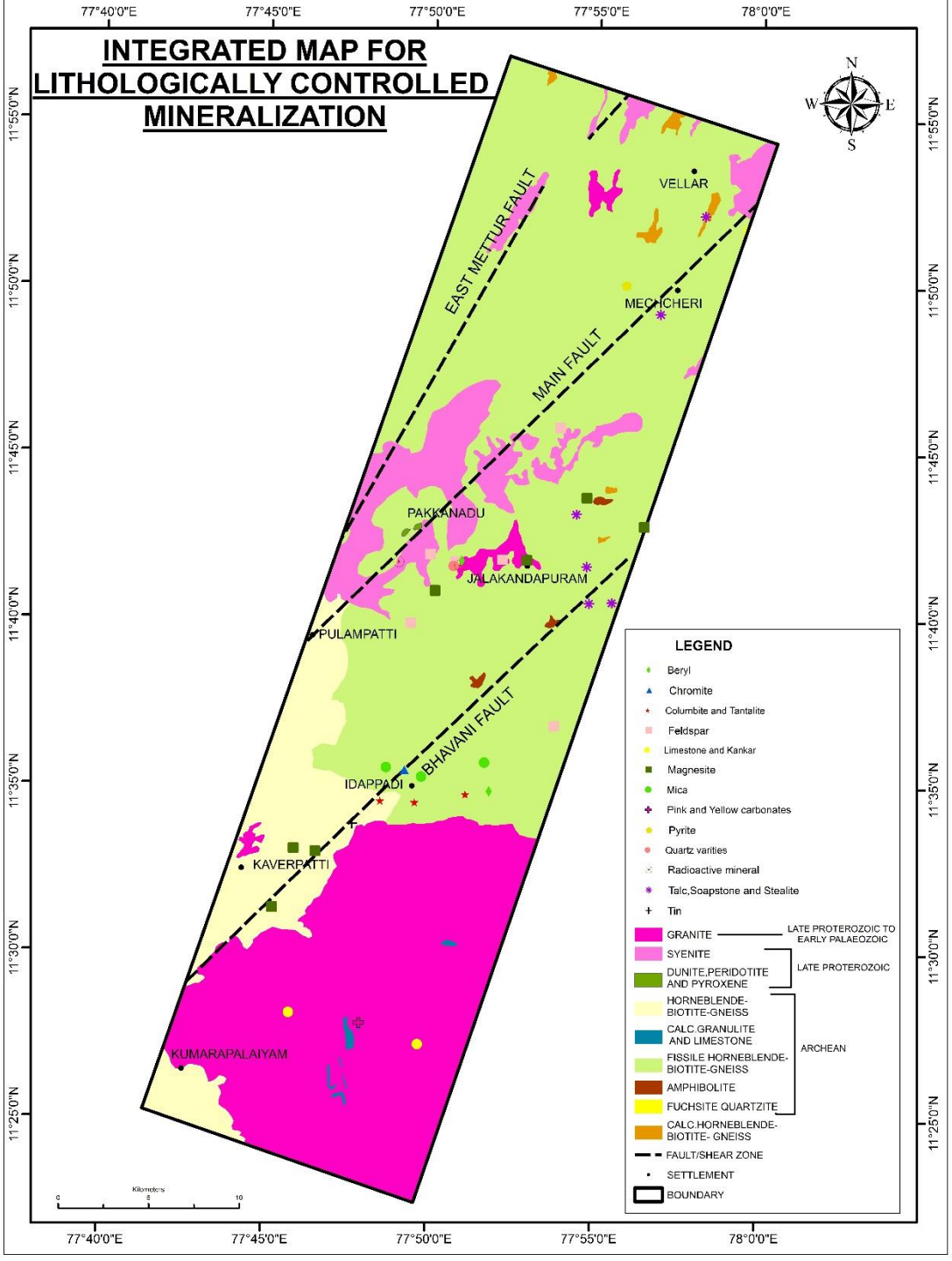

Structural Controlled
Uranium Mineralisation
N
77°40'0"E
77°50'0"E
78°0'0"E
11°50'0"N
11°40'0"N
11°30'0"N
Mallikundam
Mechcheri
Structural Controlled U Exp. Zone
Pakkanadu
Jalakandapuram
Pulampatti
Idappadi
Structural Controlled U Exp. Zone
Kumarapalaiyam
U in Water (PPB)
0.011 - 30
31 - 60
61 - 90
91 - 120
130 - 150
160 - 180
190 - 210
220 - 240
250 - 270
280 - 300
310 - 330
340 - 360
370 - 390
Existing Minera
Structural Controlled U Zone
U in Rock (PPM)
Lineament Density High
Korati Shear
Tectonic
Gravity Breaks
Regional Lineament
Magnetic Breaks
0
5
10
km

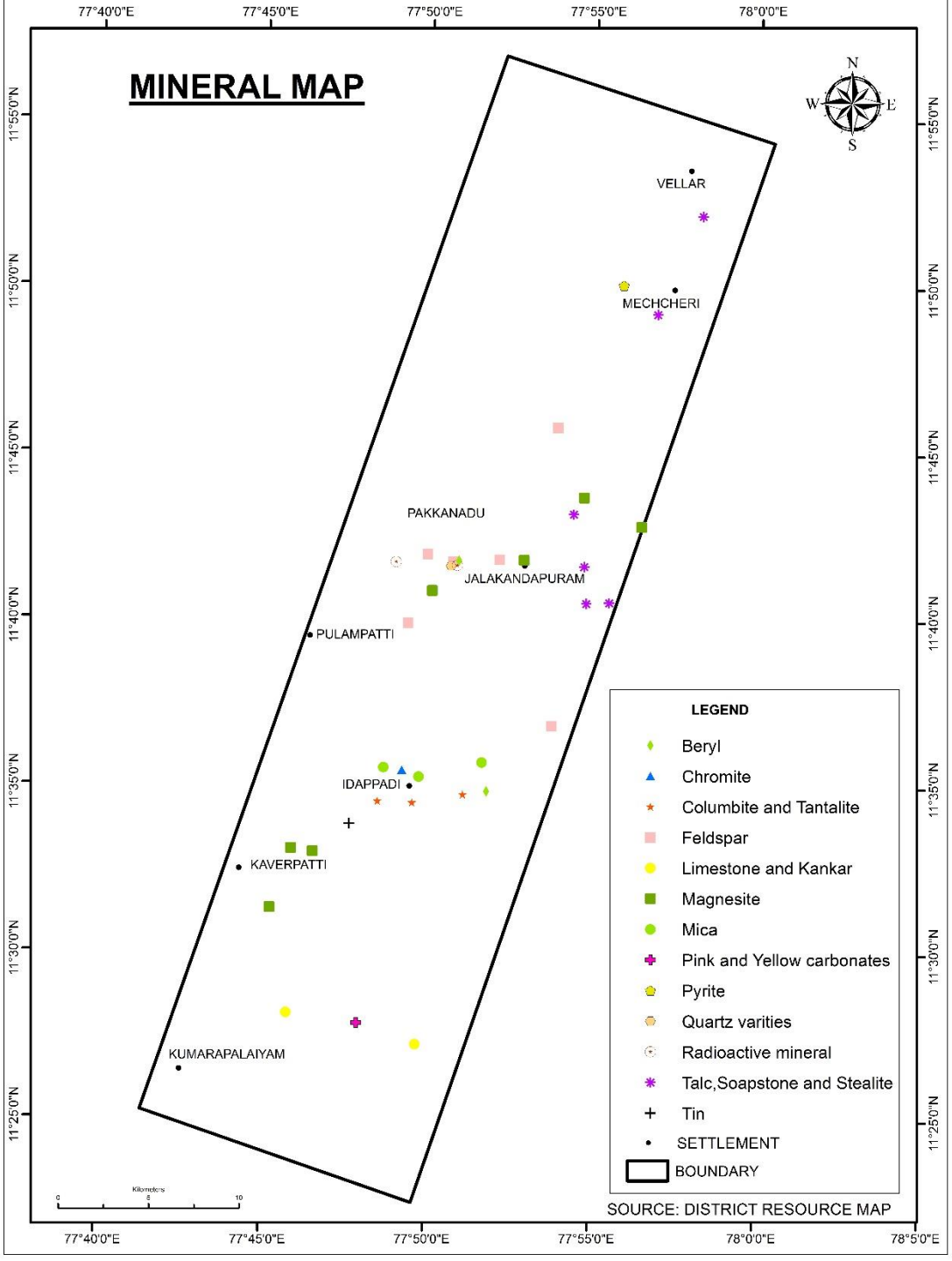

Potential Zones for Lithology Controlled Mineralisation
N
77°40'0"E
77°50'0"E
78°0'0"E
11°50'0"N
11°40'0"N
11°30'0"N
Mechcheri
Pakkanadu
Idappadi
Settlement
Lithology Controlled Mineralisation
0
5
10
km

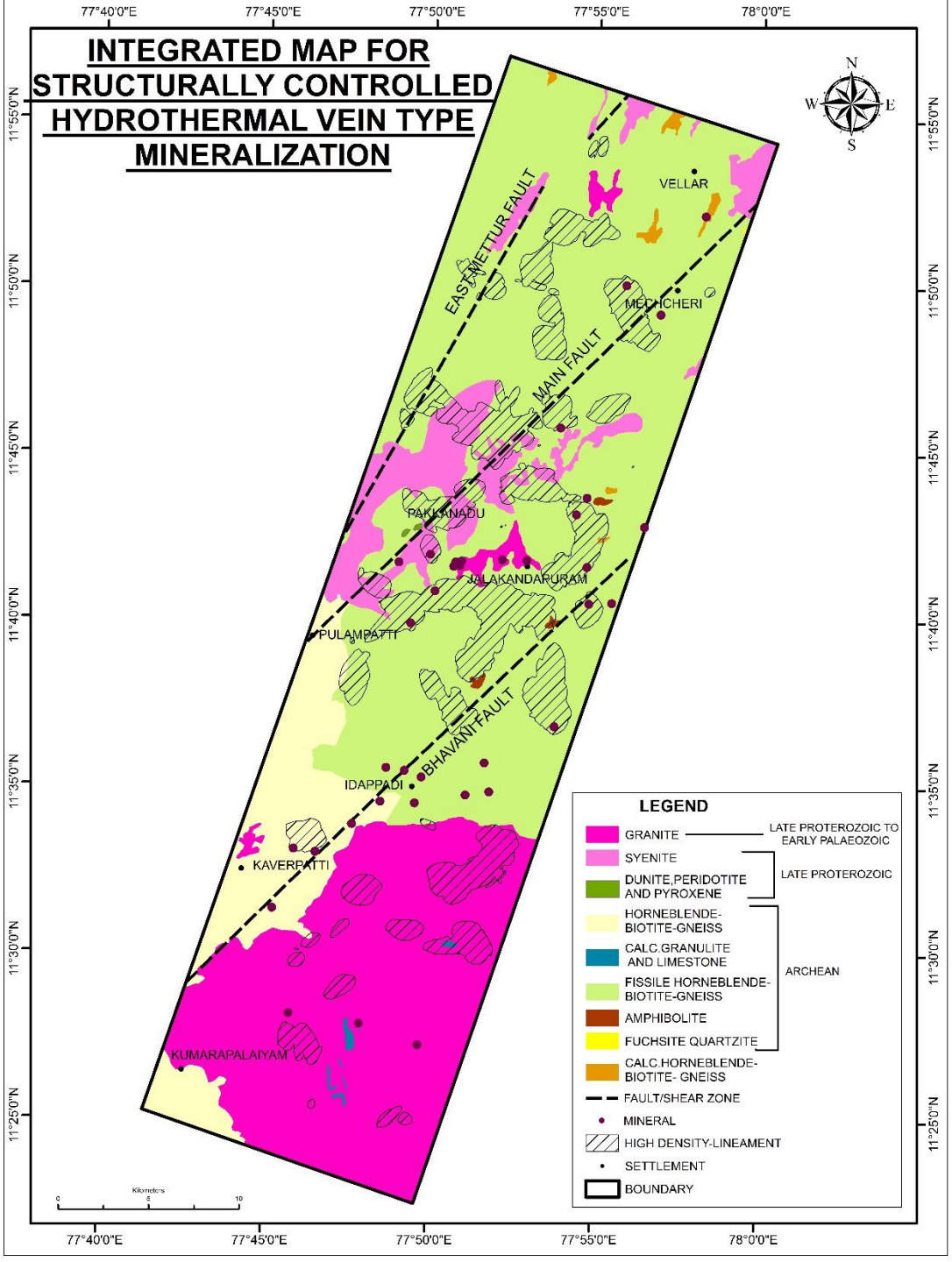

Existing Mineral Vs Lithology
N
77°40'0"E
77°50'0"E
78°0'0"E
11°50'0"N
11°40'0"N
11°30'0"N
Beryl
Chromite
Columbite and Tantalite
Feldspar
Limestone and Kankar
Magnesite
Mica
Pink and Yellow carbonates
Pyrite
Quartz varities
Radioactive mineral
Talc,Soapstone and Stealite
Tin
Mechcheri
Pakkanadu
Idappadi
Syenite
Granite
Dunite/ Peridotite/Pyroxenite
Hornblende Biotite Gneiss
Calc-Granulite/Limestone
Fissile Hornblende Biotite Gneiss
Amphibolite
Fuchiste Quartzite
0
5
10
km

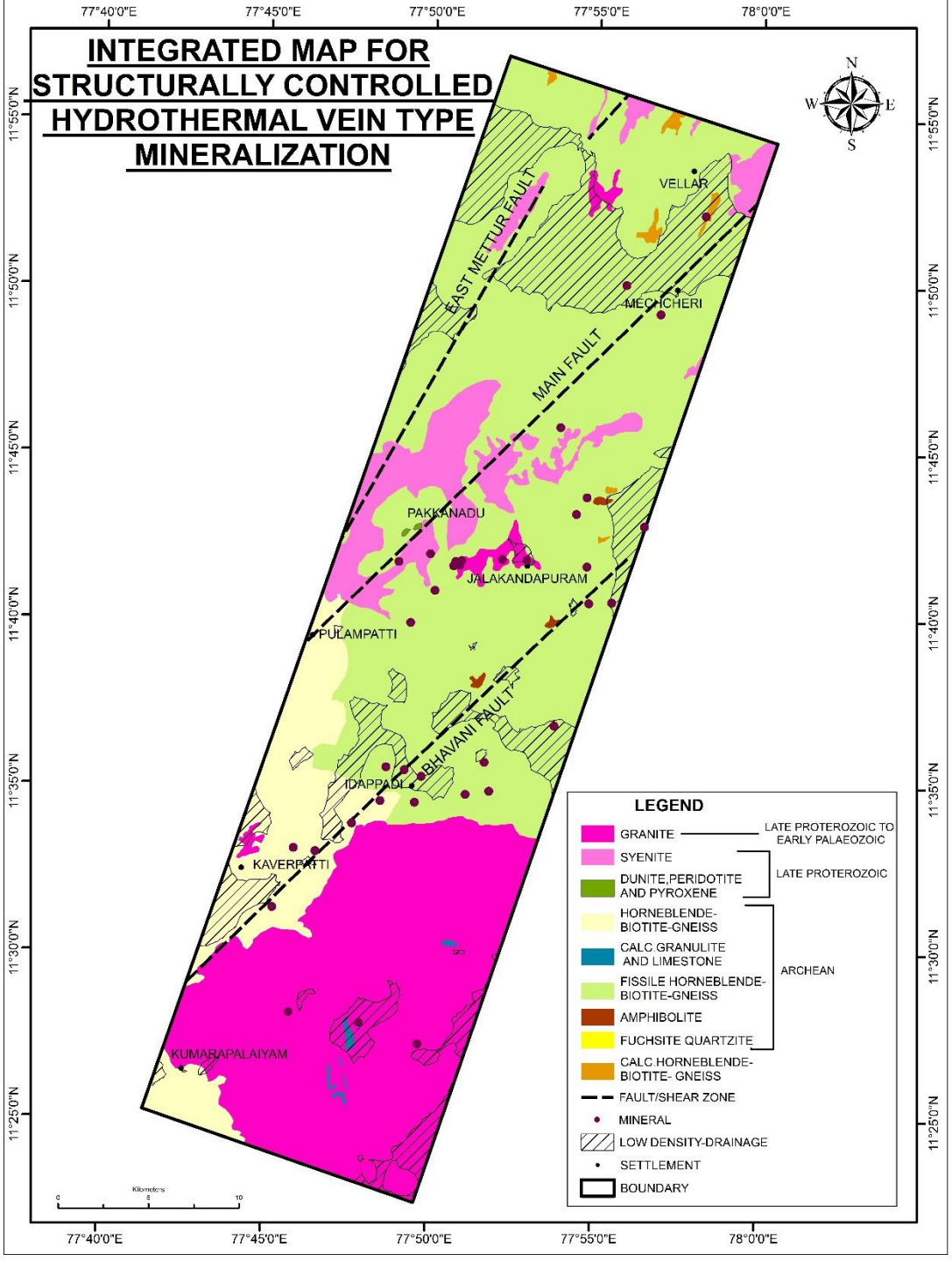

LITHOLOGY
77°40'0"E
77°45'0"E
77°50'0"E
77°55'0"E
78°0'0"E
11°55'0"N
11°50'0"N
11°45'0"N
11°40'0"N
11°35'0"N
11°30'0"N
11°25'0"N
N
S
E
W
VELLAR
MECHCHERI
PAKKANADU
JALAKANDAPURAM
PULAMPATTI
IDAPPADI
KAVERPATTI
KUMARAPALAIYAM
Kilometers
0
5
10
LEGEND
GRANITE
SYENITE
DUNITE,PERIDOTITE AND PYROXENE
HORNEBLENDE-BIOTITE-GNEISS
CALC.GRANULITE AND LIMESTONE
FISSILE HORNEBLENDE-BIOTITE-GNEISS
AMPHIBOLITE
FUCHSITE QUARTZITE
SETTLEMENT
BOUNDARY
LATE PROTEROZOIC TO EARLY PALAEOZOIC
LATE PROTEROZOIC
ARCHEAN
SOURCE: DISTRICT RESOURCE MAP

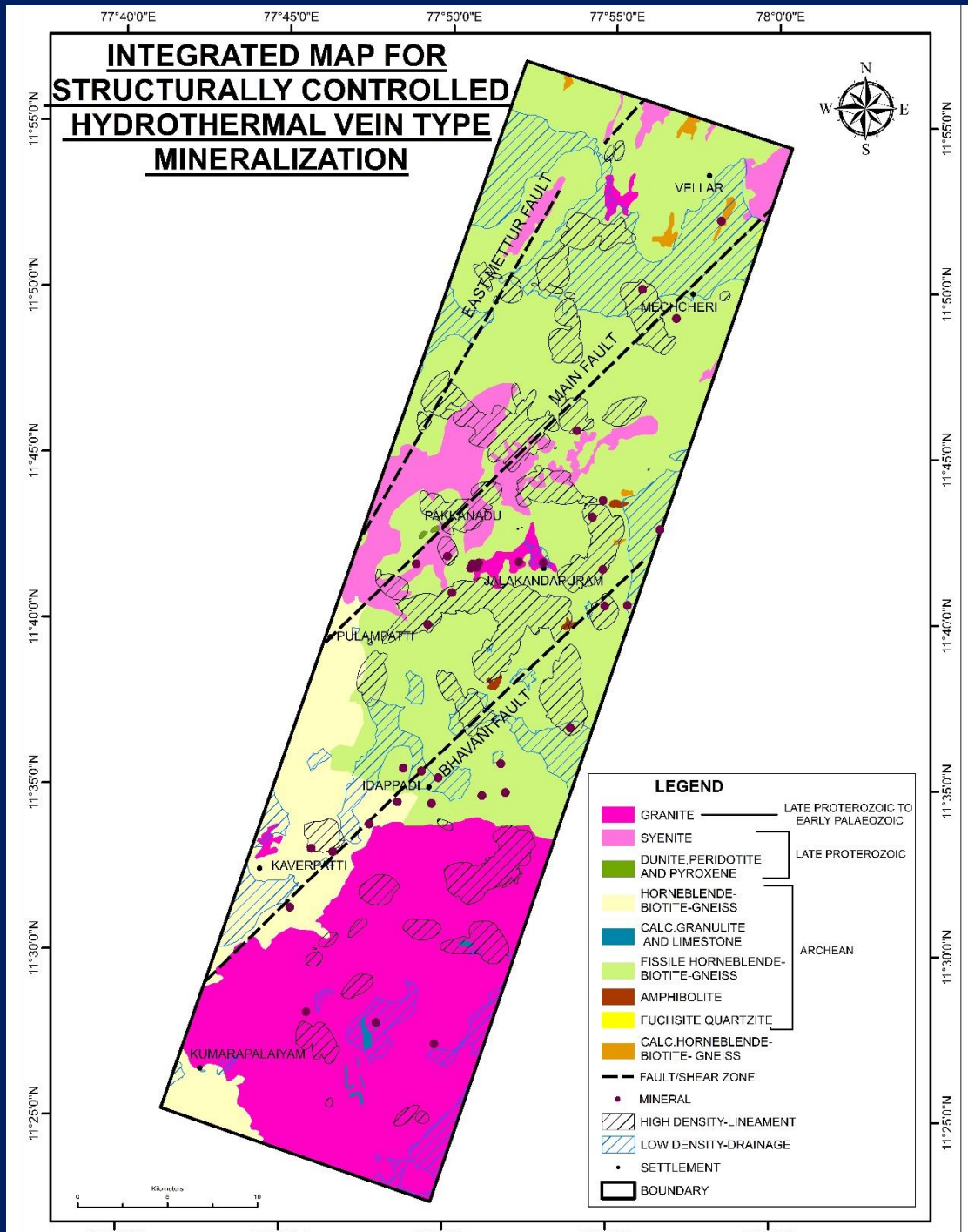

GEOLOGY [UPDATED]
77°40'0"E
77°45'0"E
77°50'0"E
77°55'0"E
78°0'0"E
78°5'0"E
11°55'0"N
11°50'0"N
11°45'0"N
11°40'0"N
11°35'0"N
11°30'0"N
11°25'0"N
N
S
E
W
EAST METTUR FAULT
MAIN FAULT
BHAVANI FAULT
VELLAR
MECHCHERI
PAKKANADU
JALAKANDAPURAM
PULAMPATTI
IDAPPADI
KAVERIPATTI
KUMARAPALAIYAM
Kilometers
LEGEND
GRANITE
SYENITE
DUNITE,PERIDOTITE AND PYROXENE
HORNEBLENDE-BIOTITE-GNEISS
CALC.GRANULITE AND LIMESTONE
FISSILE HORNEBLENDE-BIOTITE-GNEISS
AMPHIBOLITE
FUCHSITE QUARTZITE
CALC.HORNEBLENDE-BIOTITE- GNEISS
FAULT/SHEAR ZONE
ATTITUDES OF JOINT
SETTLEMENT
BOUNDARY
LATE PROTEROZOIC TO EARLY PALAEOZOIC
LATE PROTEROZOIC
ARCHEAN

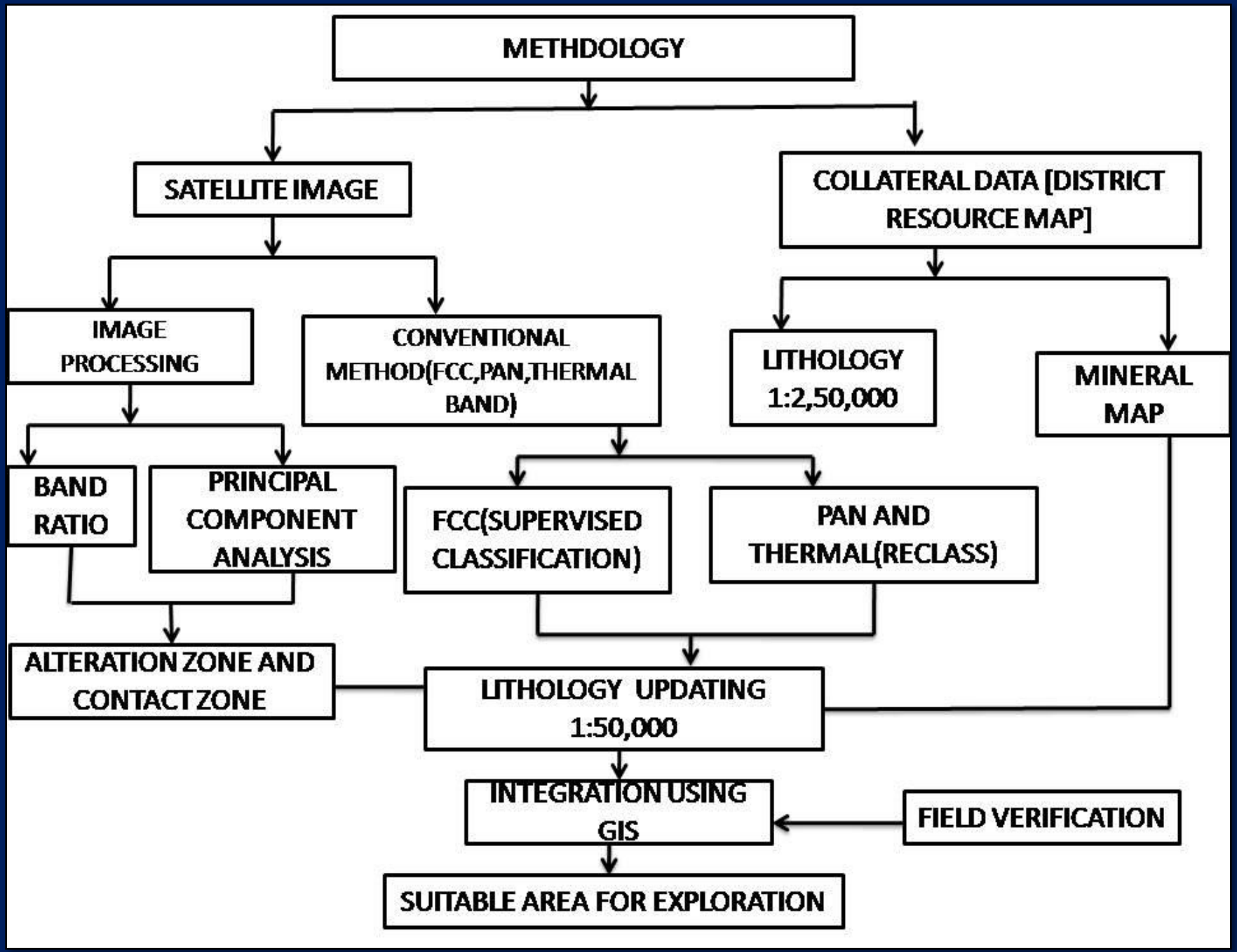

INTEGRATED MAP FOR LITHOLOGICALLY CONTROLLED MINERALIZATION
77°40'0"E
77°45'0"E
77°50'0"E
77°55'0"E
78°0'0"E
11°55'0"N
11°50'0"N
11°45'0"N
11°40'0"N
11°35'0"N
11°30'0"N
11°25'0"N
N
S
E
W
EAST METTUR FAULT
MAIN FAULT
BHAVANI FAULT
VELLAR
MECHERI
PAKKANADU
JALAKANDAPURAM
PULAMPATTI
IDAPPADI
KAVERPATTI
KUMARAPALAIYAM
Kilometers
0
5
10
LEGEND
Beryl
Chromite
Columbite and Tantalite
Feldspar
Limestone and Kankar
Magnesite
Mica
Pink and Yellow carbonates
Pyrite
Quartz varities
Radioactive mineral
Talc,Soapstone and Stealite
Tin
GRANITE
LATE PROTEROZOIC TO EARLY PALAEOZOIC
SYENITE
DUNITE,PERIDOTITE AND PYROXENE
LATE PROTEROZOIC
HORNEBLENDE-BIOTITE-GNEISS
CALC.GRANULITE AND LIMESTONE
FISSILE HORNEBLENDE-BIOTITE-GNEISS
AMPHIBOLITE
FUCHSITE QUARTZITE
ARCHEAN
CALC.HORNEBLENDE-BIOTITE- GNEISS
FAULT/SHEAR ZONE
SETTLEMENT
BOUNDARY


MINERAL MAP
77°40'0"E
77°45'0"E
77°50'0"E
77°55'0"E
78°0'0"E
78°5'0"E
11°55'0"N
11°50'0"N
11°45'0"N
11°40'0"N
11°35'0"N
11°30'0"N
11°25'0"N
N
S
E
W
VELLAR
MECHCHERI
PAKKANADU
JALAKANDAPURAM
PULAMPATTI
IDAPPADI
KAVERPATTI
KUMARAPALAIYAM
LEGEND
Beryl
Chromite
Columbite and Tantalite
Feldspar
Limestone and Kankar
Magnesite
Mica
Pink and Yellow carbonates
Pyrite
Quartz varities
Radioactive mineral
Talc,Soapstone and Stealite
Tin
SETTLEMENT
BOUNDARY
Kilometers
0
5
10
SOURCE: DISTRICT RESOURCE MAP

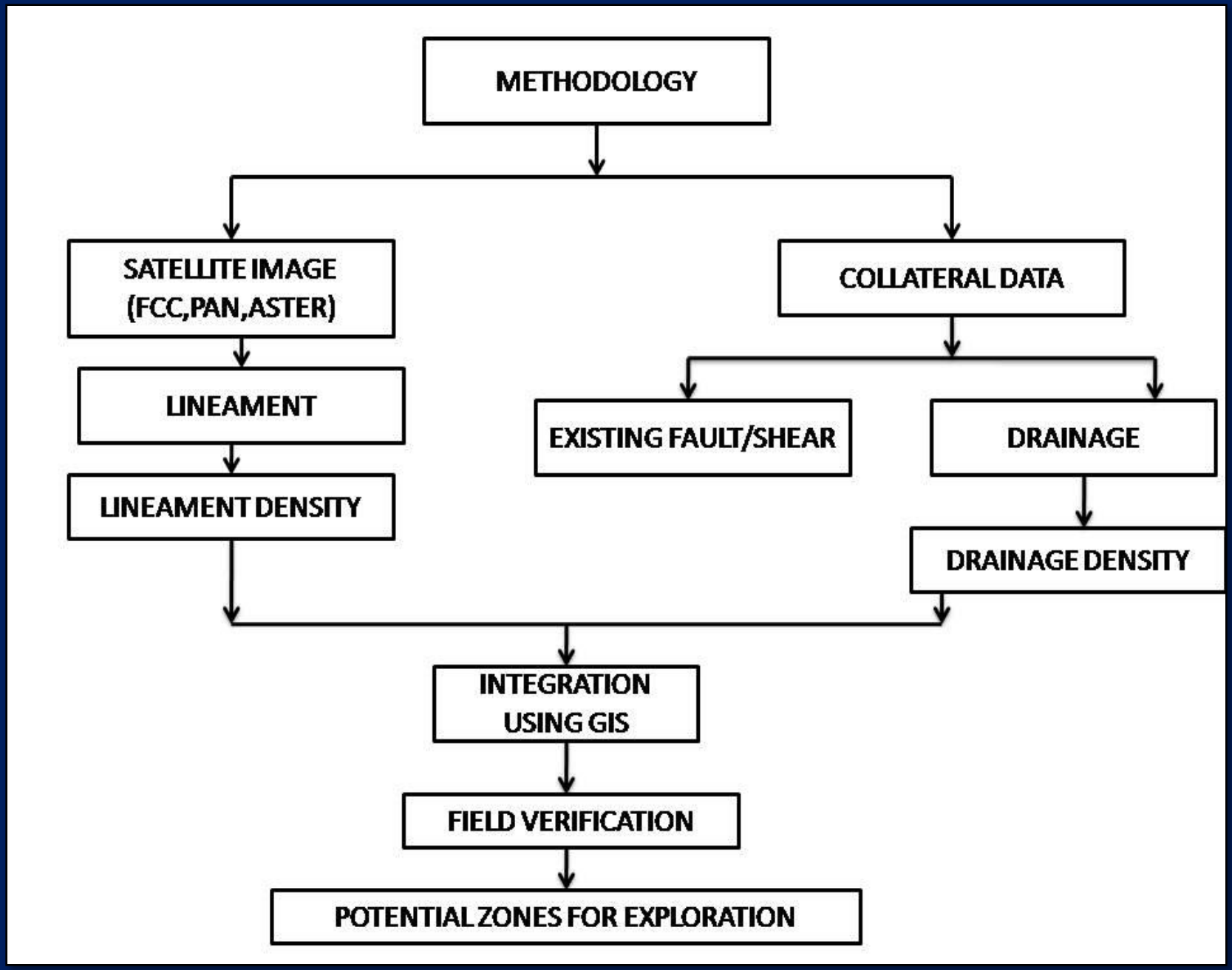

INTEGRATED MAP FOR STRUCTURALLY CONTROLLED HYDROTHERMAL VEIN TYPE MINERALIZATION
77°40'0"E
77°45'0"E
77°50'0"E
77°55'0"E
78°0'0"E
11°55'0"N
11°50'0"N
11°45'0"N
11°40'0"N
11°35'0"N
11°30'0"N
11°25'0"N
N
S
E
W
VELLAR
MECHERI
EASTERN VETTUR FAULT
MAIN FAULT
PAKKANADU
JALAKANDARURAM
PULAMPATTI
BHAVANI FAULT
IDAPPADI
KAVERPATTI
KUMARAPALAIYAM
Kilometers
0
5
10
LEGEND
GRANITE
SYENITE
DUNITE,PERIDOTITE AND PYROXENE
HORNEBLENDE-BIOTITE-GNEISS
CALC.GRANULITE AND LIMESTONE
FISSILE HORNEBLENDE-BIOTITE-GNEISS
AMPHIBOLITE
FUCHSITE QUARTZITE
CALC.HORNEBLENDE-BIOTITE- GNEISS
FAULT/SHEAR ZONE
MINERAL
HIGH DENSITY-LINEAMENT
SETTLEMENT
BOUNDARY
LATE PROTEROZOIC TO EARLY PALAEOZOIC
LATE PROTEROZOIC
ARCHEAN


INTEGRATED MAP FOR STRUCTURALLY CONTROLLED HYDROTHERMAL VEIN TYPE MINERALIZATION
77°40'0"E
77°45'0"E
77°50'0"E
77°55'0"E
78°0'0"E
11°55'0"N
11°50'0"N
11°45'0"N
11°40'0"N
11°35'0"N
11°30'0"N
11°25'0"N
N
S
E
W
VELLAR
MECHERI
EAST METTUR FAULT
MAIN FAULT
PAKKANADU
JALAKANDAPURAM
PULAMPATTI
BHAVANI FAULT
IDAPPADI
KAVERIPATTI
KUMARAPALAIYAM
Kilometers
0
5
10
LEGEND
GRANITE
LATE PROTEROZOIC TO EARLY PALAEOZOIC
SYENITE
DUNITE,PERIDOTITE AND PYROXENE
LATE PROTEROZOIC
HORNEBLENDE-BIOTITE-GNEISS
CALC GRANULITE AND LIMESTONE
FISSILE HORNEBLENDE-BIOTITE-GNEISS
AMPHIBOLITE
FUCHSITE QUARTZITE
ARCHEAN
CALC HORNEBLENDE-BIOTITE- GNEISS
FAULT/SHEAR ZONE
MINERAL
LOW DENSITY-DRAINAGE
SETTLEMENT
BOUNDARY

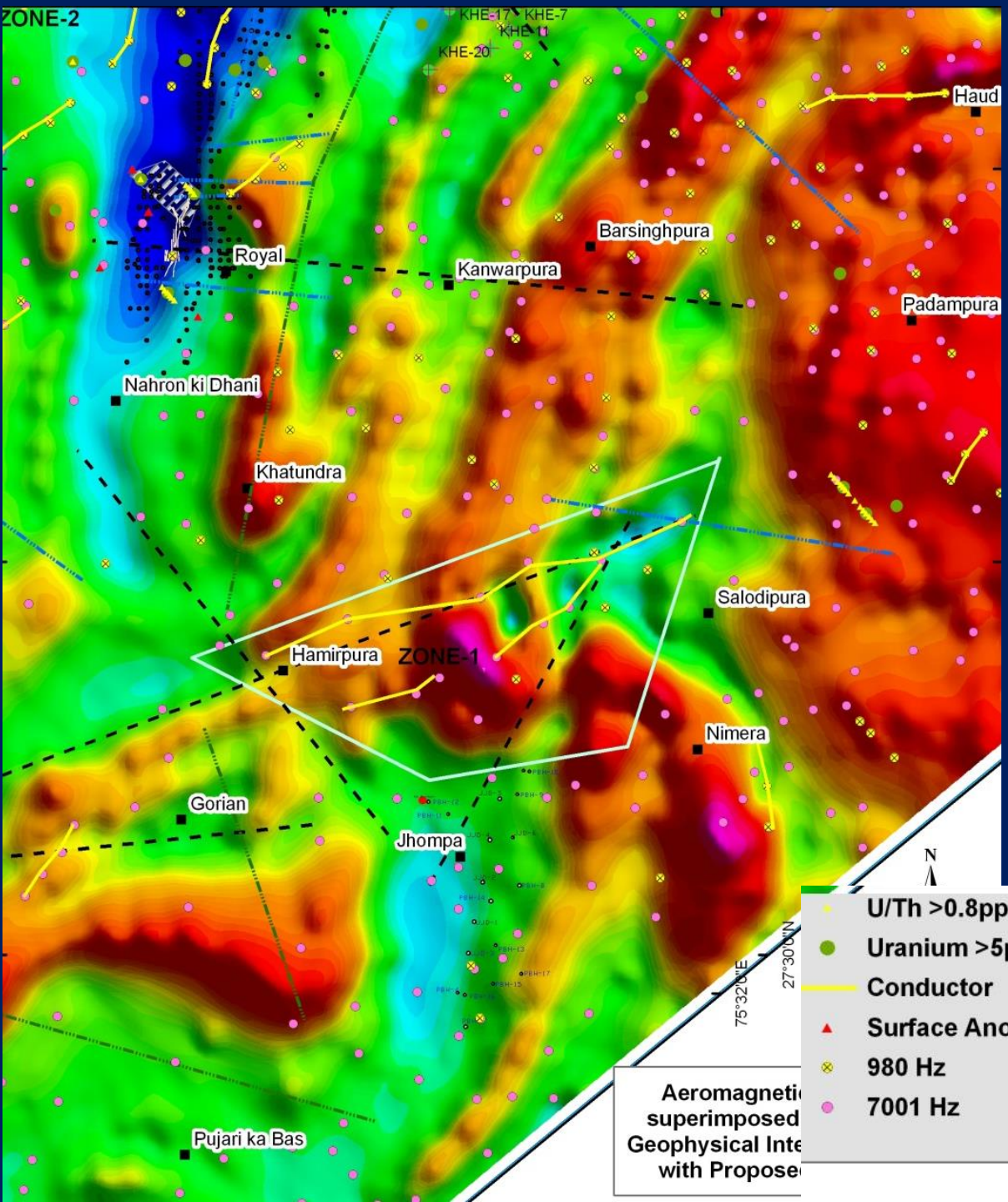

INTEGRATED MAP FOR STRUCTURALLY CONTROLLED HYDROTHERMAL VEIN TYPE MINERALIZATION
77°40'0"E
77°45'0"E
77°50'0"E
77°55'0"E
78°0'0"E
11°55'0"N
11°50'0"N
11°45'0"N
11°40'0"N
11°35'0"N
11°30'0"N
11°25'0"N
N
S
E
W
EASTERN METTUR FAULT
MAIN FAULT
BHAVANI FAULT
VELLAR
MECHCHERI
PAKKANADU
JALAKANDAPURAM
PULAMPATTI
IDAPPADI
KAVERPATTI
KUMARAPALAIYAM
Kilometers
0
5
10
LEGEND
GRANITE
SYENITE
DUNITE,PERIDOTITE AND PYROXENE
HORNEBLENDE-BIOTITE-GNEISS
CALC.GRANULITE AND LIMESTONE
FISSILE HORNEBLENDE-BIOTITE-GNEISS
AMPHIBOLITE
FUCHSITE QUARTZITE
CALC.HORNEBLENDE-BIOTITE- GNEISS
FAULT/SHEAR ZONE
MINERAL
HIGH DENSITY-LINEAMENT
LOW DENSITY-DRAINAGE
SETTLEMENT
BOUNDARY
LATE PROTEROZOIC TO EARLY PALAEOZOIC
LATE PROTEROZOIC
ARCHEAN


METHDOLOGY
SATELLITE IMAGE
COLLATERAL DATA [DISTRICT RESOURCE MAP]
IMAGE PROCESSING
CONVENTIONAL METHOD(FCC,PAN,THERMAL BAND)
LITHOLOGY 1:2,50,000
MINERAL MAP
BAND RATIO
PRINCIPAL COMPONENT ANALYSIS
FCC(SUPERVISED CLASSIFICATION)
PAN AND THERMAL(RECLASS)
ALTERATION ZONE AND CONTACT ZONE
LITHOLOGY UPDATING 1:50,000
INTEGRATION USING GIS
FIELD VERIFICATION
SUITABLE AREA FOR EXPLORATION

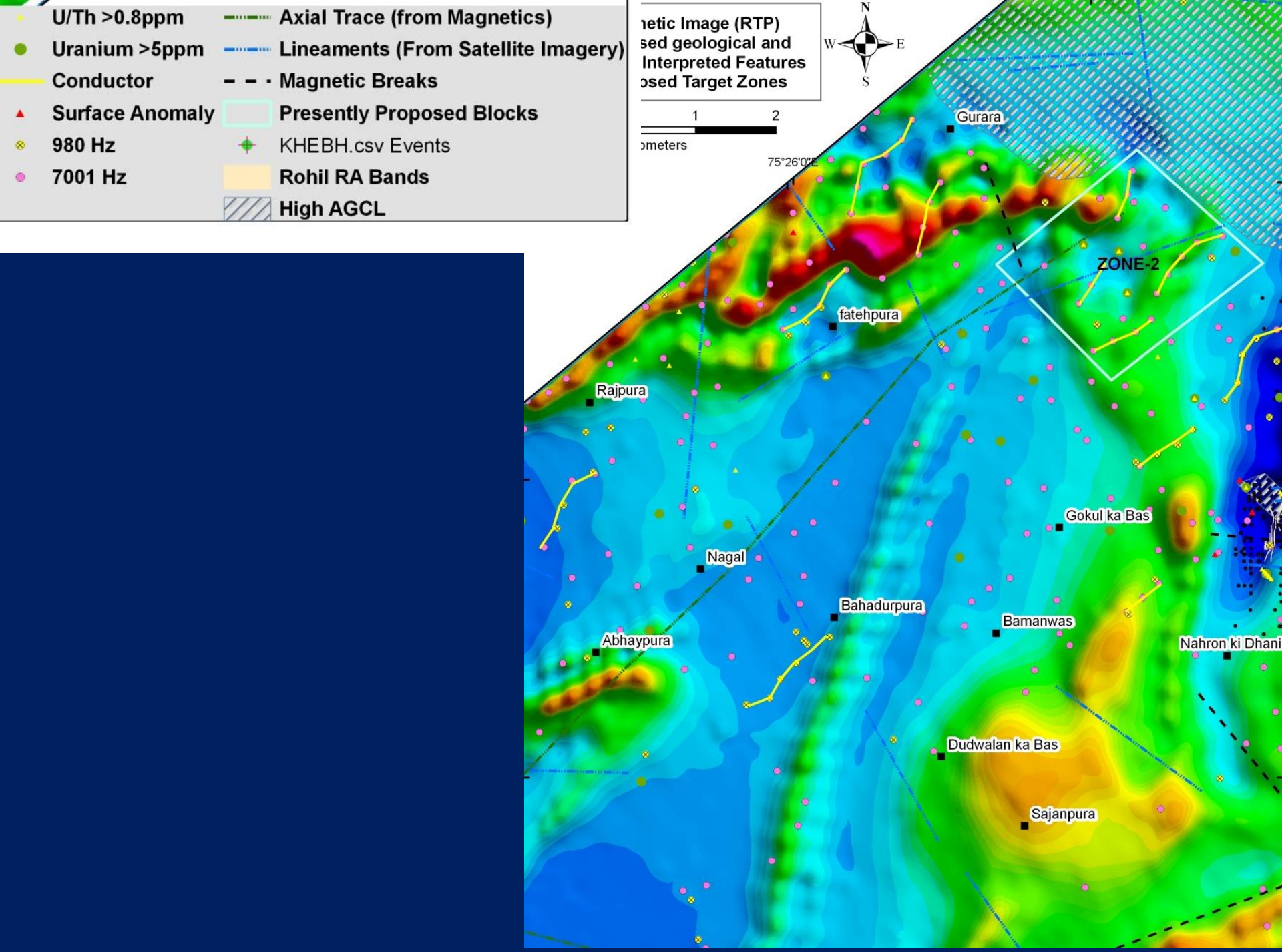
MINERAL	ASSOCIATED ROCK
BIOTITE	SCHISTS,INTRUSIVE GRANITIC ROCKS; SOME FELSIC VOLCANICS; SOMETIMES IN INTERMEDIATE AND MAFIC INTRUSIVES
MUSCOVITE	SCHISTS; PHYLLITES; GRANITES; GRANITIC PEGMATITES
TALC	SCHISTS; LOW-TEMPERATURE METAMORPHISM OF MAFIC ROCKS AND DOLOSTONES
MAGNESITE	HYDROTHERMAL DEPOSITS IN PERDOTITES AND OTHER ULTRAMAFIC IGNEOUS ROCKS; PEGMATITES; SERPENTINITES;TALC SCHICTSLIMESTONES; DOLOSTONES
COLUMBITE AND TANTALITE	GRANITIC INTRUSIVE, INCLUDING PEGMATITES
PYRITE	COMMON IN MANY LITHOLOGIES, INCLUDING INTRUSIVE IGNEOUS ROCKS, LIMESTONES, SHALES, METAMORPHIC ROCKS, AND HYDROTHERMAL DEPOSISTS; MAY ALSO REPLACE FOSSILS
ORTHOCLASE	GRNITES; GRANODIORITES; SYENITES; GRANITIC PEGMATITES; GNEISSES; ARKOSIC SANDSTONES AND CONGLOMERATES
PLAGIOCLASE	INTRUSIVE IGNEOUS ROCKS OF VARIOUS TYPES (FOR EXAMPLE, GRANITES, SYENITES, AND GABBROS); FELSIC TO MAFIC VOLCANICS; PEGMATITES; SCHISTS; GNEISSES; CONTACT METOMORPHIC LIMESTONES
BERYL	GRANITIC INTRUSIVE; PEGMATITES; BIOTITE SCHISTS
CHROMITE	PERIDOTITES; SERPENTINITES; OTHER ULTRAMAFIC ROCKS
QUARTZ	VERY COMMON;IGNEOUS ROCKS, ESPECIALLY FELSIC VOLCANICS AND GRANITIC INTRUSIVES AND PEGMATITES;SCHISTS, GNEISSES AND MOST OTHER METAMORPHIC ROCKS;SANDSTONES AND MOST SEDIMENTARY ROCKS, EVEN MANY CARBONATE ROCKS
CALCITE	LIMESTONES; MANY MARINE FOSSILS CHALK;MARBLES;HOT SPRING; CARBONITITES; VEIN IN SOME METAMORPHIC AND IGNEOUS ROCKS

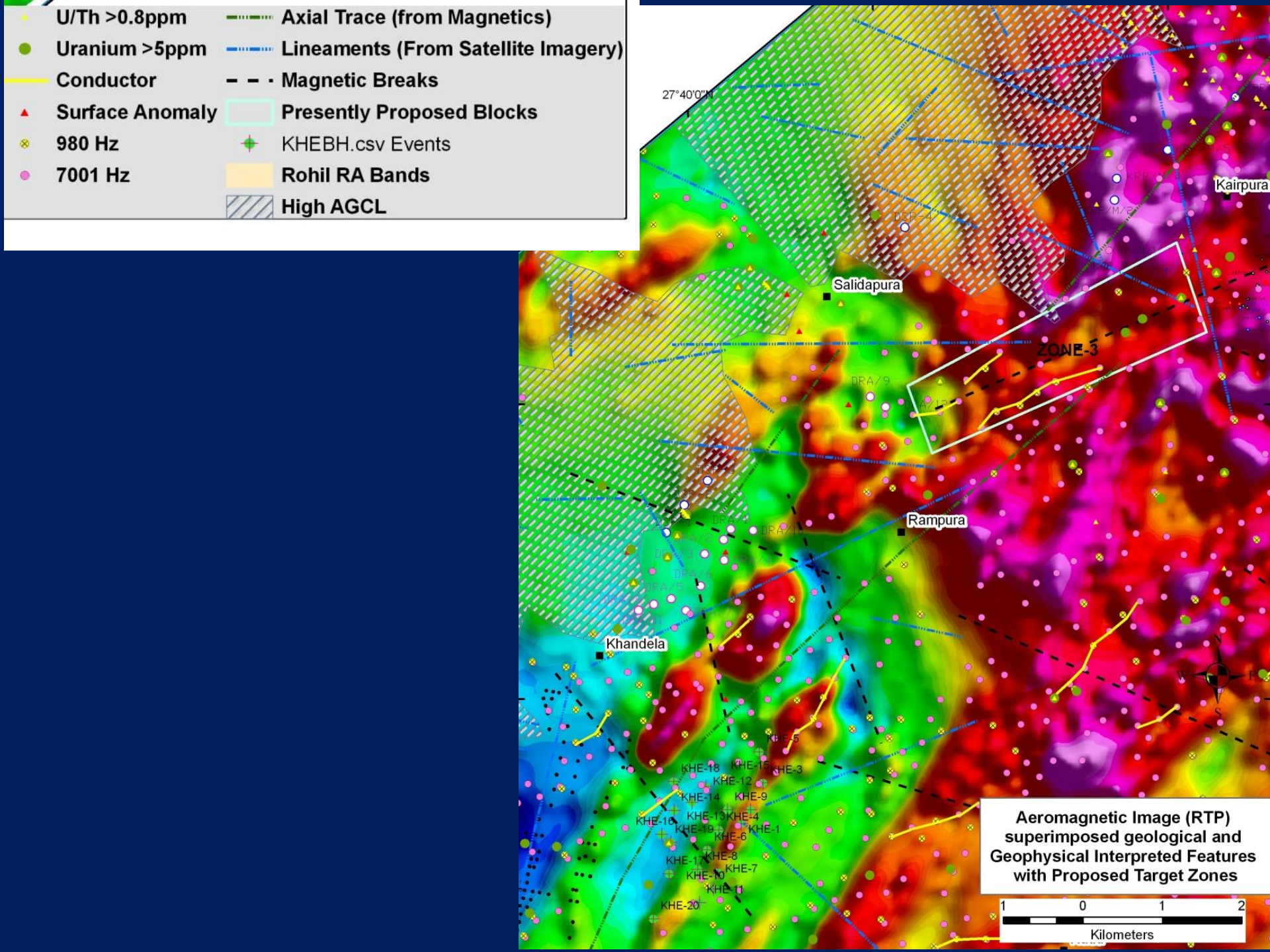

METHODOLOGY
SATELLITE IMAGE (FCC,PAN,ASTER)
COLLATERAL DATA
LINEAMENT
EXISTING FAULT/SHEAR
DRAINAGE
LINEAMENT DENSITY
DRAINAGE DENSITY
INTEGRATION USING GIS
FIELD VERIFICATION
POTENTIAL ZONES FOR EXPLORATION

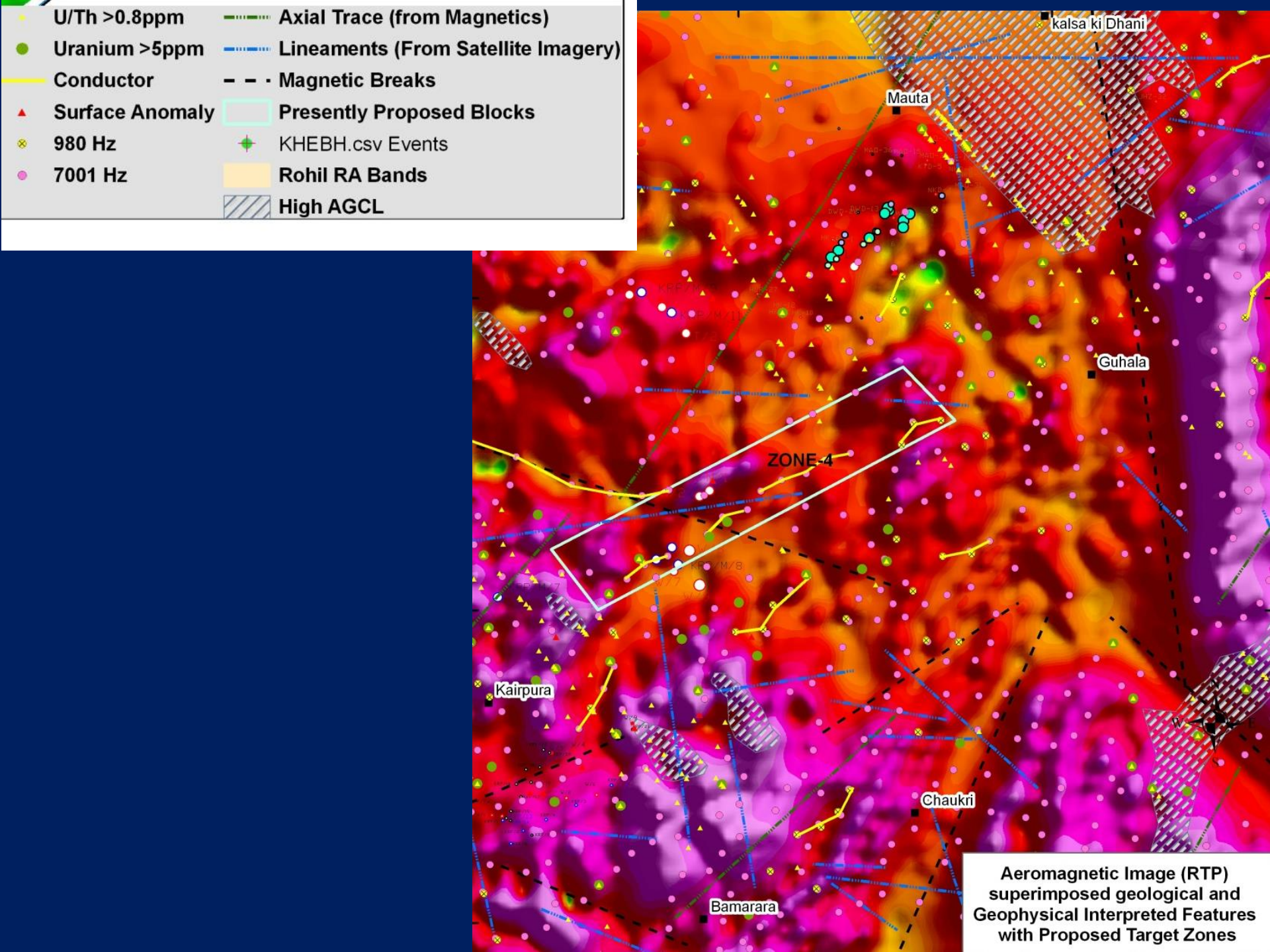
Zone	Presence of conductors	Lineaments (inferred from)			Uranium Anomaly		Other favourable criteria, if any
		Magnetic Image		Satellite Image	AGRS	Ground	
		Break/ Fault	Axial trace				
1							
2							
3							
4							
5							
6							
7							
8							
9							



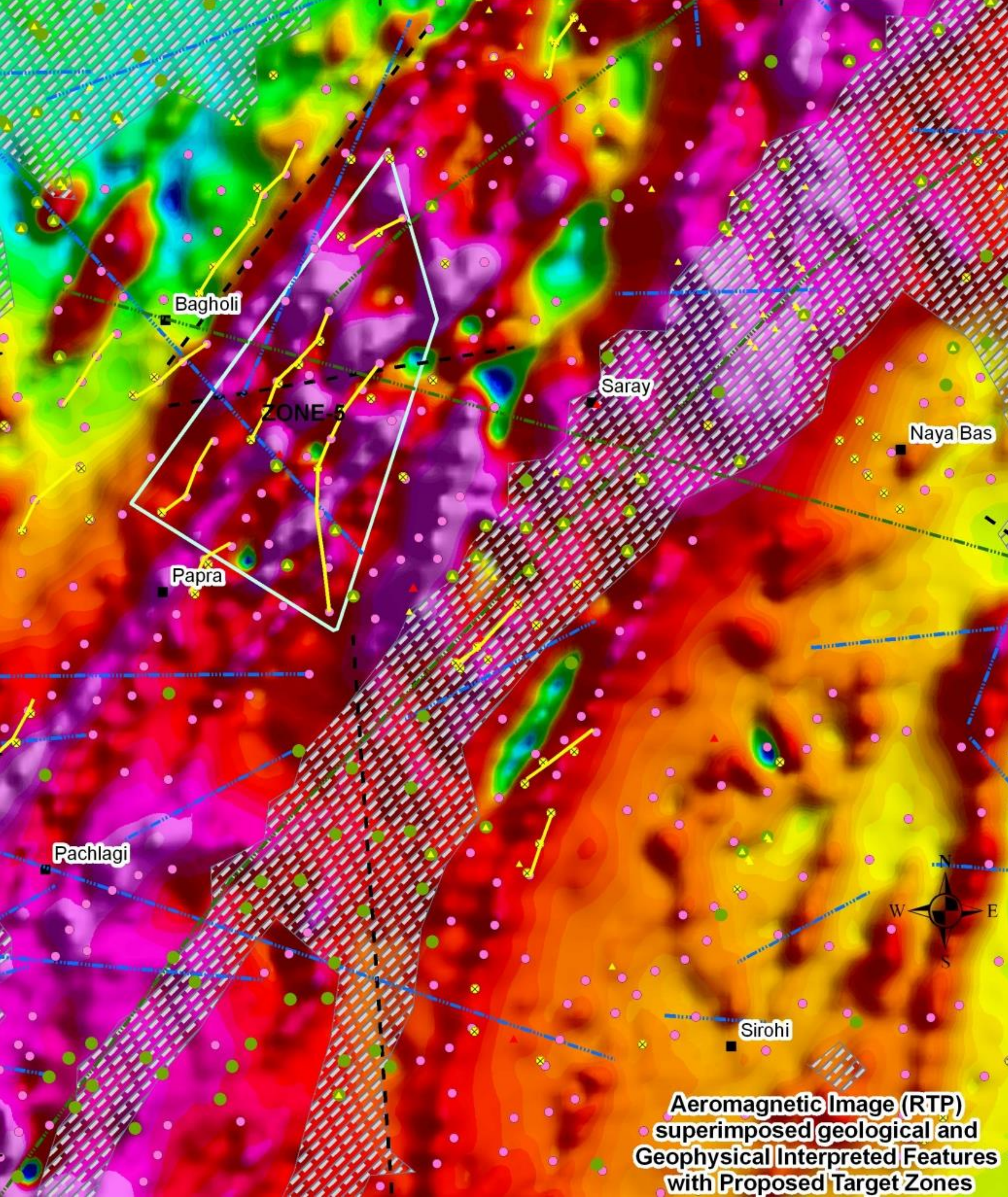
- U/Th >0.8ppm
- Uranium >5ppm
- Conductor
- Surface Anomaly
- 980 Hz
- 7001 Hz
- Axial Trace (from Magnetics)
- Lineaments (From Satellite Imagery)
- Magnetic Breaks
- Presently Proposed Blocks
- KHEBH.csv Events
- Rohil RA Bands
- High AGCL


U/Th >0.8ppm
Uranium >5ppm
Conductor
Surface Anomaly
980 Hz
7001 Hz
Axial Trace (from Magnetics)
Lineaments (From Satellite Imagery)
Magnetic Breaks
Presently Proposed Blocks
KHEBH.csv Events
Rohil RA Bands
High AGCL
netic Image (RTP)
sed geological and
Interpreted Features
osed Target Zones
N
W
E
S
1
2
ometers
75°26'0"E
Gurara
ZONE-2
fatehpura
Rajpura
Gokul ka Bas
Nagal
Bahadurpura
Bamanwas
Abhaypura
Nahron ki Dhani
Dudwalan ka Bas
Sajanpura

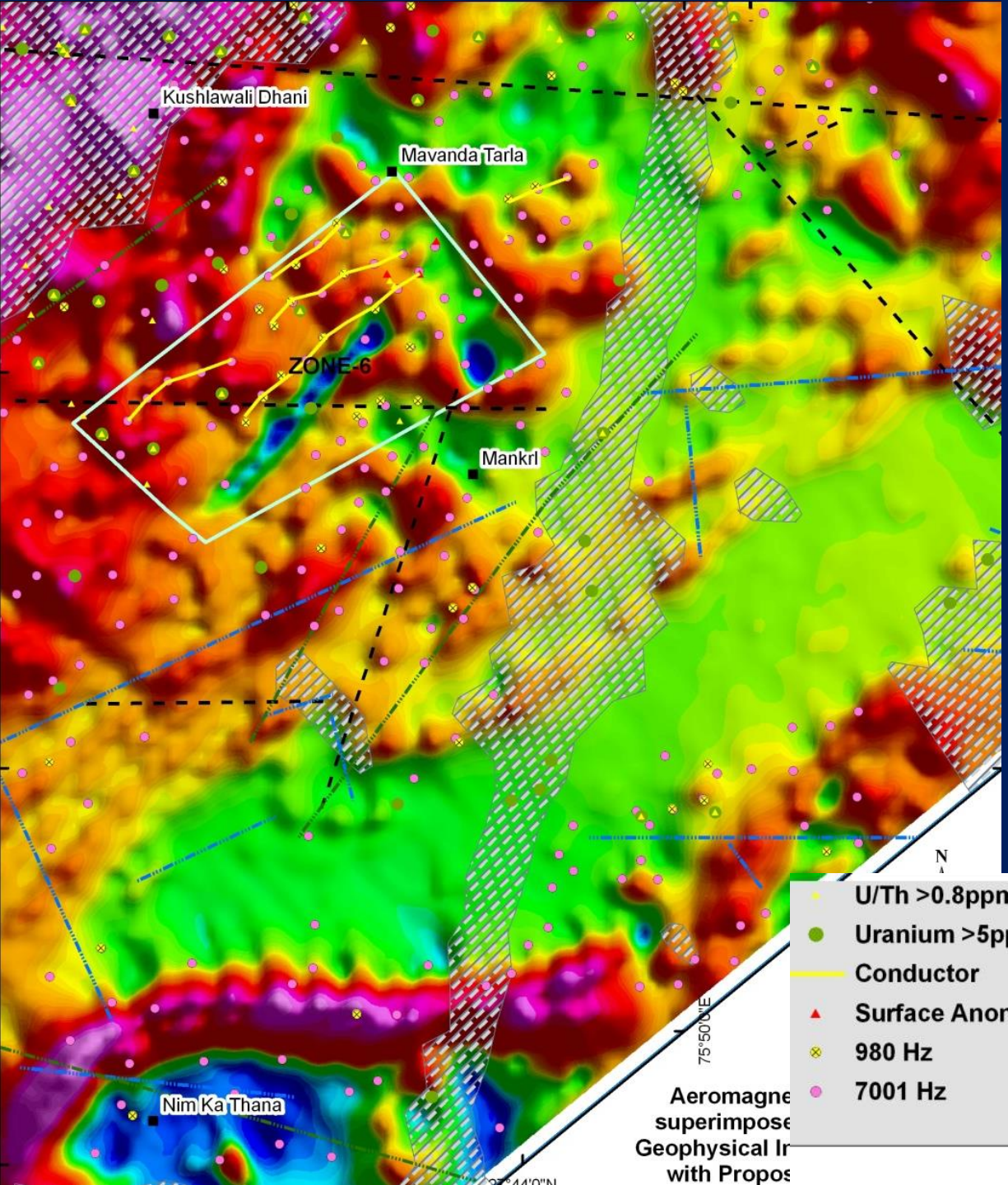

U/Th >0.8ppm
Uranium >5ppm
Conductor
Surface Anomaly
980 Hz
7001 Hz
Axial Trace (from Magnetics)
Lineaments (From Satellite Imagery)
Magnetic Breaks
Presently Proposed Blocks
KHEBH.csv Events
Rohil RA Bands
High AGCL
27°40'0"N
Kairpura
Salidapura
ZONE-3
Rampura
Khandela
KHE-5
KHE-18
KHE-15
KHE-3
KHE-12
KHE-14
KHE-9
KHE-16
KHE-13
KHE-4
KHE-19
KHE-1
KHE-6
KHE-8
KHE-17
KHE-7
KHE-10
KHE-11
KHE-20
Aeromagnetic Image (RTP) superimposed geological and Geophysical Interpreted Features with Proposed Target Zones
1 0 1 2
Kilometers



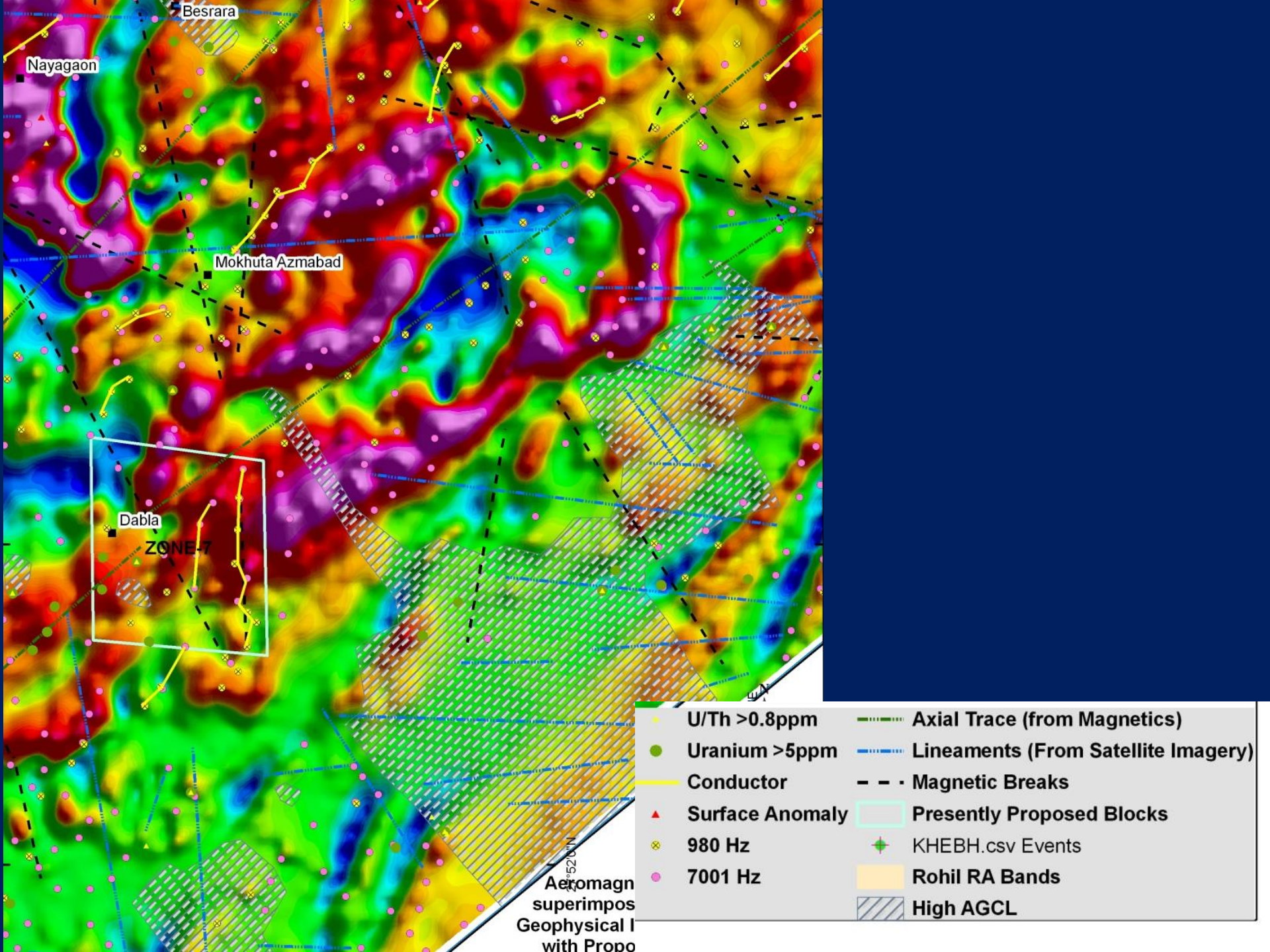
Aeromagnetic Image (RTP) superimposed geological and Geophysical Interpreted Features with Proposed Target Zones

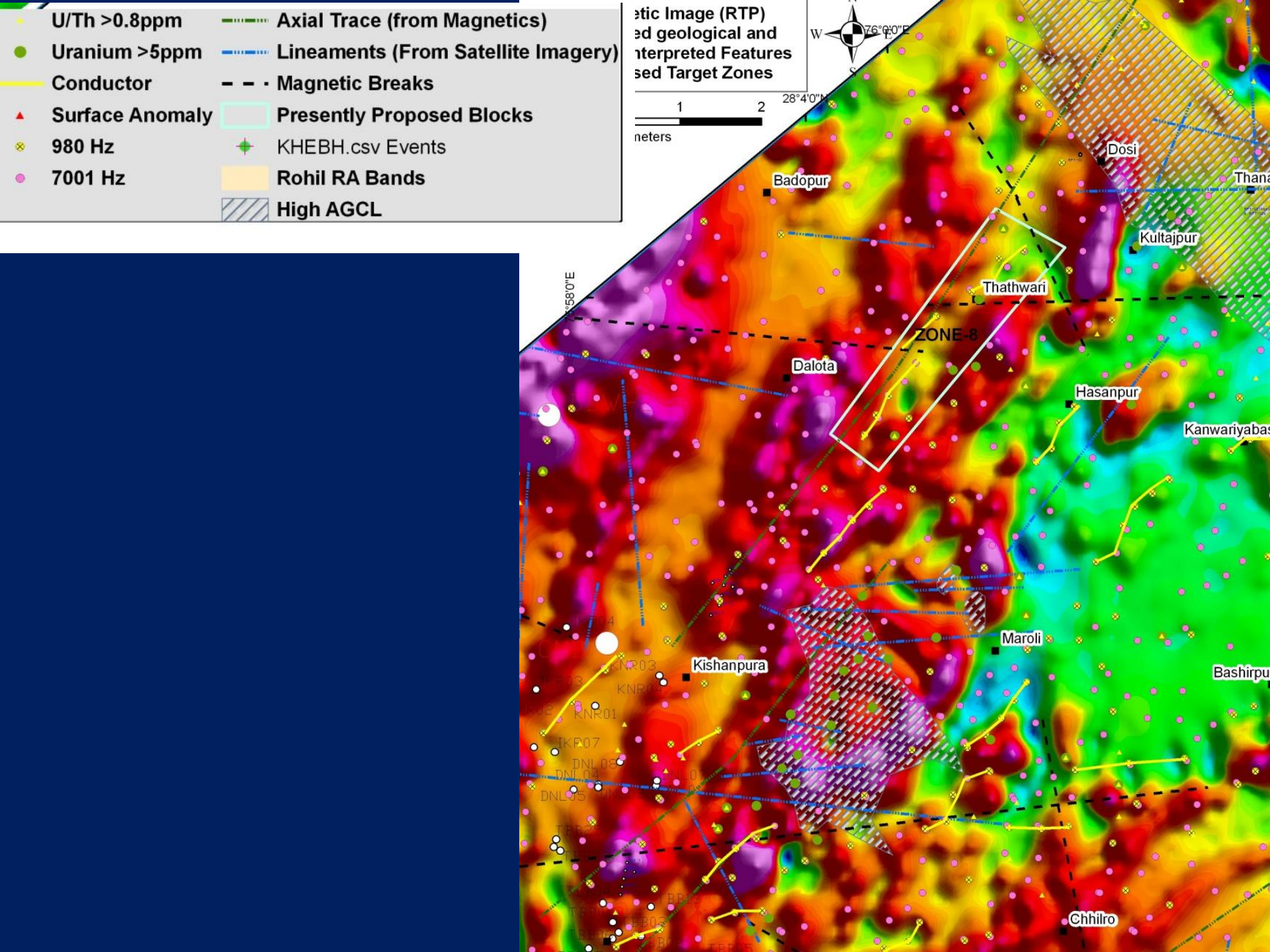


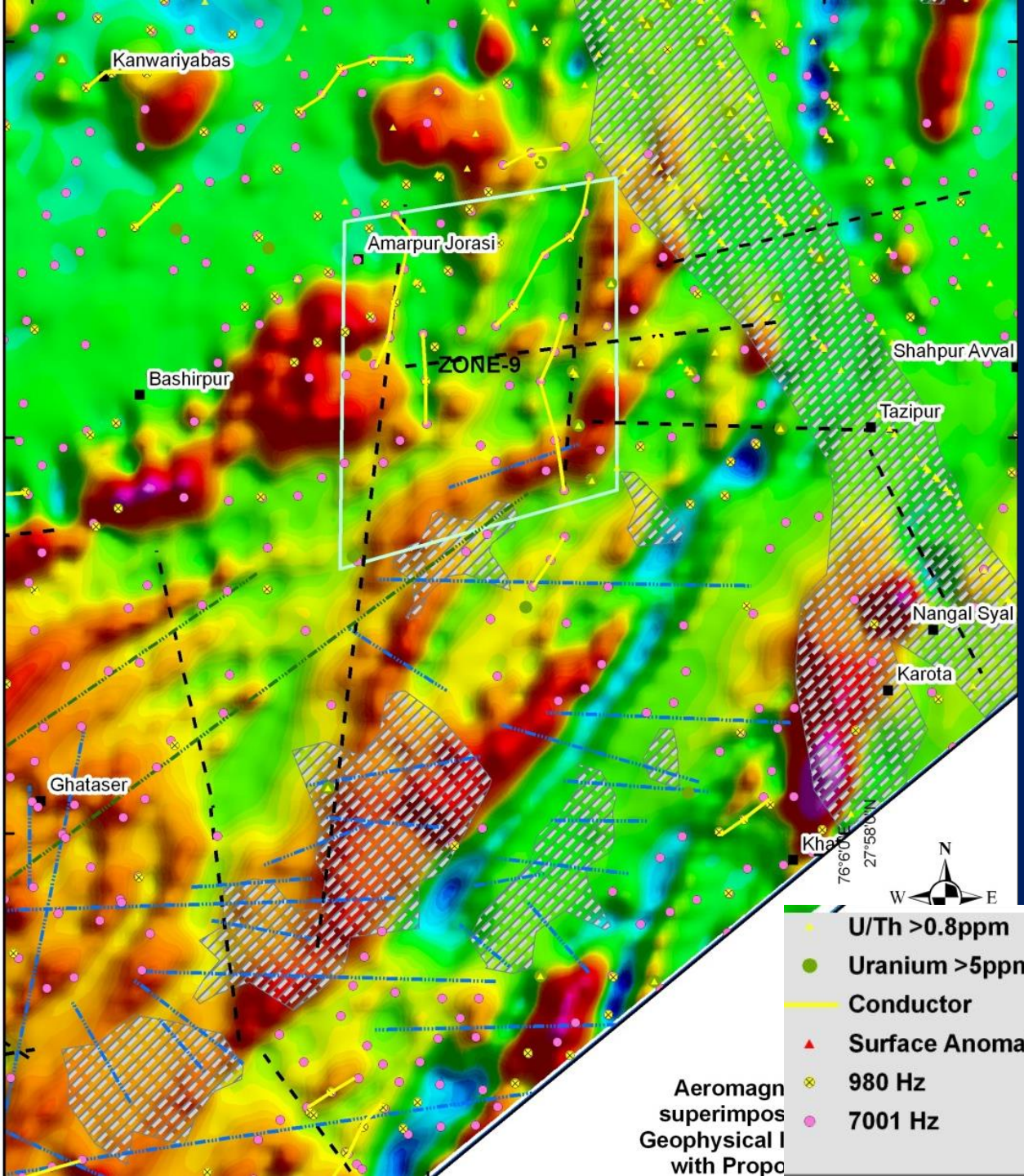
U/Th >0.8ppm
Uranium >5ppm
Conductor
Surface Anomaly
980 Hz
7001 Hz
Axial Trace (from Magnetics)
Lineaments (From Satellite Imagery)
Magnetic Breaks
Presently Proposed Blocks
KHEBH.csv Events
Rohil RA Bands
High AGCL



Aeromagne
superimpose
Geophysical In
with Propos


Besrara
Nayagaon
Mokhuta Azmabad
Dabla
ZONE-7
U/Th >0.8ppm
Uranium >5ppm
Conductor
Surface Anomaly
980 Hz
7001 Hz
Axial Trace (from Magnetics)
Lineaments (From Satellite Imagery)
Magnetic Breaks
Presently Proposed Blocks
KHEBH.csv Events
Rohil RA Bands
High AGCL
Aeromagn
superimpos
Geophysical I
with Propo


U/Th >0.8ppm
Uranium >5ppm
Conductor
Surface Anomaly
980 Hz
7001 Hz
Axial Trace (from Magnetics)
Lineaments (From Satellite Imagery)
Magnetic Breaks
Presently Proposed Blocks
KHEBH.csv Events
Rohil RA Bands
High AGCL
etic Image (RTP)
ed geological and
nterpreted Features
sed Target Zones
1
2
neters
76°0'0"E
28°4'0"N
Badopur
Dosi
Kultajpur
Thathwari
ZONE-8
Dalota
Hasanpur
Kanwariyabas
Maroli
Kishanpura
Bashirpu
Chhilro



Aeromagn
superimpos
Geophysical I
with Propo

Zone	Presence of conductors	Lineaments (inferred from)			Uranium Anomaly		Other favourable criteria, if any
		Magnetic Image		Satellite Image	AGRS	Ground	
		Break/ Fault	Axial trace				
1	✓	✓	6	✓	6	6	
2	✓	6	✓	✓	✓	6	
3	✓	✓	6	✓	✓	6	
4	✓	✓	6	✓	✓	✓	RA wells
5	✓	✓	✓	✓	✓	✓	
6	✓	✓	6	6	✓	✓	
7	✓	✓	✓	6	✓	6	
8	✓	✓	✓	6	✓	6	
9	✓	✓	✓	✓	✓	6	

Terrain Character	Igneous	Sedimentary	Metamorphic
Size & Dimension	Small to Medium	Larger	Moderate
Display of Terrain	Un -Controlled	Perfectly controlled	Moderate Either controlled/uncontrolled
Elevation	Varies point to point without any regularity	Varies uniformly and gradually	Moderate
Topography	Peak & Cliff	No Peaks-Cliffs	Moderate
Orientation/ Terrain	No trend/ orientation	Perfect trend/orientation	Moderate
Surface Smoothness	Rugged	Smooth	Smooth & Rugged

Landsat Thematic Mapper (TM)

Band 1 (0.45 - 0.52u m): It is capable of differentiating soil and rock surfaces from vegetation and for detecting cultural features.

Band 2 (0.52 - 0.60u m): it is sensitive to water turbidity differences; it highlighted the turbid water in the Lake. Because it covers the green reflectance peak from leaf surfaces, it has separated vegetation (forest, croplands with standing crops) from soil. In this band barren lands urban areas and roads and highways have appeared as brighter (lighter) tone, but forest, vegetation, bare croplands, croplands with standing crops have appeared as dark (black) tone.

Band 3 (0.63 - 0.69u m): senses in a strong chlorophyll absorption region and strong reflectance region for most soils. It has discriminated vegetation and soil. But it couldn﷽t separated water and forest. Forest land and water both have appeared as dark tone. This band has highlighted barren lands, urban areas, street pattern in the urban area and highways. It has also separated croplands with standing crops from bare croplands with stubble.

Band 4 (0.76 - 0.90u m): To distinguish vegetation varieties and conditions. Because water is a strong absorber of near IR, this band has delineated water bodies (lakes and sinkholes), distinguished between dry and moist soils (barren land and croplands). In this band croplands and grasslands have showed higher reflectance (brighter tone) than the forest. This band has also separated croplands from bare croplands.

Since standing crops (vegetation) has higher reflectance in the near IR region, they have appeared as brighter tone and due to presence of moisture content in the bare croplands, they have appeared as darker tone. In the band 4 barren lands, urban areas and highways have not been highlighted and they appeared as dark tone. Band 4 is useful for crop identification and emphasizes soil-crop and land-water contrast.

Band 5 (1.55 - 1.75um): is sensitive to the turgidity or amount of water in plants. Band 5 has separated forest lands, croplands, water body distinctly. Forests have appeared as comparatively darker tone than the croplands (light gray).Band 5 has separated water body (dark tone) from barren lands, croplands, and grass lands (lighter tone). Since urban area and croplands have responded almost in same spectral reflectance band 5 could not be able to separate these areas.

Band 7 (2.08 -2.35um): has separated land and water sharply. Band 7 has strong water absorption region and strong reflectance region for soil and rock. Urban area, croplands, highways, bare croplands have appeared as bright tone and water body, forest have appeared as dark tone.

Band 5 (1.55 - 1.75um): is sensitive to the turgidity or amount of water in plants. Band 5 has separated forest lands, croplands, water body distinctly. Forests have appeared as comparatively darker tone than the croplands (light gray).Band 5 has separated water body (dark tone) from barren lands, croplands, and grass lands (lighter tone). Since urban area and croplands have responded almost in same spectral reflectance band 5 could not be able to separate these areas.

Band 7 (2.08 -2.35um): has separated land and water sharply. Band 7 has strong water absorption region and strong reflectance region for soil and rock. Urban area, croplands, highways, bare croplands have appeared as bright tone and water body, forest have appeared as dark tone.

Greenfields and brownfields

- Exploration is termed either Greenfields or Brownfields depending on the extent to which previous exploration has been conducted.

- Greenfields refers to unspoilt grass, and brownfields to that which has been firmed on repeatedly.

- The general meaning of brownfields exploration is that which is conducted within geological terrain within close proximity to known ore deposits. Greenfields are the remainder.

- Greenfields exploration is highly conceptual, relying on the predictive power of ore genesis models to search for mineralisation in unexplored virgin ground

- Greenfield exploration depend on predictive power of ore genesis models to find mineral deposits in previously unexplored areas or in areas where they are not already known to exist.

- When a geologist has a conceptual idea about where a mineral deposit might be and spends money to see if the mineralization is really there, this is referred to as grassroot exploration.
- Common activities include: airborne satellite surveys, ground based geological and geophysical prospecting and surveying as well as determining drill target areas.
- Grassroot exploration projects are the riskiest projects in the mining business. Some statistics indicate that only 1 in 5,000 to 1 in 10,000 grassroot exploration projects ever reach the production stage.

Greenfields exploration is highly conceptual, relying on the predictive power of ore genesis models to search for mineralisation in unexplored virgin ground. This may be territory which has been drilled for other commodities, but with a new exploration concept is considered prospective for commodities not sought there before.

The success rate of exploration and the return on investment is low because exploration is an inherently risky business. Figures for success rates depend on the commodity in question but a good strike rate can be measured in the oil industry; the supergiant Prudhoe Bay oilfield was found on the 12th well drilled into the area. Within gold deposits a discovery hole may be one in one thousand and within some base metals commodities strike rates range from one in fifty to one in one hundred.

Greenfields exploration has a lower strike rate, because the geology is poorly understood at the conception of an exploration program but the rewards are greater because it is easier to find the biggest deposit in an area earlier, and it is only with more effort that the smaller satellite deposits are found. Brownfields exploration is less risky, as the geology is better understood and exploration methodology is well known, but since most large deposits are already found the rewards are incrementally less.

The general meaning of brownfields exploration is that which is conducted within geological terrain within close proximity to known ore deposits.

In brownfield exploration, geologists look for deposits near or adjacent to an already operating mine.

As geologists are able to use existing data, the risk in brownfield exploration is considerably lower than in greenfield exploration. Because the facilities for mining and processing the ore have already been built and paid for, the additional capital cost for processing the new found ore is very low

- Prognostic map indicates the only area in which to search for new mineral deposits.
- A geological map showing the relative likelihood position for finding areas of new mineral deposits in individual regions of the territory being mapped.
- A quantitative prognosis assesses the possible or geological reserves of minerals in mineral deposits on territories that appear promising.

- Prognostic maps are usually compiled on a scale of 1:200,000 to 1:10,000, on the basis of metallogenic maps.
- They show areas with known deposits, areas in which the prospect of discovering new mineral deposits is promising, and areas that are not promising.
- Based on how favorable the chances are for discovering minerals, promising areas are usually classified as most promising, promising, and somewhat promising.

- By correlation to areas with established mineral deposits, promising areas are established by mapping those geological factors that control the disclosed deposits.
- It included the factors of stratigraphy, lithology, tectonics, magmatism, and metamorphism, either singly or in combination.
- The geological factors that make it possible to forecast the distribution of mineral deposits are evaluated either visually or mathematically, by factor analysis.

In the latter case, the significance of each geological factor for the forecast is evaluated in points, and the total makes it possible to determine which areas are most favorable for discovering new deposits.

When prognostic maps are compiled, areas in which to search for new mineral deposits are noted that are both on the surface of the earth and that lie deep within the earth without emerging on the surface.