

Progress Report

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Ryan Gibbon
PhD Student
University of the Witwatersrand
School of Geography, Archaeology and Environmental Studies
Private Bag 3, PO Box WITS 2050, South Africa
Telephone: +27 (0)11-717 6059, Fax: +27 (0)11-339 1620
Email: gibbonr@science.pg.wits.ac.za
Office Address: Richard Ward Building, Room 519, East Campus

Cosmogenic Sampling

Five sites on the farm Rietputs 15 have been sampled for cosmogenic dating. The samples collected consist of natural river sands and clasts collected from the ancient Vaal River deposits. These samples are currently in the process of analysis; ages for these ancient river deposits will be obtained within the next year. Each stratigraphic section is listed below with relevant information. All of the deposits that were sampled and stratigraphically recorded have been removed by mining. Little to no pristine deposits is still preserved on the farm Rietputs 15.

Rietputs Section 1:

- 1) GPS: 28° 19' 20.5''
24° 42' 56.1''
- 2) Gravel Rietputs Section.
- 3) Section Direction: 280/100 degrees.
- 4) Thickness: 7.6m
- 5) Sample:

- **SEC01C** - Sample taken from near the base of the section about 1m above bedrock. Vertical Location: 7.20-7.50 m below surface

Rietputs Section 2:

- 1) GPS: 28° 19' 09.7''
24° 44' 16.6''
- 2) Rietputs Fine Alluvia and Gravels.
- 3) Section Direction: 360/180 degrees.
- 4) Thickness: 16m +
- 5) Sample:

- **SEC02E** - Sample from the Rietputs fine alluvia lithofacie below the lower calcrete palaeosol. Vertical Location: 10 m below surface.
- **SEC02F** - Sample from a sandy lens within the top layer of the gravels. Vertical Location: 13.5-14m below surface.

- **SEC02G** - Sample from a large fine alluvia layer sandwiched between the gravels. Vertical Location: 15.3m below surface.
- **SEC02H** - Sample from the sandy matrix in the lowermost gravels just above bedrock. Vertical Location: 16m below surface.

Rietputs Section 3:

1) GPS: 28° 19' 30.2''
24° 44' 21.5''

- 2) Rietputs Fine Alluvia and Gravels.
- 3) Section Direction: 25/215 degrees.
- 4) Thickness: 14.5m
- 5) Sample:

- **SEC03C** - Sample from fine alluvia lithofacies above the gravels. Vertical Location: 7.70m below surface
- **SEC03D** - Sample from the sand matrix surrounding the clasts of the gravels. Vertical Location: 14m below surface

Rietputs Section 4:

1) GPS: 28° 20' 08.0''
24° 43' 41.6''

- 2) Gravel Rietputs Section covered by Riverton Fine Alluvia.
- 3) Section Direction: 275/95 degrees.
- 4) Thickness: 8m +
- 5) Sample:

- **SEC04B** - Sample from the matrix surrounding the clasts of the gravels. Sample only from the gravel layer not from the Riverton Member. Vertical Location: 7.4-7.6m below surface.

Rietputs Section 5:

1) GPS: 28° 19' 16.1''
24° 44' 30.3''

- 2) Rietputs Fine Alluvia and Gravels.
- 3) Section Direction: 360/180 degrees.
- 4) Thickness: 17m +
- 5) Sample:

- **SEC05B** - Sample from the matrix surrounding the clasts of the gravels. Vertical Location: 14-15m below surface.

Excavated samples of earlier Stone Age artefacts

In addition to the samples collected for dating, a collection of Earlier Stone Age artefacts (stone tools) was undertaken from one site on the farm Rietputs 15. At the time of the collection Sonop Delwery was only mining one site on the farm. As a result, the material that was excavated and put through the mining plant had a good provenance, and was not mixed with any other material from a separate area on the farm. Due to these conditions it was possible to get a large sample of artefacts from a single excavated area. In addition, the site is near to a location that I sampled for cosmogenic dating. This cosmogenic sample will provide a date of the deposit from which the tools come.

The only way that I could recover artefacts was to stand along the dump conveyors and remove artefacts from the conveyor before it was to be put in a Bell truck and used as backfill. Earlier Stone Age stone tools were removed from the conveyors over a three day period. Only artefacts in the size range 32mm-25cm could be recovered. Although the small and large size categories were removed and could not be accessed, a good sample of Earlier Stone Age tools was accumulated. This exercise proved to be worthwhile as around 500 artefacts (rough guess at this stage) were recovered. I will begin the analysis of these stone tools shortly. I am very excited about the sample as it should provide an unmixed and dated assemblage of Earlier Stone Age artefacts.

(GPS Location of mining excavation site from which tools were collected: 28° 19' 22.8'', 24° 43' 02.6'')

Standard site record forms for each cosmogenic sample, as well as, the excavation sample have been lodged with the McGregor Museum.