

Course Completion Report Practical Interpretation of Geophysical Data	Course 1.12	NORPLAN 
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1 CONTENT

- Course data
- Course objectives
- Training focus group
- Practical and theoretical work
- Course evaluation: comments from participants
- Recommendations for next or other courses

2 COURSE DATA:

Name of course:	Course 1.12: Practical Interpretation of Geophysical Data
Number of participants:	9 trainees from: MRRD RuWatSIP, MEW & DACAAR
Location for training:	RuWatSIP Conference Room, MRRD
Date of implementation	24 th to 25 th May 2014
Course organiser	Mr. Andreas de Jong
Supporting presenter	Prof. Eqrar

3 COURSE OBJECTIVES

The main purpose of this course was to introduce practical interpretation techniques of surface resistivity survey data, using the surface resistivity survey of Faryab conducted by MRRD & DACAAR field teams last year.

The main tasks of this practical course were to:

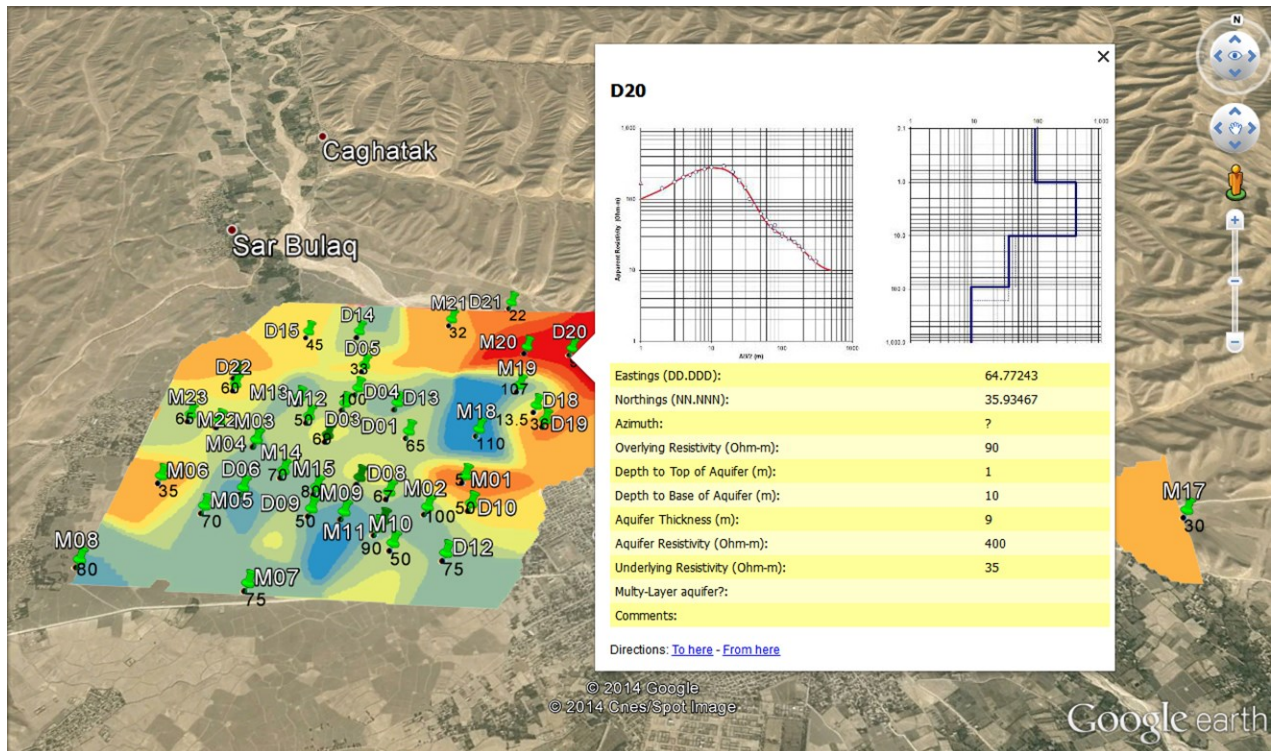
1. Review the surface geophysical surveys conducted by MRRD & DACAAR in Faryab last year (2013).
2. Conduct quality control on the VES interpretations.
3. Extract relevant data for maps & cross sections.
4. Correlate the data together with existing geological records.
5. Propose drill sites for exploratory drilling in Faryab.

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4 TRAINING FOCUS GROUP

The focus group of this course were hydrogeologists and geophysicists who are involved with the application of surface resistivity surveys for groundwater exploration. Participants from the various ministries were as follows:

- RuWatSIP/MRRD: 6 persons
- MEW: 2 person
- DACAAR: 1 person

5 PRACTICAL AND THEORETICAL WORK

The course was implemented over three days. The concept was to teach the practical aspects of data processing and quality control of surface resistivity surveys in order to produce VES soundings, maps in Google Earth and sections in MS Excel, using real data from Faryab.

Day 1 – Saturday 24th May

Review of lessons learnt from the VES survey in Faryab: Security was a major issue and the project had to be adjusted according to which areas were safe to work in. There were communication problems with the government officials & one day DACAAR carried out geophysics

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over a mine field. We are lucky nobody was hurt. There were technical problems with contact resistance in several locations.

Review of VES interpretations: The importance of doing quality control in the field and plotting the data in the field was stressed. Overall the field data is fairly good, but in some soundings the MN spacing was not accurate and had to be corrected during the interpretation. Coordinate issues were discussed, as there were numerous typing errors of the coordinates. It was recommended that coordinates should be hand written on the field sheets as a backup, and always transferred electronically from the GPS to avoid typing errors.

Practical on VES interpretation using GeoVES: The VES modelling approach was revisited, as many of the interpretations by MRRD & DACAAR had been carried out using too many layers, which cannot be resolved with the data as seen from the sensitivity analysis. The relevant data which can be extracted from the VES was demonstrated. e.g depth to base of aquifer, aquifer thickness & resistivity.

Day 2 – Sunday 25th May

Practical on data processing steps from the VES to production of contoured maps and interactive pop-up tables & images in Google Earth.

Day 3 – Monday 26th May

Review of the five drill site locations identified by MRRD in their report. A number of locations were shifted based on the revised interpretation of the VES data, and MRRD will update their report based on what was learnt over the last few days. The proposed locations of the wells are:

Location ID	VES_ID	Latitude (WGS84)	Longitude (WGS84)	Estimated Depth to Base of Aquifer (m)
Well #1	M05	35.92100	64.74800	72.6
Well #2	D15	35.93545	64.75076	48.6
Well #3	M18	35.92755	64.76629	113
Well #4	M11	35.92000	64.76064	96
Well #5	M13	35.92958	64.75194	89.3

The locations of the proposed wells will be discussed with David Banks & may be adjusted.

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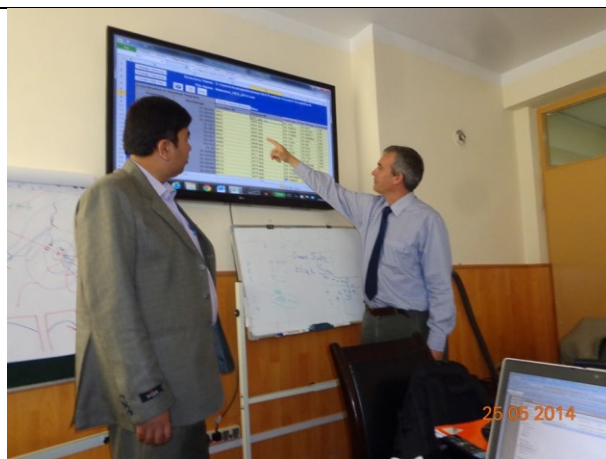
Participants discussing VES modelling in GeoVES



Eng. Poya, co-presenter



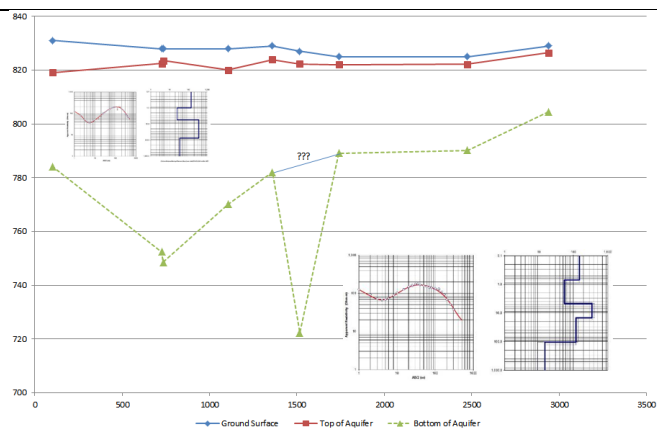
Learning the use of the Excel based Google Earth KML file exporter.



Andreas & Eng. Poya introducing data export from Excel to Google Earth.



Producing contour maps and pop-ups in Google Earth



Sections in Excel based on VES soundings

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6 COURSE EVALUATION: COMMENTS FROM PARTICIPANTS

The course was evaluated with the three standard questions as shown below. Feedback was collected and organized in an Excel spreadsheet. The course evaluation document is available on the project website with full comments. There were nine people on this 3-day course. Two missed the last day, and six filled out the questionnaires.

The evaluation questions and the participants' response in percentage were as follows:

Question 1: Did the training course meet your expectations?

Response: Completely: 33%, Partially: 67%, Not at all: 0%.

Question 2: What do you think about the overall relevance of training course? Considering the limits on your time and the topics discussed?

Response: Too Long: 0%, Just right: 50%, Too short: 50%.

Question 3: How relevant was the training workshop to your organization or project's need?

Response: Very relevant: 83%, Somewhat relevant: 17%, Not relevant: 0%.

7 RECOMENDATIONS IF THE COURSE WAS TO BE REPEATED

1. This course is a follow up of the Surface Geophysical Survey Course 1.2, so it is important that the participants have attended the first course.
2. A good knowledge of Excel is a requirement if participants are to use this course as a foundation to implement the interpretation of other surface geophysical surveys. Participants should be at a minimum skill level of the Excel, Access and Data Management courses provided by the NORPLAN project. ***The main reason why many participants are struggling with their technical work is a basic lack of skills in data management and the practical use of Excel. This leads to a range of quality control issues. This issue cannot be overemphasized.***
3. Follow up practical courses of this nature should be conducted using other data from Afghanistan, as some participants requested further training and would benefit from a reinforcement of their interpretation skills.

Report prepared by: Andreas de Jong, International Training Expert, Norplan, May 2014.