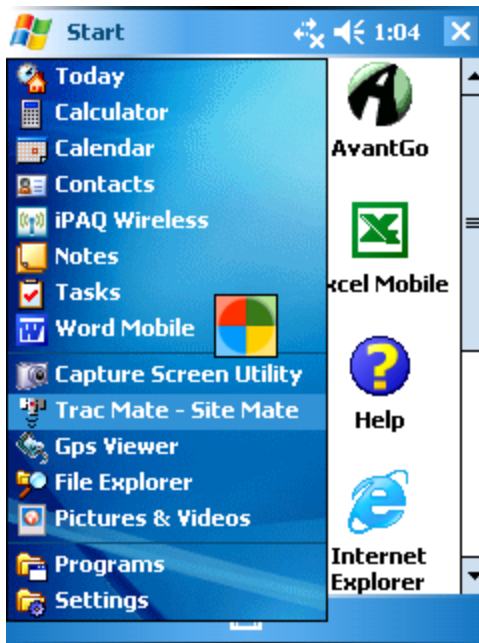


SiteMate for Precision Agriculture

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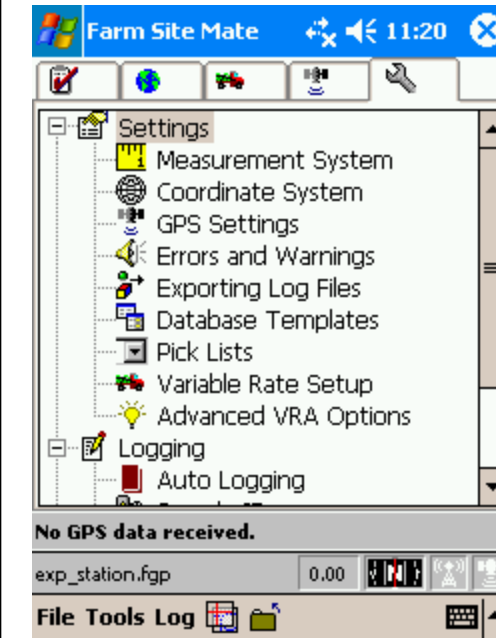
1. Open Site Mate by clicking on the iPAQ's Start button and selecting TracMate - SiteMate from the drop down menu. (You can also select 'Programs' from the Start Menu and then select Trac Mate - SiteMate).



2 This is the first screen you should see when you open SiteMate. Before any data is collected, review GPS settings to ensure everything is properly set-up. *SiteMate with Variable Rate was used in this example, all tabs may not be visible on your iPAQ.*



3a. Tap the 'wrench' tab on the far right.
3b. Then tap the '+' to the left of 'Settings.'



4. Tap 'GPS Settings.'

Farm Site Mate 11:19

GPS Settings

GPS Source

- ☒ GPS Receiver on COM Port
- ☐ GPS Simulation
- ☐ Manual Location Entry

Source Comm Quality Offset Simulati ◀ ▶

File Tools Log

5 'GPS Receiver on COM Port' should be selected. Then tap the 'Comm' tab at bottom of screen (second from left).

Farm Site Mate 11:21

GPS Settings

COM Settings

Port COM4

Baud Rate 4800

Data Bits 8

Parity None

Stop Bits 1

Auto Baud

Source Comm Quality Offset Simulati ◀ ▶

File Tools Log

6. If you know the GPS Settings, select them here. If you do not know the settings, tap AutoBaud.'

Autobaud

GPS was successfully found.

Comm Port

COM4

Baud Rate

4800



Cancel

✓ OK

7. This is what the 'AutoBaud' screen will look like. When the blue line stops progressing across the bottom, and 'GPS was successfully found' appears, tap 'OK' at the bottom of the screen.

GPS Settings

GPS Quality Filter

Minimum GPS Quality

- 1 - Standard position (no differential)
- 1 - Standard position (no differential)
- 2 - Differential corrected position
- 4 - RTK fixed integers
- 5 - RTK floating integers

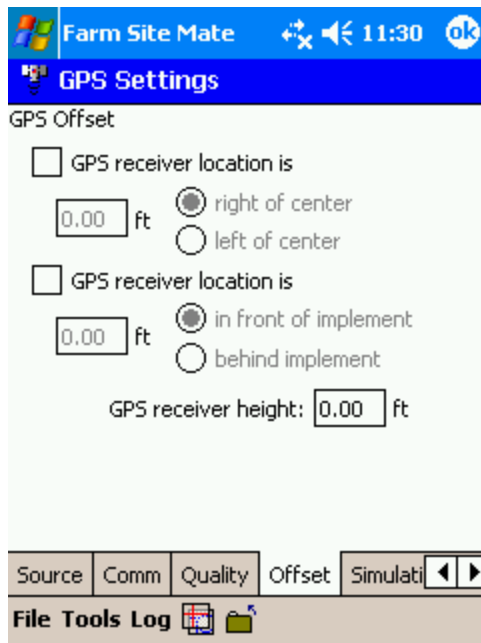
☒ Honor NMEA Checksum

Source Comm Quality Offset Simulati ◀ ▶

✓ OK

✗ Cancel

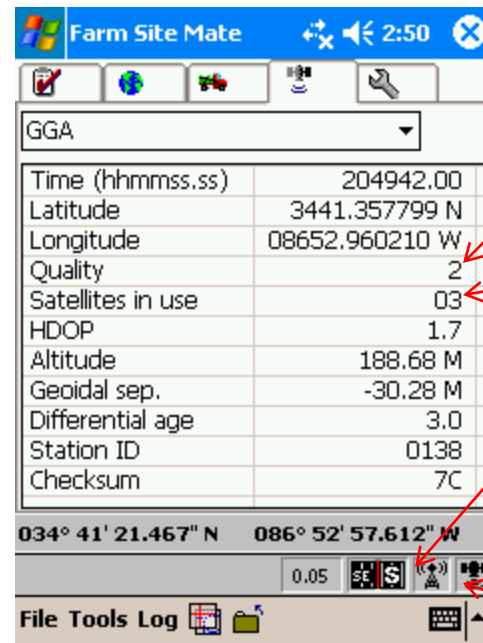
8 Tap the 'Quality' tab. For soil sampling, you can select 'minimum GPS Quality' to be '1- Standard Position.' Max HDOP should be 25.



9. Tap the 'Offset' tab. If your GPS receiver is mounted (on an ATV, for example), you might need to put an offset in. This would also be important if the iPAQ was serving as a controller for a variable rate application or sensor based application. Tap 'OK' on the bottom of your screen (not shown in screen capture on left).



11. To begin data collection, tap the 'clipboard/checkmark' icon on the far left. To create a new boundary file (or point file, etc), tap 'New Scouting Job.'



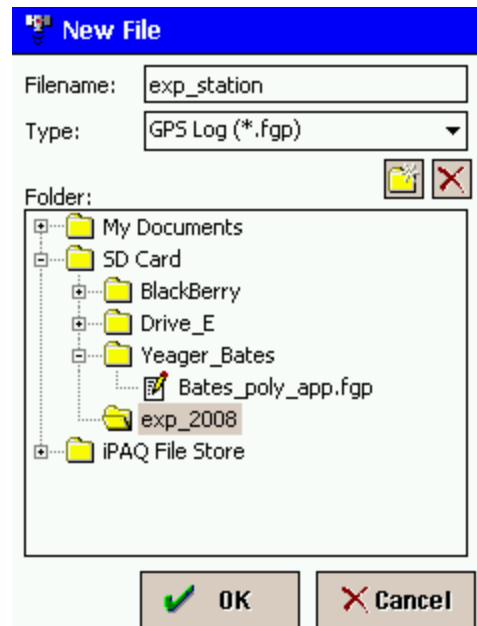
10. Tap the 'Satellite' icon .

'2' indicates a differential correction.

'3' is the minimum number of satellites.

Indicates differential correction is being received (appears white when no diff. is available).

'3' is the minimum number of satellites.



12a. First you will want to select a location to save the file. The recommended location is the SD card.

12b. Next, tap the box next to 'Filename.' When you do this a keyboard will appear.

12c. Once filename is entered, tap 'OK' at bottom of screen.

Filename:

exp_station						OK	X
a	b	c	d	e	f		
g	h	i	j	k	l		
m	n	o	p	q	r		
s	t	u	v	w	x		
y	z	1	2	3	4		
5	6	7	8	9	0		
áü	!@#	123	Shift	Spc	Bksp		

13. This is the keyboard screen that appears, as described in step 11b. Enter the name and tap 'OK' to go back to screen shown in step 11.

Template

<Blank Template>

<No Attributes>

New

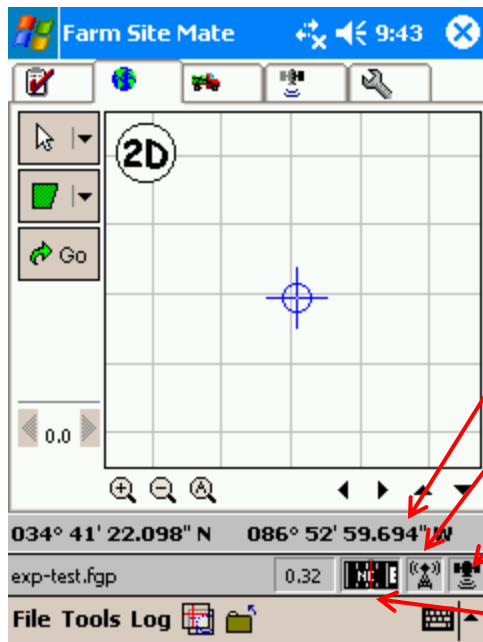
Edit

Delete

OK

Cancel

14. This window allows you to customize SiteMate for a specific application. Examples are scouting templates, variable rate application set-ups and sensor (such as Greenseeker) collection. For this exercise, just click 'OK' at the bottom of the screen.



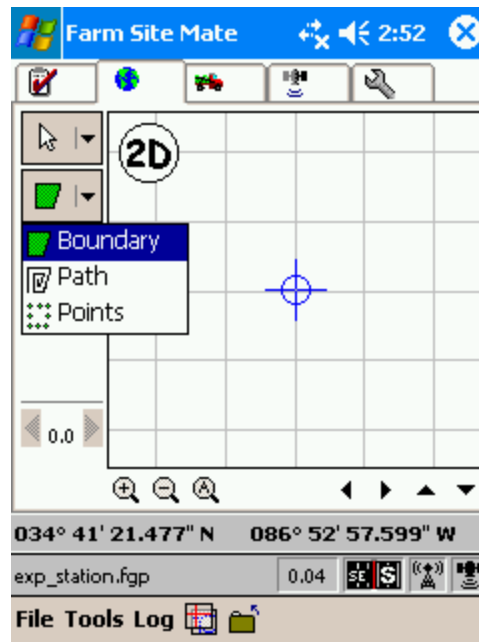
15. This screen should now be visible.

Lat/lon information

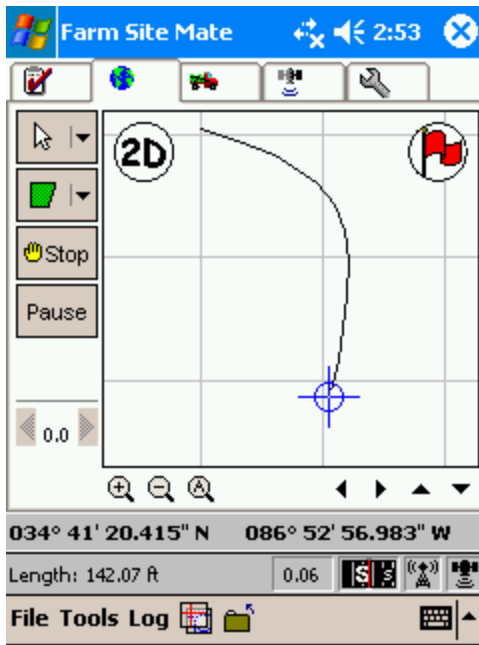
Correction signal (DGPS)

GPS

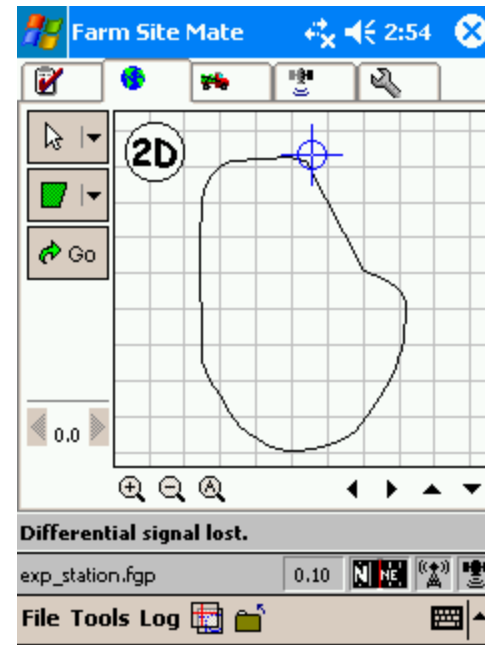
Compass



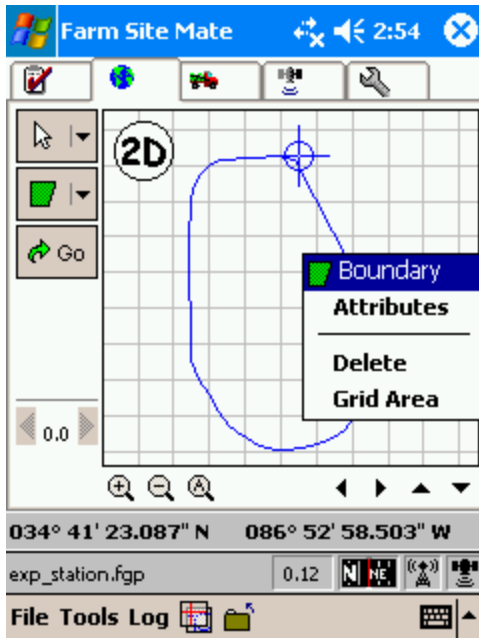
16. To run a field boundary, select the 'boundary' option from the drop down box.



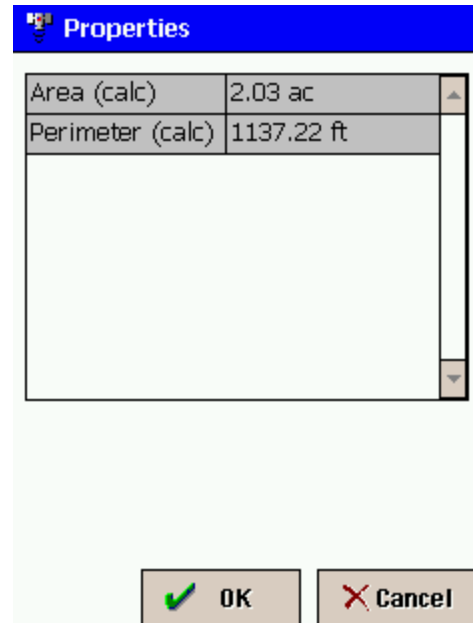
17. When you are ready to begin mapping the boundary, 'tap 'Go.' As soon as 'Go' is tapped, the button changes to read 'Stop.' 'Once you tap 'go', and start moving, a line should appear on the screen to indicate the path you have taken. 'Pause' can be used if you have to go around something, such as a mudhole.



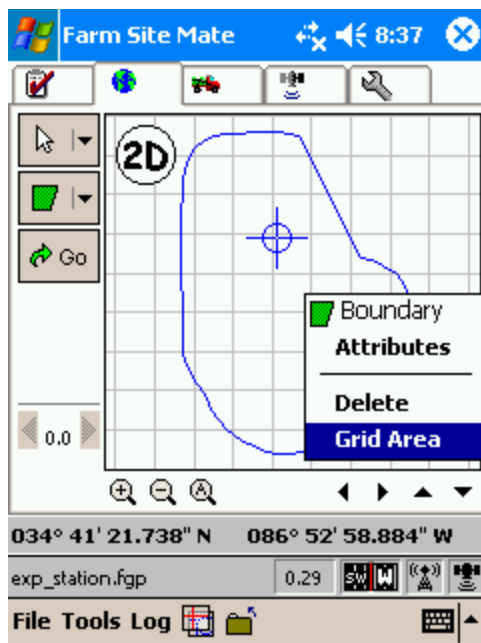
18. Tap 'Stop' when you get back to your starting point. If you are not exactly at the starting point, SiteMate will use a straight line to connect the start and end points.



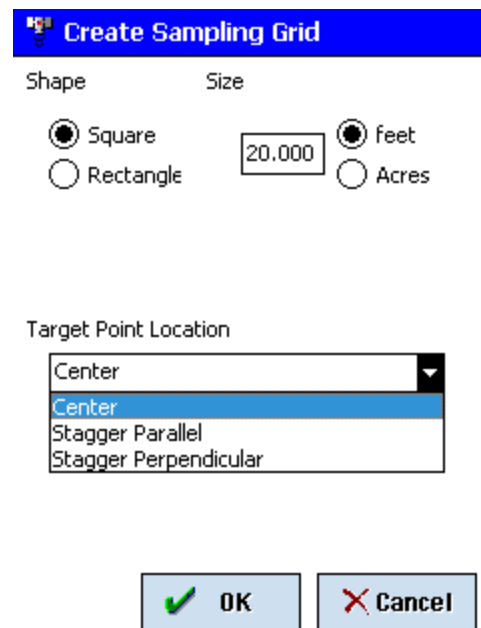
19. Tap anywhere on the boundary you just created, and a menu will pop up. Tap 'Attributes' to see the field acreage.



20. Field acreage and perimeter length will be displayed. Tap 'OK.'



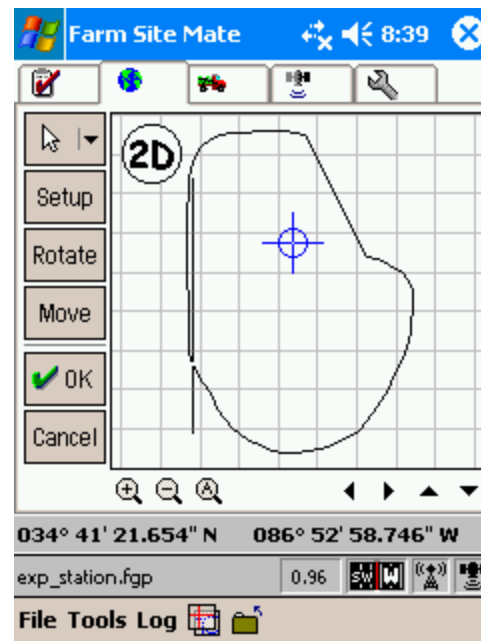
21. To create a grid, tap the boundary Tap 'Grid Area.'



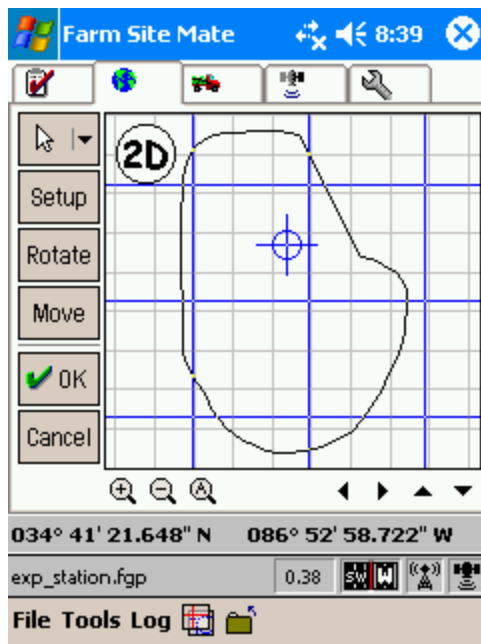
22. Select the shape, size and location of the sampling point location and tap 'OK.'



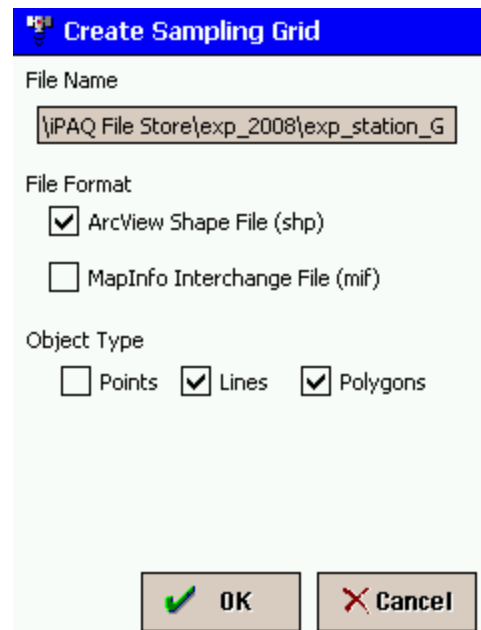
23. Follow the instructions on the screen.



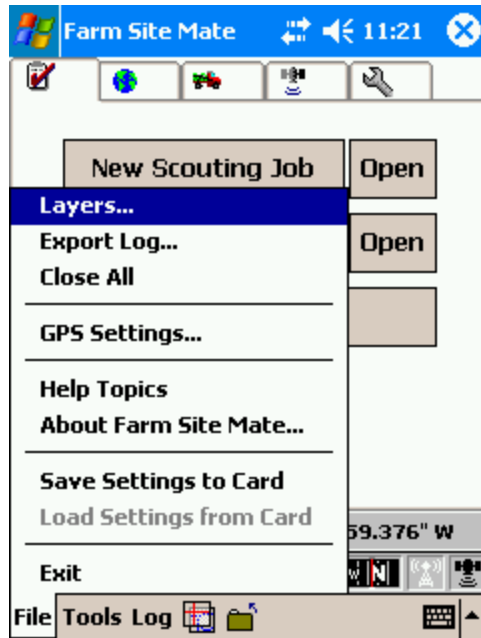
24. A line will appear on the screen as you tap and drag (as described in previous step).



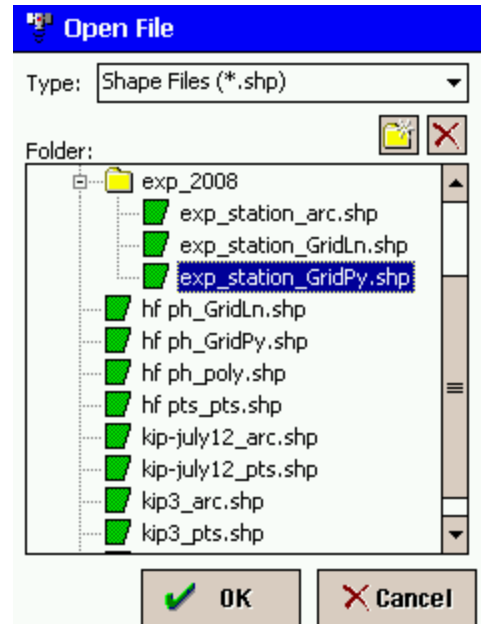
25. SiteMate places the grid. Use the tools on the left to change grid size and rotate or move the grid placement. Click OK when finished.



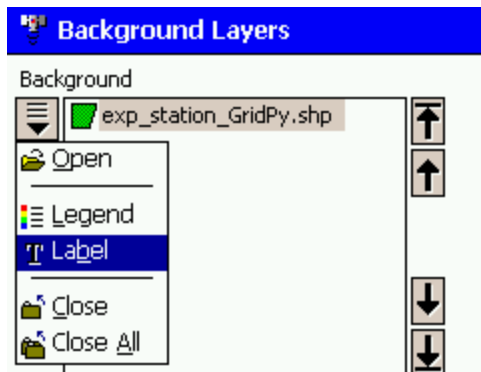
26. Select ArcView Shape field and Polygons . Click OK. It is always good to check and make sure the file is being saved to the location you want.



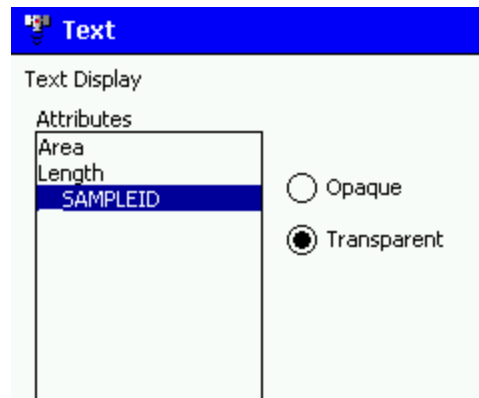
27. To open a grid (or any shape file), tap 'file,' then 'Layers'



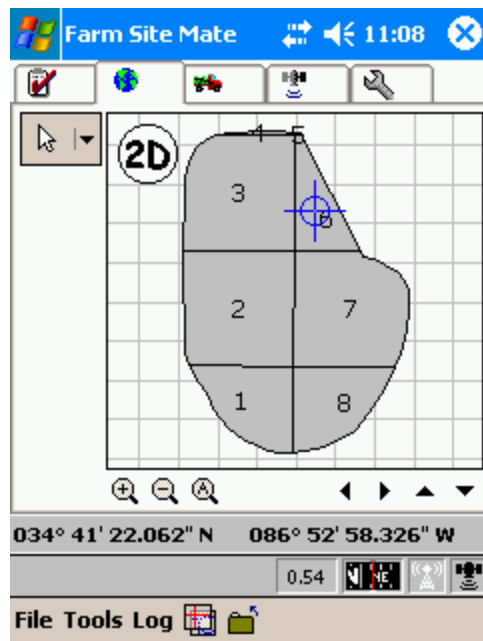
28. Select the appropriate file by tapping.



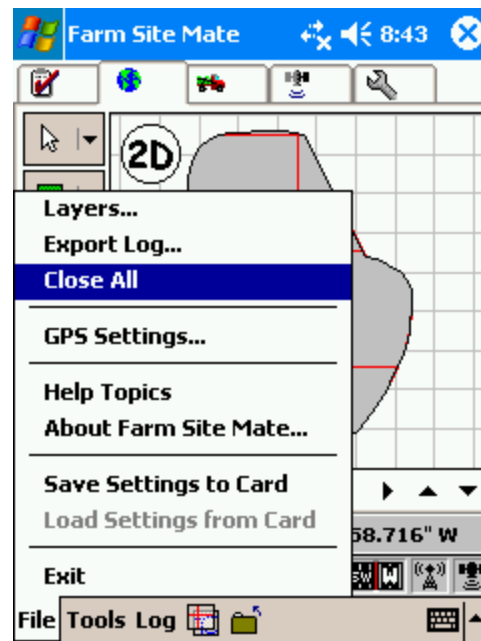
29. Tap the down arrow to the left of the filename. Tap 'Label.'



30. Tap the Attribute that you wish to display. In this case, it is 'SAMPLEID.'



31. The grid numbers are now displayed on the screen. If you are collecting soil samples, these are the numbers that you would use to label your boxes.



32. Tap 'File' and then 'close all'

Export Log File?

Do you wish to export this log?

- ☒ Yes
☐ No

In the future...

- ☐ ALWAYS export the log file.
☐ NEVER export the log file.
☒ ASK each time a log is saved.



OK



Cancel

33. The following screen will appear. Be sure that 'yes' is selected under 'Do you wish to export the log?'

Export File

Export File Types

- ☒ Arcview Shape File (.shp)
☐ Mapinfo Interchange File (.mif)
☐ Farm Works GPL File (.gpl)

\\SD Card\\exp_2008



OK



Cancel

34. This depends on your software . Generally, I export as a shape file since most software will import a shape file.

Export File

Arcview Shape File (.shp)

Points

☐

Paths

☐

Boundaries

☒ \\SD Card\\exp_2008\\exp_station_arc

☒ Export as lines



OK



Cancel

35. Check the box in front of the file type that you wish to export. Tap 'OK'.

Once the file has been exported, it is saved in a shape format in the location you designated. In the example below, the file was saved in the 'iPAQ File Store' folder. Connect the iPAQ to the computer. (make sure that ActiveSync detects the iPAQ) To move the file from the iPAQ to a desktop computer, you can go to "My Computer" and double-click on "Mobile Device." Double-click "My Windows Based Mobile Device," then double-click "iPAQ File Store" (the location we saved the file in the example). There will be multiple files listed with the field name. One file is *.gpl (or *.fgp depending on your version of SiteMate). The other three files are *.shp, *.shx, and *.Dbf. To import a shape file into a Geographical Information System (GIS), for example: FarmWorks, SMS Basic/Advanced, MapShots, etc., you must copy the *.shp, *.shx, and *.Dbf. Some GIS packages will now directly import fgp files.

The screenshot shows a Windows XP 'My Computer' window. The address bar indicates the path: `\\IPaq File Store\exp_2008`. A list of files is displayed with columns for Name, Size, Type, and Modified date.

Name	Size	Type	Modified
__tmplyr.fdt	434 bytes	FDT File	11/11/2008 8:42:3...
exp_station.fdt	35 bytes	FDT File	11/9/2008 2:55:10 ...
exp_station.fgp	5.26KB	FGP File	11/9/2008 2:54:16 ...
exp_station.gpe	39 bytes	GPE File	11/11/2008 8:43:4...
exp_station.lgd	10 bytes	LGD File	11/11/2008 8:43:4...
exp_station_arc	128 bytes	DBF File	11/9/2008 2:56:30 ...
exp_station_arc.gpe	70 bytes	GPE File	11/9/2008 2:56:30 ...
exp_station_arc.shp	1.04KB	SHP File	11/9/2008 2:56:30 ...
exp_station_arc.shx	108 bytes	SHX File	11/9/2008 2:56:30 ...
exp_station_Grid.smb	244 bytes	SMB File	11/11/2008 8:42:4...
exp_station_GridLn	393 bytes	DBF File	11/11/2008 8:42:4...
exp_station_GridLn.gpe	69 bytes	GPE File	11/11/2008 8:42:4...
exp_station_GridLn.lgd	10 bytes	LGD File	11/11/2008 8:43:4...
exp_station_GridLn.shp	1.87KB	SHP File	11/11/2008 8:42:4...
exp_station_GridLn.shx	164 bytes	SHX File	11/11/2008 8:42:4...
exp_station_GridPy	393 bytes	DBF File	11/11/2008 8:42:3...
exp_station_GridPy.gpe	109 bytes	GPE File	11/11/2008 11:07:...
exp_station_GridPy.lgd	10 bytes	LGD File	11/11/2008 11:09:...
exp_station_GridPy.shp	1.87KB	SHP File	11/11/2008 8:42:3...
exp_station_GridPy.shx	164 bytes	SHX File	11/11/2008 8:42:3...
exp-test.fdt	34 bytes	FDT File	11/11/2008 9:17:0...
exp-test.fgp	16 bytes	FGP File	11/11/2008 9:17:0...
exp-test.gpe	39 bytes	GPE File	11/11/2008 10:06:...
exp-test.lgd	10 bytes	LGD File	11/11/2008 10:06:...