Field Data Acquisition using QField and QFieldCloud

Improving workflow for the Geological Mapping and Mineral Exploration Branch

Basic tools used by Geologists

The most important tools: (in my opinion)

1. The Field Notebook
2. A GPS
3. A Camera

QField and QFieldCloud combines all three

Data Types collected by GMME:

1. Site Data
2. Site Photography
3. Structural Data
4. Lithological Data
5. Samples Collected
    a. Geochemical
        i. Lab, Job, Methods
        ii. Results
    b. Geochronological
        i. Lab
        ii. Results
    c. Petrographic
        i. Section ID
        ii. Description

Site Data

1. Geologist
2. Site Number
3. **Site ID**
4. GPS Number
5. Date
6. Co-ord Type
7. Accuracy
8. Latitude
9. Longitude
10. Easting
11. Northing
12. Elevation
13. Zone
14. 100KSheet
15. 100KNo.
16. 250KSheet
17. 250KNo.
18. Comments
19. Compiled by

Site Photography

1. **Site ID**
2. Photo Number
3. Image Number
4. Facing
5. Comments
6. Photo Link

Structural Data

1. **Site ID**
2. Structure Type
3. Structure Width cm
4. Structure Mineral
5. Intensity
6. Vein Intensity volpc
7. Azimuth
8. Strike
9. Dip
10. Dip Direction
11. Comments

Lithological Data

1. **Site ID**
2. Occurrence
3. Weathering
4. Environment
5. Comments
6. Lithological Description
7. Litholgy1
8. Texture1
9. GrainSize1_mm
10. Colour11
11. Colour12
12. Mineral11
13. Mineral12
14. Mineral13
15. Mineral11pc
16. Mineral12pc
17. Mineral13pc
18. Description11
19. Description12
20. Alteration11
21. Alteration12
22. AlterationType11
23. Alteration Type12
24. Alteration Intesity11
25. Alteration Intesity12
26. Mineralisation11
27. Mineralisation12
28. Mineralisation Style11
29. Mineralisation Style12
30. Mineralisation Amount11
31. MineralisationAmount12
32. Oxidation1
33. Oxide11
34. Oxide12
35. Oxide13
36. Oxide11pc

Lithological Data (continued)

37. Oxide12pc
38. Oxide13pc
39. Litholgy2
40. Texture2
41. GrainSize2_mm
42. Colour21
43. Colour22
44. Mineral21
45. Mineral22
46. Mineral23
47. Mineral21pc
48. Mineral22pc
49. Mineral23pc
50. Description21
51. Description22
52. Alteration21
53. Alteration22
54. AlterationType21
55. AlterationType22
56. AlterationIntesity21
57. AlterationIntesity22
58. Mineralisation11
59. Mineralisation12
60. MineralisationStyle21
61. MineralisationStyle22
62. MineralisationAmount21
63. MineralisationAmount22
64. Oxidation2
65. Oxide21
66. Oxide22
67. Oxide23
68. Oxide21pc
69. Oxide22pc
70. Oxide23pc
71. 250KGeoUNIT

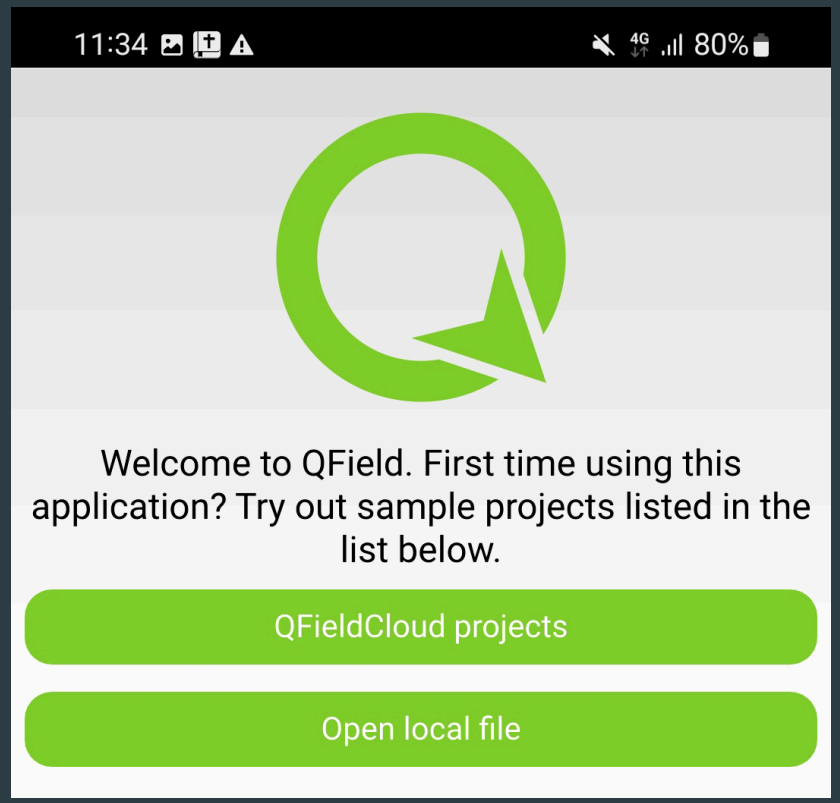
Samples collected

1. **Site ID**
2. SiteSample Number
3. Sample Number
4. Occurrence
5. Sample Type
6. Collection Method
7. Sample photo
8. Photo Link
9. Analysis1
10. Analysis2
11. Analysis3
12. Lab1
13. Lab2
14. Lab3
15. DispatchDate1
16. DispatchDate2
17. DispatchDate3
18. ReportDate1
19. ReportDate2
20. ReportDate3
21. LabReport1
22. LabReport2
23. LabReport3
24. ReportLink1
25. ReportLink2
26. ReportLink3
27. Comments

Sample Analysis tables (postfield)

a. Geochemical
    i. Lab, Jobs, Methods
    ii. Results
b. Geochronological
    i. Lab
    ii. Results
c. Petrographic
    i. Section ID
    ii. Description

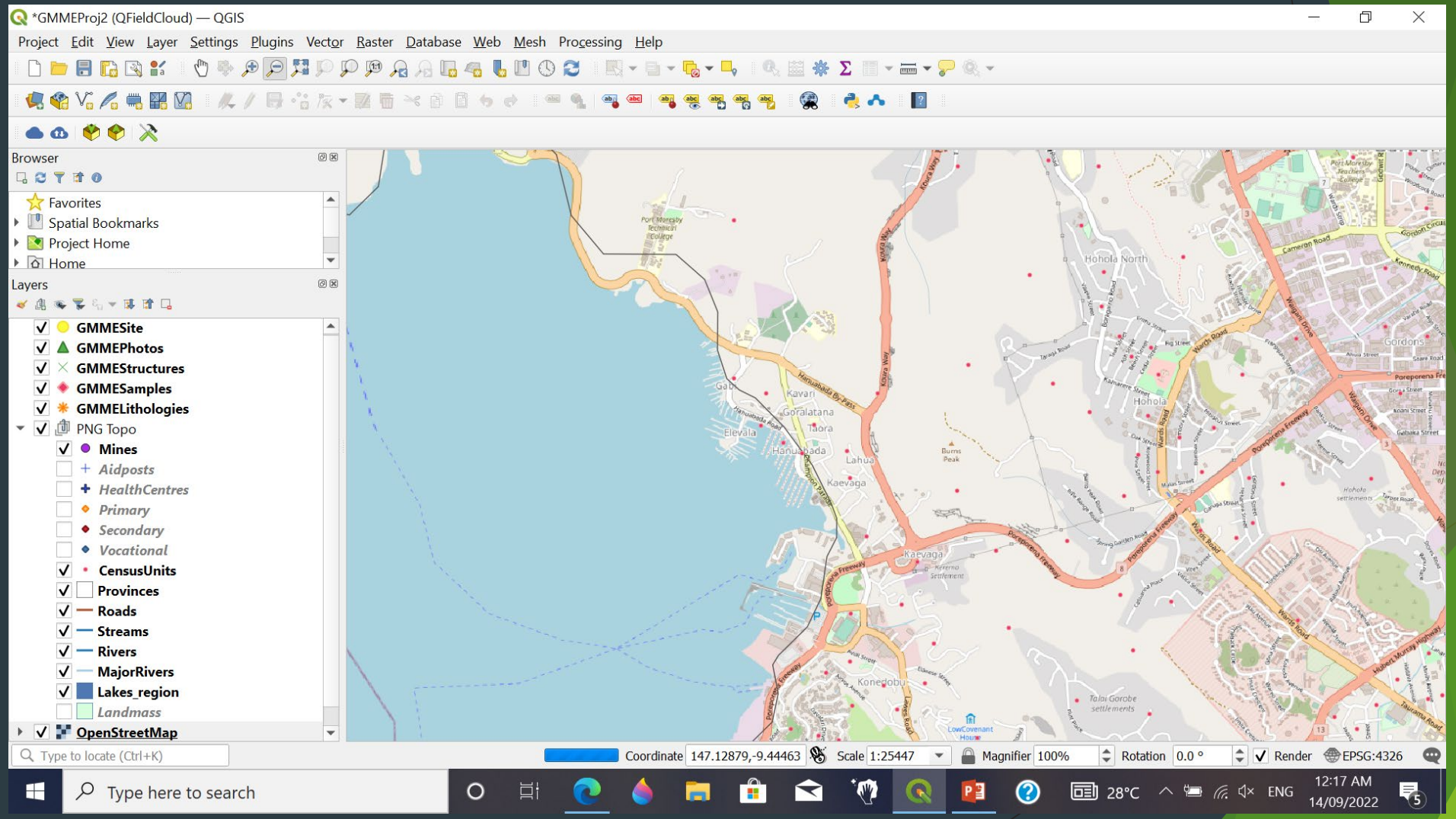
QField and QFieldCloud



The Application:

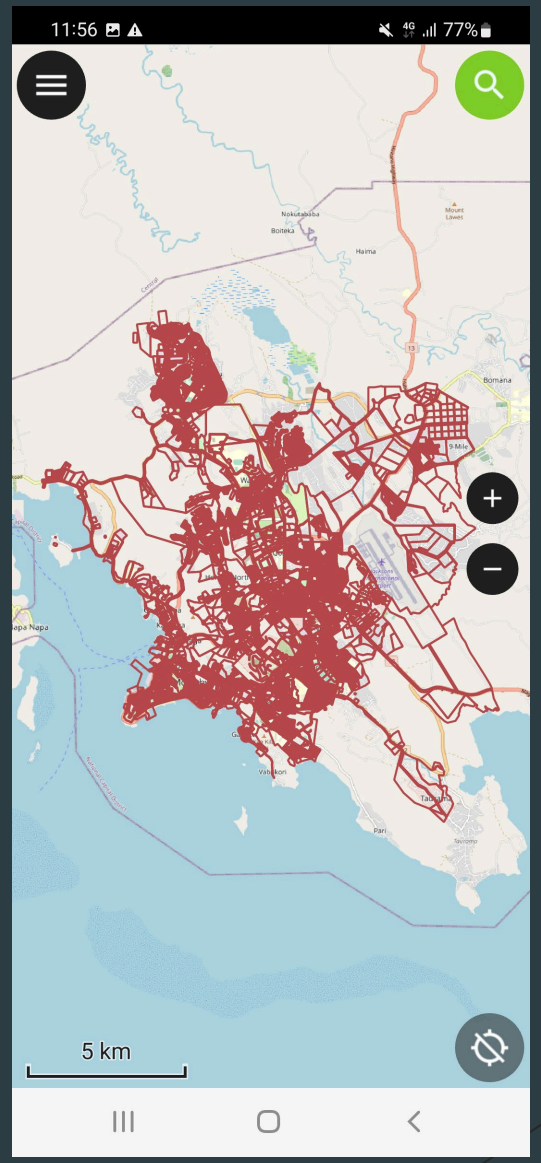
1. Open-source
2. Plug-in (extension) of QGIS
3. Works offline
4. Customisable (Fields / attributes) to needs of user
5. Data can be uploaded locally or more recently remotely (CLOUD)

Project setup for QField in QGIS



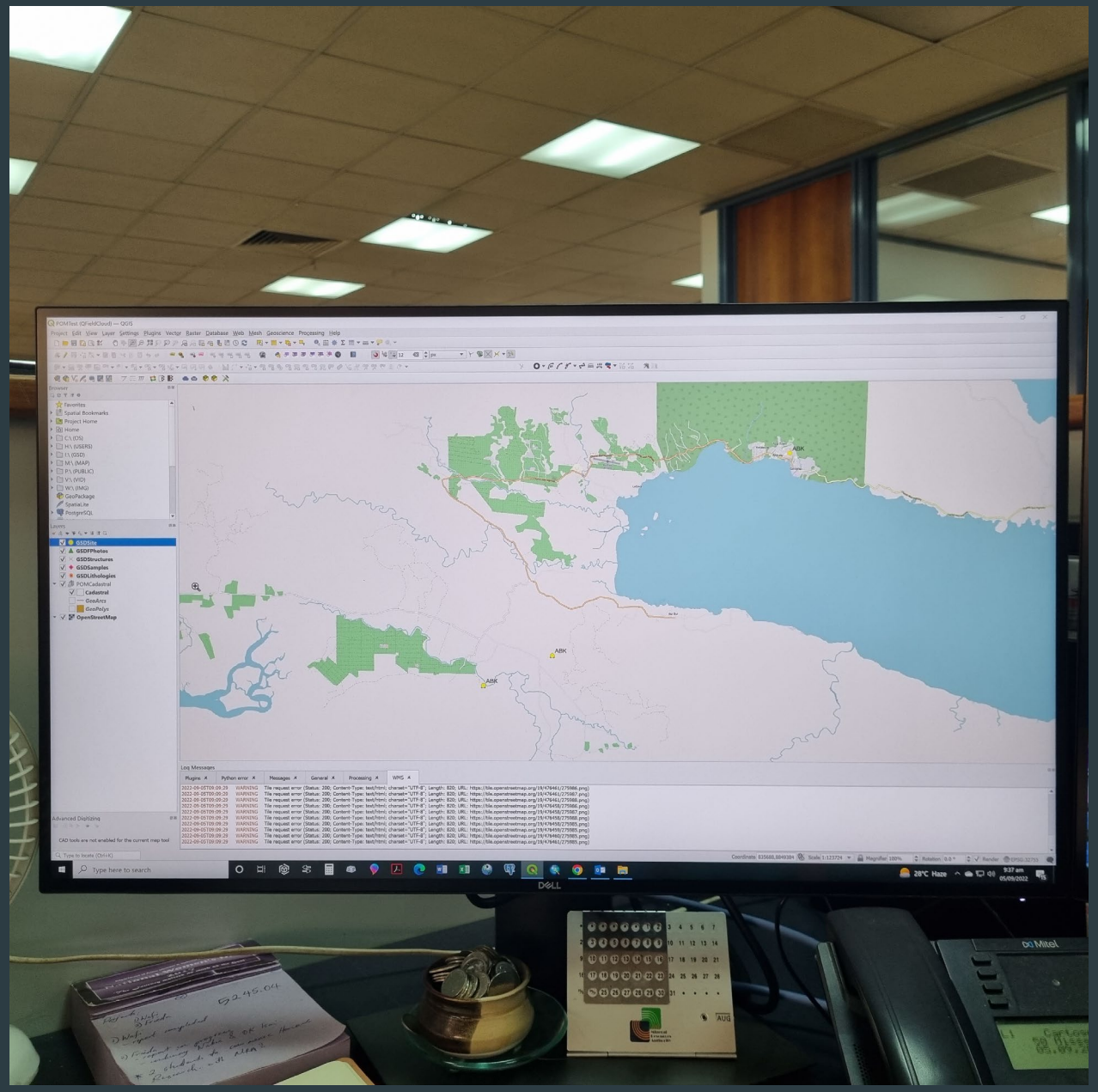
QField and QFieldCloud

1. Project setup in QGIS
2. ‘Packaging’ of Project for Qfield
3. UPLOAD of Project onto PHONE either by cable or CLOUD
4. Collect data either online or offline
5. Upload Data by cable (in-office or via cloud)



Data upload means:

1. Instant visibility in QGIS
2. INSTANT Spatial validation
3. Less handling of data therefore less chances of errors (human)
4. Data is NOT Lost even if notebook or phone is lost or damaged
5. Accountability of staff
6. Data Integrity (duplicates, latest version etc)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ABK
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DELL

In summary:

1. Be innovative
2. Use the internet
3. Research and teach yourselves
4. Look to **Open Source**
5. Don’t try to reinvent the wheel

“Some-one out there has already encountered the problem that you are trying to address!”