YMIP Grant **13-036**

A Summary Technical Report on the **Upper Grand Valley** Project
A Focussed Regional Module, Hard Rock Type

A Geochemical/Geological Report

No Claims staked under this grant

Location
NTS Map Sheet 115I14 and 115P03,
Camp at 384,070E, 6,987,120N, Elev 867 m
UTM NAD 83, Zone 8

Grant awarded to Jeff Mieras
Work performed by Gordon Richards & Jeff Mieras
Report written by Gordon Richards

October 15, 2013

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SUMMARY

Work described in this report was conducted under a YMIP Focussed Regional Grant, Hardrock Type. YMIP No is 13-033 awarded to Jeff Mieras.

The project is located on the north side of the headwaters of a Grand Valley Creek 105 km northwest of Carmacks on NTS Map Sheets 115I14 and 115P03. See Figure 1.

Richards and Mieras flew by helicopter from a previous fly camp on the nearby Paleo Claims. A helipad was cut out on a bench area for use on demob and as a camp from which prospecting traverses was conducted. The following is an historical account of events on this project:

July 4, 5, 26, 27 Mob and demob for four YMIP Grant Projects: Paleo, Stoggie, Lake, and Upper Grand Valley (13-033 to 13-036 respectively).
July 21. Moved from Paleo Property to Upper Grand Valley Project. Cut out helipad and set up camp.
July 22 to 24. Prospected and sampled.
July 25. Richards flew out to Pelly Farm and drove to Carmacks. Mieras flew out to Trans North base at Carmacks.

Regionally the property lies within Yukon Tanana Terrane. The most detailed and recent geology map is provided by Canadian Geoscience Map 7, *Geology Southwestern McQuesten and parts of Northern Carmacks* by J.J. Ryan, M. Colpron, and N. Hayward at a scale of 1:125,000. The target area is shown to be underlain by the basal member of the Yukon Tanana Terrane, the Late Devonian and older Snowcap Assemblage comprised of quartzite to quartz-mica schist intruded by orthogneises. These rocks display upper greenschist- to amphibolite-facies metamorphism. Work in 2013 by the applicant and Richards did not find any outcrop on their traverses. However a pit dug at camp to hold a food cooler was dug into decomposed orthogneiss. Float of similar medium

grained foliated diorite was found throughout the soil grid area as were angular pebbles as part of colluvium in many soil pits. No quartzite float was observed.

Basalt to basaltic andesite of the Upper Cretaceous Carmacks Group is the only magmatic suite represented of the three magmatic suites that are described by Vanessa Bennett as being genetically related to White Gold District mineralized systems. It lies along the southern side of the target area.

Aeromagnetic derivative maps are great aids in locating gold mineralized structures in the White Gold District (M Burke, V Bennett, personal communication Sep 2010). However, they are distinctly lacking in the area of geochemically anomalous augered soils collected in 2011 and MMI soils collected in 2013. Only a very faint northwest trending tilt derivative low is evident on derivative maps. The lack of a derivative low may be due to the low magnetic susceptibility of underlying rocks as evidenced by the low residual magnetic response. There may have been little magnetic susceptibility to have been destroyed by hydrothermal fluids ascending a structure so that no contrast of magnetic susceptibility could ever be developed. Or there is simply no such structure developed in the target area.

The target area occurs in the underexplored pre-Reid glaciated terrain east of the White Gold District. Reid glaciation began 200,000 years ago and ended about 50,000 years ago. The glaciation across the general area of the UGV Project is described as much older than Reid, possibly older than 500,000 years (Jeff Bond, personal communication, 2012). Jeffrey Bond and Panya Lipovsky of the Yukon Geological Survey have recently provided a number of papers, maps and posters on the surficial geology of the pre-Reid glaciated area with descriptions related to exploration. In particular they noted that tills have largely been removed by weathering from hilltops and modest slopes leaving hillsides amenable to soil sampling with effectiveness believed to be similar to unglaciated terrain further west. Soil pits dug in 2013 support this description. Of 77 soil pits dug by Richards, 46 were 100% loess, 25 were colluvium with some loess and only 6 were till with some loess. Most of the till samples were found in the northeast corner of the sampled area.

In 2011, one man day was spent collecting standard augered soils on a contour traverse across a hillside cut by a creek with a strong geochemical response in an RGS silt. The RGS silt, ID 1186, assayed 64 ppb Au (98^{th} %tile), 9.2 ppm As (95^{th} %tile), 0.6 ppm Sb (90^{th} %tile), and 54 ppb Hg (80^{th} %tile). Its location is shown on Figure 2.

Soils collected in 2011 were mixed till, loess and weathered bedrock collected beneath younger loess that blankets the general area. They were collected by auger along a contour traverse as shown on Figure 2 at a spacing of 100 metre and more where samples were difficult to collect due to swampy ground in areas of more gentle relief. No rock samples were collected.

Results were highly encouraging with many samples over a two km length anomalous for a combination of Au, As, Pb, and Sb as shown on Figure 2. The weak magnetic low that crosses the anomalous samples is also shown. It was believed by the applicant that the dilution of soils by incorporation of glacial till and loess over a time period of hundreds of thousands of years and glacial smearing in an unknown direction have caused the geochemical responses to be subdued and smeared. However, the two km of anomalous soils made this an excellent target for follow-up work.

Additional soil sampling was recommended to define the extent of the multi-element geochemically anomalous soil results. Collection of MMI soil samples was also recommended as an alternative to standard soil sampling as this method gives anomalies only directly over underlying mineralization so that the pattern of anomalous geochemistry is not as spread out as it is for standard soil sampling. It was believed that this sampling would provide a focus for additional work.

Work conducted in 2013 involved the collection of 168 MMI soils on a grid of 200 m spaced lines with a 50 to 100 m sample interval. No strong multi-element anomalous patterns from the MMI soils are defined in this work. One cluster of anomalous gold MMI response ratios occurs in the southwest corner of the soil grid with no pathfinder element support.

All garbage was removed from camp and taken to Carmacks for disposal.

SURVEY METHODS

General

Soil sampling used the selective leach analyses Mobile Metal Ion (MMI) because the area had been glaciated during one or more pre-Reid glacial periods and MMI soil sampling can, where it is effective, "see through" deep overburden including glacial till. The 2013 grid MMI soil sampling programme was conducted to see if it was effective in the target area.

Eight man days were spent by Jeff Mieras and Gordon Richards setting up a camp and collecting 168 MMI soil samples and 2 rock samples. Complete lab results are provided in Appendices. UTM co-ordinates and MMI results for soil samples expressed as response ratios for selected elements are provided in Table 1 and shown on Figures 3 to 10. UTM co-ordinates, sample descriptions, and geochemical results for rock samples for selected elements are provided in Table 2. UTM co-ordinates were recorded using a UTM NAD83 Zone 8 Projection.

Soil sample details such as float and rock chip type, soil colour, texture, depth, dampness and site slope were described in notes. Their locations were recorded in a Garmin handheld GPSmap 60Cx unit. Some UTM co-ordinates were also recorded in notebooks as a backup in case of loss of the GPS unit or loss of data stored on the unit. No such loss occurred. Sampled material was placed into numbered bags as described below. Soils were collected at 100 m interval on 8 soil lines and at 50 m interval on 2 lines with a 200 m line spacing designed to give broad coverage over the anomalous portion of the 2011 augered soil sample line.

Response ratios (RR) for 14 elements were calculated for all 168 MMI soil samples and are provided in Table 1. Geochemical results for 13 selected elements for the 2 rock samples are provided in Table 2. Anomalous MMI response ratios greater than selected threshold values for Au, As, Ag, Pb, Zn, Ni, Ti, and Ce are shown graphically on Figures 3 to 10 and described more fully below.

Geology and Rock Samples.

Structurally controlled gold mineralization that could explain the spotty and somewhat glacially smeared multi-element augered soil anomalies collected in 2011 was the main target. This target is modeled after the White Gold District structurally controlled deposits with the realization that other gold bearing systems are certainly possible. Expected size of geochemically anomalous zones is up to three km long and 50 to 500 m or so wide. There are numerous examples from the White Gold District where a reconnaissance style soil line with a 100m spaced sample interval yielded only one anomalous sample that eventually led to the discovery of significant gold mineralization.

Angular float and soil rock chips were described wherever possible in an attempt to map bedrock geology and alteration present on the property. Two rock samples of limonitic orthogneiss float weighing 0.13 and 0.16 kg were collected in gusseted kraft bags.

The rock samples were shipped to Vancouver and delivered to Acme Analytical Laboratories (Vancouver) Ltd, 9050 Shaughnessy St., Vancouver, B.C., V6P 6E5 for analyses. Rock samples were crushed to 80% passing a 10 mesh screen, from which 500 g was split and pulverized to 85% passing a 200 mesh screen.

Analytical method used was Acme's 1DX on a 15 g sample size. In this method sample splits of 15 g are leached in hot (95* C) Aqua Regia and analyzed by ICP-MS. Results are reported for 41 elements in ppb, ppm or % depending on the element in question as shown on the Certificate of Analyses provided. An attached Appendix provides results in original format. Sample results for selected elements are also provided on Table 2 with UTM co-ordinates.

MMI Soil Samples.

MMI analysis uses a weak partial extraction to improve the conventional geochemical response over buried ore deposits. The process measures the mobile metal ions from mineralization, which have moved toward the surface and become loosely attached to the surfaces of soil particles. They concentrate within the 10 to 25 cm soil depth which in the 77 samples collected by Richards was comprised of only loess in 46 samples, a mixture of loess and colluvium in 25 samples and a mixture of loess and till in 6 samples. Its effectiveness has been documented in over 1000 case histories on six continents and includes numerous commercial successes. The anomalies are sharply bounded and in most cases directly overlie and define the extent of the surface projection of buried primary mineralized zones. The MMI process is a proprietary method developed by

Wamtech of Australia. SGS Minerals Services in Toronto purchased all rights to the method and provides analyses in Vancouver and Toronto.

Watch and ring were removed prior to sampling. Pits were dug by shovel to a depth of 30 cm in order to expose the soil profile for sampling. The profile was scraped clean with a plastic scoop to remove any metal effect from the shovel. A continuous strip of soil was collected by plastic scoop over the interval of 10 to 25 cm below the top of true soil, placed in a pre-numbered ziplock baggie and placed in an 11 inch by 20 inch 2 mil plastic bag. Loess was present at nearly all sample sites and was the sample medium for the bulk of all of the 168 MMI soils collected. Some samples were mixtures of loess and colluvium or loess and till. Samples were kept cool until they were shipped to SGS Minerals Services, 3260 Production Way, Burnaby, B.C., V5A 4W4, Canada for analyses.

In the SGS Lab, samples are not dried or prepared in any way. The MMI process includes analyses of an unscreened 50-g sample using multi-component extractants. Metal contents are determined for 53 elements by ICP-MS in the parts per billion range.

Response Ratios were calculated for 14 elements as shown on Table 1. The average values for results of the lower quartile were calculated for each element. One-half of detection limit was used for those samples with values reported as less than detection limit. Then each result was divided by the lower quartile average to obtain its response ratio. A response ratio of 10 or more is considered very significant for indicating underlying mineralization. Lesser values of 5 to 10 can also be important particularly where more than one element has such a value. Response ratios can best be thought of as a multiple of background in interpreting results.

RESULTS

Geology and Rock Analyses.

Minor float and rock chips noted in about 30% of the soil pits were of medium grained foliated dioritic orthogneiss. No quartzite was seen as might be expected from the mapping provided on Geoscience Map 7 referred to above. Two limonitic intrusive rock samples were sent for assay but neither returned any anomalous metal values. See Table 2 for rock descriptions and geochemical results.

The property lies within pre-Reid glaciated terrain. A blanket of loess 15 cm to in excess of 30 cm depth covers the sampled area. Current work found till in only about 10% of the soil pits, colluvium in about 30% of the soil pits and only loess in the remaining 60% of the soil pits. As it is not known what lies under those soil pits with only loess exposed, it would appear that one-quarter of the terrain is underlain by till and three-quarters by colluvium. It is believed that much of the till originally deposited on the hillsides was eroded prior to the deposition of the 20,000 year old post McConnell age loess.

Au MMI Response Ratios. Figure 3.

A cluster of anomalous gold response ratios (RR) occurs in the west central portion of the grid as can be seen on Figure 3. RR values greater than 5 are plotted. This cluster occurs over and around the highest gold value (30 ppb in J189) from the 2011 augered soil sample traverse. The anomalous RRs are not contiguous but do occur over an area of 500m by 300m open to the southwest. A high RR of 55 in sample S387 is extremely anomalous and is supported by an arsenic RR of 12, which is one of only three As RR values greater than 8. This sample and S383 (RR 12) and S355 (RR 11) form a linear pattern that might be indicative of a north trending gold mineralized structure.

A second cluster of weaker gold response ratios occurs in the central portion of the grid around S339. These samples form a pattern 200m by 300m in size with the highest gold RR of 10. Support is provided by anomalous silver in and adjacent to many of the samples.

As and Sb MMI Response Ratios. Figure 10.

Response ratios for both As and Sb show little anomalous response. For As only four RRs are greater than 5 with a high of 16 at T330. For Sb all results were <1 ppb except for nine samples where 5 were 1ppb, 3 were 2ppb, and 1 was 3ppb. This low response for As and Sb is in sharp contrast to anomalous values for these elements in the augered soil sample results of 2011. Refer to Figure 2. Either there is no underlying arsenic-bearing mineralization and the 2011 high values are transported anomalies or these elements are not responding using the MMI technique. It is interesting that the strongest MMI response for gold occurs in the area of the strongest conventional geochemical results for the augered samples and indeed forms a cluster of anomalous values here along with one strong MMI As result. This could be indicating that As and Sb do not respond using MMI analyses in this environment. However, As and much less so Sb do respond on a similar MMI survey on the Paleo Property 10 km northeast.

Ag Response Ratios. Figure 4.

As can be seen on Figure 4, moderately anomalous MMI RR values for silver (6-8 with one 14 RR) occur scattered across the property with a cluster of anomalous values that include RRs of 21 and 42 occurring with the second cluster of anomalous gold MMI values in the centre of the grid. There is no anomalous silver support for the stronger anomalous Au cluster in the west central portion of the grid.

Pb MMI Response Ratios. Figure 5.

Anomalous MMI RRs for lead are scattered across the grid with a preponderance of higher values in the northeast. Lead sometimes is a pathfinder element for gold mineralization but little definitive support is provided in the current results. Highest RRs of 42 and 40 occur at T316 and T330.

Zn MMI Response Ratios. Figure 6.

Anomalous MMI RRs for zinc are scattered across the grid as shown on Figure 6. A crude correspondence with lead occurs in the northeast portion of the grid but little definitive support is provided for gold mineralization. There is crude coincident support between Pb, Zn and Ag in the northeast portion of the grid.

Ni, Ti, and Ce MMI Response Ratios. Figures 7, 8, and 9.

Patterns of Ni, Ti, and Ce sometimes aid in mapping bedrock geology. Elevated Ni occurs associated with mafic rocks. Ti and Ce often occur associated with intrusive rocks. The scattered anomalous patterns for Ti and Ce may be related to underlying orthogneiss, the only rock type found as float and chips in soil pits. The crude northwest trending pattern for anomalous Ni RRs may be indicative of a more mafic orthogneiss unit underlying this portion of the grid.

CONCLUSIONS AND RECOMMENDATIONS.

- Minor float and rock chips noted in about 30% of the soil pits were of medium grained foliated dioritic orthogneiss. No quartzite was seen as might be expected from the mapping provided on Geoscience Map 7.
- Two rock samples of limonitic orthogneiss were not anomalous for any metals.
- Soils on hillsides are estimated from the soil pits to be about 25% tills and 75% colluvium blanketed with a covering of 20 to 50 cm thick loess that in places is partially admixed into the upper part of the soil profile and is rarely missing. In general, till occurs in the north half of the grid and colluvium in the south half.
- The 2011 augered soil sample line that was analyzed by Acme's 1DX analyses was variably anomalous for Au, As, Sb and Pb over a two km length. An RGS sample draining the grid and 2011 soil line was anomalous for Au, As, and Sb.
- A pattern of anomalous MMI gold response ratios occurs in the west central portion of the grid with a high RR of 55 in sample S387. This is an extremely high value that aligns with lesser but still anomalous RR values of 12 and 11 forming a linear pattern that could be indicative of an underlying gold mineralized structure. There is no strong pathfinder support for this anomaly which could be explained by either the other pathfinder elements not being present in bedrock or they are not being responsive. Hand digging of trenches on these higher Au RRs is recommended to prospect for the source of the anomalies and help distinguish between these two possibilities.
- A second pattern of anomalous MMI gold RRs occurs in the central portion of the grid around S339. The highest RR for Au is 10. Response ratios for silver provide some good support for this second anomalous pattern with silver RR highs of 42 and 21. However, no other pathfinder elements show anomalous patterns for this anomaly.

- Crudely coincident anomalous MMI patterns for Pb, Zn and Ag occur in the northeast portion of the grid over a 500m by 400 m area. A model for the causative source of this anomaly cannot be provided
- Scattered but persistent anomalous RR patterns for Ti and Ce are considered related to underlying orthogneiss, the only rock type found as float and chips in soil pits. The crude northwest trending pattern for anomalous Ni RRs may be indicative of a more mafic orthogneiss unit underlying this portion of the grid.

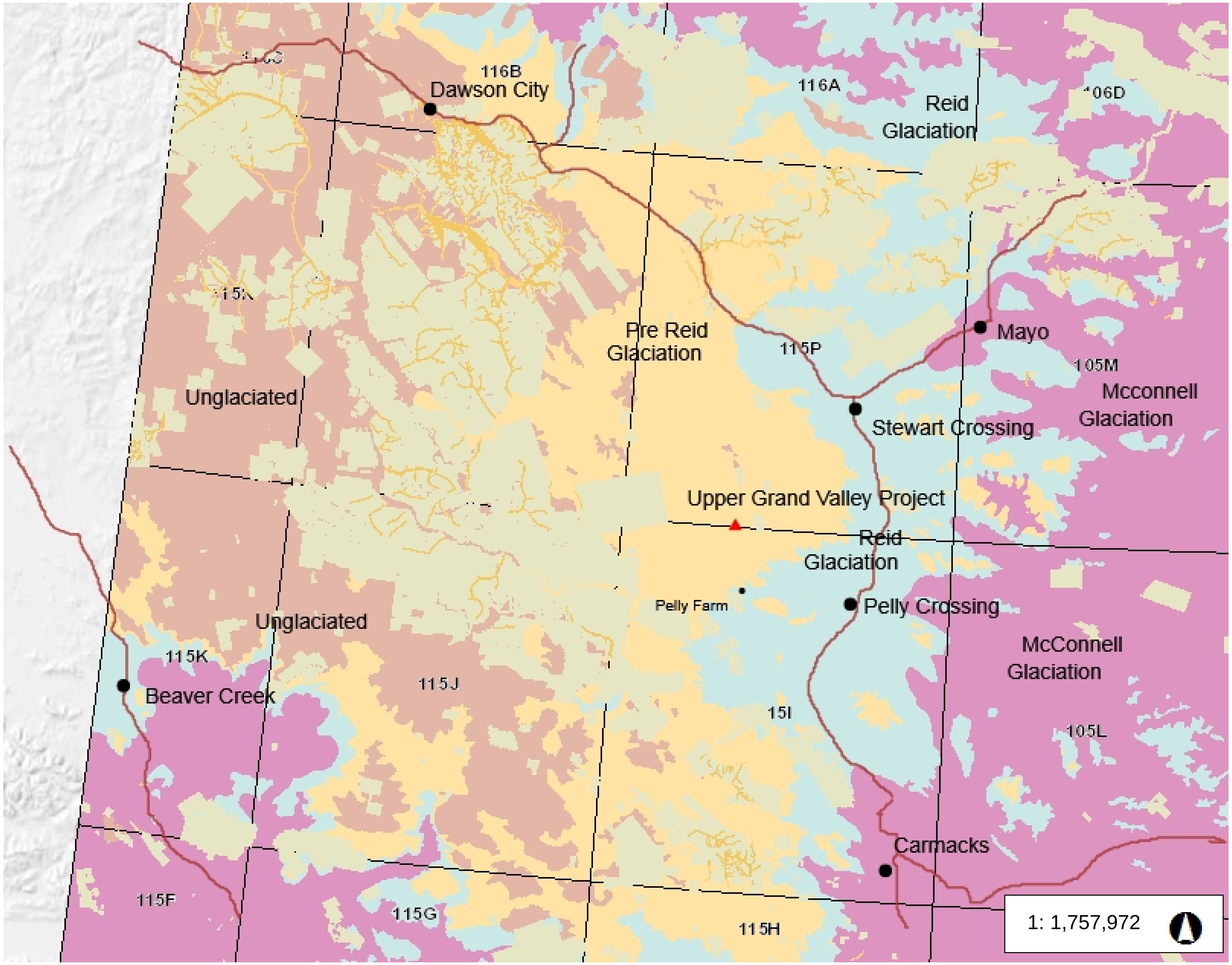
Respectfully submitted,

Gordon G Richards P.Eng.

Yukon Geological Survey

Figure 1. Location Map UGV Project

Yukon Energy, Mines and Resources



1: 1,757,972

Legend

- Placer Claims (1M)
- Quartz Claims (1M)
- 1:250,000 NTS Mapsheet Inde
- Glacial Limits (1M)
  - Cordilleran and montane glacial fea
  - Tutsieta Lake Phase Limit (ca. 13 k
  - Katherine Creek Phase Limit (ca. 2
  - All time Laurentide extent (ca. 30 ka
  - Cordilleran and montane glacial fea
  - Cordilleran and montane glacial fea
  - Unglaciated area

Notes

89.3 0 44.65 89.3 Kilometers

Yukon Albers

Produced from: Yukon Geological Survey MapMaker Online

This map is a user generated static output from an Internet mapping site and is for reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable. THIS MAP IS NOT TO BE USED FOR NAVIGATION.

Date Printed: 27-Oct-2013

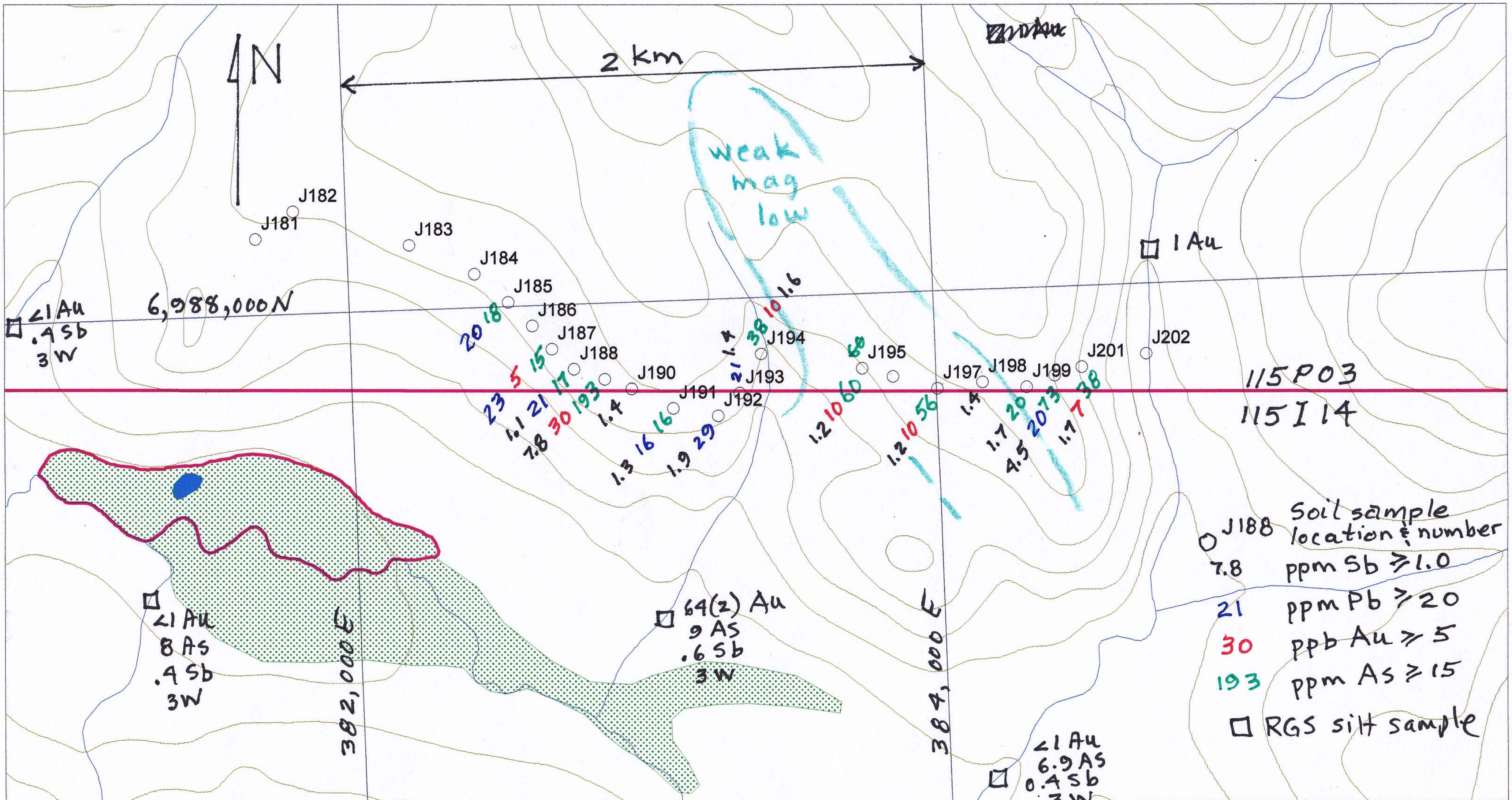


Figure 2. UPPER GRAND VALLEY AREA
COLDSPRING PROJECT

UTM Zone 8. NAD83 NTS 115P03 & 115I14

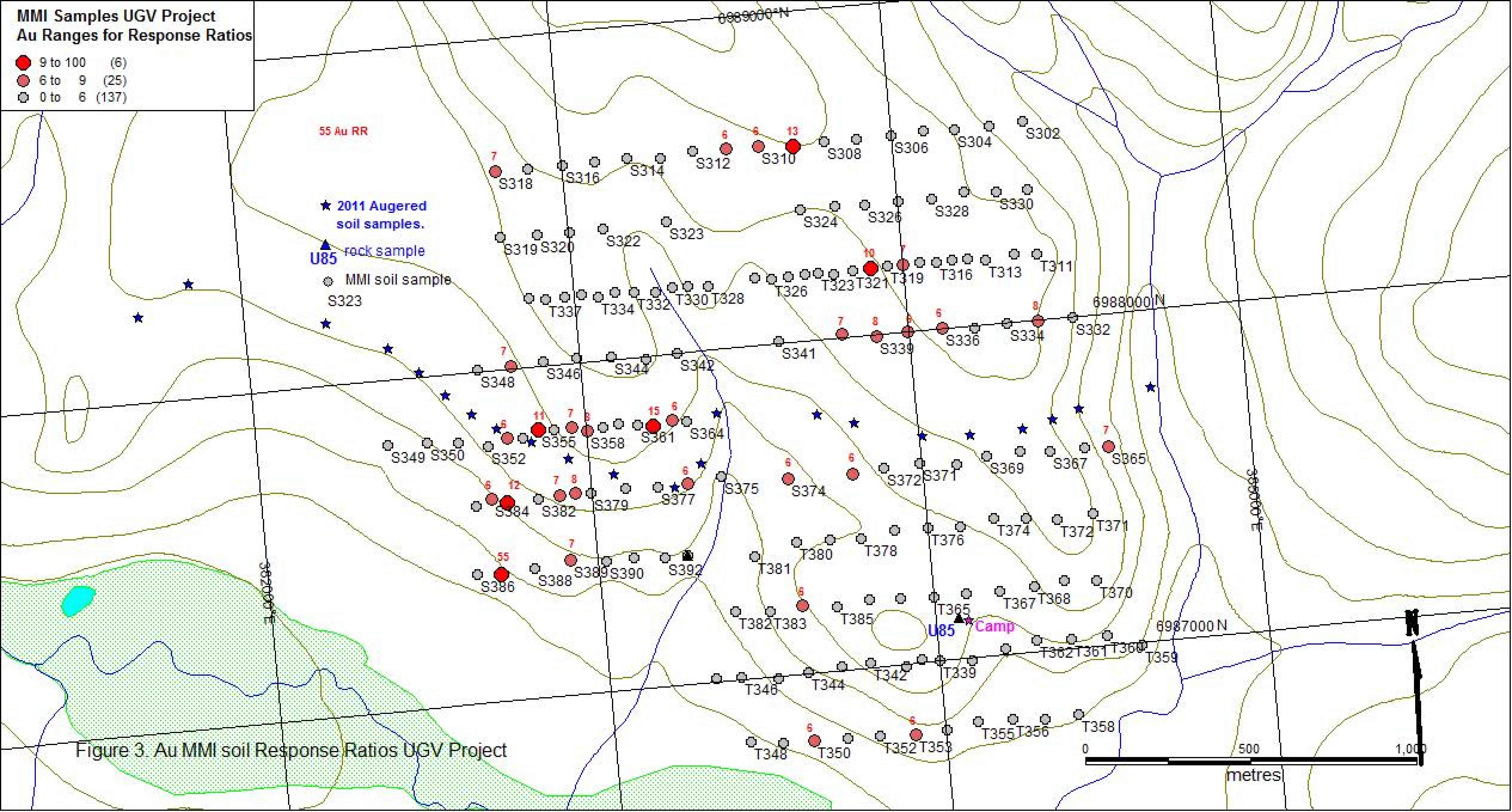


Figure 3. Au MMI soil Response Ratios UGV Project

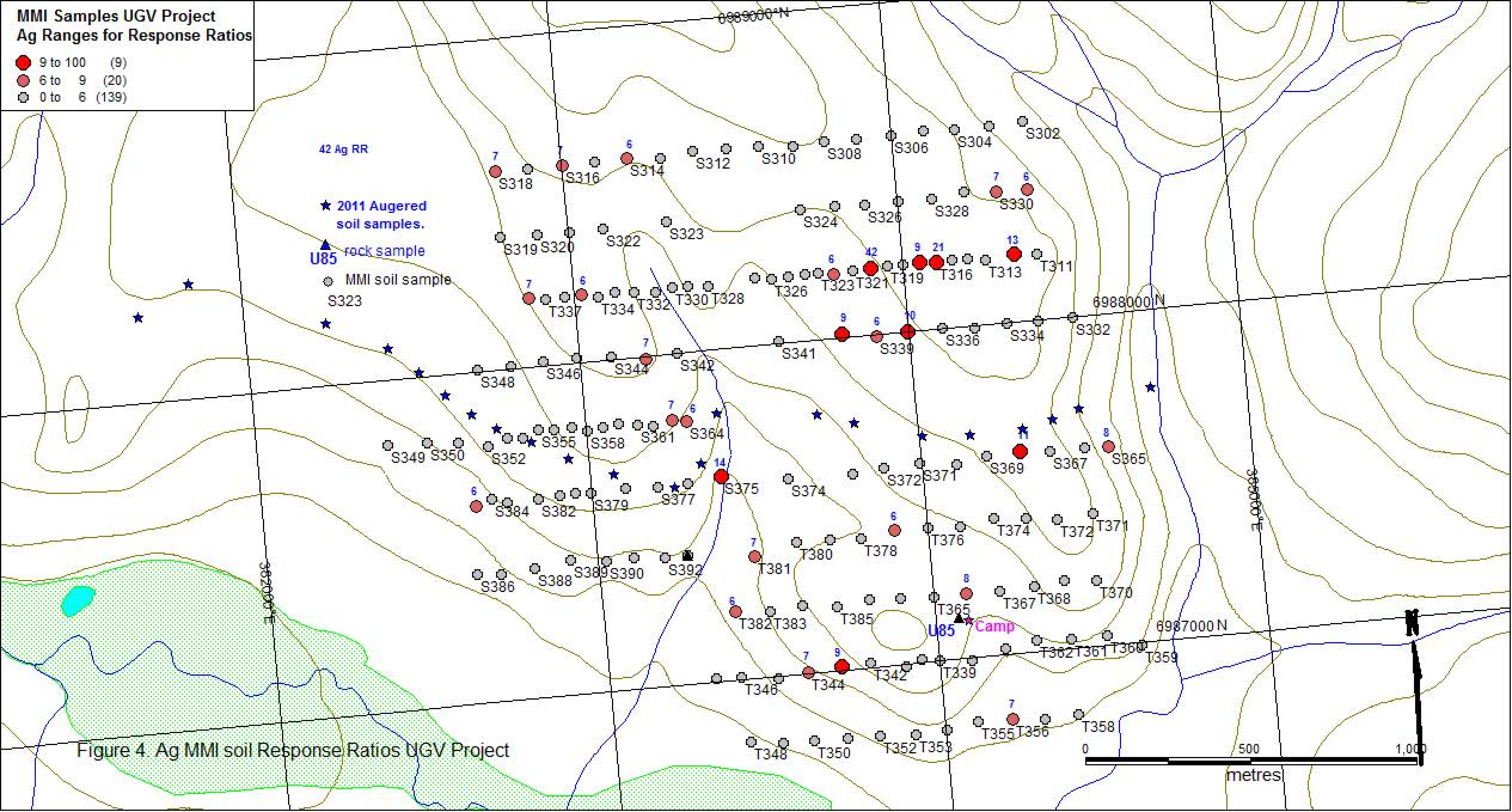


Figure 4. Ag MMI soil Response Ratios UGV Project

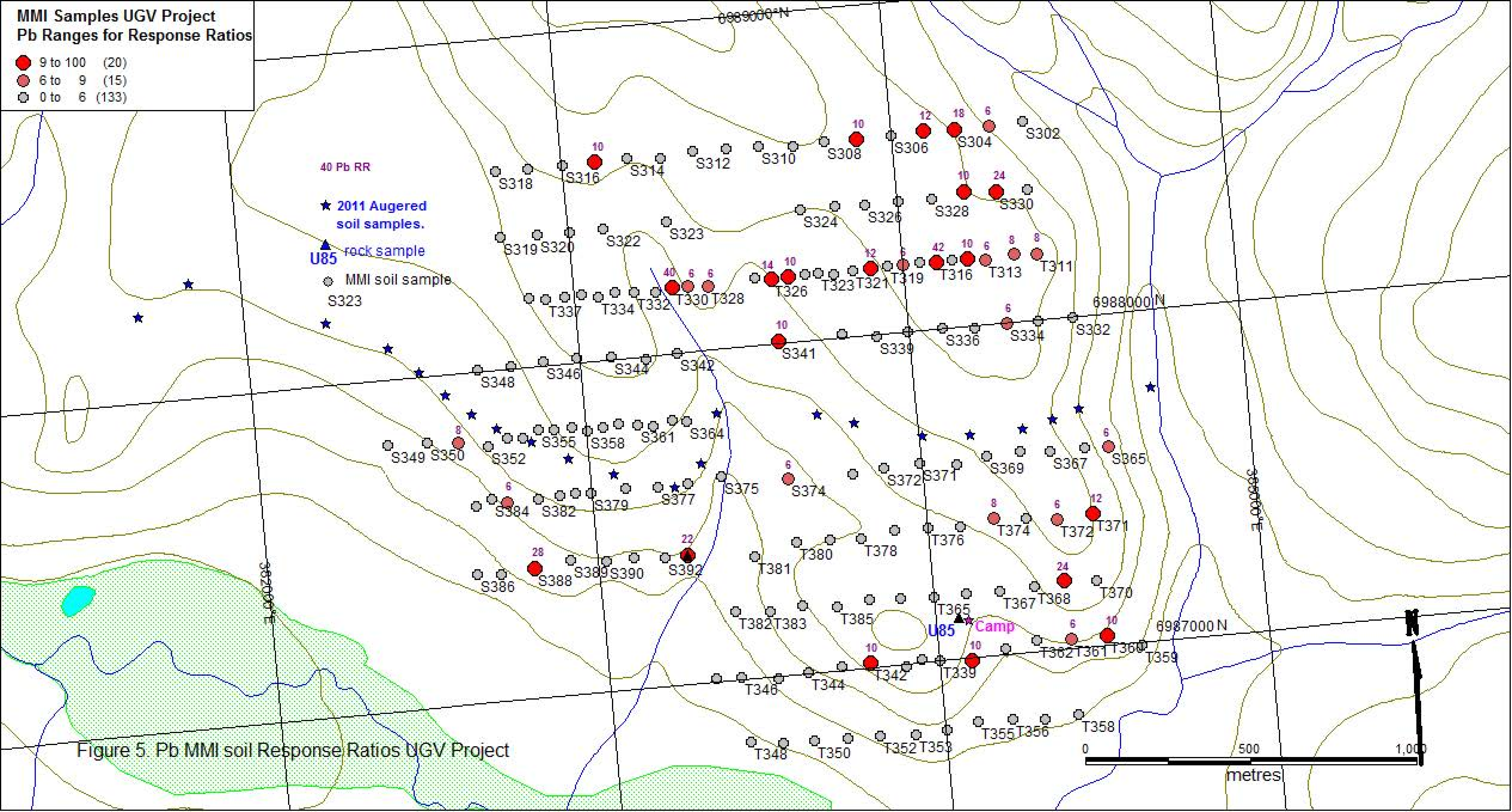


Figure 5. Pb MMI soil Response Ratios UGV Project

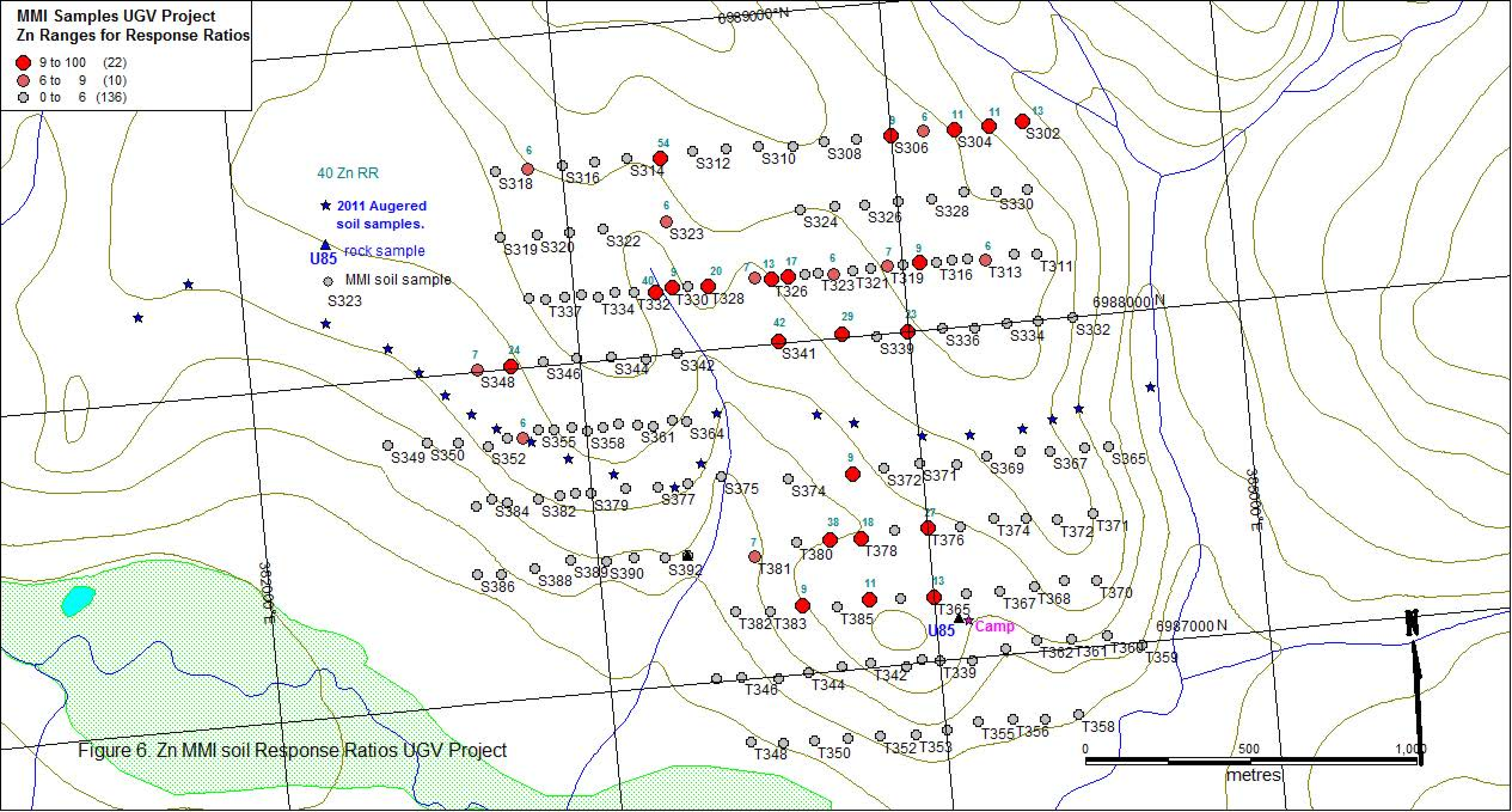


Figure 6. Zn MMI soil Response Ratios UGV Project

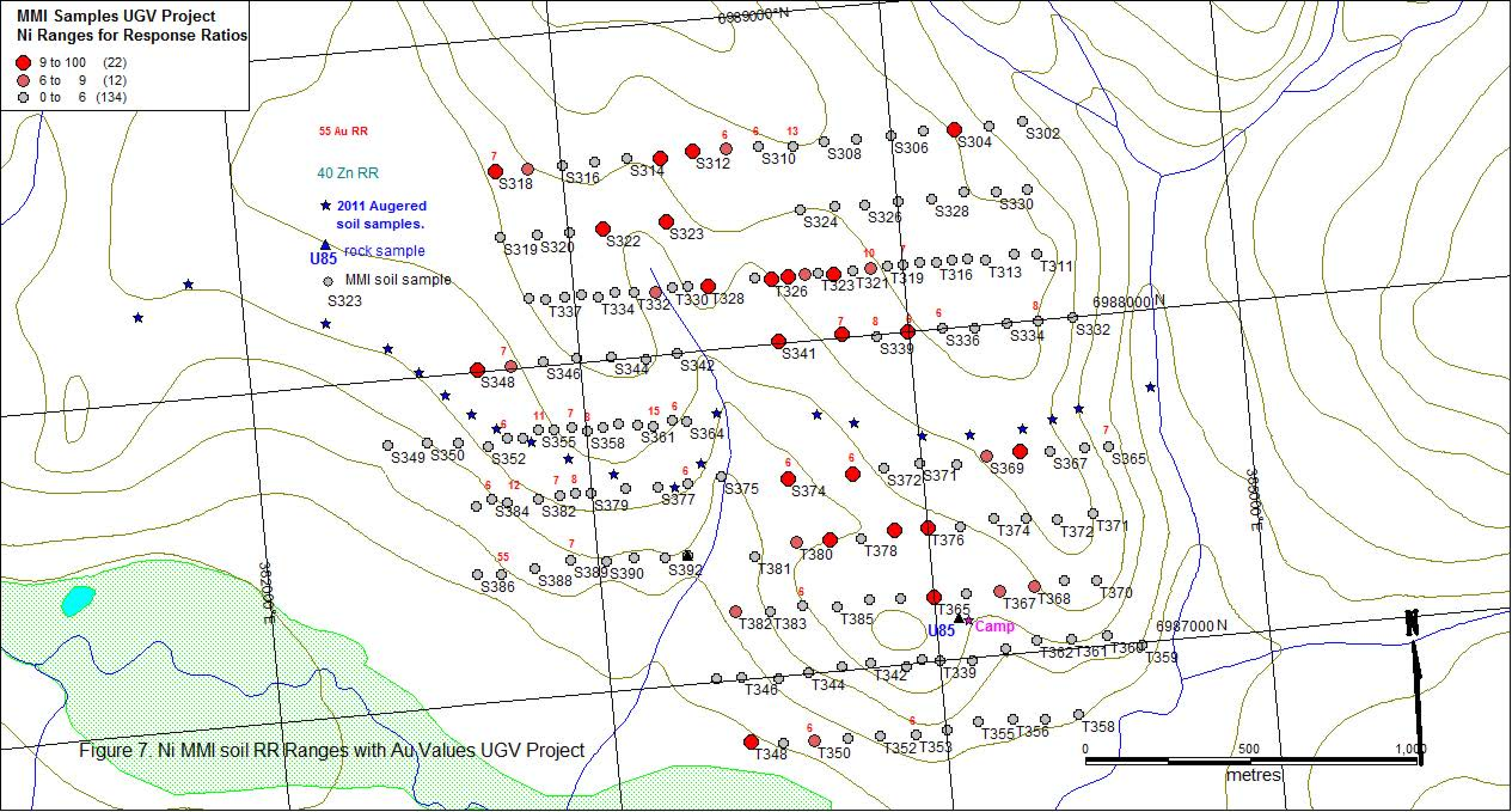


Figure 7. Ni MMI soil RR Ranges with Au Values UGV Project

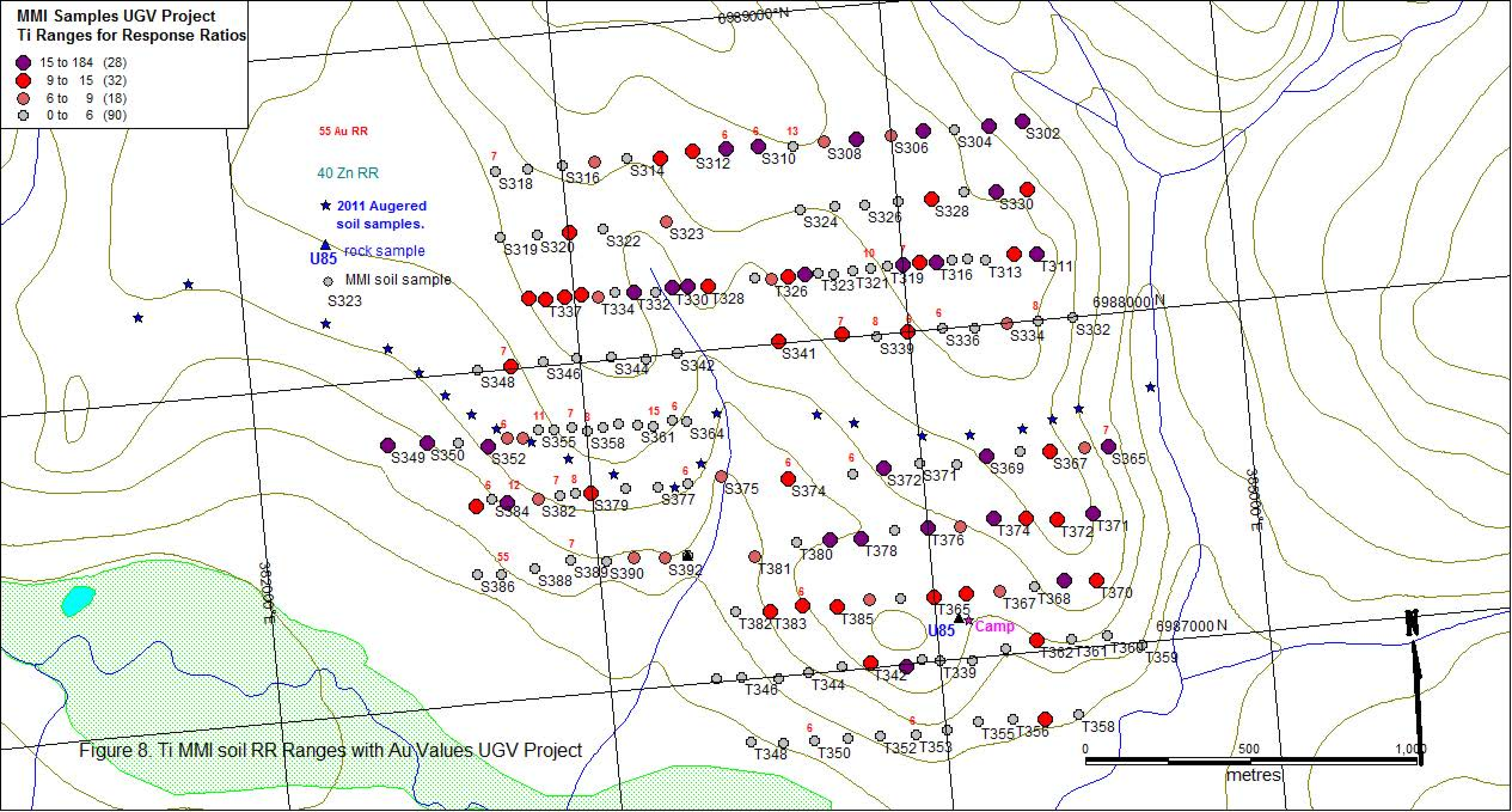


Figure 8. Ti MMI soil RR Ranges with Au Values UGV Project

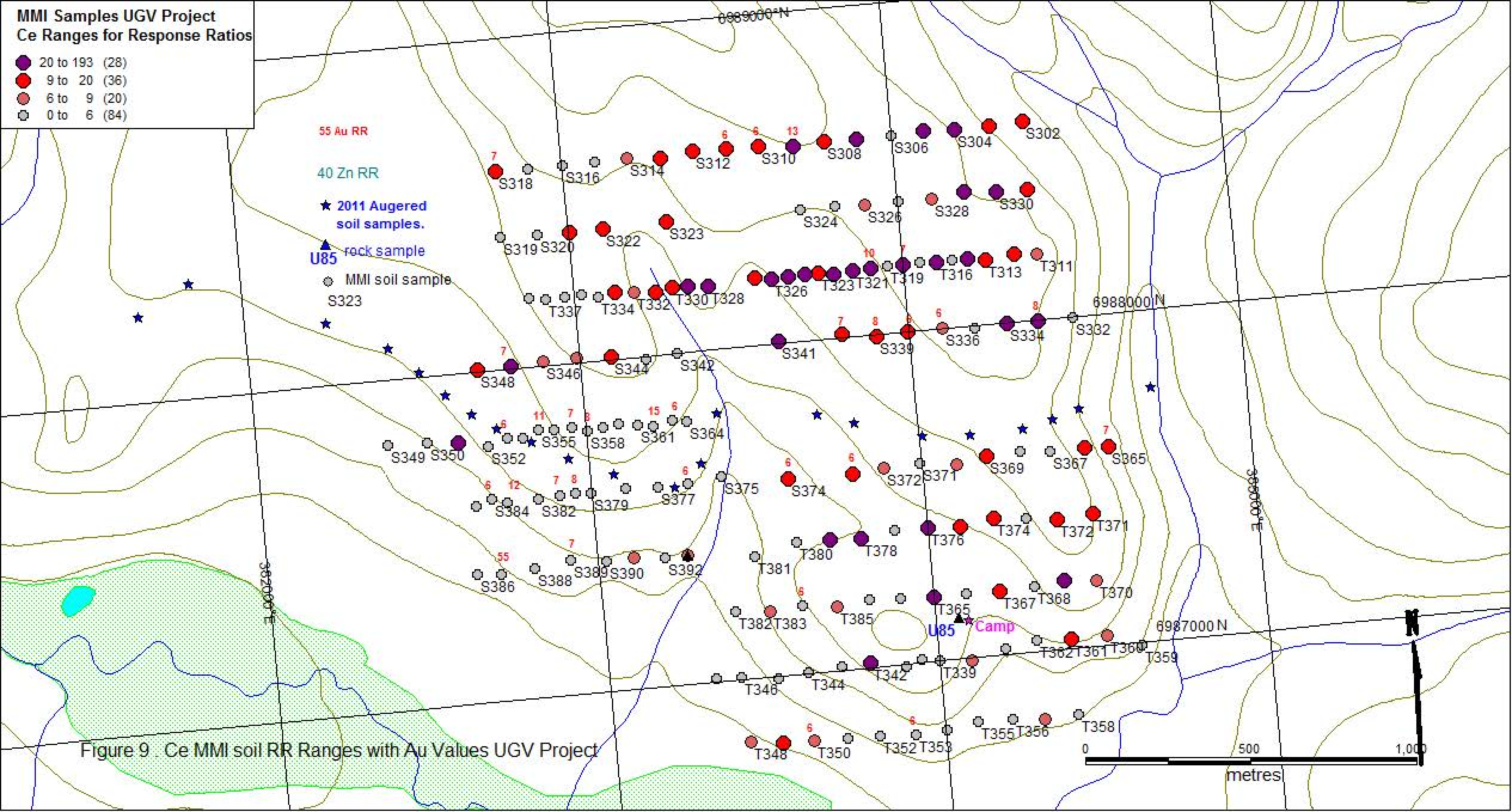


Figure 9 . Ce MMI soil RR Ranges with Au Values UGV Project

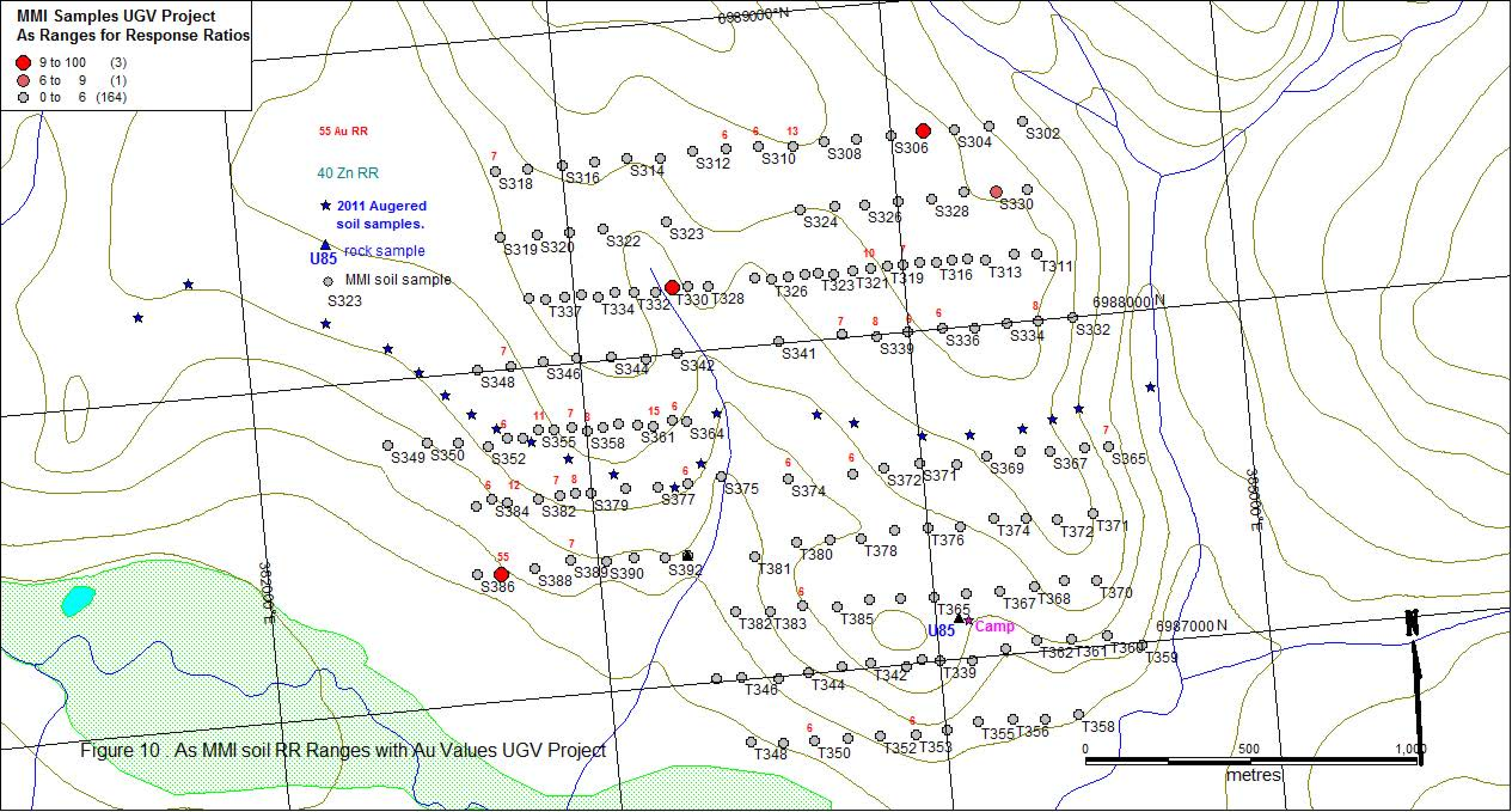


Figure 10 . As MMI soil RR Ranges with Au Values UGV Project