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[ASX: NTU]

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## ASX RELEASE

### DRILLING REVEALS EXCITING URANIUM POTENTIAL AT GARDINER-TANAMI

- Primary uranium mineralisation (pitchblende<sup>1</sup>) and clay alteration characteristic of unconformity-style uranium deposits intersected in three holes out of five at Soma A1
- Preliminary Afmex mineralogical and geochronological studies of the pitchblende mineralisation and accompanying alteration confirm that the Gardiner-Tanami region displays similarities with the highly productive Athabasca and Alligator Rivers uranium provinces
- Pitchblende mineralisation associated with well defined graphitic conductors which a new airborne VTEM<sup>2</sup> survey shows extending over a distance of approximately 8km
- Series of new priority drill targets with potential for higher grades of uranium now being defined where fault structures transect the conductors; such as:
  - at Soma A1 (100% Northern Uranium – see Figure 2) and
  - within adjacent Manhattan Corporation Limited's (ASX:MHC) exploration licence where Northern Uranium is earning 60% interest (Figure 4)
- Additional conductors identified at depth at The Don prospect (Northern Uranium earning 60%, Manhattan 40%) and extending below sandstone cover towards Northern Uranium's 100%-owned licence

<sup>1</sup> pitchblende - a variety of uranium oxide (UO<sub>2</sub>) a dominant ore mineral in unconformity-style deposits in the Athabasca Basin (Canada) and Alligator Rivers region (NT)

<sup>2</sup> VTEM survey - Versatile Time-Domain Electromagnetic survey

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Northern Uranium Limited (ASX: NTU) is pleased to report further positive results from the diamond drilling program on the Company's 100%-owned Gardiner-Tanami uranium project in Western Australia.

Drilling at the priority Soma A1 target has intersected primary uranium mineralisation, and confirmed the potential of the project to host significant and high grade unconformity-style uranium deposits.

The drilling follows two years of extensive geophysical exploration across 6,000km<sup>2</sup> of Northern Uranium's tenements by its strategic partner and project operator Afmeco Mining and Exploration Pty Ltd (Afmex) - the Australian subsidiary of French nuclear group Areva NC (Areva).

The principal target at Gardiner-Tanami is the high grade unconformity-style uranium deposit type similar to the ore deposits mined by Areva and its joint venture partners in the Athabasca Basin, Saskatchewan, Canada.

Diamond drilling at the Gardiner-Tanami project commenced in August, with the objective of testing the Company's highest priority exploration target areas at Lewis Creek North, Oracle and Soma (Figure 1). Results of the drilling at Lewis Creek North target area, which were encouraging, have been announced previously.

Northern Uranium Executive Chairman Kevin Schultz said the latest results from Soma were further confirmation of the uranium potential of the Gardiner-Tanami project, and a validation of the Company's exploration strategy.

"This is very promising for shareholders, as we have observed uranium mineralisation in the unconformity-type setting and have identified a host of new targets with potential for high grade uranium deposits," he said.

"Testing has also now observed the similarities between the Gardiner-Tanami and the world class uranium provinces at Athabasca and Alligator Rivers," he said. "These latest results greatly increase our confidence as we plan our follow up work programs, not only at Lewis Creek and Soma but also in the Manhattan Gardner Range joint venture area, and the 5,000 square kilometres of new tenements in the Northern Territory that we expect to be granted in 2010."

"Northern Uranium has a unique opportunity with such a vast and strategically important land holding, similar to the opportunity that was available for uranium exploration in the Alligator Rivers when Narbalek, Ranger and Jabiluka were discovered in the 1970s," he said.

"The follow up at Soma and along the conductor extending into the Manhattan Gardner Range joint venture area will involve on-ground mapping and other surveys to pinpoint structures likely to host an ore deposit which will be tested by drilling. This work has already commenced around Soma A1 and will be continued as seasonal conditions allow early in 2010," Mr Schultz said. "We would hope to be drilling much earlier next year than was the case this year, when our program was delayed by the difficult financial situation that was common to all mining and exploration companies."

"We are obviously very pleased with the way our flagship project is shaping up," he said.

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## Soma Drilling Results

As a first pass test of the uranium potential of the Oracle Soma target area, one diamond core hole was drilled into the Soma A3 VTEM conductor and five diamond core holes were drilled on a single cross section across the Soma A1 VTEM conductor. The details of the drill holes are tabulated below and illustrated in Figure 3.

**Table 1: Drill Holes on Soma Target**

| Hole Id | Target conductor | Northing* (m) | Easting* (m) | Azimuth | Inclination | Depth (m) |
|---------|------------------|---------------|--------------|---------|-------------|-----------|
| GT03    | A3               | 7867890       | 481794       | 0°      | -90°        | 170.1     |
| GT04    | A1               | 7869344       | 483040       | 6°      | -60°        | 263.8     |
| GT05    | A1               | 7869410       | 483063       | 7°      | -50°        | 161.7     |
| GT06    | A1               | 7869410       | 483063       | 15°     | -80°        | 140.8     |
| GT07    | A1               | 7869206       | 483006       | 0°      | -70°        | 230.6     |
| GT08    | A1               | 7869410       | 483063       | 180°    | -75°        | 80.8      |

\* Coordinates in GDA94 Zone 52

To test the Soma A1 VTEM conductor holes GT04-GT08 were located on an elevated plateau of Gardiner Sandstone and drilled through to the unconformity into a basement of metasediments that are referred to as Killi Killi Beds.

As a generalisation, the holes encountered Gardiner Sandstone to depths varying from 35 to 60m. The Gardiner Sandstone display localised weak to moderate bleaching, presence of quartz dissolution features and drusy quartz along fractures.

The unconformity is characterised by a strong argillisation and bleaching overprinting a 25-50m thick zone of intensely hematized (iron oxide enriched) Killi Killi Beds.

At depths ranging from 80-250m three of the holes intersected meta-pelite with “conductive” graphite and associated 0.4m-3.0m wide radiometrically anomalous zones with disseminated sulphides (pyrite and chalcopyrite) and thin siderite veins. A high degree of fracturing associated with immature brecciation is observed within some graphitic zones, such as in Hole GT04 between 134m and 146m. An apparent east-southeasterly trending fault zone is interpreted to be the cause of a 12m offset of the unconformity.

Hand-held XRF measurements on the drill core located the following significant anomalous uranium concentrations with disseminated sulphides:

|      |  |
|------|--|
| GT04 | 144.5m - 145.6m: spot measurements up to 113ppm U (0.013% U <sub>3</sub> O <sub>8</sub> )    |
|      | 155.9m – 156.3m: spot measurements up to 2,100ppm U (0.252% U <sub>3</sub> O <sub>8</sub> )  |
| GT06 | 102.6m – 103.4m: spot measurements up to 219ppm U (0.026% U <sub>3</sub> O <sub>8</sub> )    |
| GT07 | 164.45m – 165.6m: spot measurements up to 1,469ppm U (0.176% U <sub>3</sub> O <sub>8</sub> ) |

Downhole gamma logging only returned values up to a maximum of 125ppm eU<sub>3</sub>O<sub>8</sub> and selected intervals of the diamond drill core are currently being sampled for chemical assay.

The uranium concentrations in the drill cores were determined by Afmex to be due to the presence of the minerals pitchblende and autunite (a calcium uranyl phosphate mineral). Preliminary Afmex mineralogical and geochronological studies of the pitchblende

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mineralisation and accompanying alteration confirm that the Gardiner-Tanami region displays similarities with the Athabasca and Alligator Rivers uranium provinces (see below).

### **Mineralogical and Age Dating Studies**

The initial results of the scientific studies of the Soma diamond drill cores by Afmex show that the uranium mineralisation is related to pitchblende–siderite–sulphide veinlets associated to hydrothermal alteration. Secondary uranium remobilisation as autunite is disseminated in the surrounding host rocks (Figure 5). Preliminary primary uranium deposition age was determined at approximately 1400-1500 million years (Ma), in the geological time scale. This age is younger than the age of deposition of the overlying Gardiner Sandstone (1750-1640Ma). Further age determination on pitchblende will be done to better constrain the model.

Such observations of age range link the primary uranium mineralisation in the Killi Killi basement rocks with hydrothermal fluid movement that took place after the Gardiner Sandstone deposition. This reinforces the comparisons that have been made between the Gardiner-Tanami region and the Athabasca and Alligator Rivers uranium provinces, which host the world's largest high grade unconformity-style uranium deposits.

### **New Airborne VTEM Survey**

As announced on 16 October 2009 Northern Uranium has reached an agreement with Manhattan providing an exclusive right for Northern Uranium to earn 60% interest in Manhattan's Gardner Range Project by spending A\$1.05m within four years.

Manhattan's Gardner Range Project comprises exploration licences which are adjacent to some of Northern Uranium's Gardiner-Tanami tenements, most notably E80/3275 which is contiguous with a Northern Uranium tenement covering the Oracle and Soma target areas (Figure 1).

Within E80/3275 Manhattan holds the historic "The Don" prospect where drilling in the 1980s intersected unconformity-style uranium mineralisation of 0.44m of 1.5%  $U_3O_8$  and 1.7g/t gold in graphitic shale at a depth of 40m. A Manhattan VTEM survey line over The Don prospect had identified a significant conductor which was considered to be a primary uranium target at depth in fresh rock. In the announcement disclosing the agreement, Northern Uranium stated that it intended a more detailed airborne VTEM survey this year, to be followed up next year with ground radiometric surveying, geological mapping, geochemical sampling and drilling.

The more detailed VTEM survey has now been completed and shows that the conductors which were drilled on the Soma A1 target extend over a total of 8km, of which 6km is a continuation to the east under sandstone cover in Manhattan's E80/3275 (Figure 4). As a consequence, a series of new priority drill targets with potential for high grade uranium ore deposition can now be defined, most notably where fault structures transect the conductors. Such targeting is illustrated in Figure 2 with example potential drill target areas situated within a few hundred metres of the uranium mineralisation intersected in the Soma A1 drill holes.

Similar targets may be expected in the adjacent Manhattan exploration licence, providing a near term focus for Northern Uranium's exploration expenditure that is required for the Company to earn its 60% interest. The new VTEM survey has also revealed that the conductor beneath The Don prospect extends to the west-northwest below sandstone cover towards Northern Uranium's 100%-owned Soma exploration licence.

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## About Northern Uranium and the Gardiner-Tanami project

Northern Uranium Limited is primarily a uranium exploration and development company with large and prospective projects in Western Australia and the Northern Territory. The Company has a strategic alliance with Areva, which has a substantial shareholding in Northern Uranium and, through Afmex, is operator of uranium exploration and development of the Gardiner-Tanami Project. Areva will also market any uranium produced by Northern Uranium.

The Gardiner-Tanami project covers an area of approximately 11,000km<sup>2</sup> centred on the WA-NT border 200km southeast of Halls Creek. The area is compared favourably with the Athabasca Basin (Canada), which hosts the world's highest grade unconformity-related uranium deposits, and the Alligator Rivers region in the NT where the Ranger mine, Australia's largest operating uranium mine, is located.

## INVESTOR INFORMATION

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### Capital Structure:

Share Price (NTU): \$0.165c  
Issued Shares: 72.7m  
Market Cap: \$12m

### Company Management:

Kevin Schultz – Executive Chairman  
Adrian Griffin - Non executive Director  
Bob Hair - Non executive Director  
Colin McCavana - Non executive Director  
Philippe Portella - Non executive Director  
Robin Wilson – General Manager

## FOR AND ON BEHALF OF THE BOARD



Kevin Schultz  
Executive Chairman

### Competent Person Declaration

*The information in this report accurately reflects information prepared by competent persons (as defined by the Australasian Code for Reporting of Mineral Resources and Ore Reserves). It is compiled by Mr K Schultz, an employee of the Company who is a Fellow of The Australasian Institute of Mining and Metallurgy with the requisite experience in the field of activity in which he is reporting. Mr Schultz has sufficient experience which is relevant to the style of mineralisation and the type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent person as defined in the 2004 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". Mr Schultz consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.*

**Figure 1**  
**WA Gardiner-Tanami Project Tenements and Soma Target Location Plan**

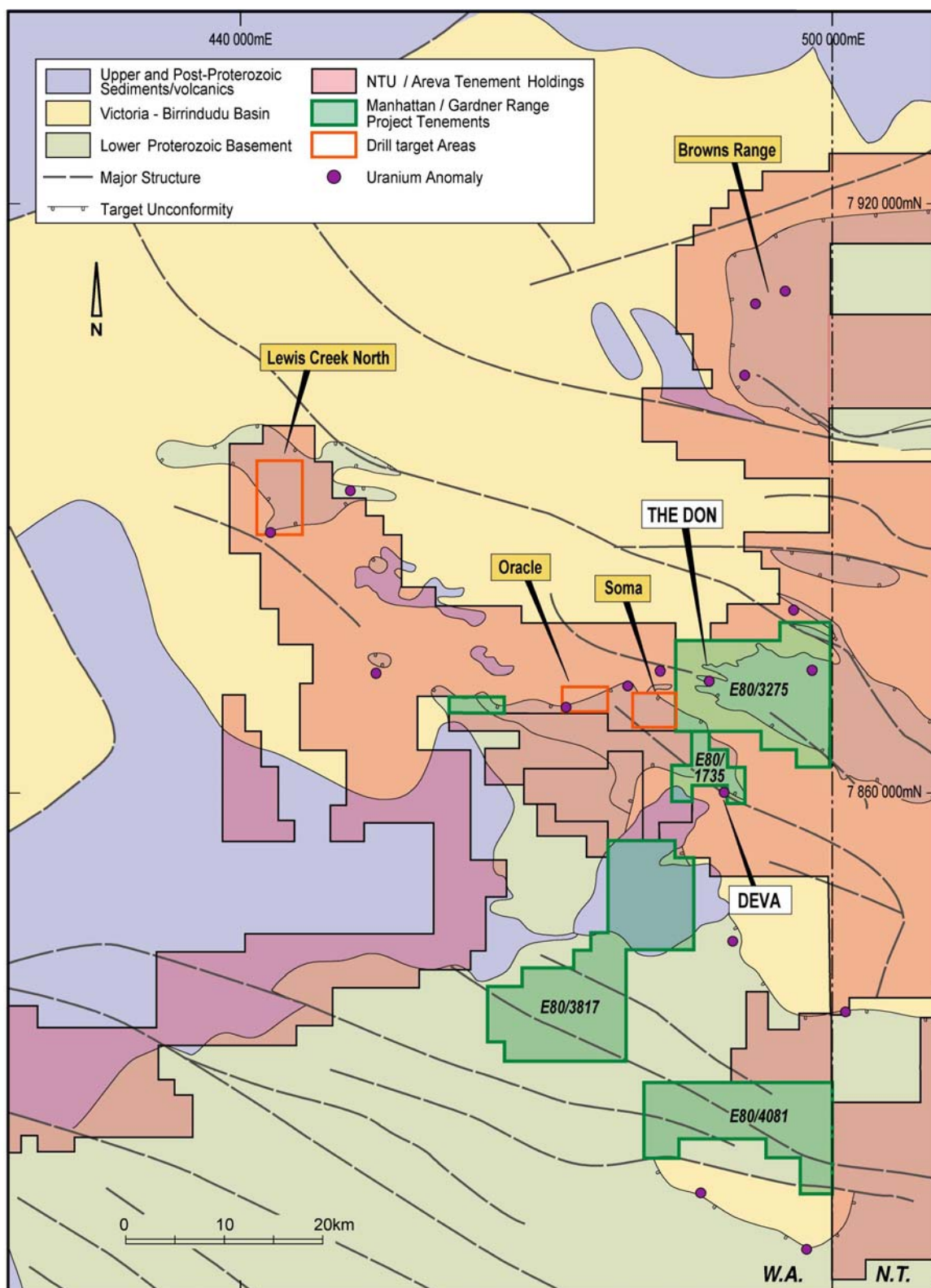




Figure 2

Soma A1 – Drilled Cross Section Line and New Priority Drill Targets

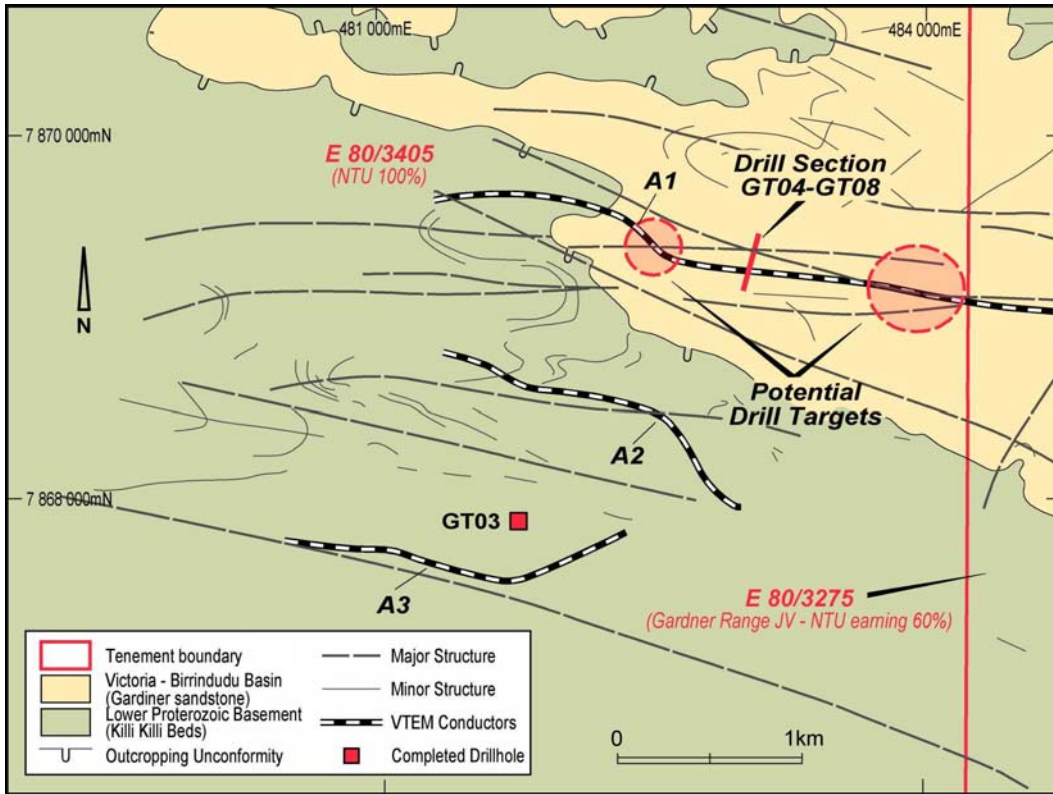
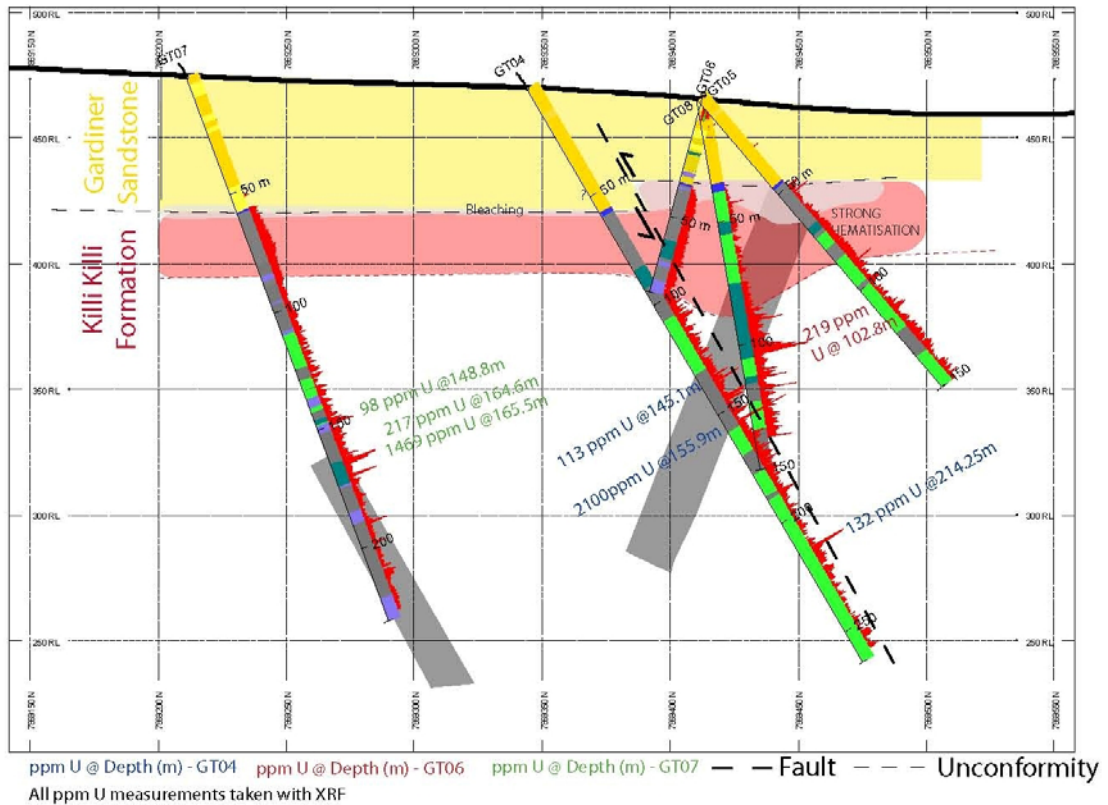


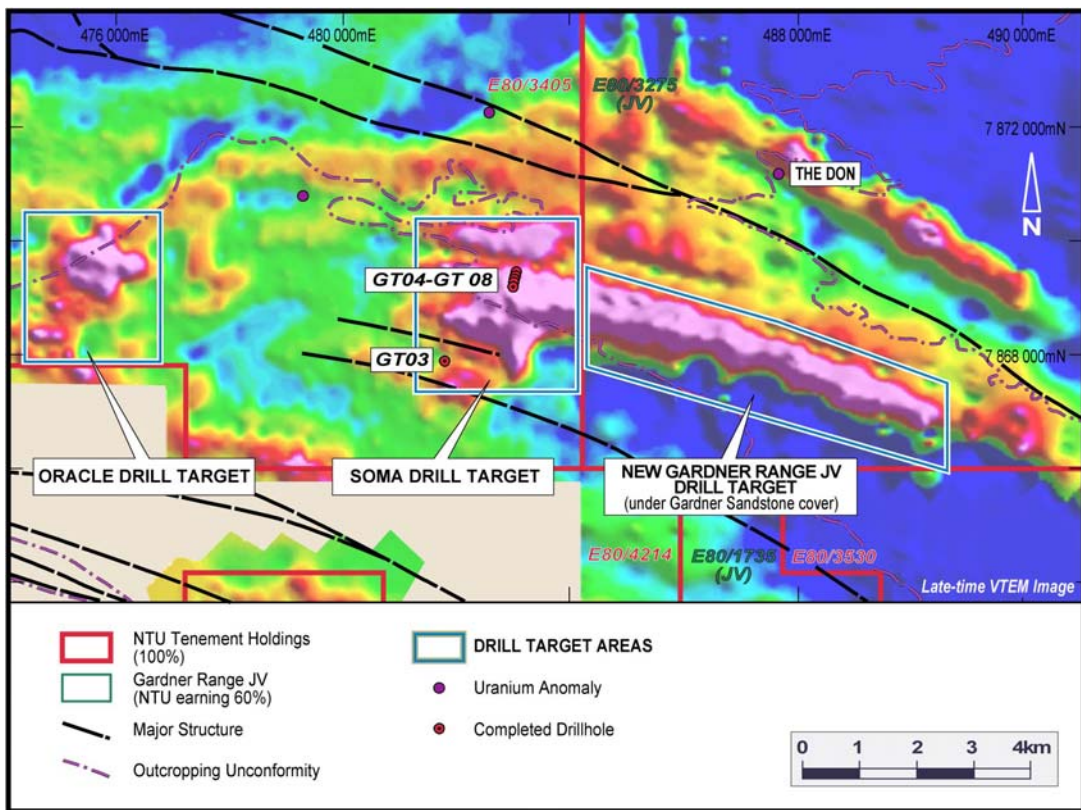
Figure 3

Soma A1 – Drilled Cross Section



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**Figure 4**  
**Soma VTEM Conductors extending into Manhattan Exploration Licence**



**Figure 5**  
**SEM Images with Pitchblende, Autunite and Sulphide Bands**

