

EQUIPMENT

- Recorder: Geometrics "GEODE", 24 channel seismic recorder
24 bit A/D conversion, 144 dB dynamic range
Controlled via external computer running Windows XP and SEISMODULE
software with data transmission to controller via RJ45 (ethernet)
Data format is SEG-2 or SEG-Y
- Sensor:: 14 Hz geophones
8m take-out seismic cable - but we will use something smaller
- Source: Betsy SEISGUN source with 400 grain blank shells

SETUP - PHYSICAL

- 1) lay out the seismic cable - BEING CAREFUL TO HAVE THE CABLE ENDS COVERED
AND NOT DRAGGING THE ENDS THROUGH THE BRUSH
- 2) plant the geophones and connect to the cable
- 3) connect: geophone cable
data cable from "-->" port to Geometrics laptop adaptor
trigger cable
battery BE CAREFUL OF PLUS (+) AND MINUS(-)
Geometrics laptop adaptor (RJ45) to computer NIC
- 4) power up: power up the computer
toggle the "enable power up" switch on the Geometrics laptop adaptor
login into computer
Push the RED button on the geode
start "Geometrics Seismodule Controller" which is on the desktop
(blue light should flash every ~3 sec under normal operation)

SEISMODULE SOFTWARE

MENUS (general)

1. *Survey* -> starting and naming a new survey
2. *Geom* -> sets survey mode, geophone interval, relative locations of shot and geophones
3. *Observer* -> survey description (informational only) and line number
4. *Acquisition* -> sample interval and record length, filters, stacking options, gain (individual or constant)
5. *File* -> file saving parameters and format, file reading
6. *Display* -> controls how data is plotted
7. *DoSurvey* -> most of the commands used to acquire, display and save data while doing the survey
8. *Window* -> maximize or minimize display windows
9. *Answers* -> field quality control programs and quick analysis of data
0. *Print* -> print
- .*System* -> set units, set trigger options, channel remapping, exit

SETUP – Geometrics Seismodule Controller

Survey -> 1. New Survey -> fill in name and initial line number (“1”)

Geom -> 1. Survey mode -> refraction
2. Geophone interval -> X (where X is the geophone spacing)
3. Group/Shot -> set up the geometry - shot offset and geophone spacing

Observer -> Edit survey description - not really used

Acquisition -> Sample interval/Record Length ->
set sample interval of 0.25 msec,
set record length 0.128 sec
Acquisition Filters -> set both filters to NOTCH_FREQUENCY_60
Stack Options -> stack limit ____ (1 or 2)
check “auto stack”
check "display intermediate stacks"
set “Unstack delay” to 10
(unstack delay - number of seconds the last stack is displayed to give
the operator a chance to REMOVE the last stack)
Preamp gain - set to LOW (24 dB) or HIGH (32dB) or individual
(use HIGH gain)
Stack Polarity - positive
Set the trigger hold-off to 0.2
New line number - any number

File -> Storage parameters
set next file number to 1 (for the first shot)
set directory to c:\Tyson
set AUTOSAVE
set Data Type to be SEG-2 (the only possible setting)
check “save to disk”

System -> set time date units -> set to meters
channel remapping – used to reverse the order of the channels and thus
which geophone is closest to the unit

DO SURVEY: (this is the typical use) -start in a disarmed state

Clear memory (H)ot (K)ey 2 (just the number 2)
modify the shot geometry - shot location
Arm (HK1)
send OK to source operator
wait for signal - (accept or reject) (tab to NO for NO UNSTACK i.e. accept)
Disarm (HK1)
repeat (if stacking)

***** SAVE FILE MANUALLY AND NOTE FILE NAME WITH SHOT NOTES*****

HOT KEYS: 1 toggles arm/disarm
2 clear memory

TO TURN OFF

toggle the “enable power down” switch on the Geometrics laptop adaptor

System -> 0. close controller