EPA United States
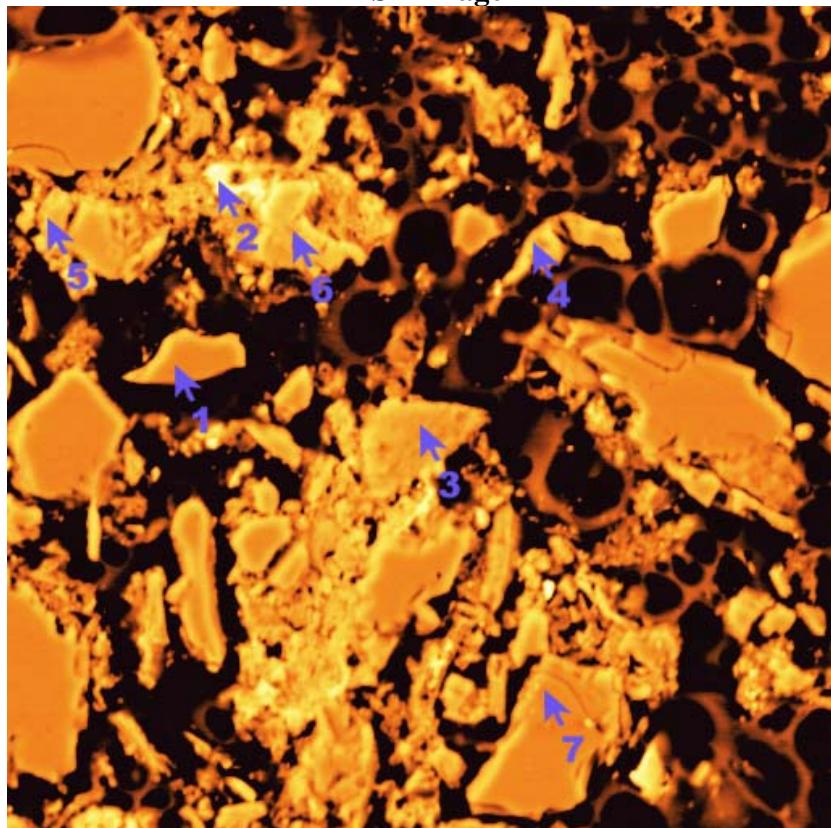Environmental Protection
Agency

Mine Waste Technology Program

Linking Waterfowl with Contaminant Speciation in Riparian Soils

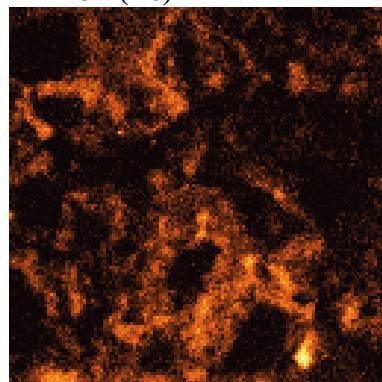**Appendix A: D.G. Strawn's Final Report to MSE, Dated January 26, 2006**

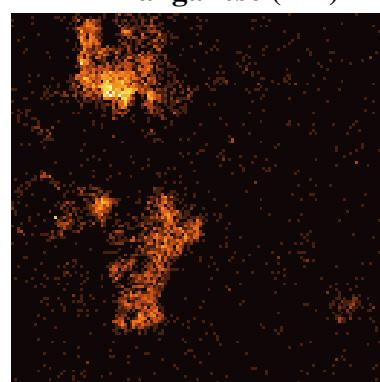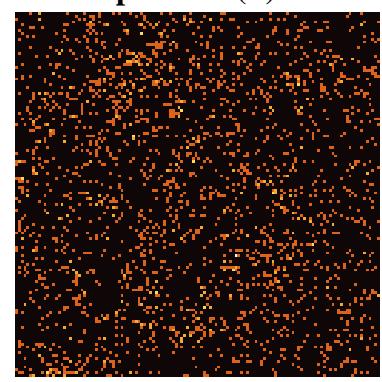**Pages A-296 through A-396**

P8C7 – 325, 345
BSE Image

Iron (Fe)

Manganese (Mn)

Phosphorous (P)

Lead (Pb)

Silicon (Si)

EDS Scan Images by Point

Point 1

Label A: P8C7 X-325 Y-245 Point 1

Point 2

Label A: P8C7 X-325 Y-245 Point 2
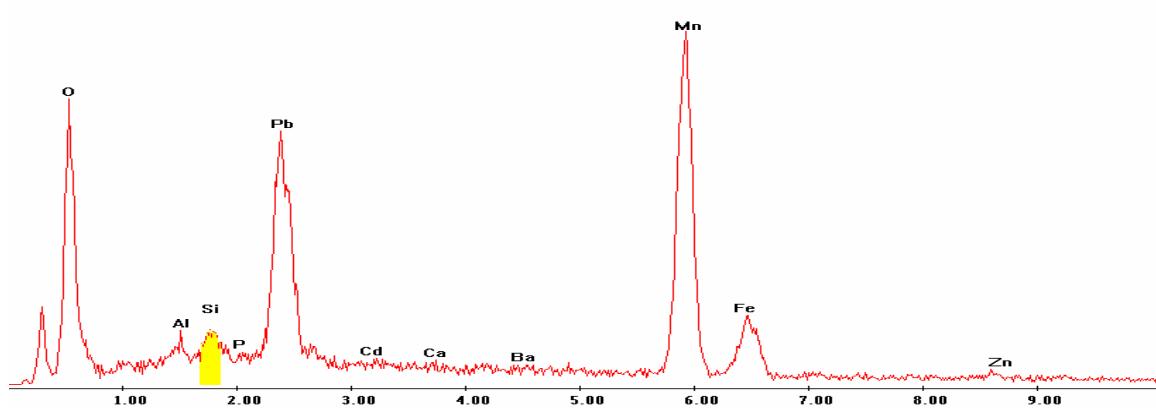
Point 3

Label A: P8C7 X-325 Y-245 Point 3
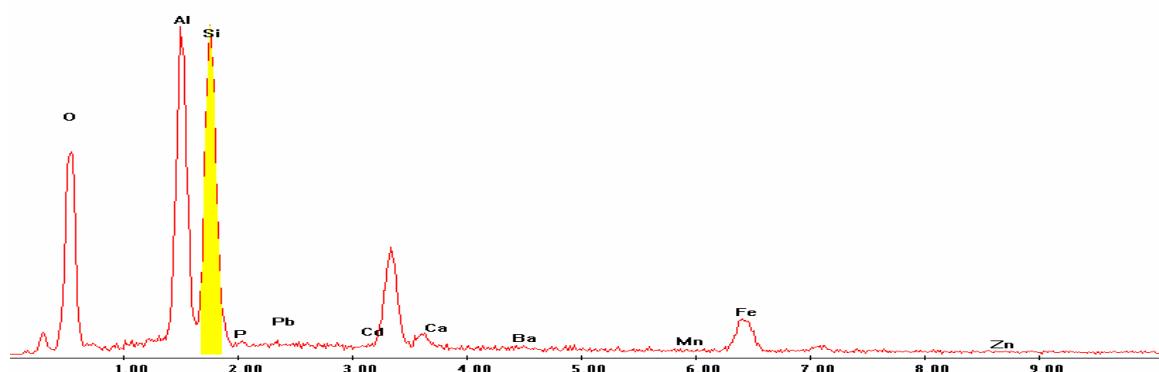
Point 4

Label A: P8C7 X-325 Y-245 Point 4
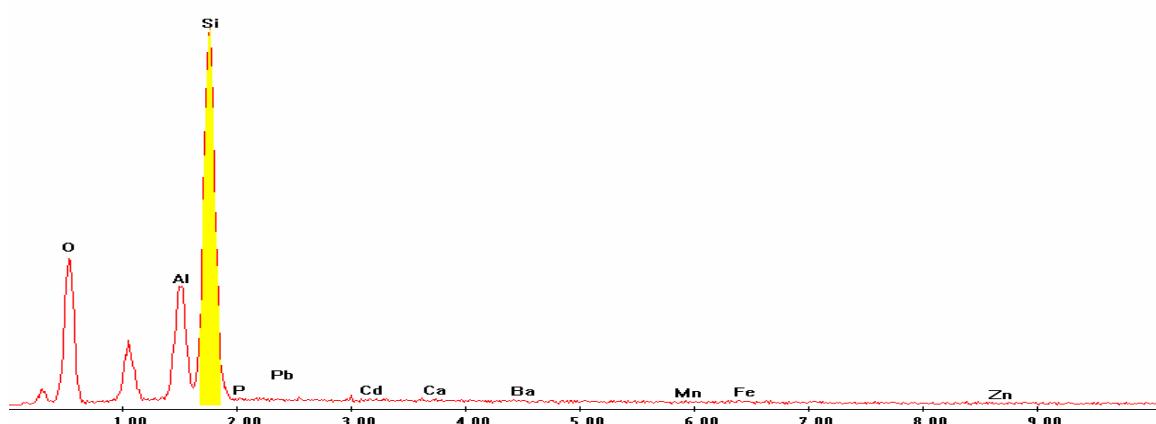
Point 5

Label A: P8C7 X-325 Y-245 Point 5

A-298
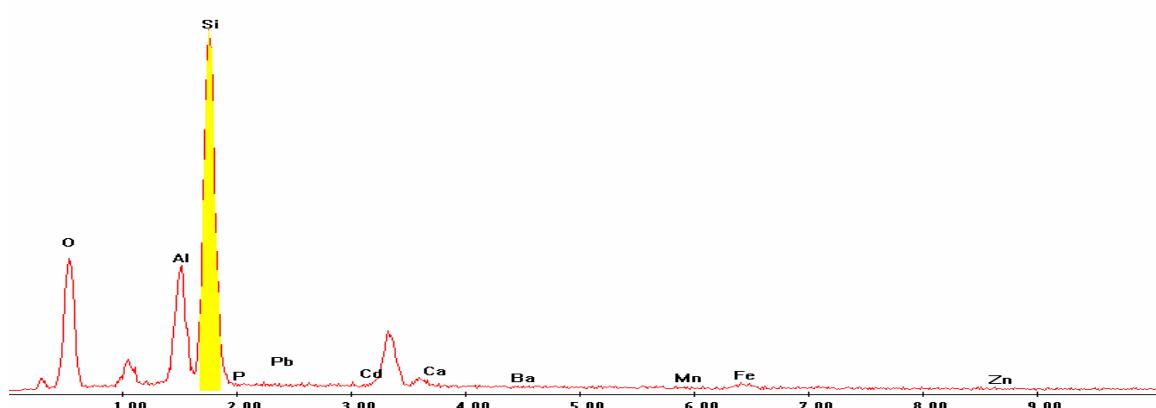
Point 6

Label A: P8C7 X-325 Y-245 Point 6
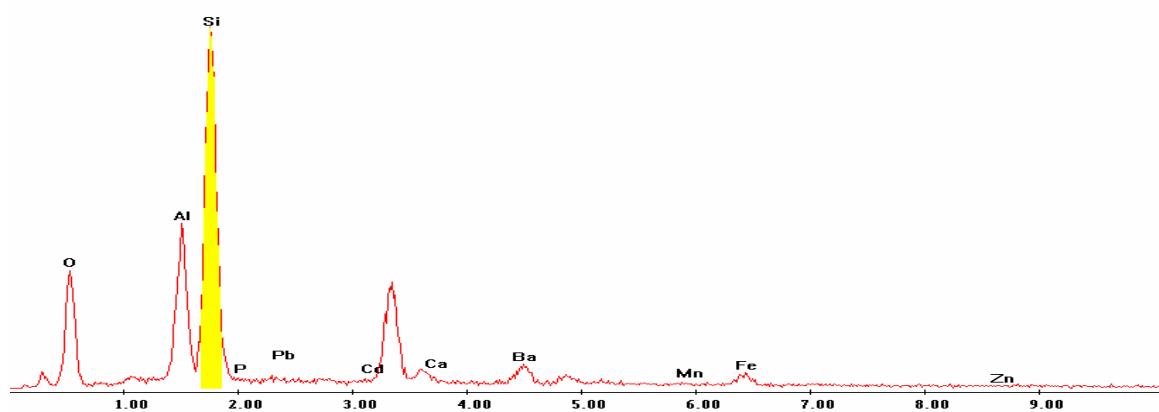
Point 7
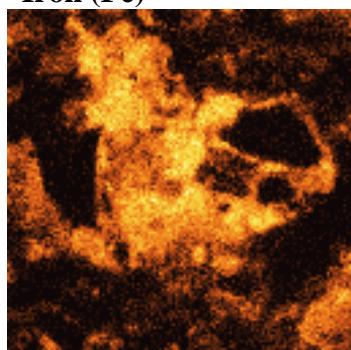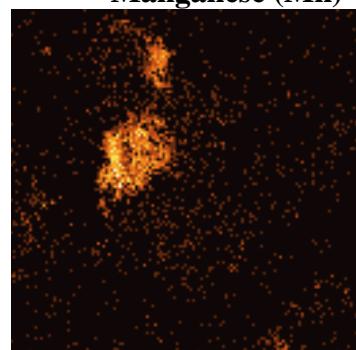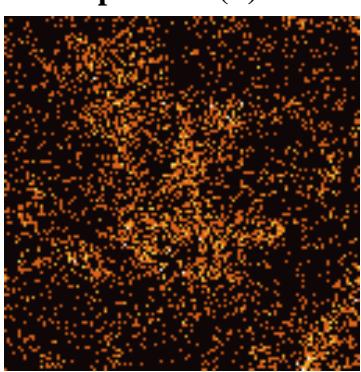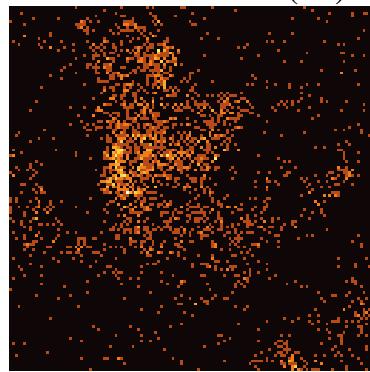
Label A: P8C7 X-325 Y-245 Point 7
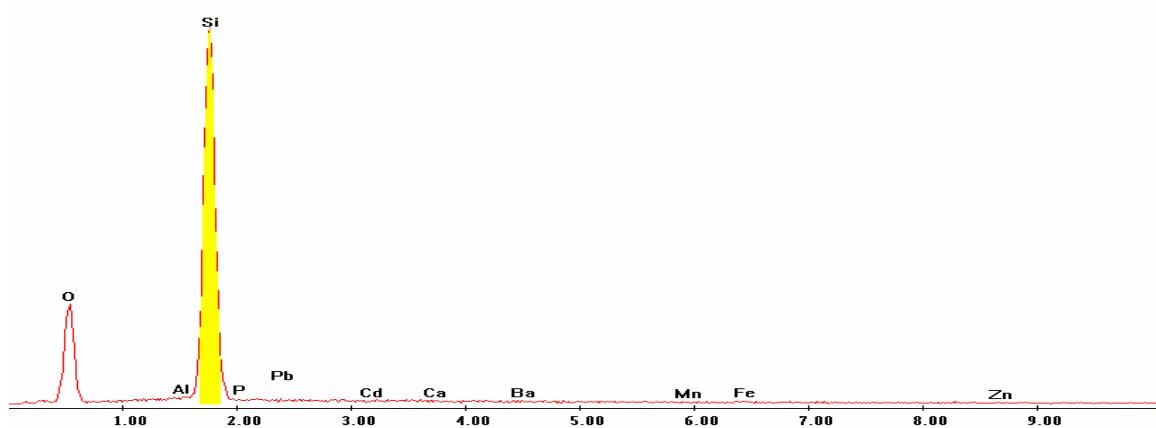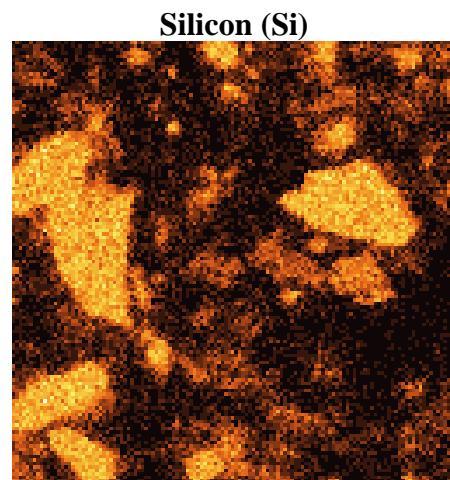
P8C7 – 380, 269
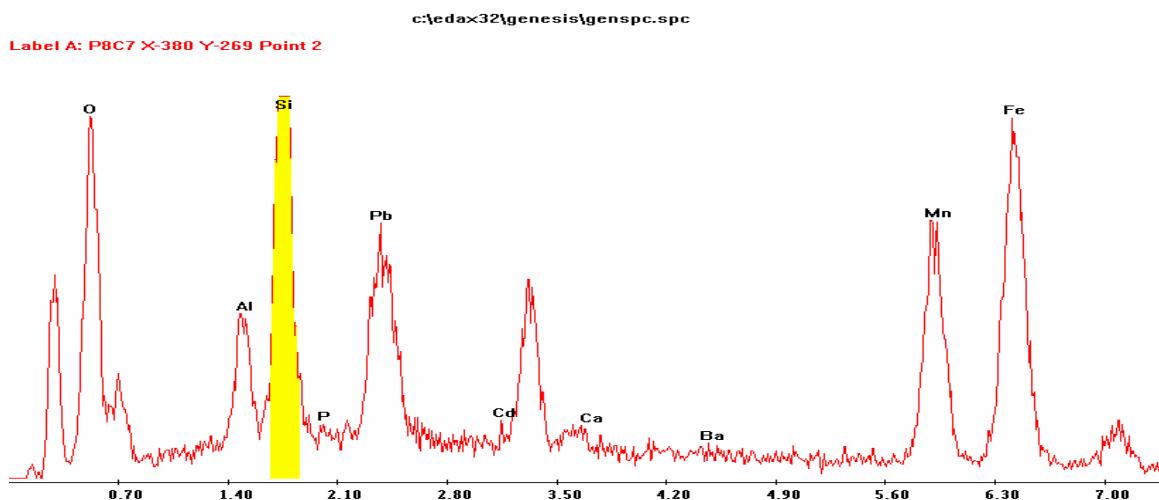**BSE Image**
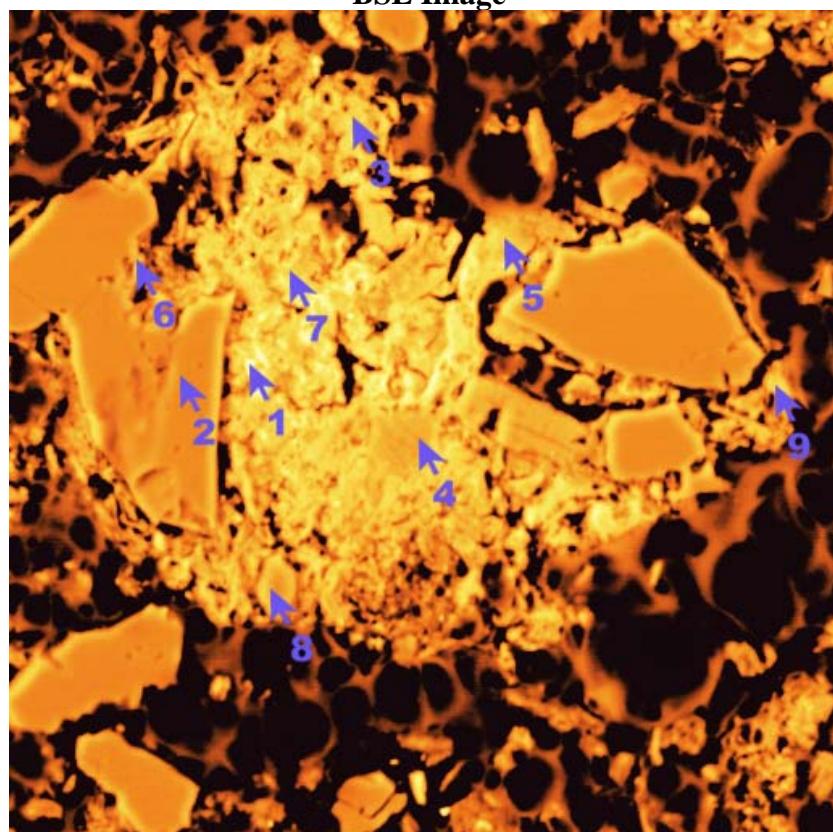
Iron (Fe)

Manganese (Mn)

Phosphorous (P)

Lead (Pb)

Silicon (Si)

EDS Scan Images by Point
Point 1

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Point 2

c:\edax32\genesis\genspc.spc

Point 3

Label A: P8C7 X-380 Y-269 Point 3
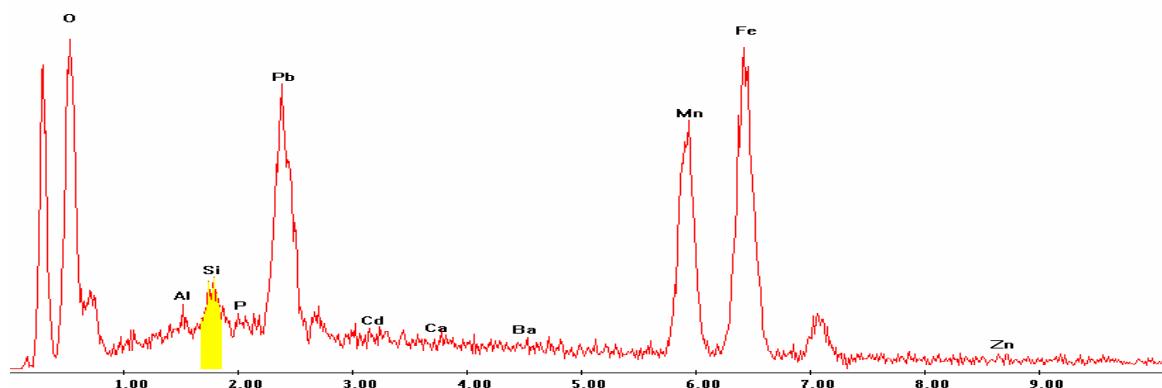
Point 4

Label A: P8C7 X-380 Y-269 Point 4
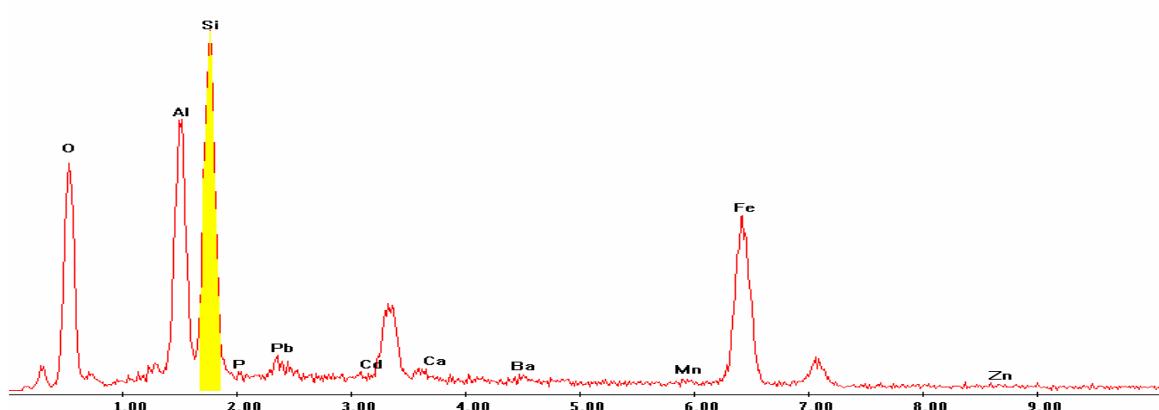
Point 5

Label A: P8C7 X-380 Y-269 Point 5

A-302
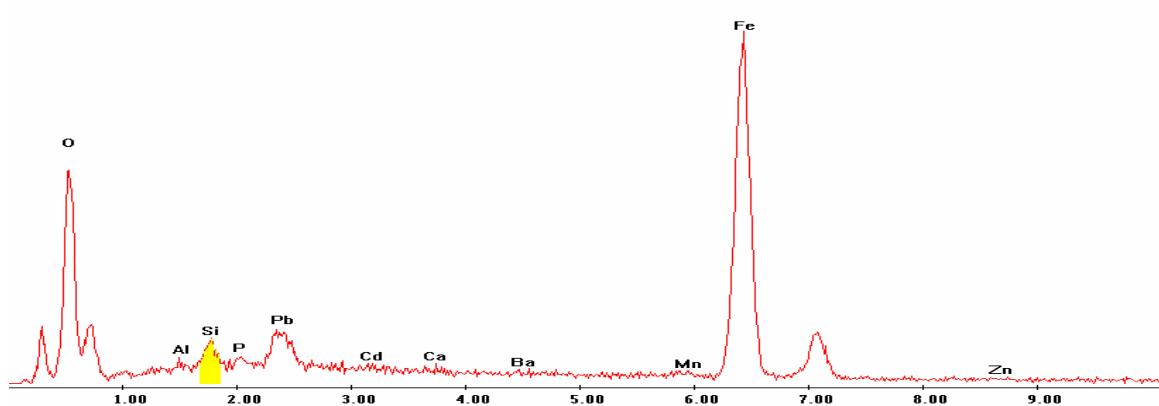
Point 6

Label A: P8C7 X-380 Y-269 Point 6
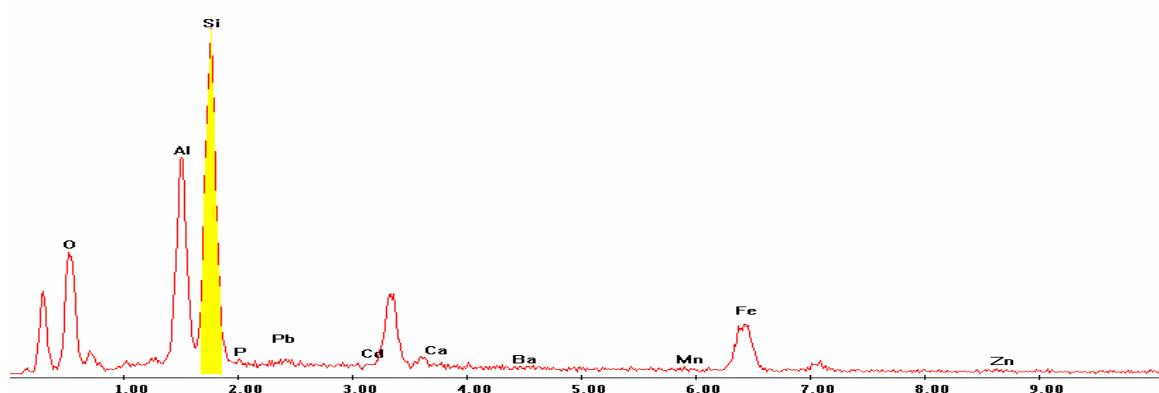
Point 7

Label A: P8C7 X-380 Y-269 Point 7
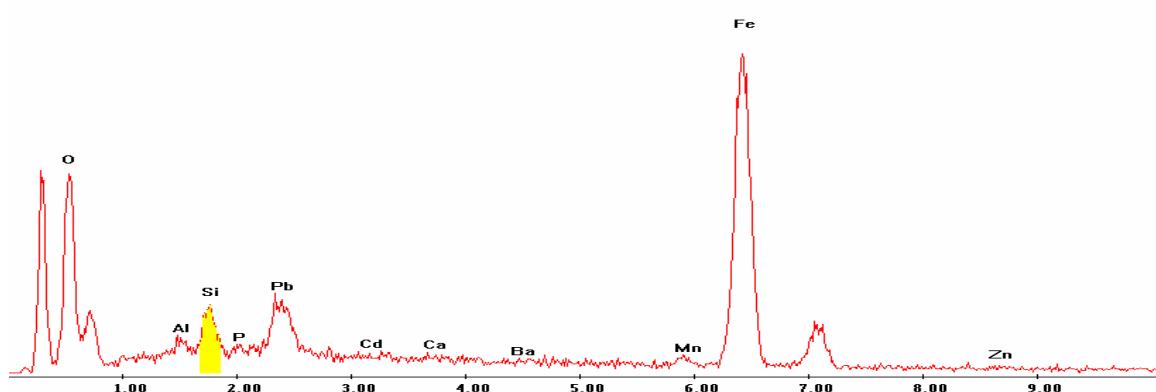
Point 8

Label A: P8C7 X-380 Y-269 Point 8

A-303

Point 9

A-304
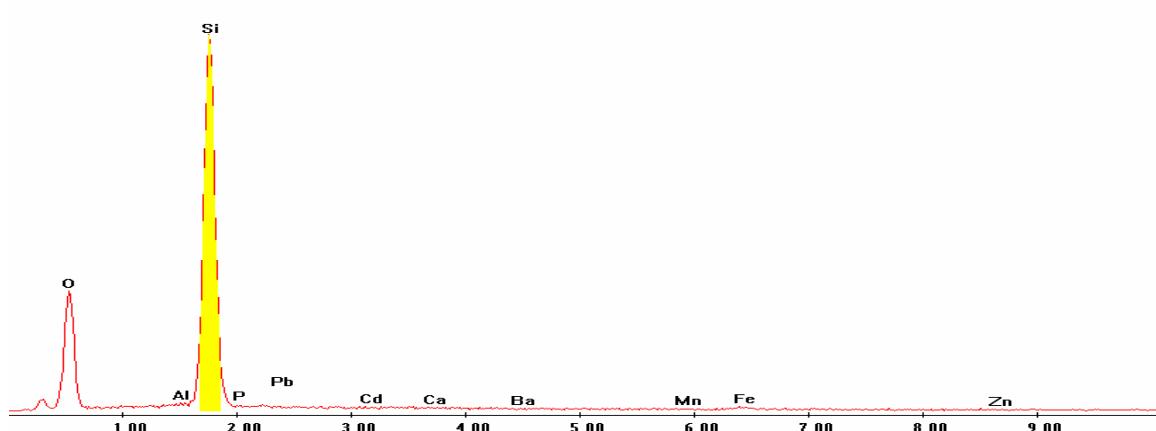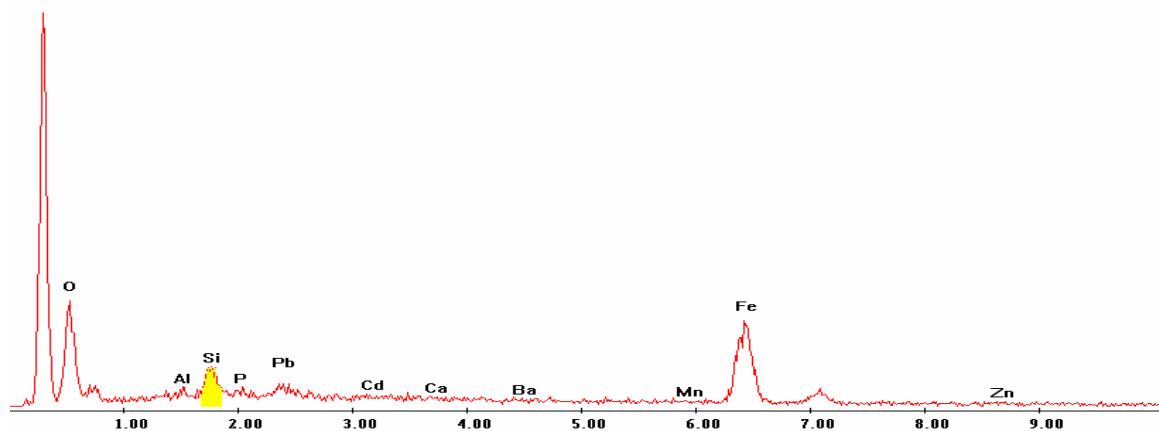
P8C7 – 398, 323
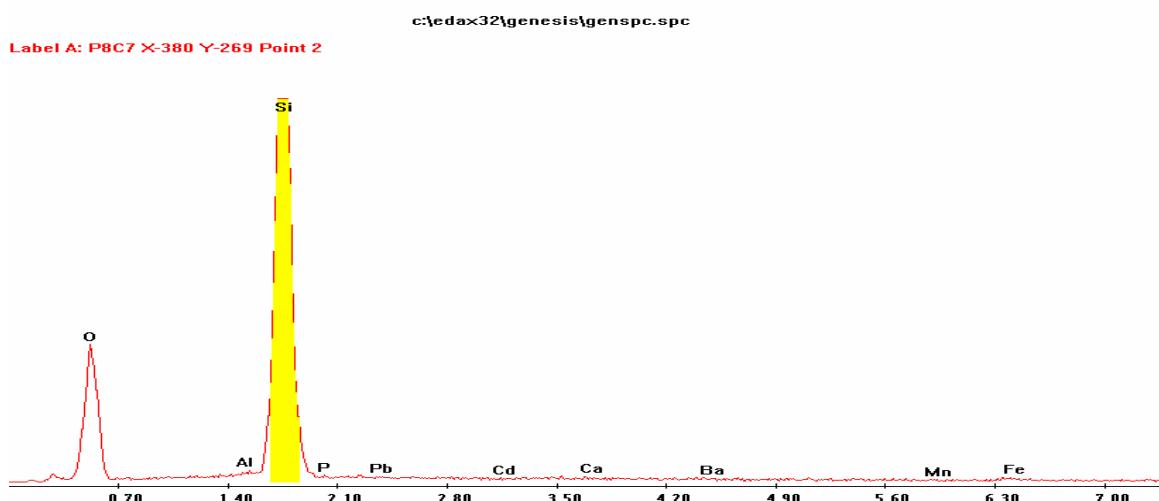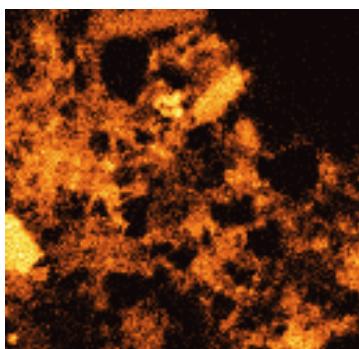**BSE Image**

Iron (Fe)
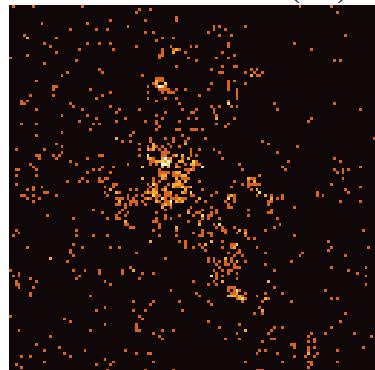
Manganese (Mn)

Phosphorous (P)

Lead (Pb)

Silicon (Si)

EDS Scan Images by Point
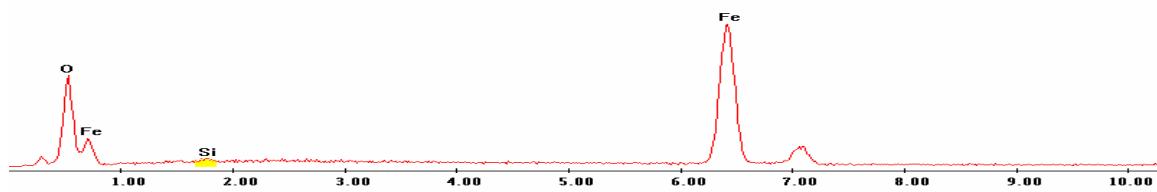
Point 1

Point 2

Point 3

Label A: 01jun04 P8C7 398 323 Point 3
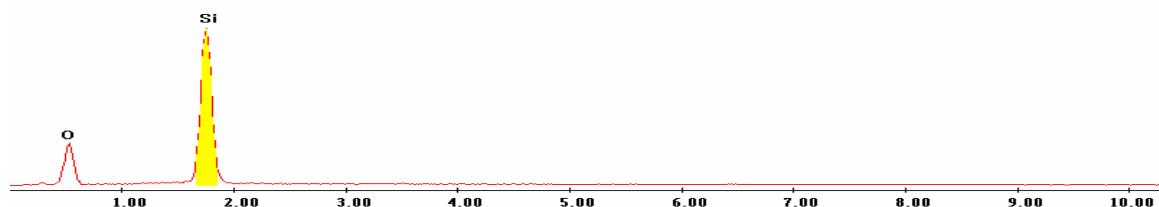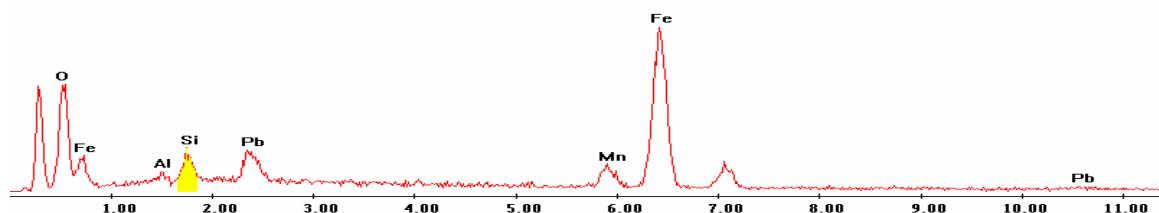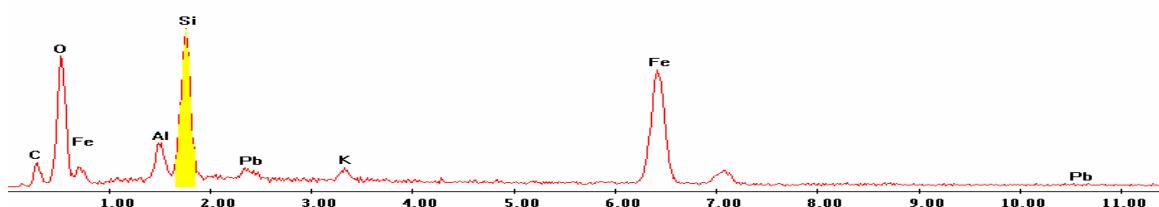
Point 4

Label A: 01jun04 P8C7 398 323 Point 4

Point 5

Label A: 01jun04 P8C7 398 323 Point 5

A-307

Point 6
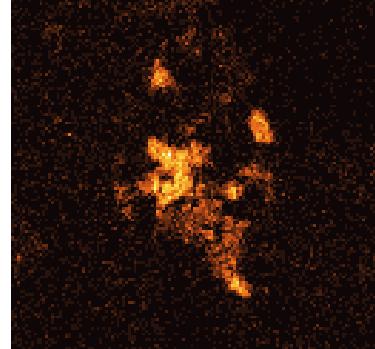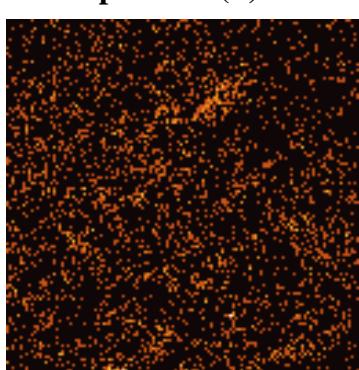
Point 7

Point 8

A-308
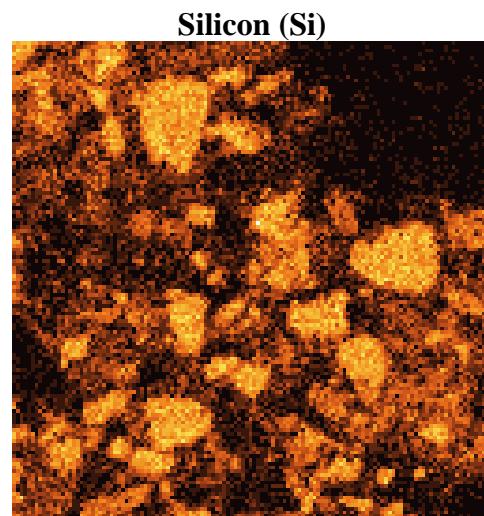
Point 9

Point 10

A-309

P8C7 – 456, 196
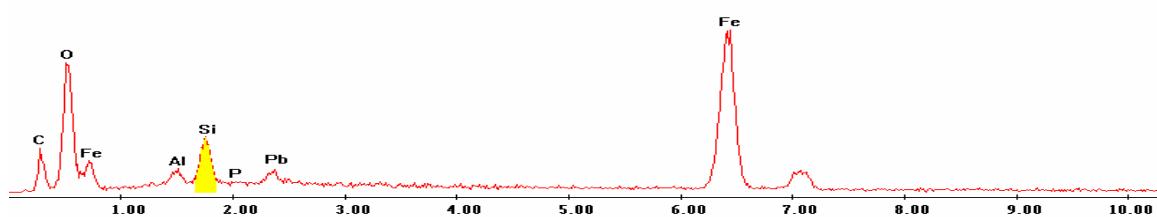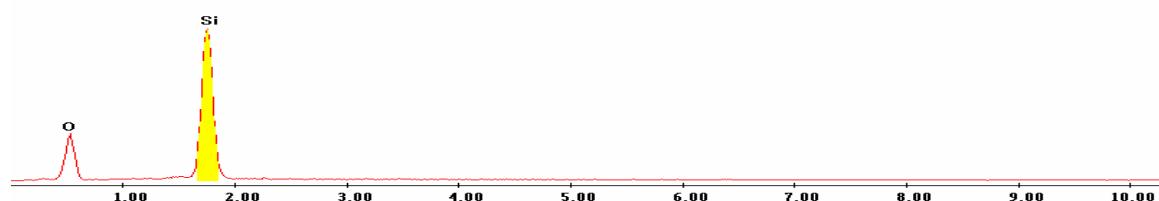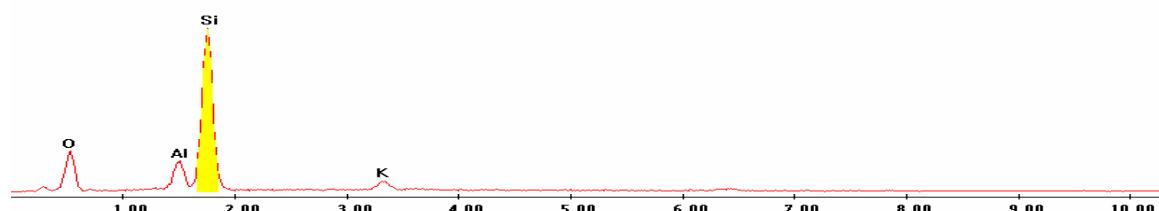**BSE Image**

Iron (Fe)

Manganese (Mn)

Phosphorous (P)

Lead (Pb)

Silicon (Si)

EDS Scan Images by Point

Point 1

Point 2

A-311

Point 3

Point 4

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Point 5

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A-312
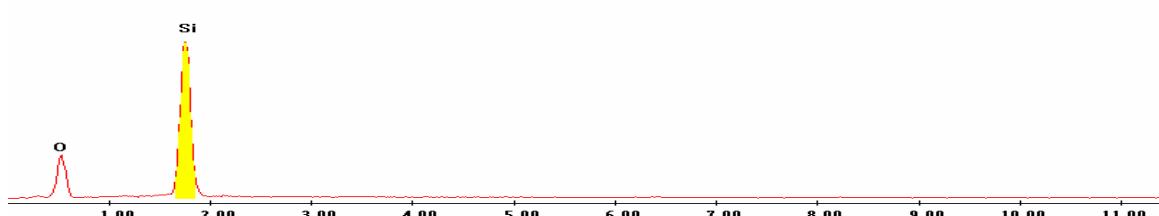
Point 6

Label A: 01jun04 P8C7 456 196 Point 6
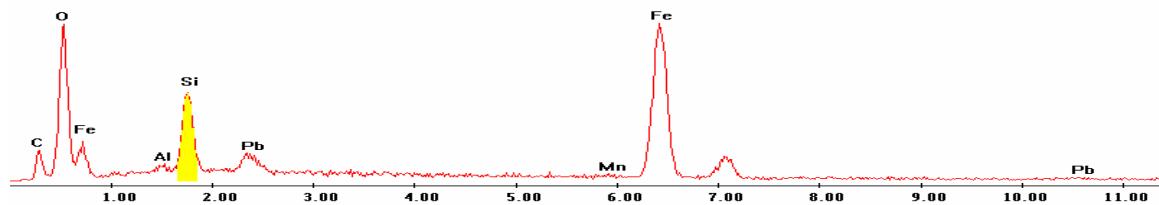
Point 7

Label A: 01jun04 P8C7 456 196 Point 7

Point 8

Label A: 01jun04 P8C7 456 196 Point 8
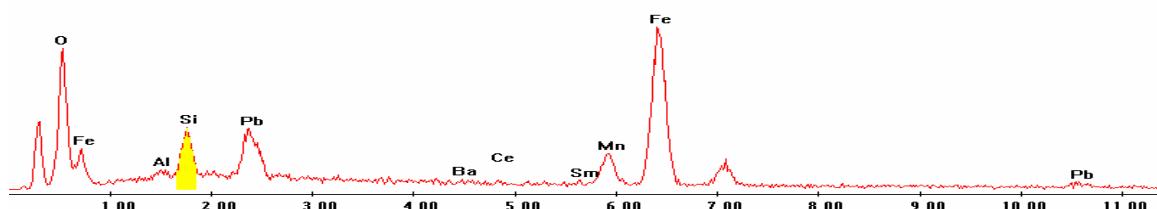
Point 9

Label A: 01jun04 P8C7 456 196 Point 9
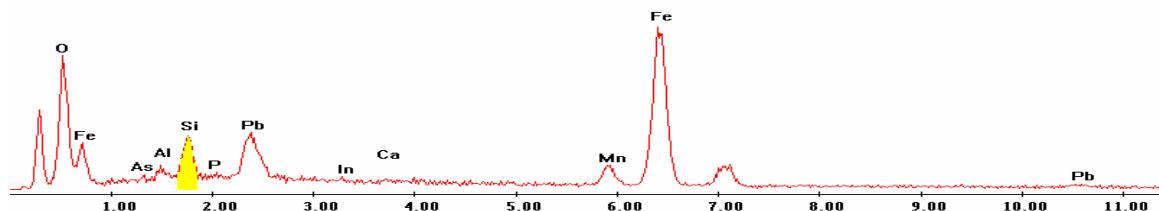
Point 10

Label A: 01jun04 P8C7 456 196 Point 10
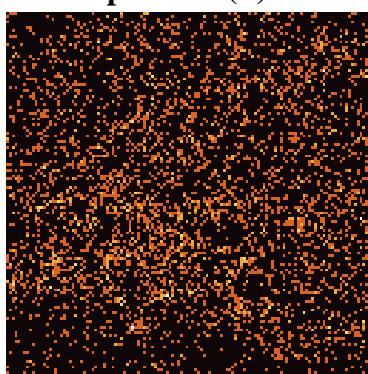

A-314
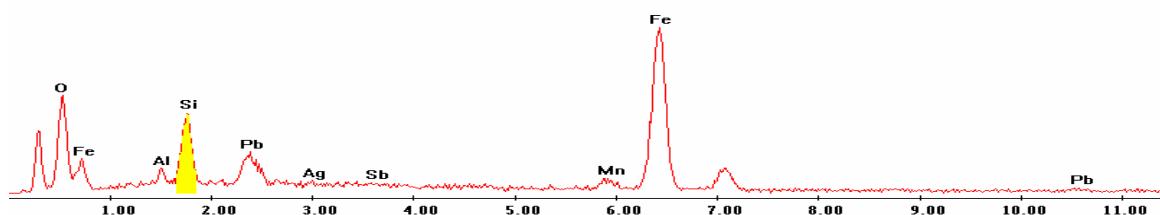
P8C7 – 490, 265
BSE Image
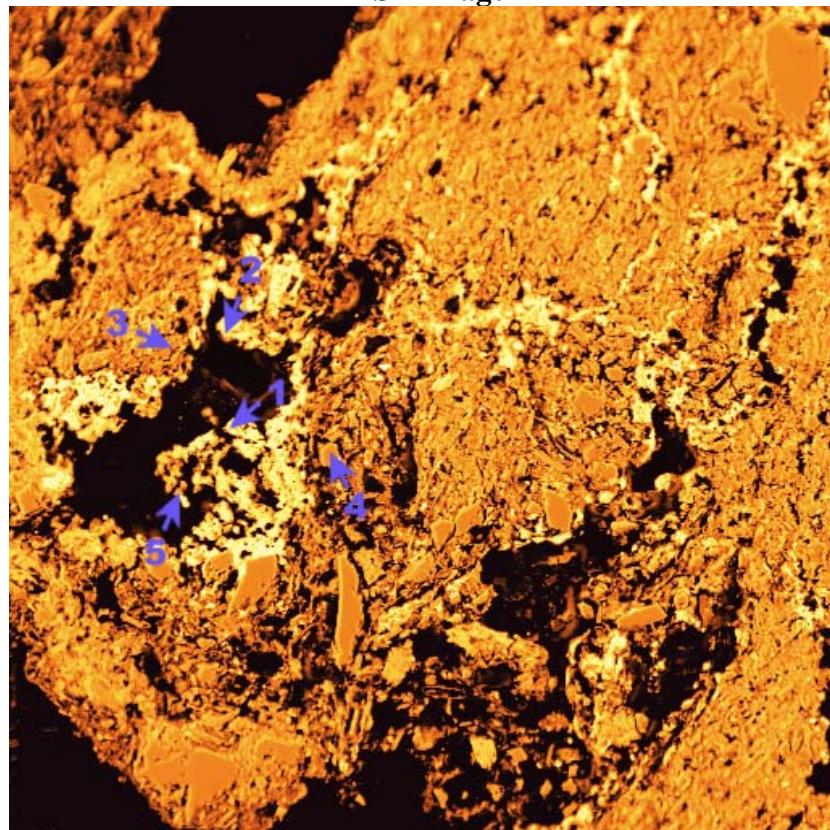
Iron (Fe)

Manganese (Mn)
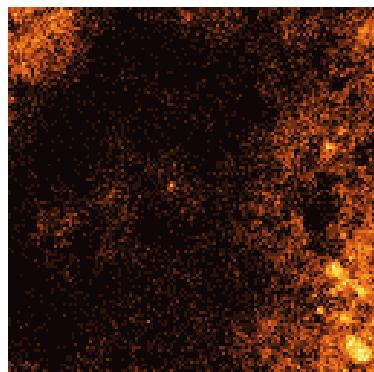
Phosphorous (P)

Lead (Pb)
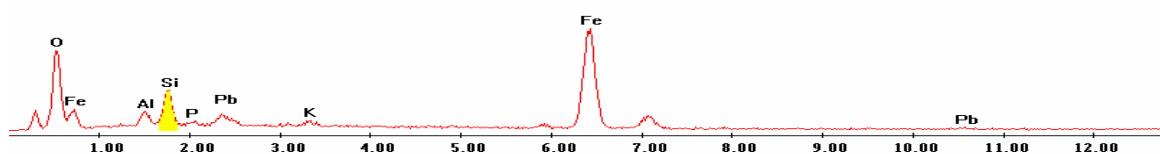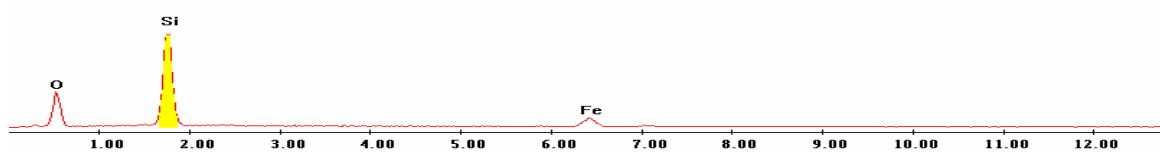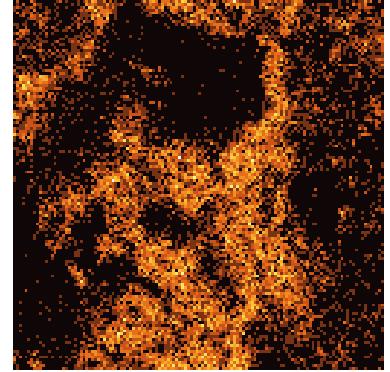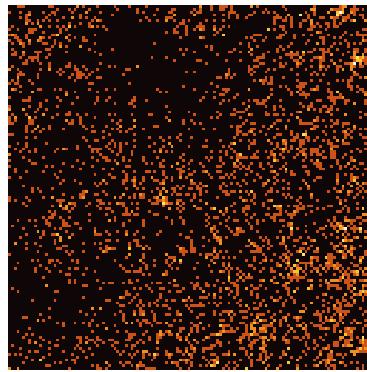
Silicon (Si)
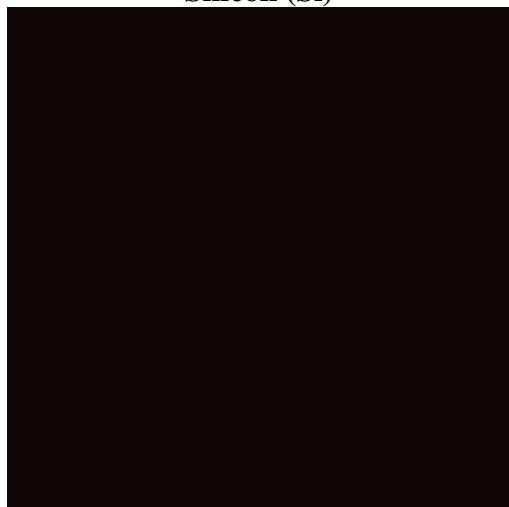
EDS Scan Images by Point

Point 1

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Label A: P8C7 X-490 Y-265 Point 1

Point 2

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Label A: P8C7 X-490 Y-265 Point 2
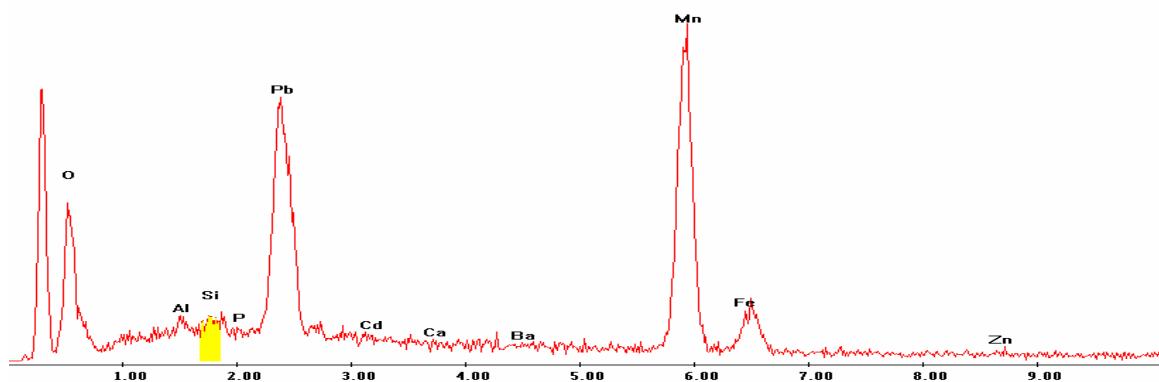
Point 3

Label A: P8C7 X-490 Y-265 Point 3
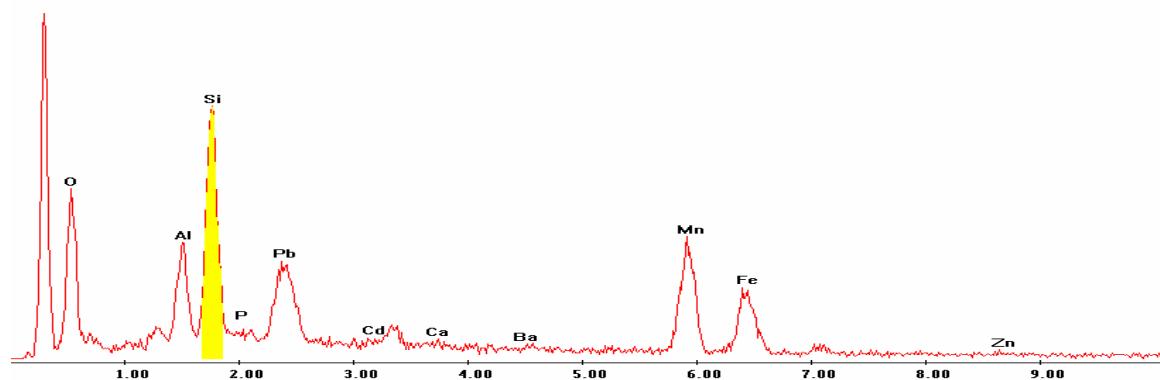
Point 4

Label A: P8C7 X-490 Y-265 Point 4
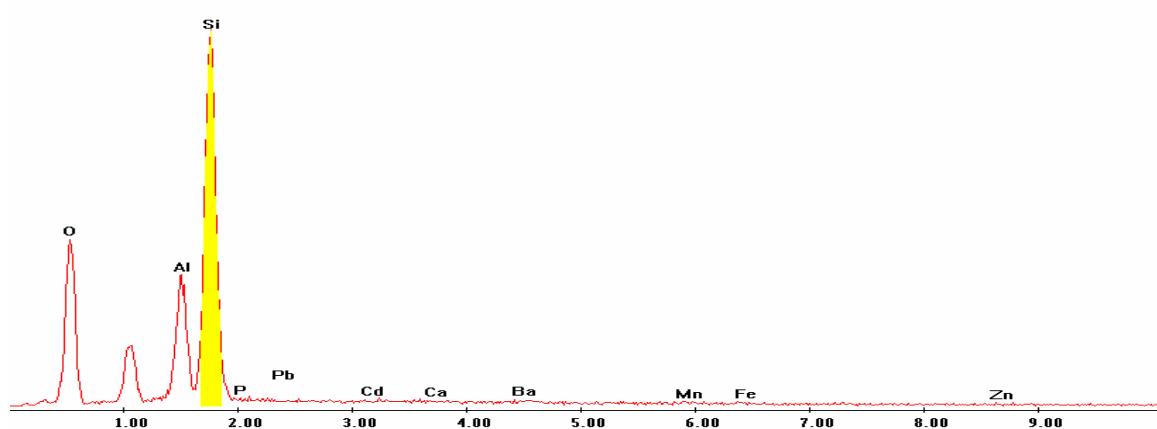
Point 5

Label A: P8C7 X-490 Y-265 Point 5
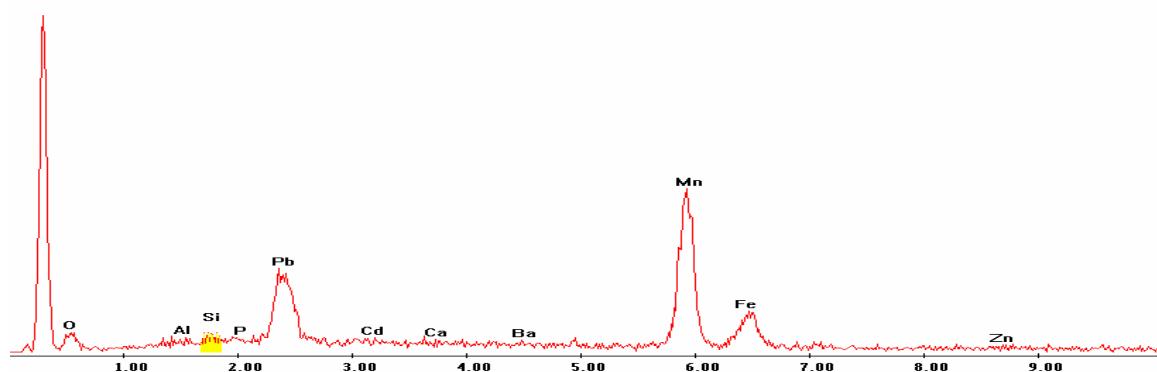
Point 6

Label A: P8C7 X-490 Y-265 Point 6

A-318
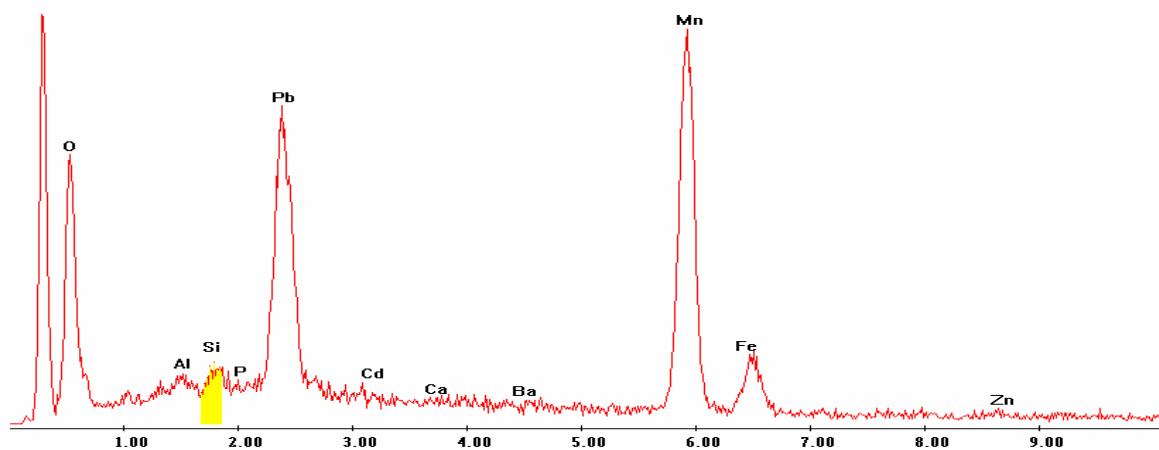
P8C8 – 302, 323
BSE Image
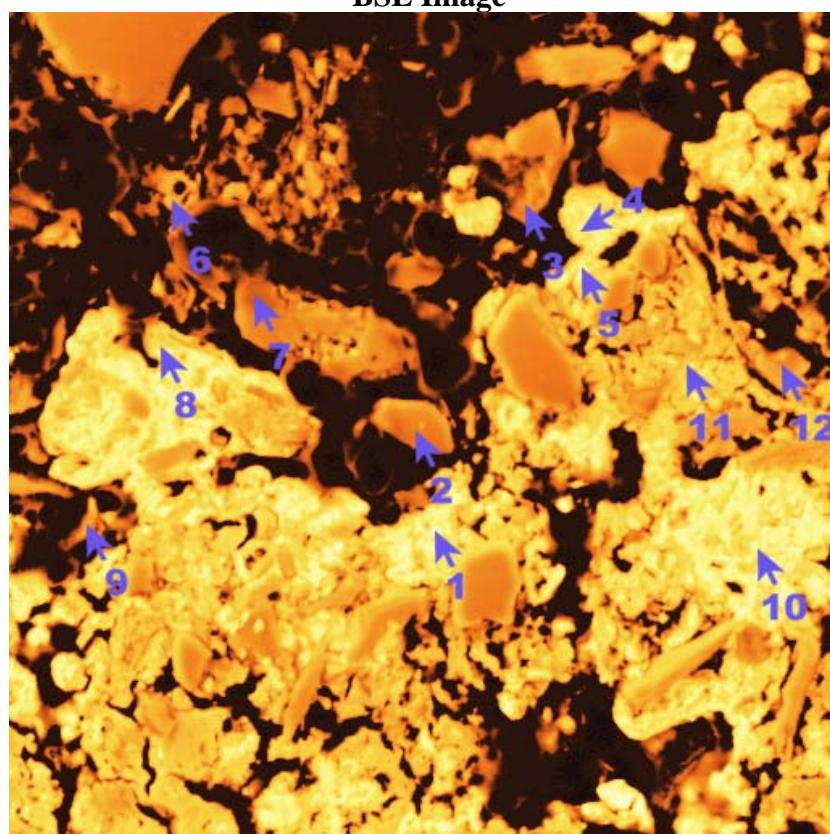
Iron (Fe)
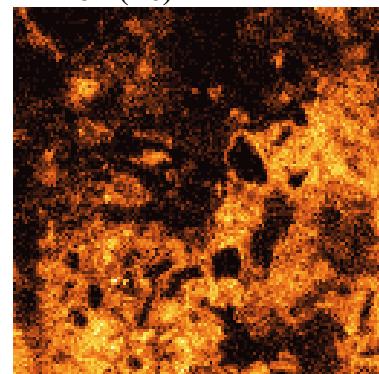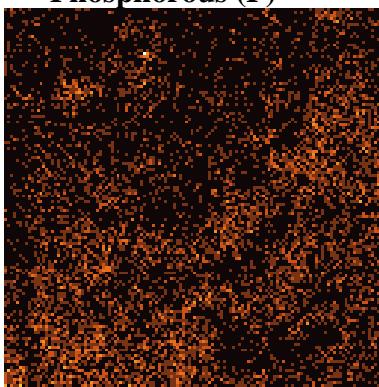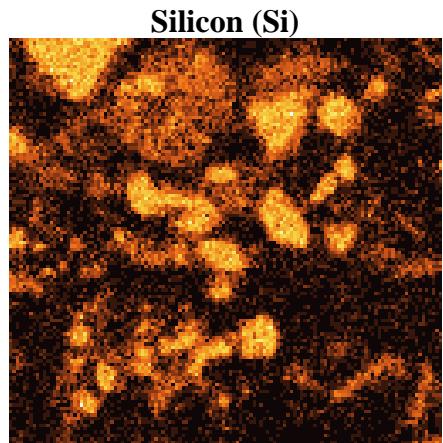
Manganese (Mn)

Phosphorous (P)

Lead (Pb)

Silicon (Si)

EDS Scan Images by Point

Point 1

Point 2

Point 3

Label A: 16apr04 p8c8 302 323 Point 3   Label B: H K

Point 4

Label A: 16apr04 p8c8 302 323 Point 4   Label B: H K

Point 5

Label A: 16apr04 p8c8 302 323 Point 5   Label B: H K

A-321

Point 6

Label B: H K

Point 7

Label B: H K

Point 8

Label B: H K

A-322

Point 9

Point 10

A-323

Point 11

Point 12

A-324

P8C8 – 328, 276
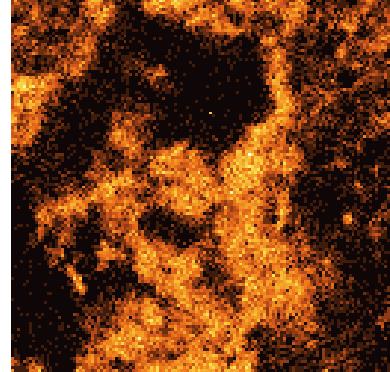**BSE Image**

Iron (Fe)

Manganese (Mn)

Phosphorous (P)

Lead (Pb)

Silicon (Si)
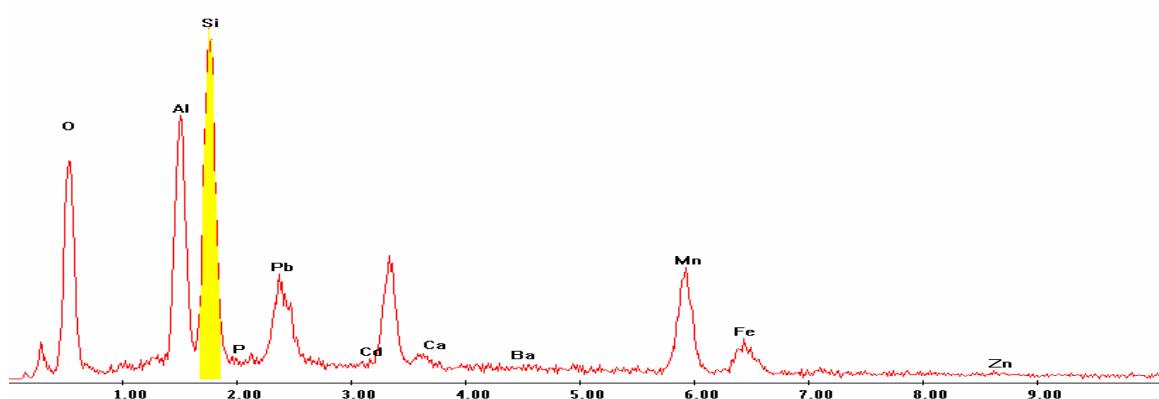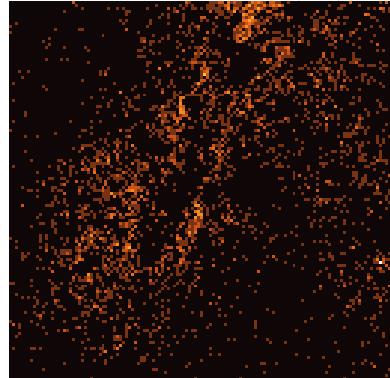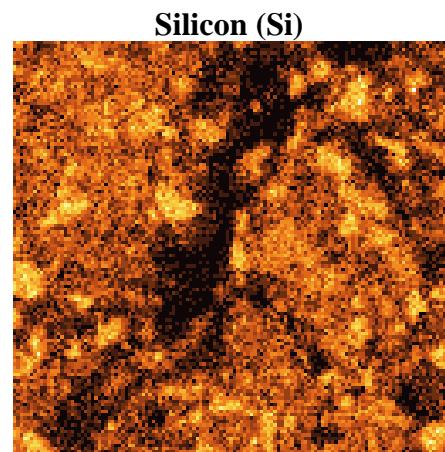

EDS Scan Images by Point

Point 1

Label A: 16apr04 p8c8 328 276 Point 1   Label B: H K

Point 2

Label A: 16apr04 p8c8 328 276 Point 2   Label B: H K

Point 3

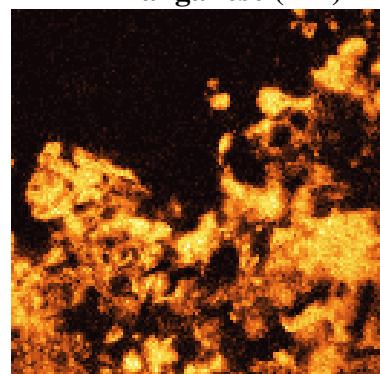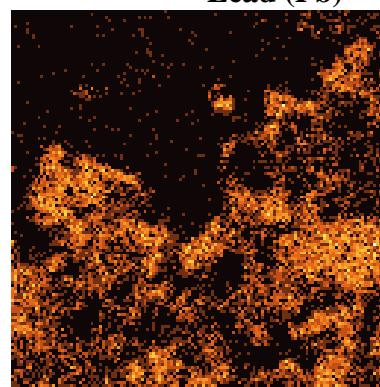Label A: 16apr04 p8c8 328 276 Point 3   Label B: H K

Point 4

c:\edax32\genesis\genspc.spc-/-peakgen.spc

Label A: 16apr04 p8c8 328 276 Point 4   Label B: H K

Point 5

c:\edax32\genesis\genspc.spc-/-peakgen.spc

Label A: 16apr04 p8c8 328 276 Point 5   Label B: H K

Point 6

Label A: 16apr04 p8c8 328 276 Point 6   Label B: H K

Point 7

Label A: 16apr04 p8c8 328 276 Point 7   Label B: H K

Point 8

Label A: 16apr04 p8c8 328 276 Point 8   Label B: H K

A-328

Point 9

Label A: 16apr04 p8c8 328 276 Point 9   Label B: H K

Point 10

Label A: 16apr04 p8c8 302 323 Point 10   Label B: H K

Point 11

Label A: 16apr04 p8c8 328 276 Point 11   Label B: H K

Point 12

Label A: 16apr04 p8c8 328 276 Point 12   Label B: H K

A-330

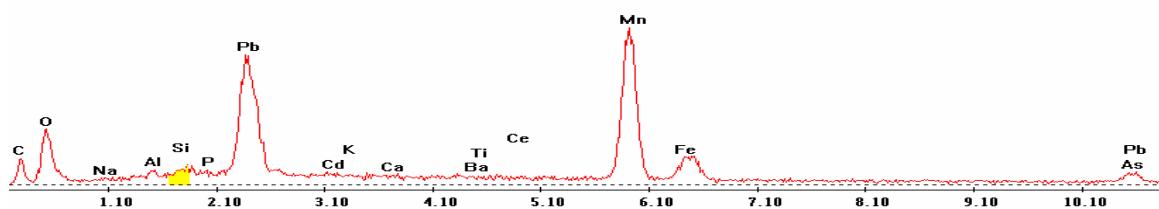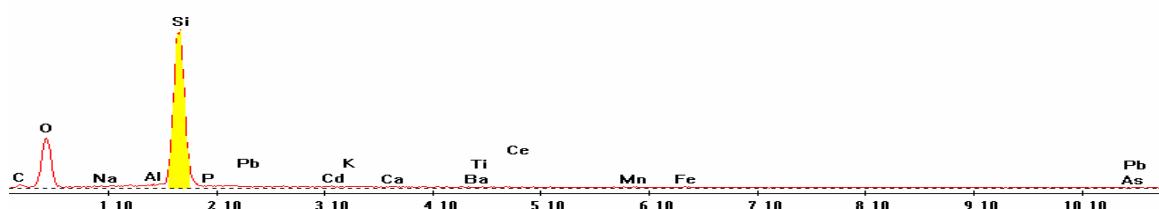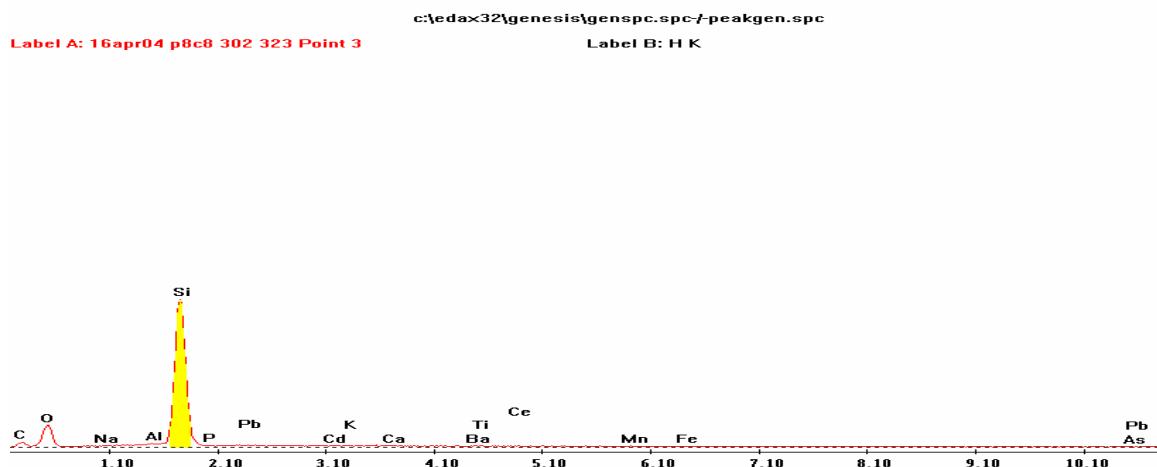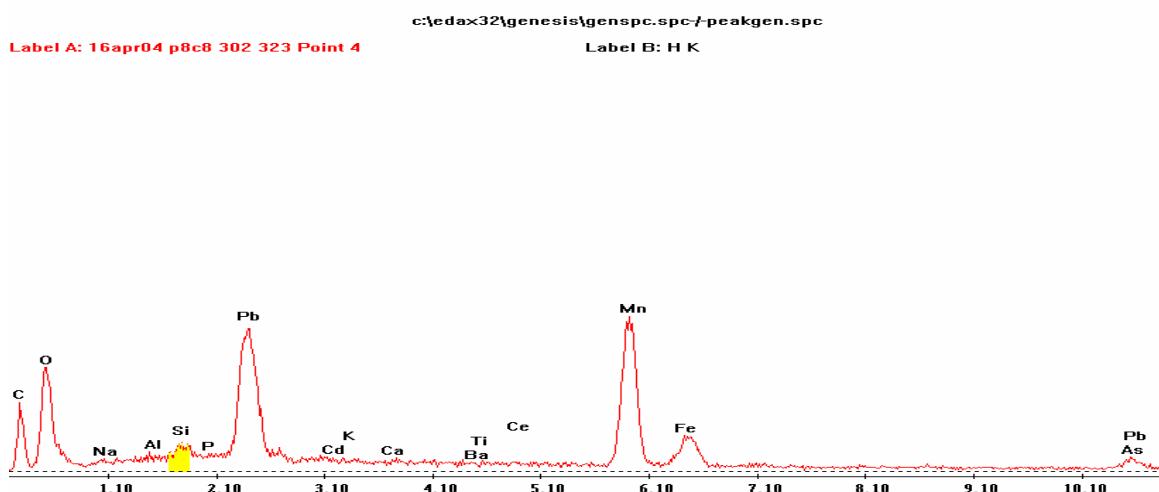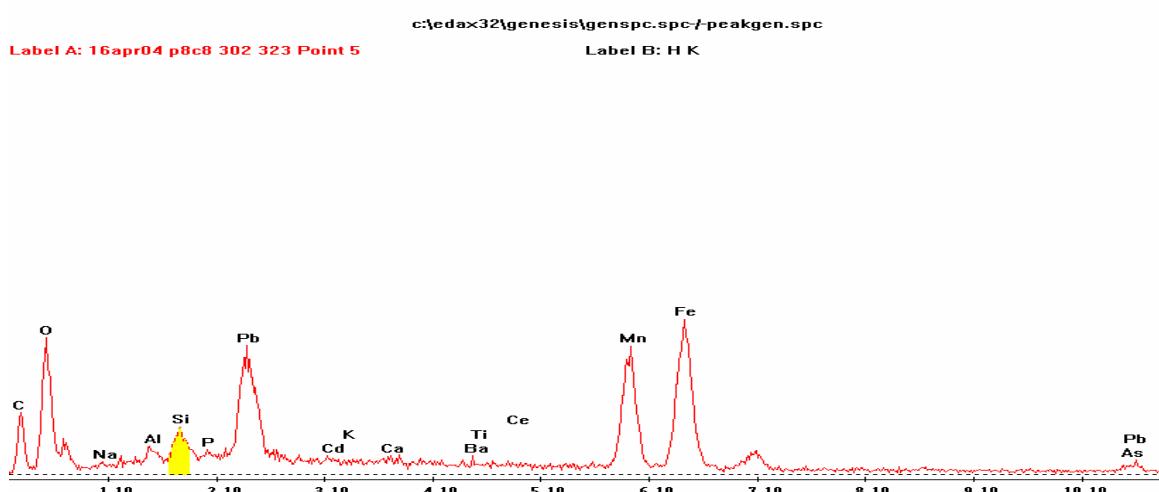**P8C8 – 333, 340**
BSE Image

Iron (Fe)

Manganese (Mn)

Phosphorous (P)

Lead (Pb)

Silicon (Si)
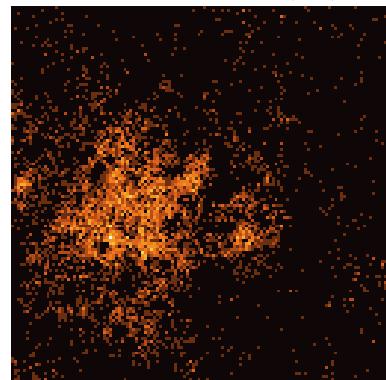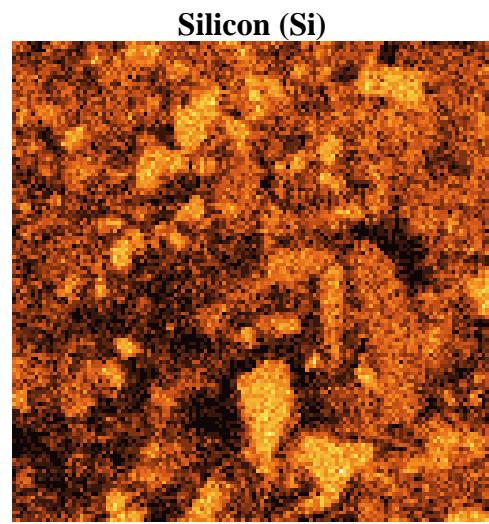
EDS Scan Images by Point

Point 1

Label A: 16apr04 p8c8 333 340 Point 1   Label B: H K
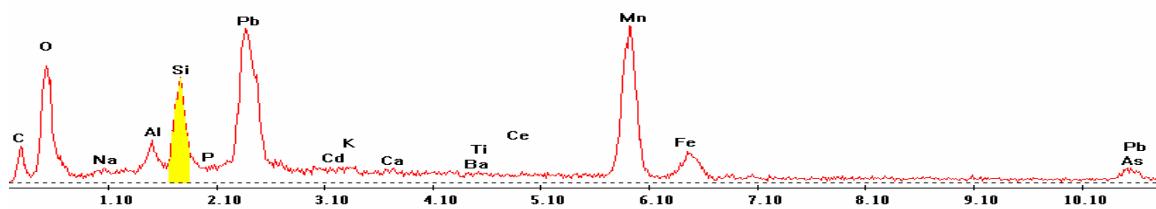
Point 2

Label A: 16apr04 p8c8 333 340 Point 2   Label B: H K

A-332
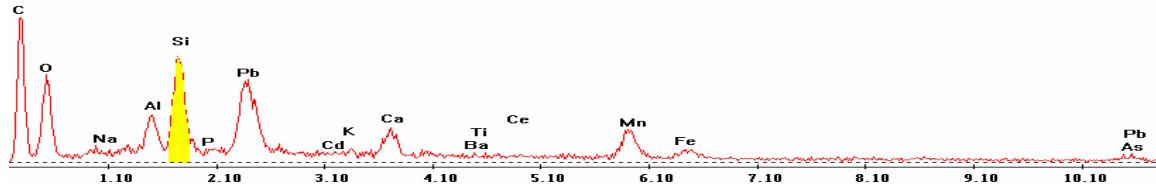
Point 3

Label A: 16apr04 p8c8 333 340 Point 3   Label B: H K
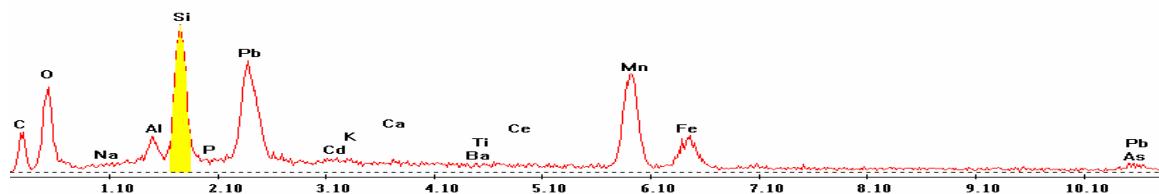
Point 4

Label A: 16apr04 p8c8 333 340 Point 4   Label B: H K
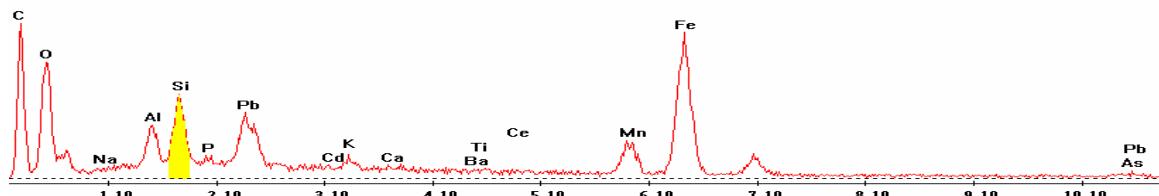
Point 5

Label A: 16apr04 p8c8 333 340 Point 5   Label B: H K

A-333
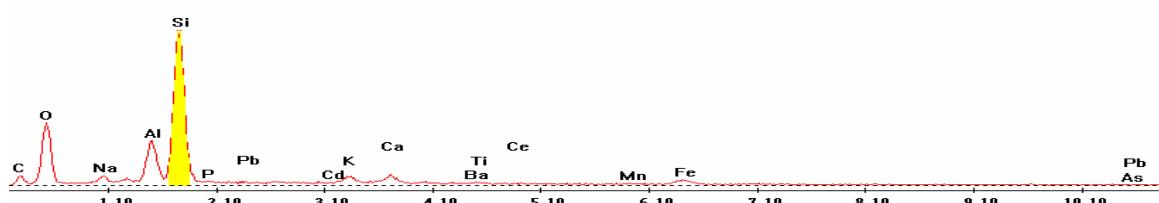
Point 6

Label A: 16apr04 p8c8 333 340 Point 6   Label B: H K

Point 7

c:\edax32\genesis\genspc.spc-/-peakgen.spc
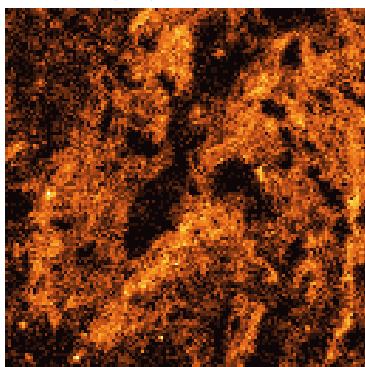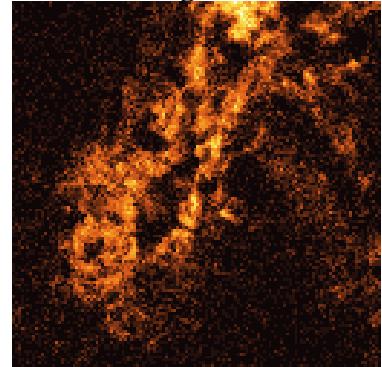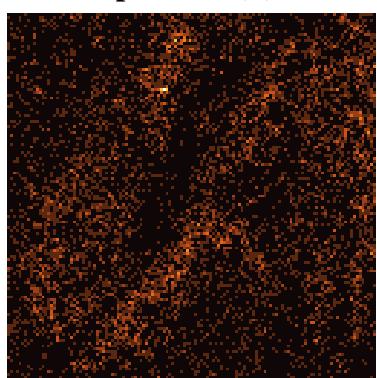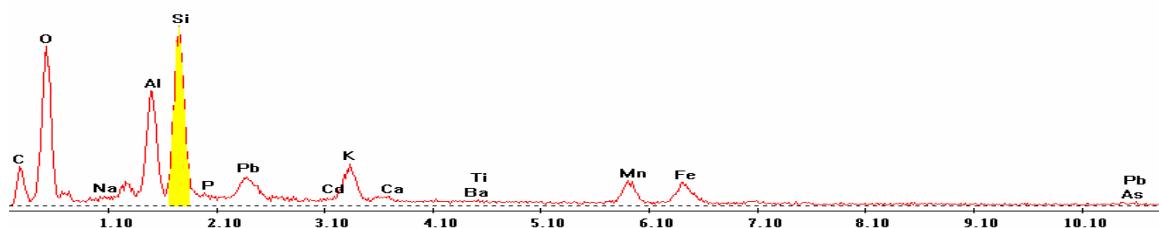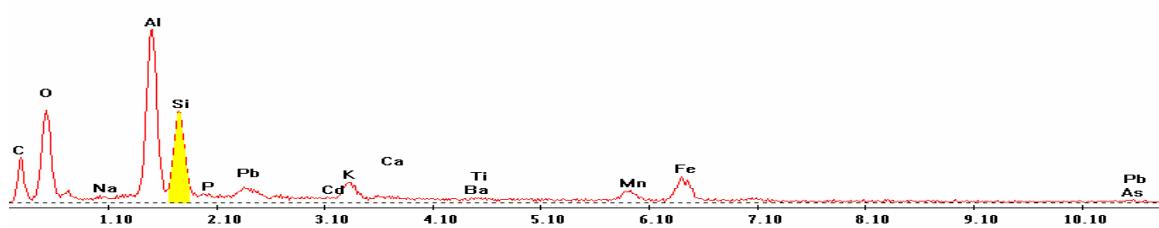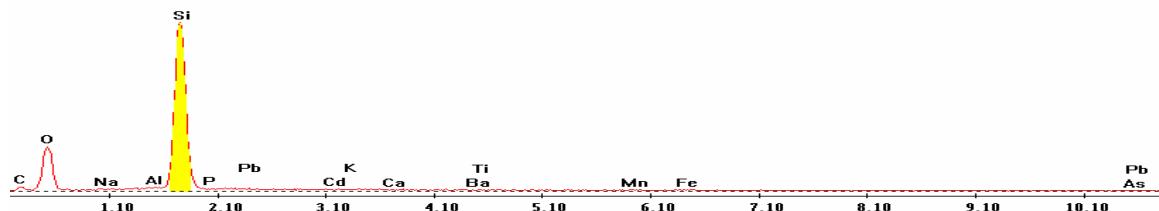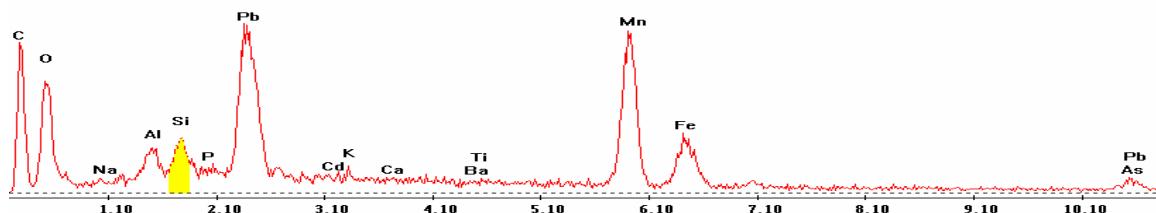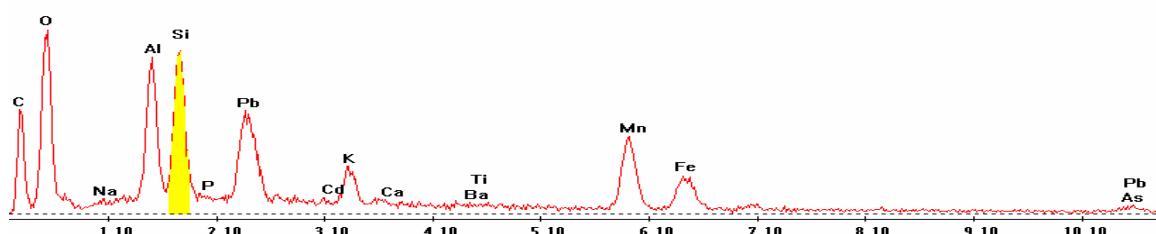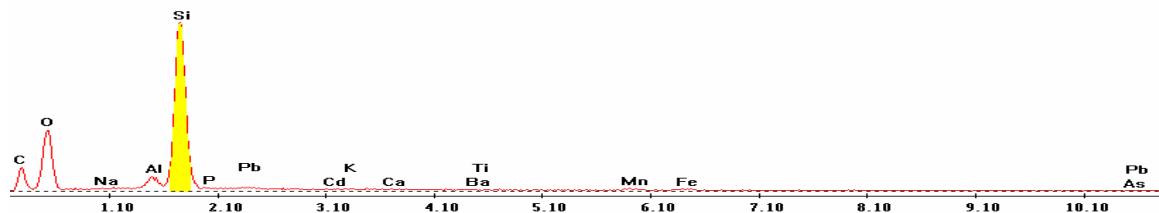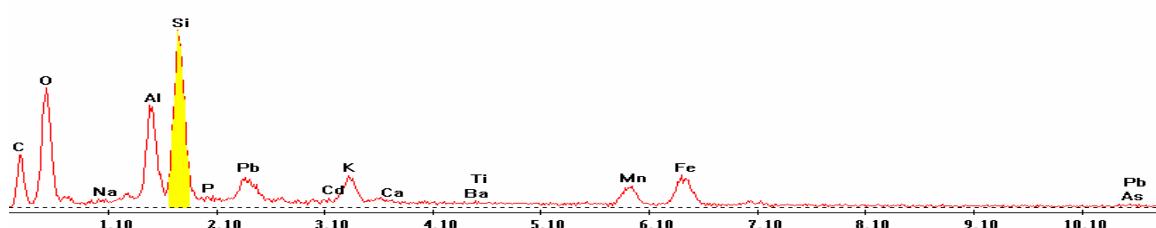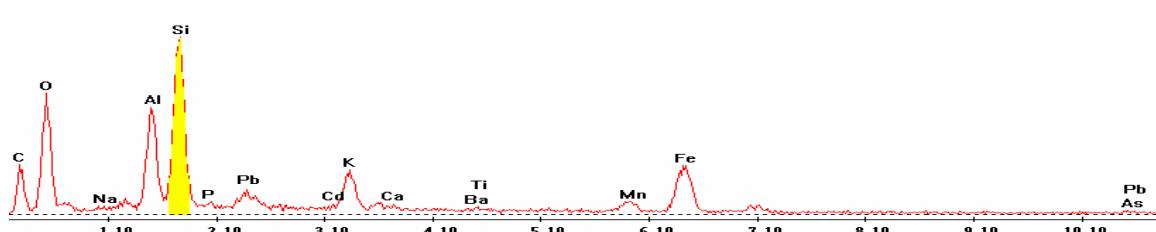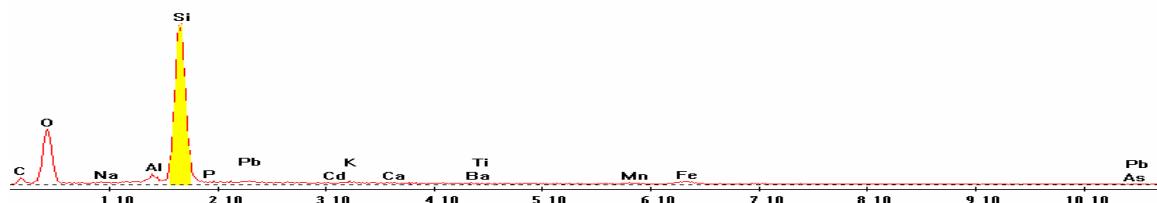
Label A: 16apr04 p8c8 333 340 Point 7   Label B: H K

Point 8

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Label A: 16apr04 p8c8 333 340 Point 8   Label B: H K

Point 9

Label A: 16apr04 p8c8 333 340 Point 9   Label B: H K

Point 10

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Label A: 16apr04 p8c8 333 340 Point 10   Label B: H K

P8C8 – 354, 225
BSE Image

Iron (Fe)
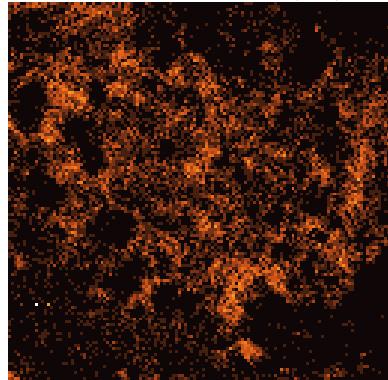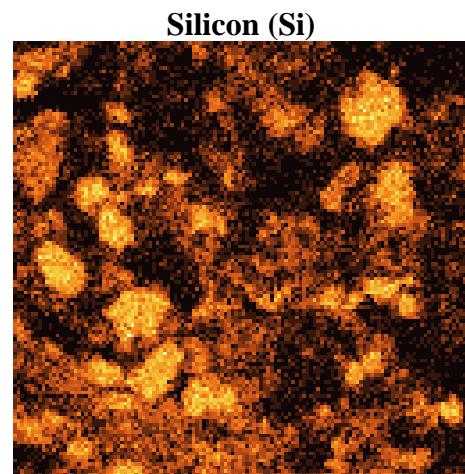
Manganese (Mn)

Phosphorous (P)

Lead (Pb)

Silicon (Si)

EDS Scan Images by Point

Point 1

Point 2

A-337
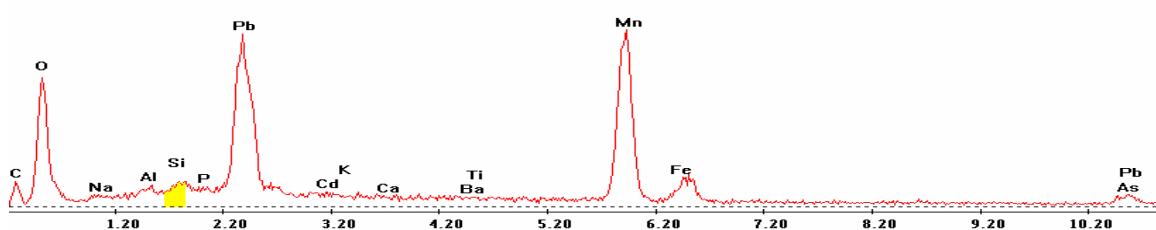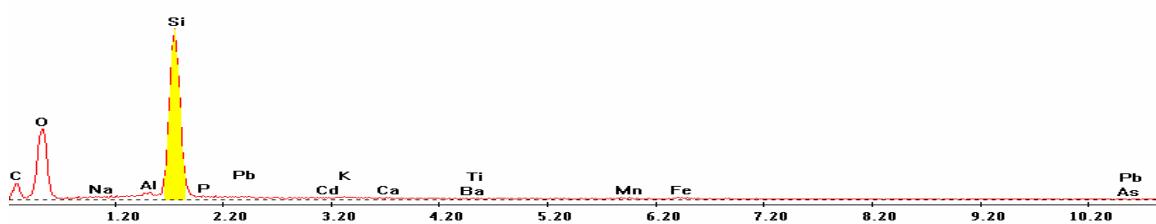
Point 3

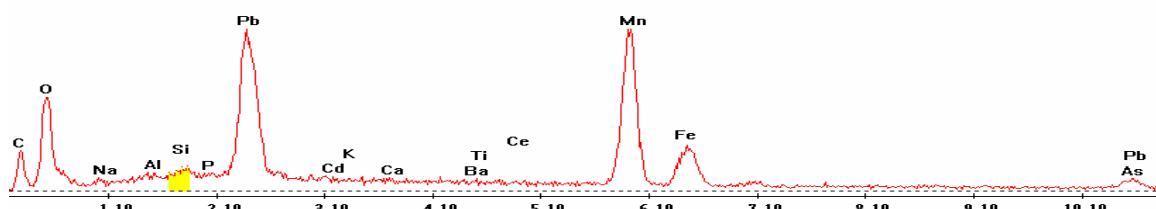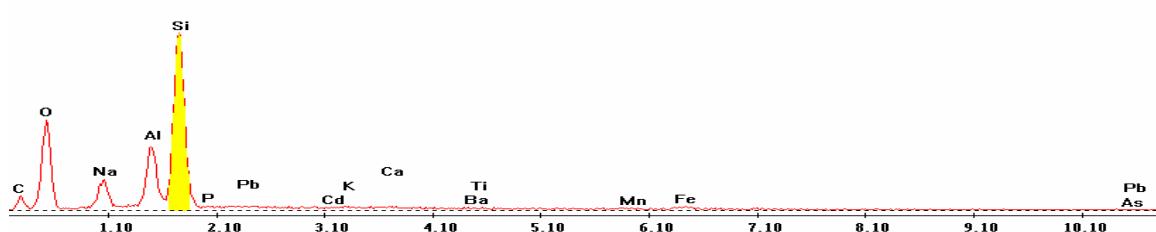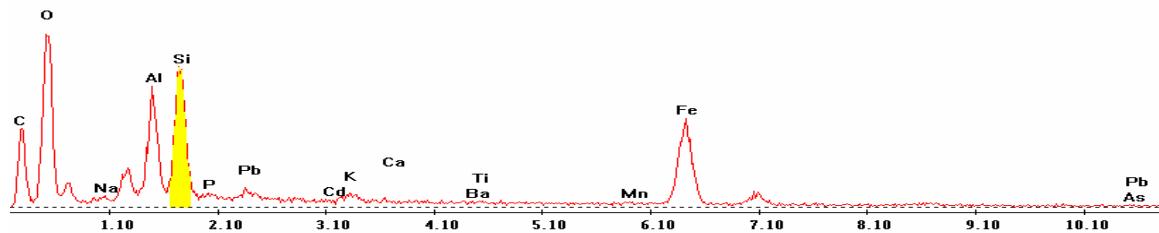Label A: 16apr04 p8c8 354 225 Point 3   Label B: H K

Point 4

c:\edax32\genesis\genspc.spc-/-peakgen.spc
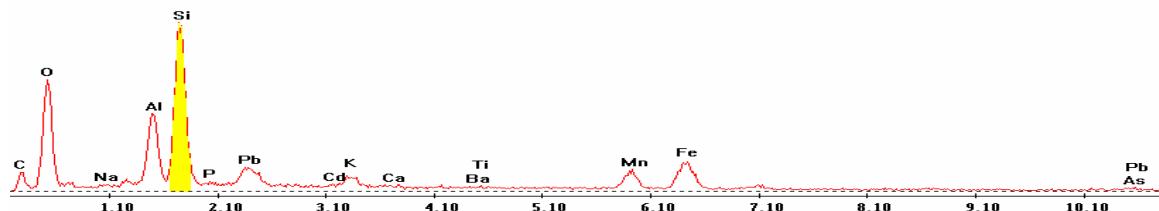
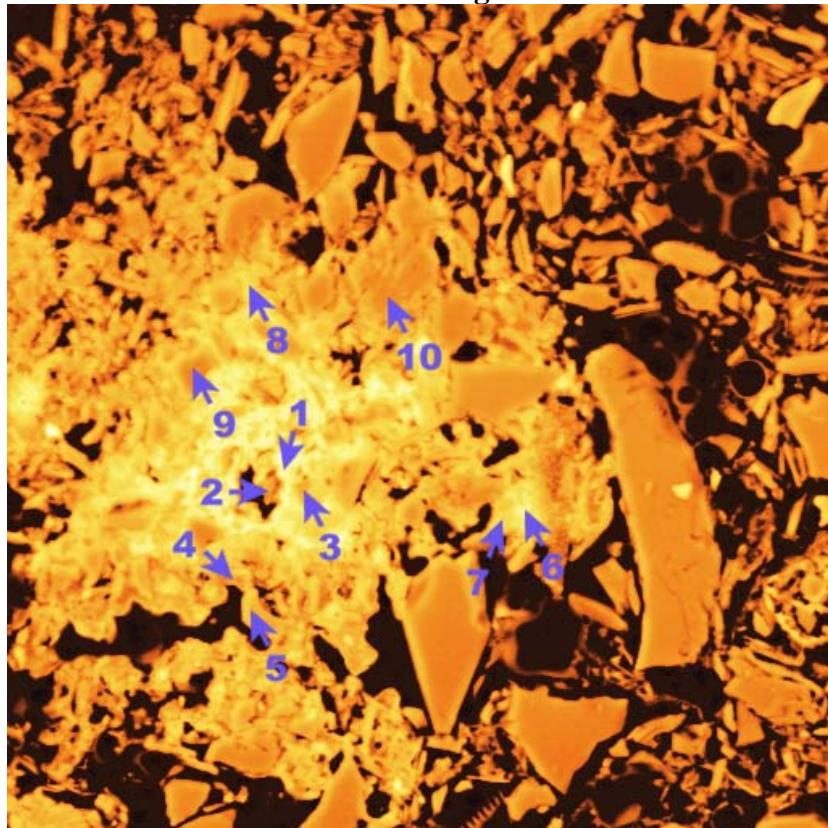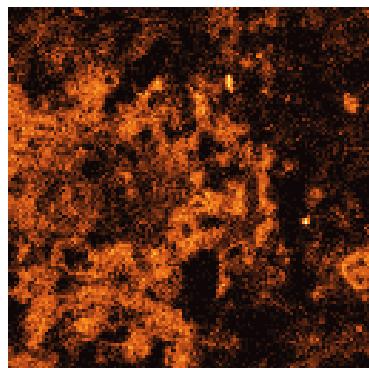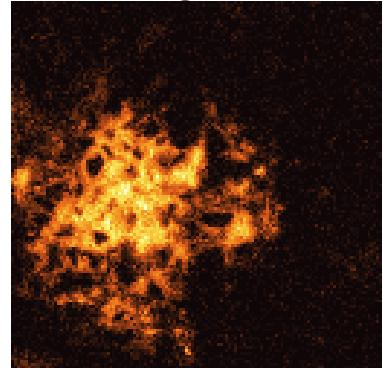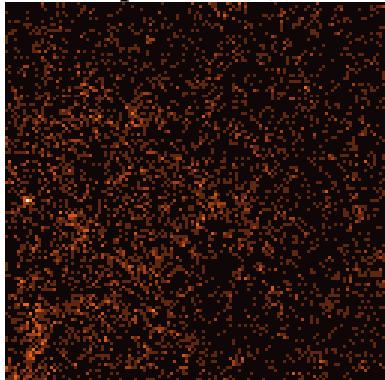Label A: 16apr04 p8c8 354 225 Point 4   Label B: H K

Point 5

c:\edax32\genesis\genspc.spc-/-peakgen.spc
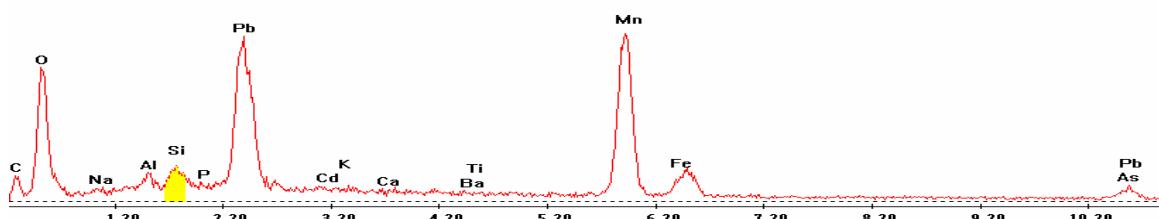
Label A: 16apr04 p8c8 354 225 Point 5   Label B: H K
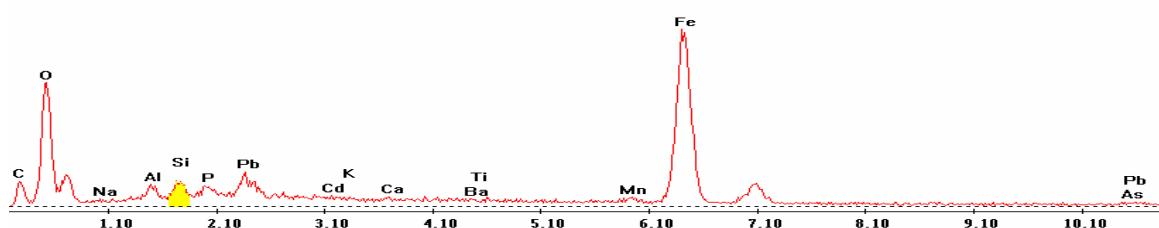
Point 6

Label A: 16apr04 p8c8 354 225 Point 6   Label B: H K

Point 7

c:\edax32\genesis\genspc.spc-/-peakgen.spc
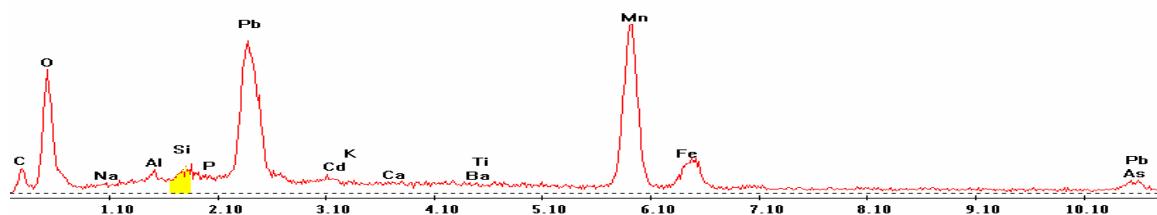
Label A: 16apr04 p8c8 354 225 Point 7   Label B: H K

Point 8

c:\edax32\genesis\genspc.spc-/-peakgen.spc
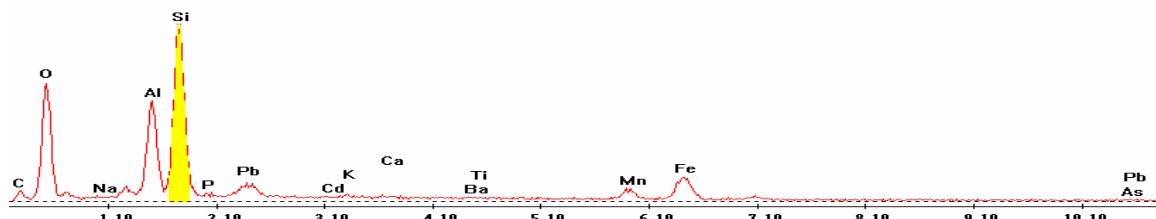
Label A: 16apr04 p8c8 354 225 Point 8   Label B: H K

A-339

Point 9

Point 10

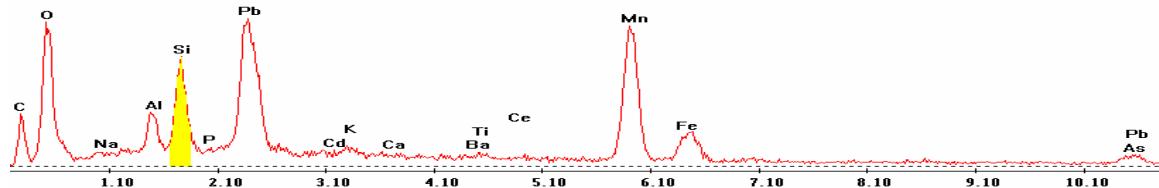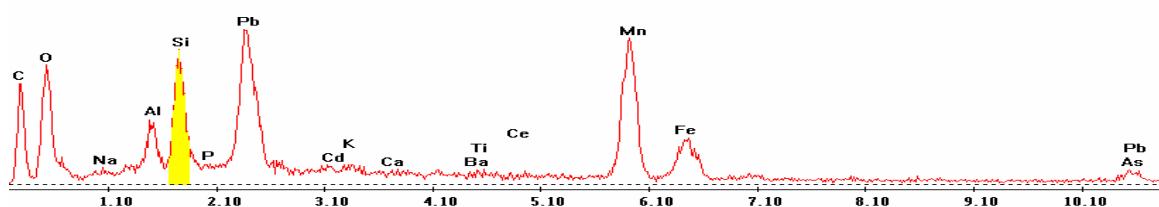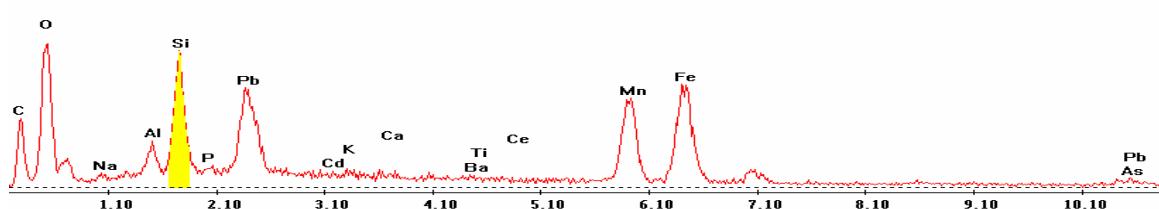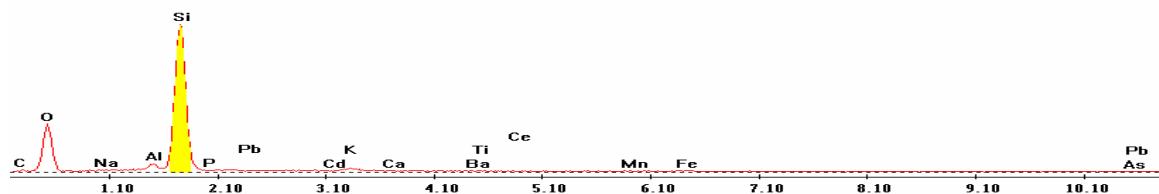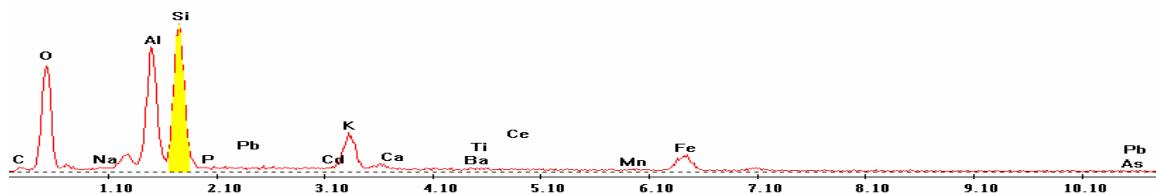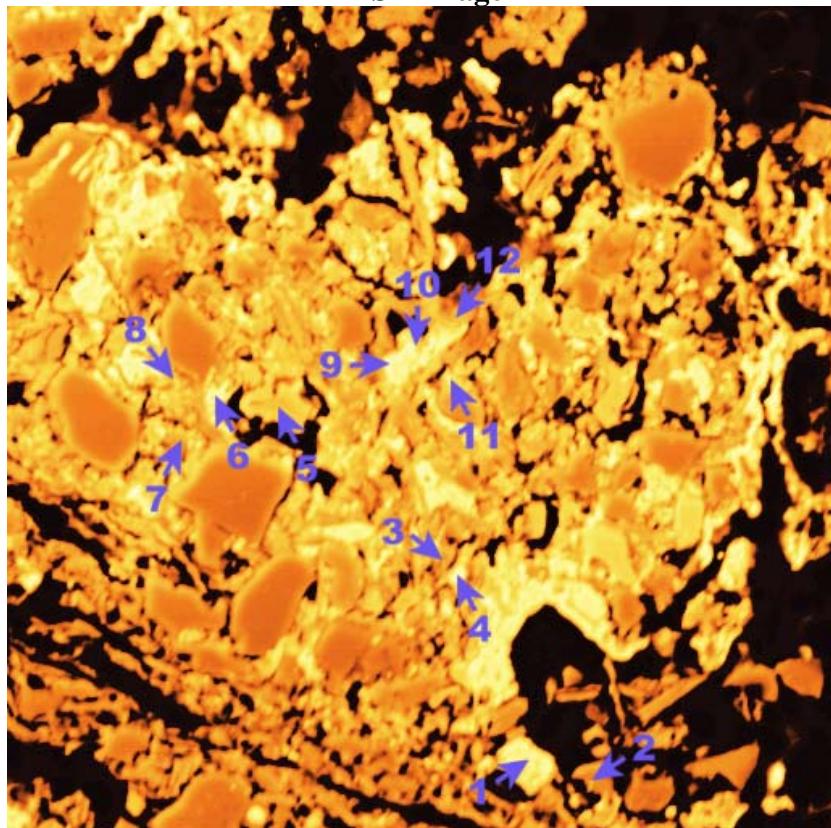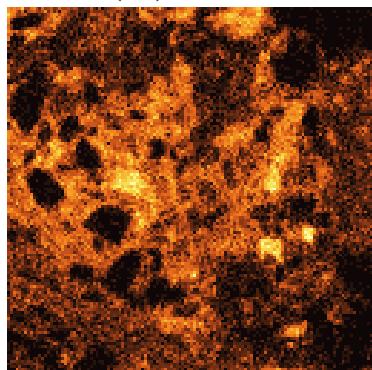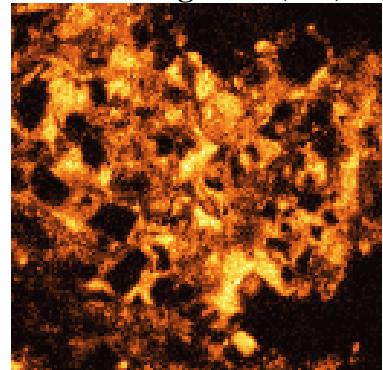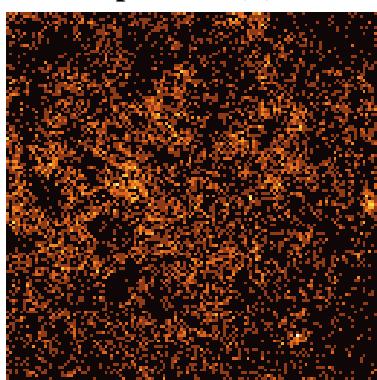# Point 11

A-340

Point 12

A-341

P8C8 – 361, 241
BSE Image

Iron (Fe)
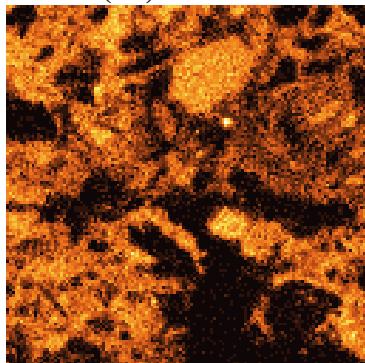
Manganese (Mn)
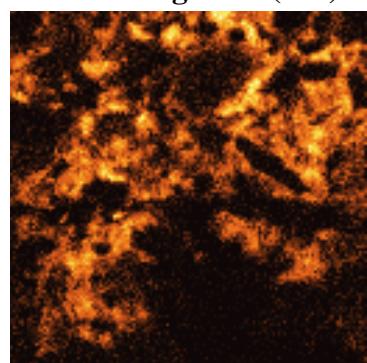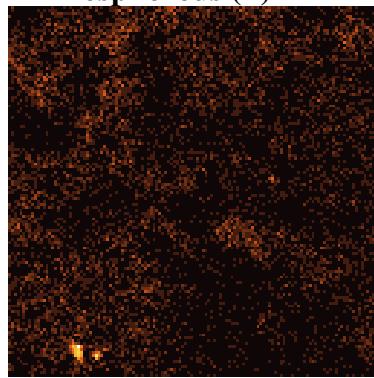
Phosphorous (P)

Lead (Pb)

Silicon (Si)
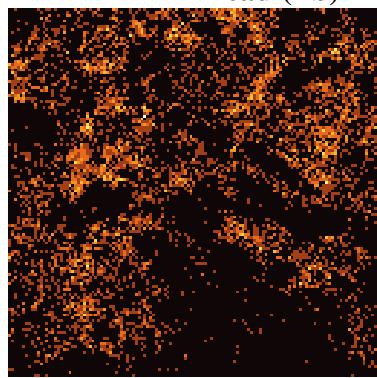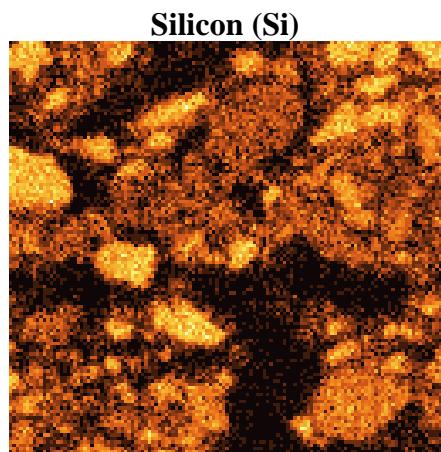
EDS Scan Images by Point

Point 1

Label A: 09APR04 P8C8 361 241 Point 1   Label B: H K
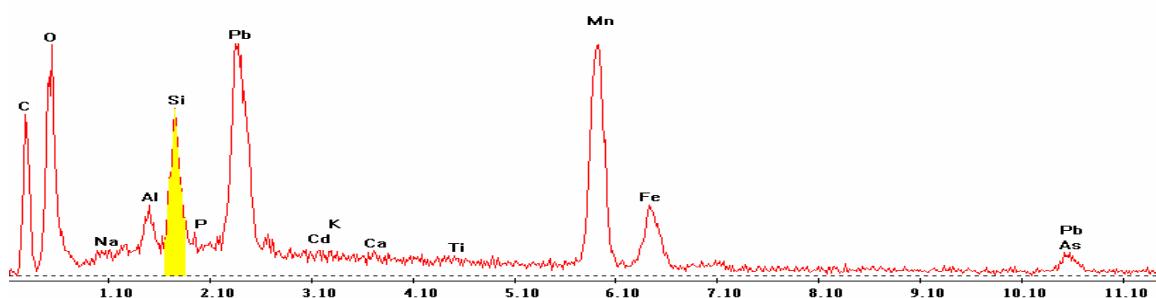
Point 2

Label A: 09APR04 P8C8 361 241 Point 2   Label B: H K

A-343

Point 3

Label A: 09APR04 P8C8 361 241 Point 3   Label B: H K

Point 4

Label A: 09APR04 P8C8 361 241 Point 4   Label B: H K
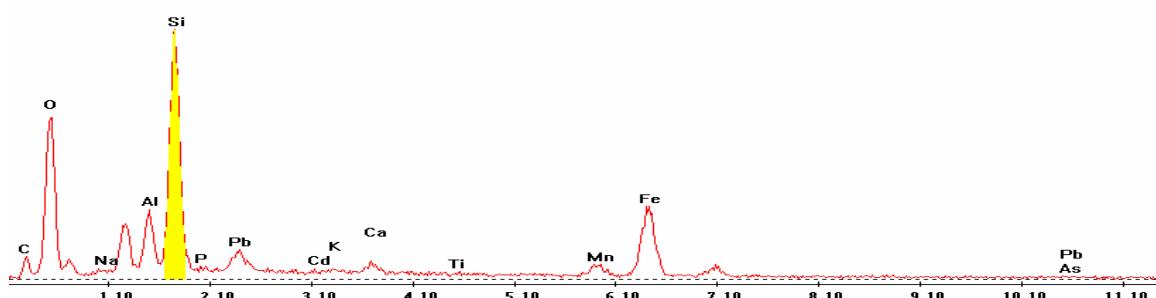
Point 5

Label A: 09APR04 P8C8 361 241 Point 5   Label B: H K
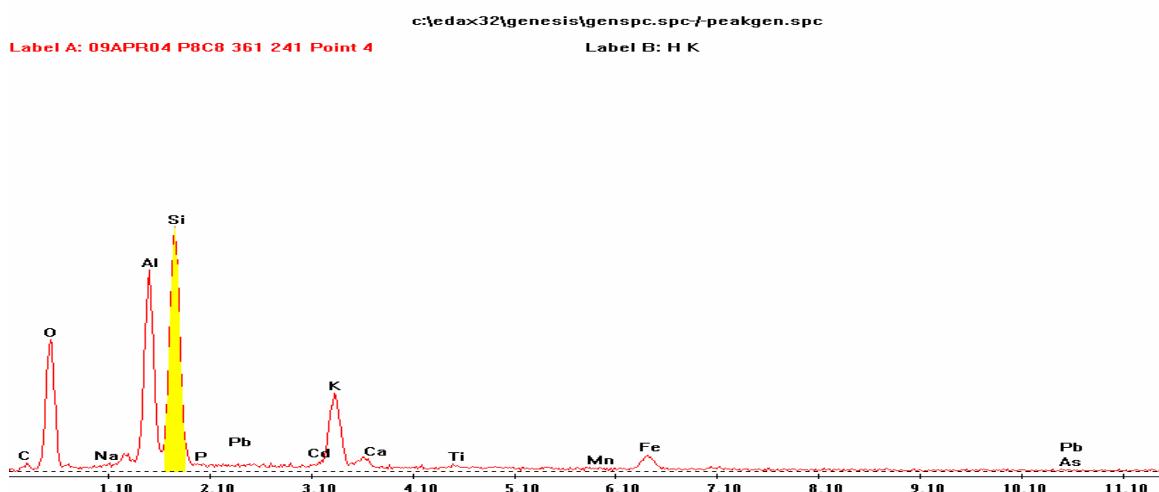
Point 6

Label A: 09APR04 P8C8 361 241 Point 6   Label B: H K

Point 7

Label A: 09APR04 P8C8 361 241 Point 7   Label B: H K

Point 8

Label A: 09APR04 P8C8 361 241 Point 8   Label B: H K

A-345

Point 9

Point 10

Point 11

Point 12

Label B: H K

A-347

P8C8 – 395, 203
**BSE Image**

Iron (Fe)
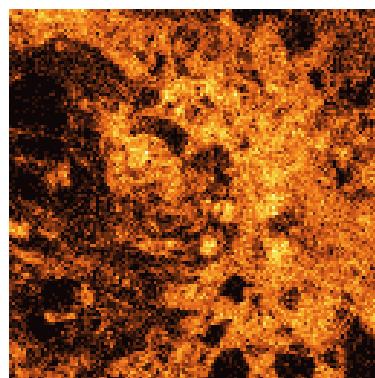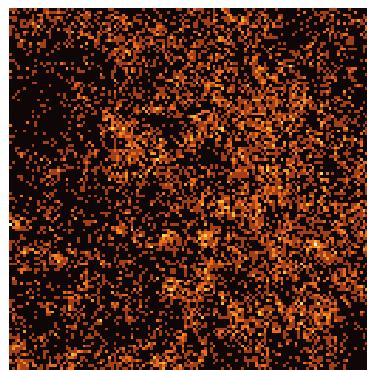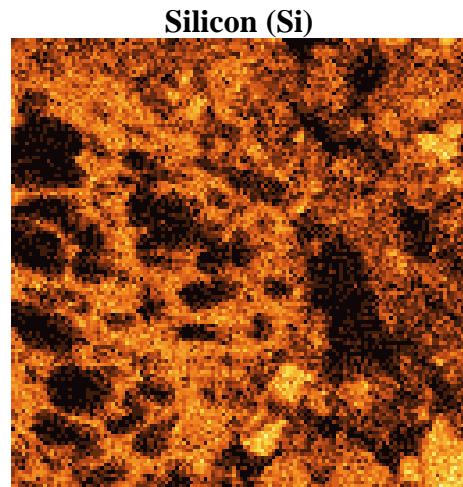
Manganese (Mn)

Phosphorous (P)

Lead (Pb)

Silicon (Si)

EDS Scan Images by Point

Point 1

Point 2

A-349
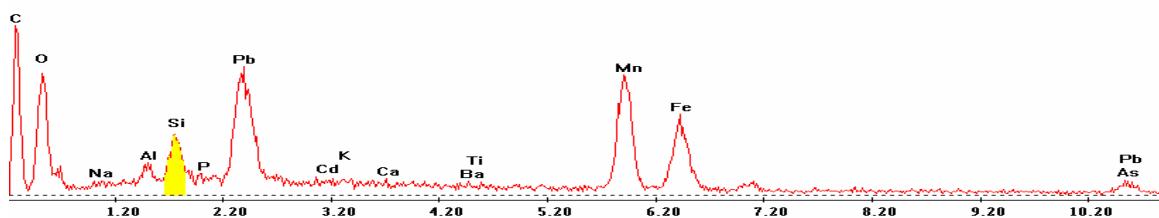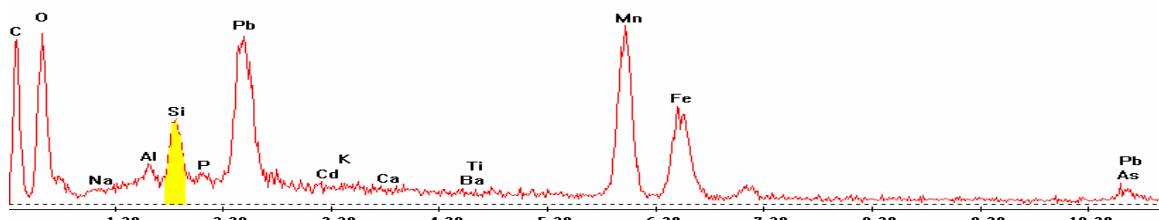
Point 3

Label A: 16apr04 p8c8 395 203 Point 3   Label B: H K
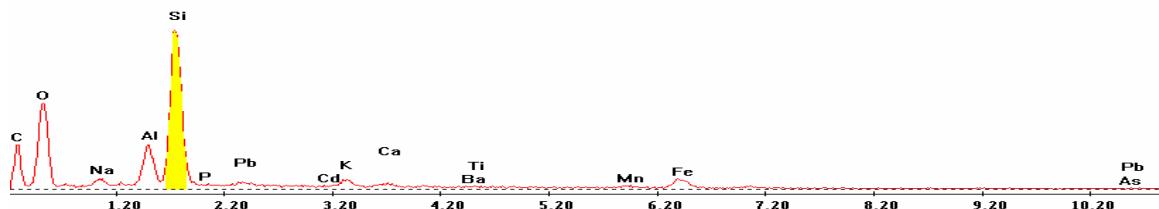
Point 4

Label A: 16apr04 p8c8 395 203 Point 4   Label B: H K
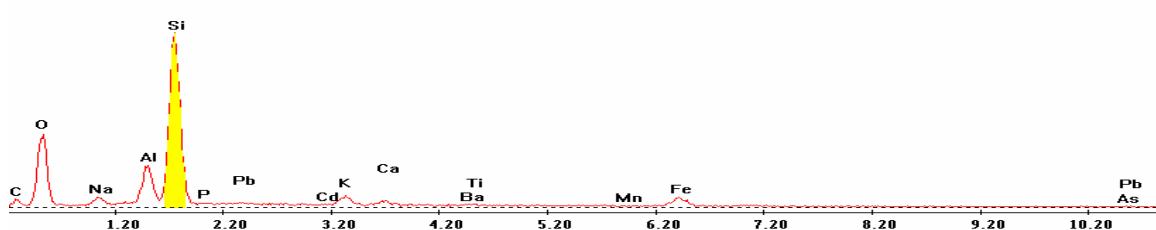
Point 5

Label A: 16apr04 p8c8 395 203 Point 5   Label B: H K
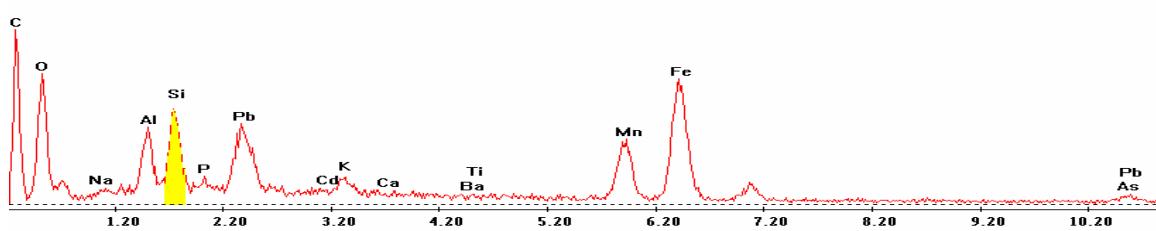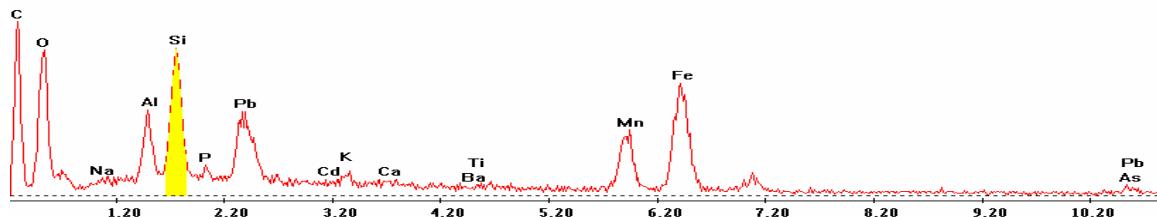
A-350

Point 6

Point 7

Point 8

A-351
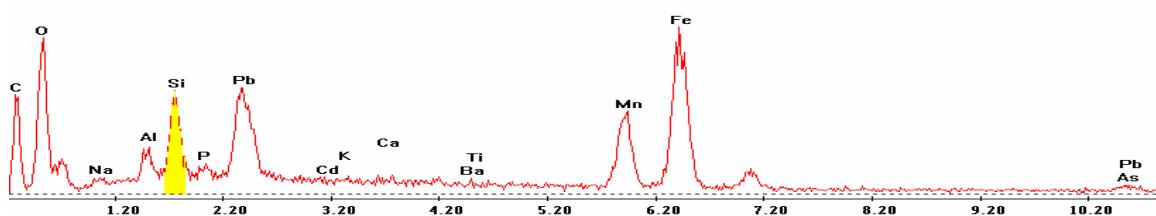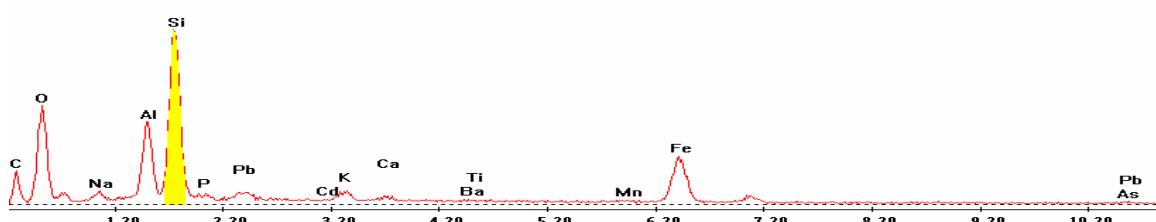
Point 9

Label A: 16apr04 p8c8 395 203 Point 9   Label B: H K
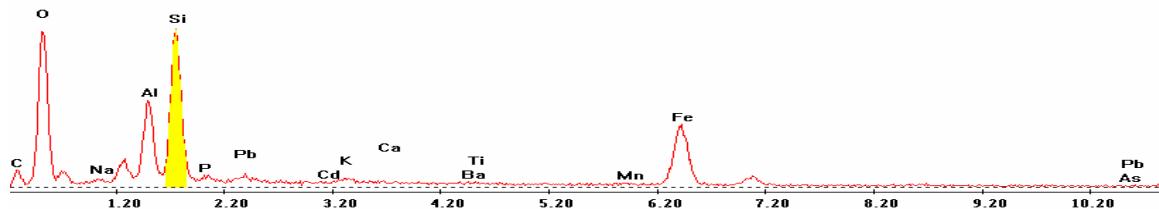
Point 10

Label A: 16apr04 p8c8 395 203 Point 10   Label B: H K
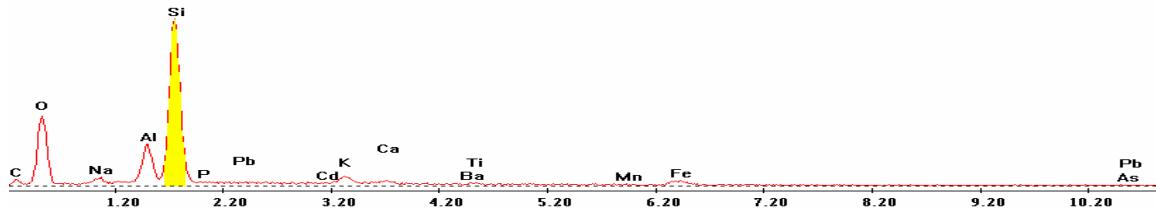
Point 11

Label A: 16apr04 p8c8 395 203 Point 11   Label B: H K

A-352

Point 12

Label A: 16apr04 p8c8 395 203 Point 12   Label B: H K

Point 13

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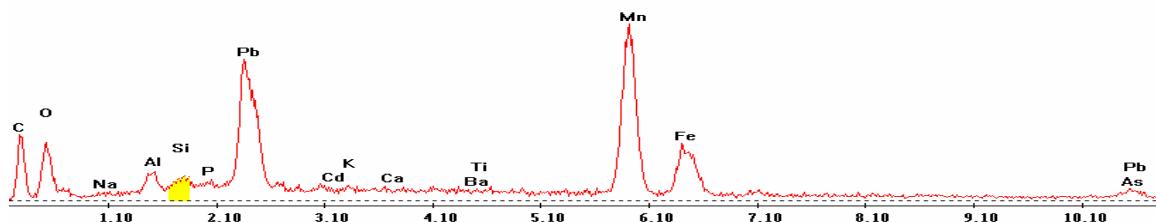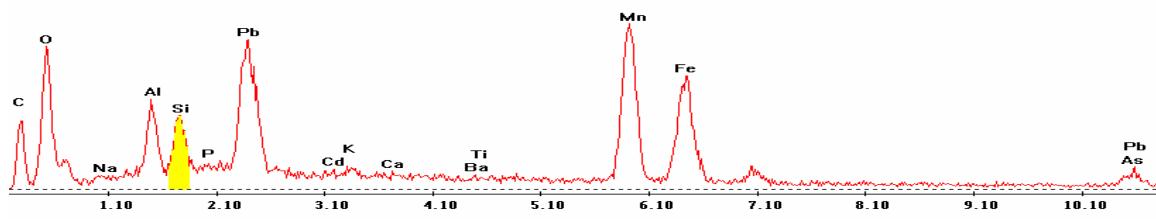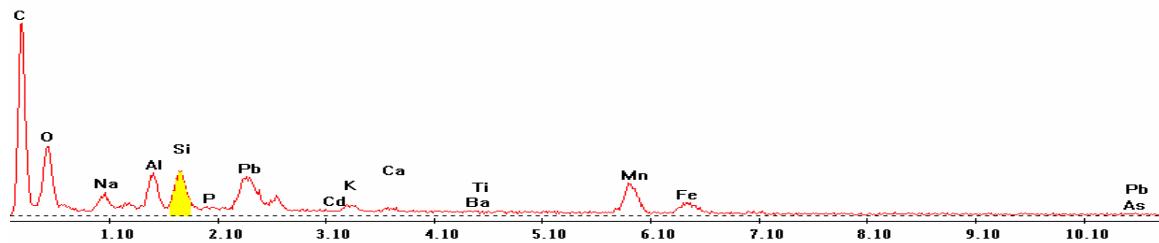
Label A: 16apr04 p8c8 395 203 Point 13   Label B: H K

Point 14

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Label A: 16apr04 p8c8 395 203 Point 14   Label B: H K
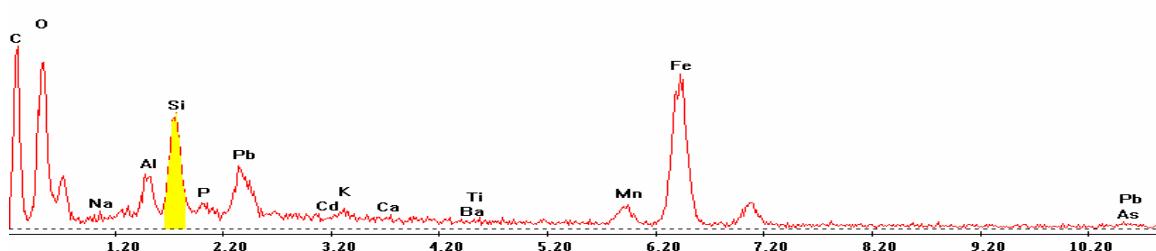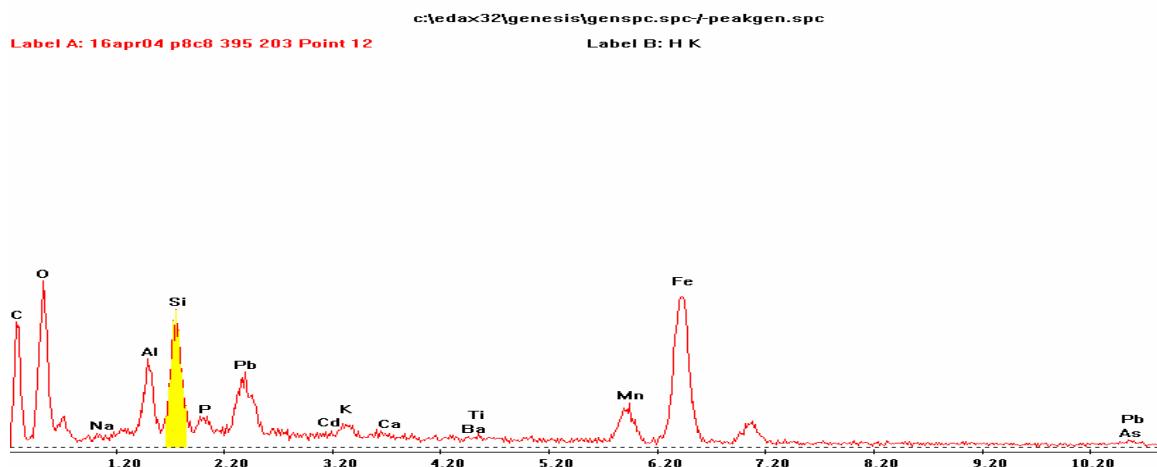
P8C8 – 399, 204
**BSE Image**

Iron (Fe)
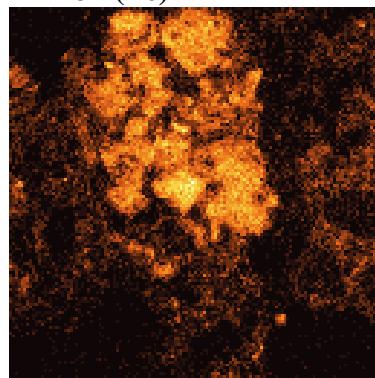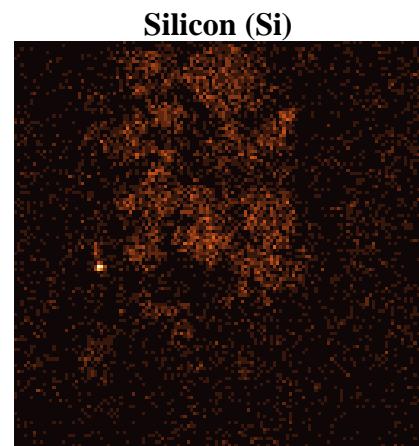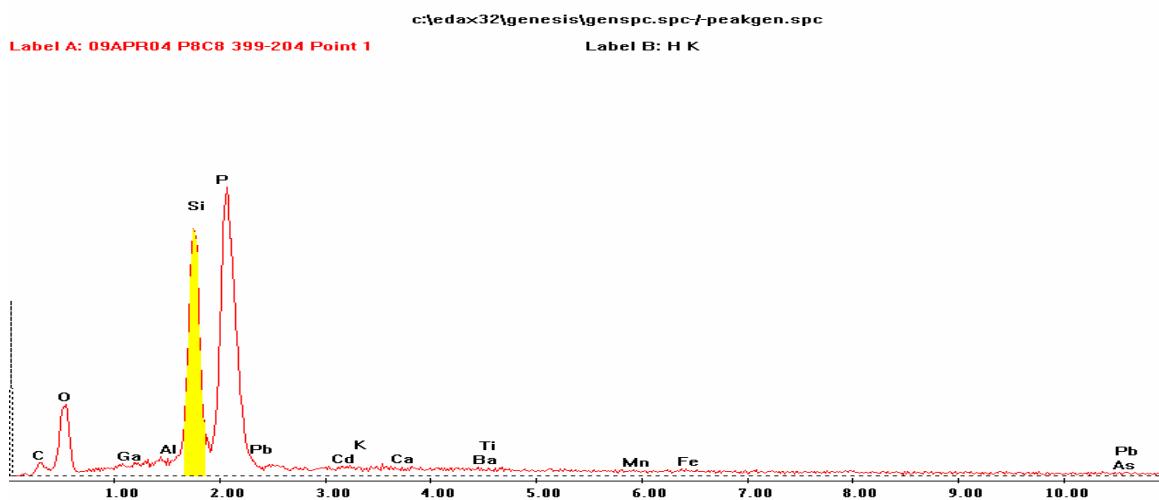
Manganese (Mn)

Phosphorous (P)

Lead (Pb)

Silicon (Si)

EDS Scan Images by Point

Point 1

c:\edax32\genesis\genspc.spc-/-peakgen.spc

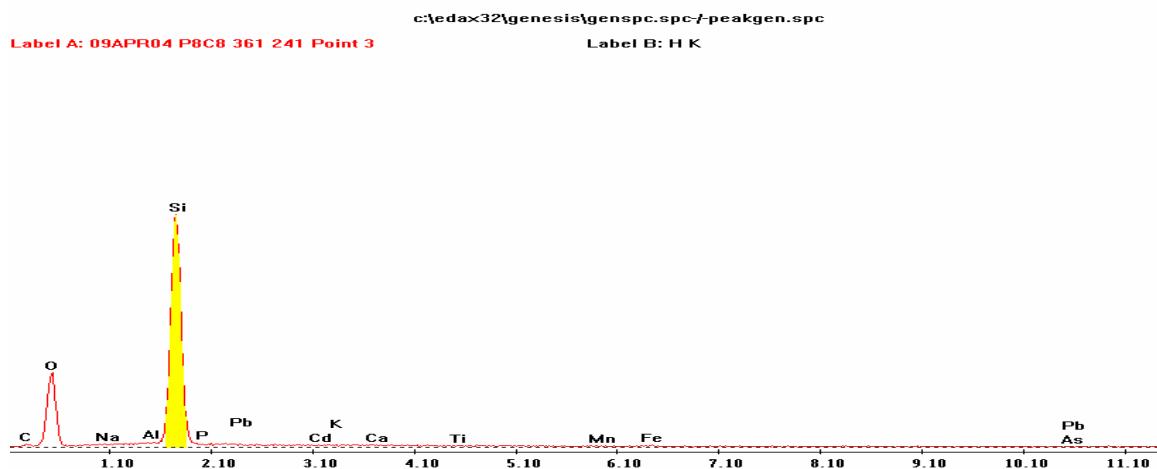Label A: 09APR04 P8C8 399-204 Point 1   Label B: H K

Point 2

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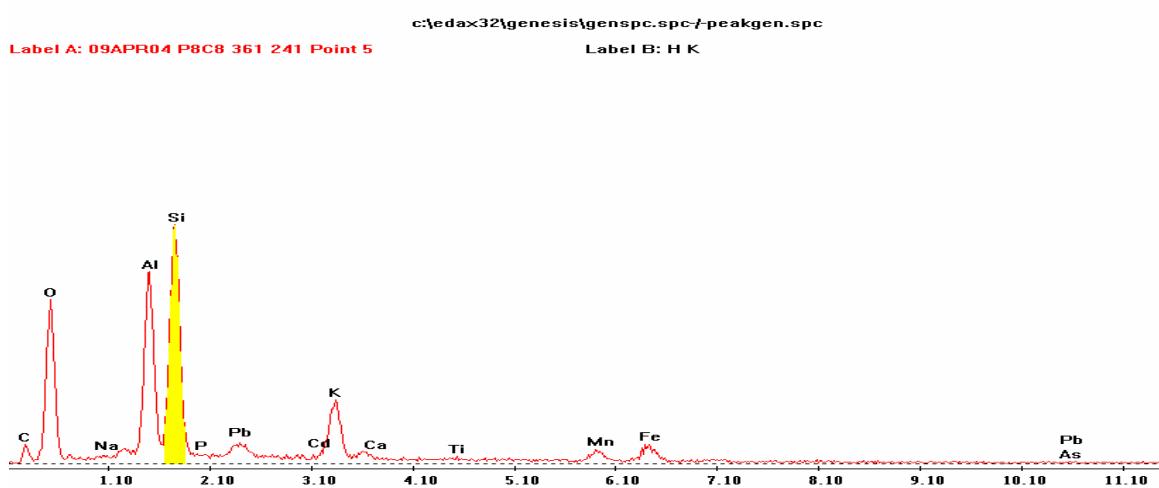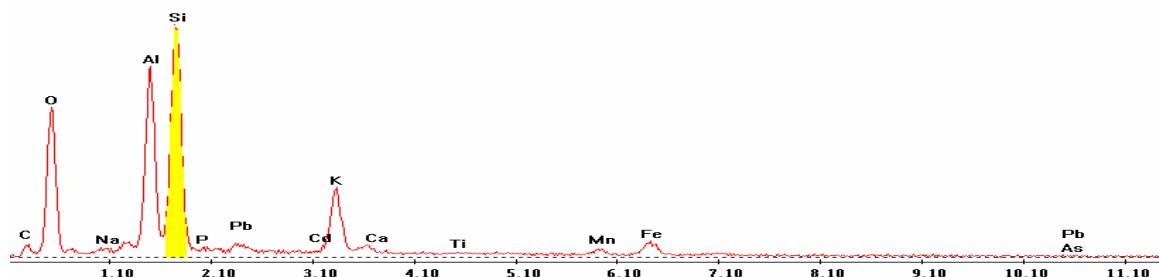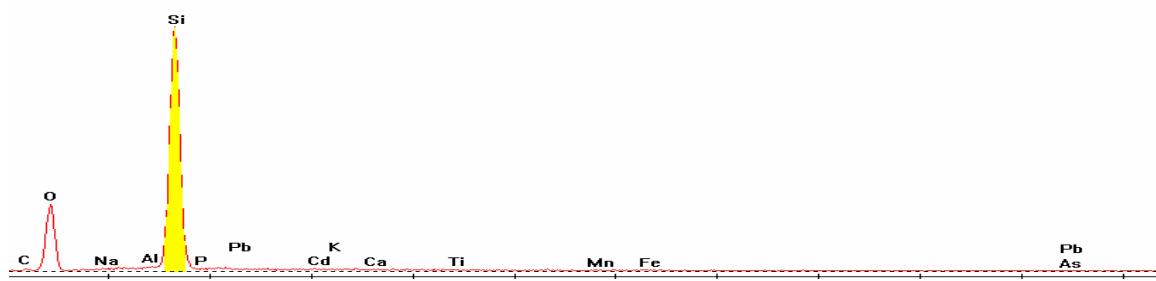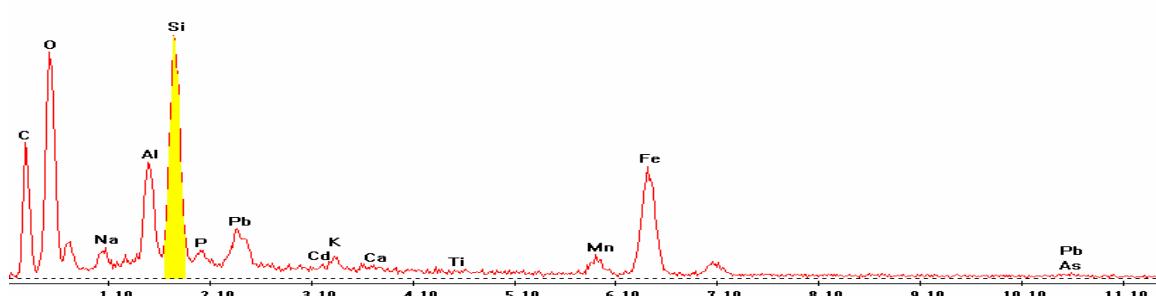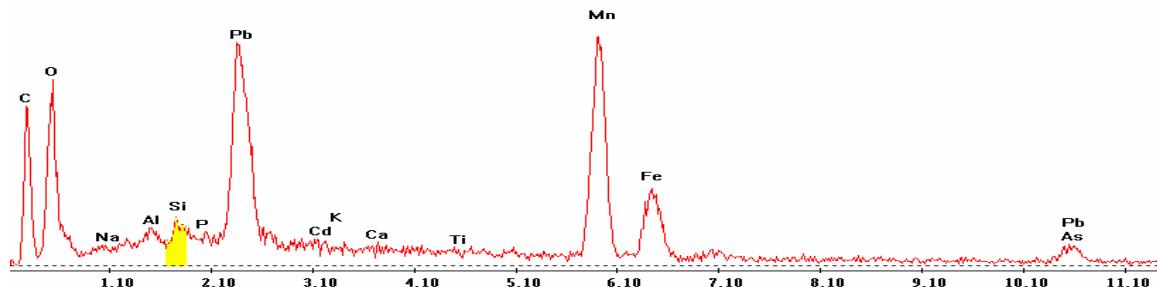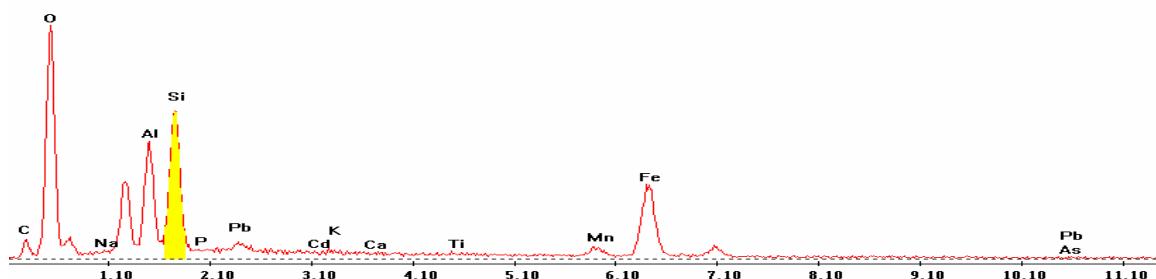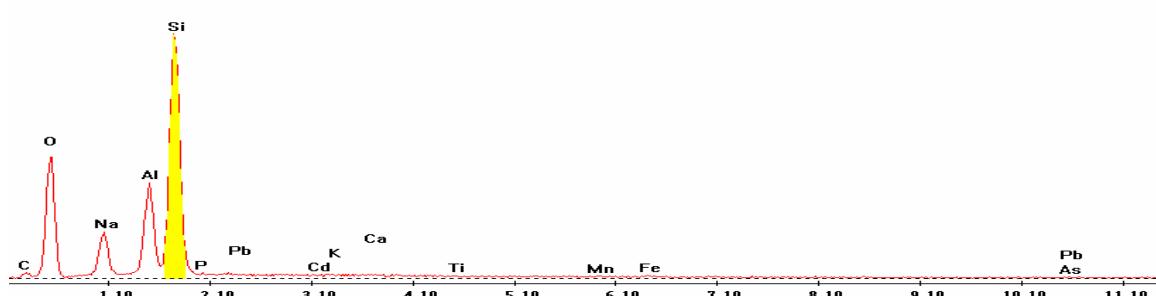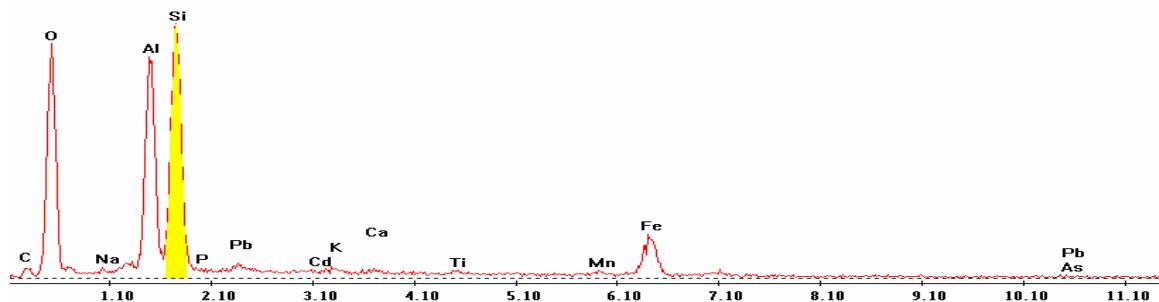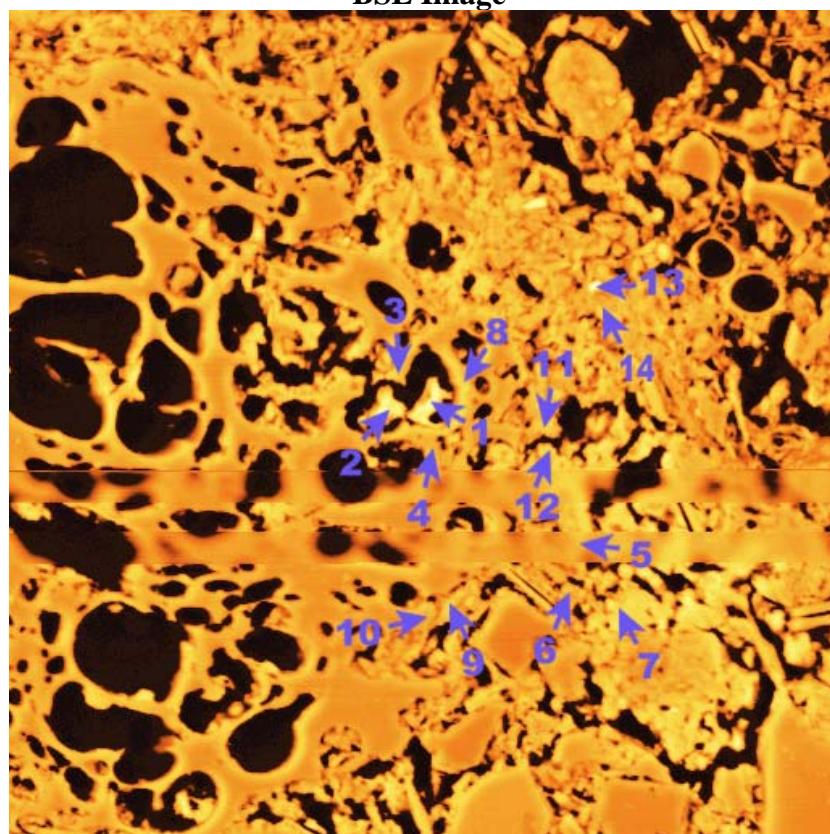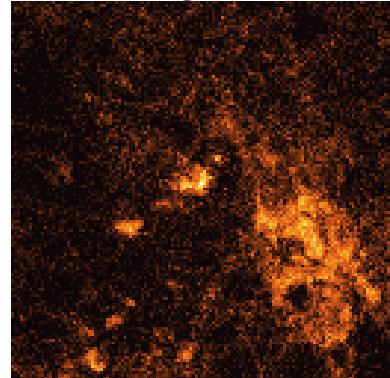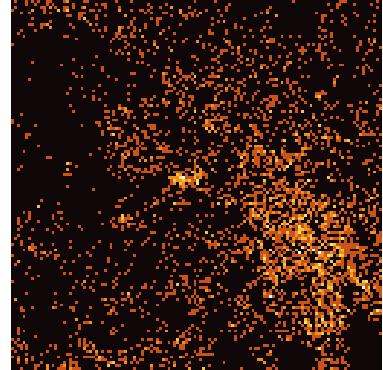Label A: 09APR04 P8C8 399-204 Point 2   Label B: H K

Point 3

Point 4

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Point 5

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A-356

Point 6

Label A: 09APR04 P8C8 399-204 Point 6   Label B: H K

Point 7

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Label A: 09APR04 P8C8 399-204 Point 7   Label B: H K

Point 8

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Label A: 09APR04 P8C8 399-204 Point 8   Label B: H K

A-357
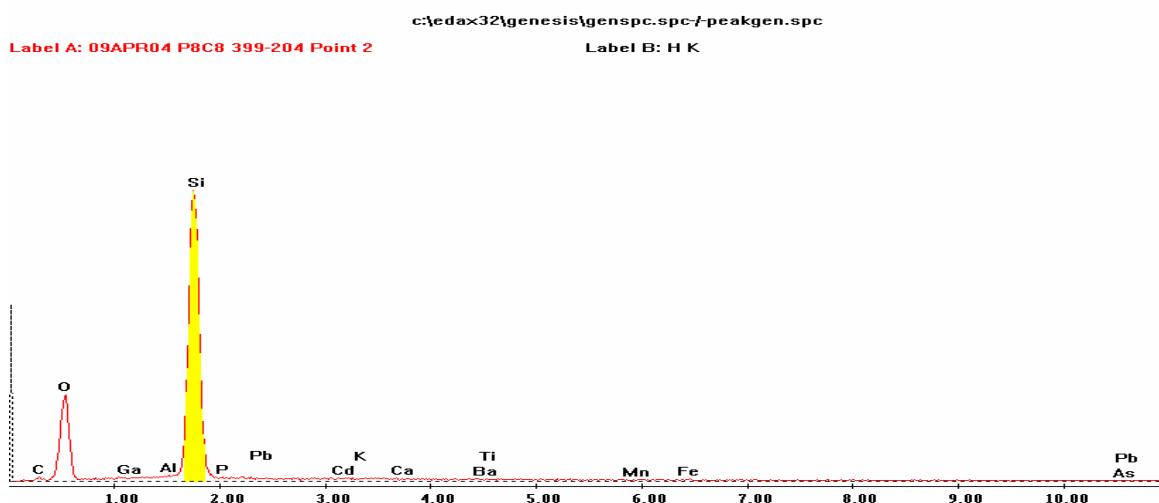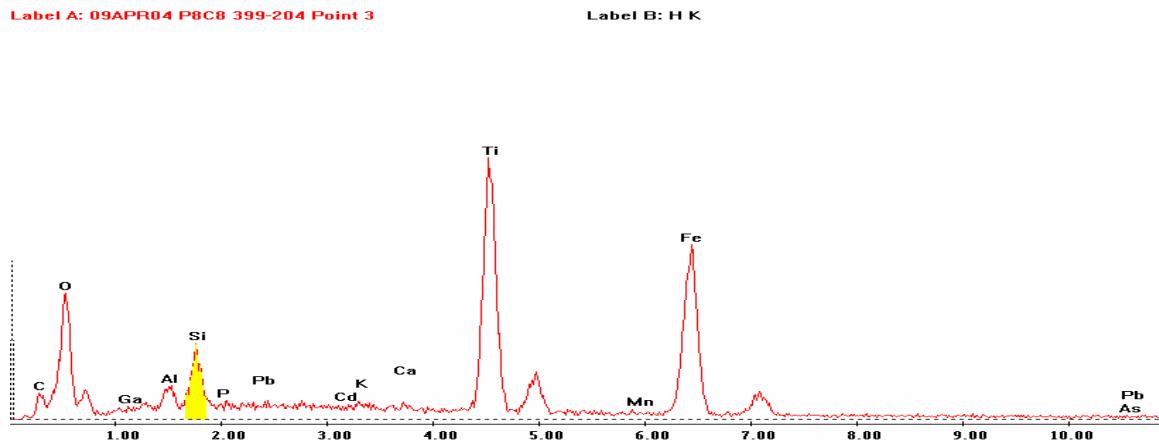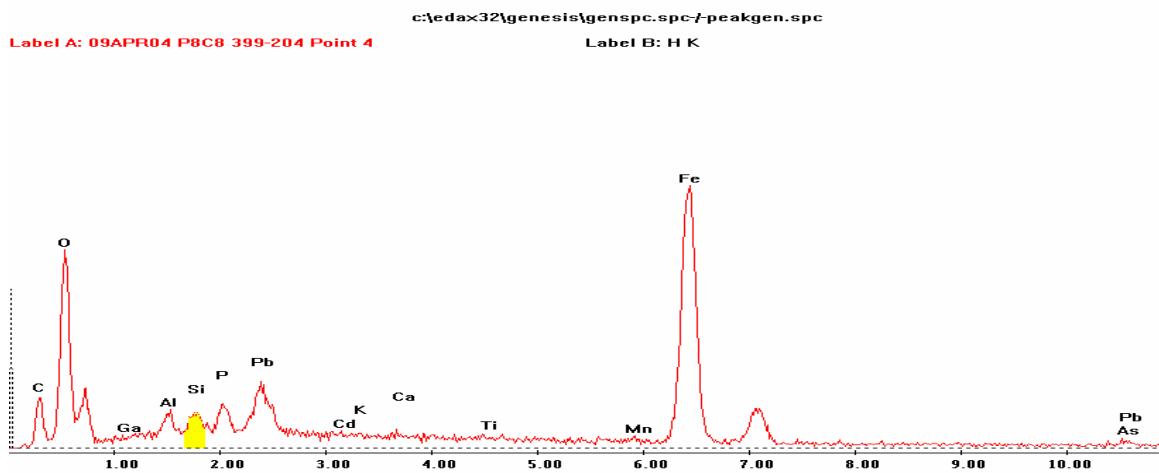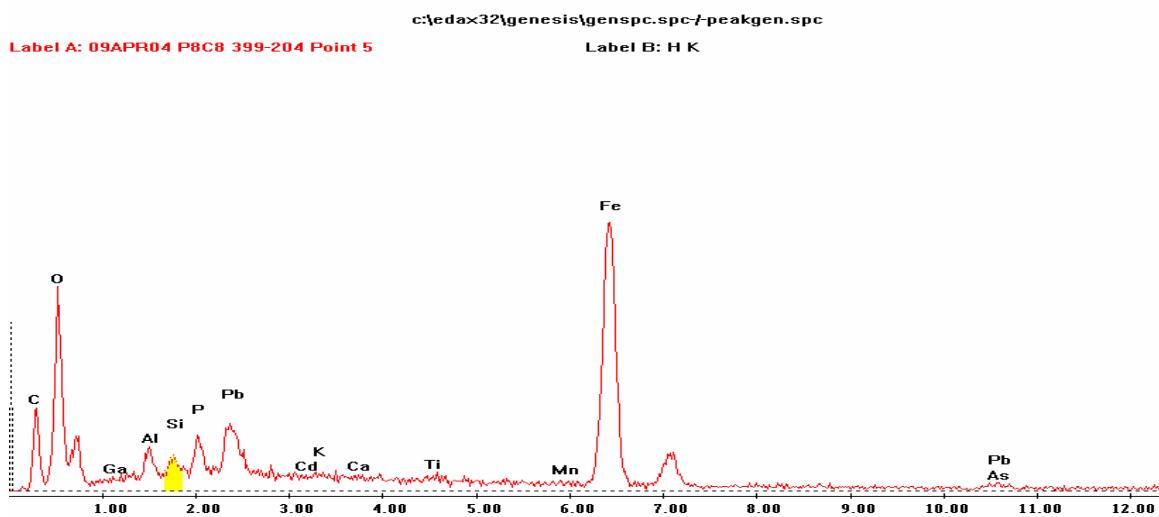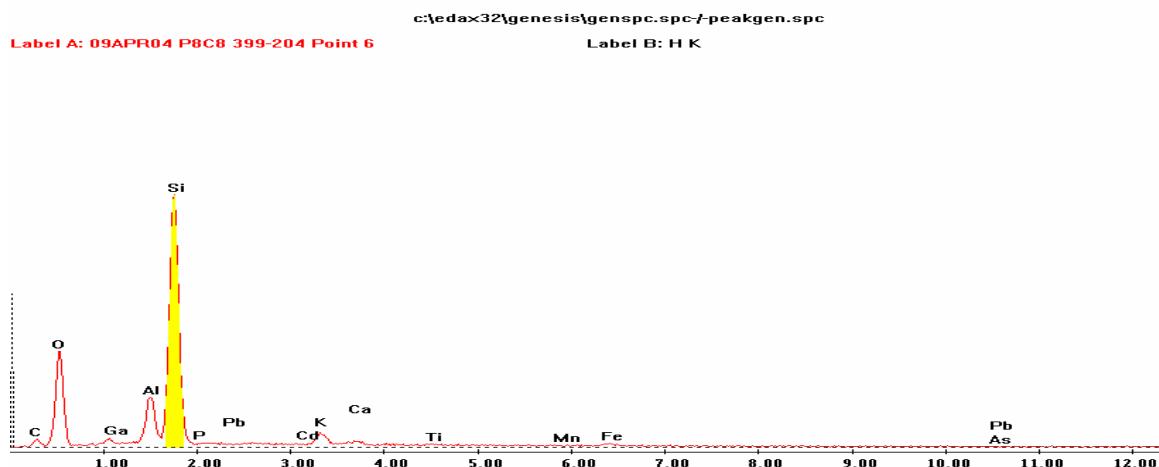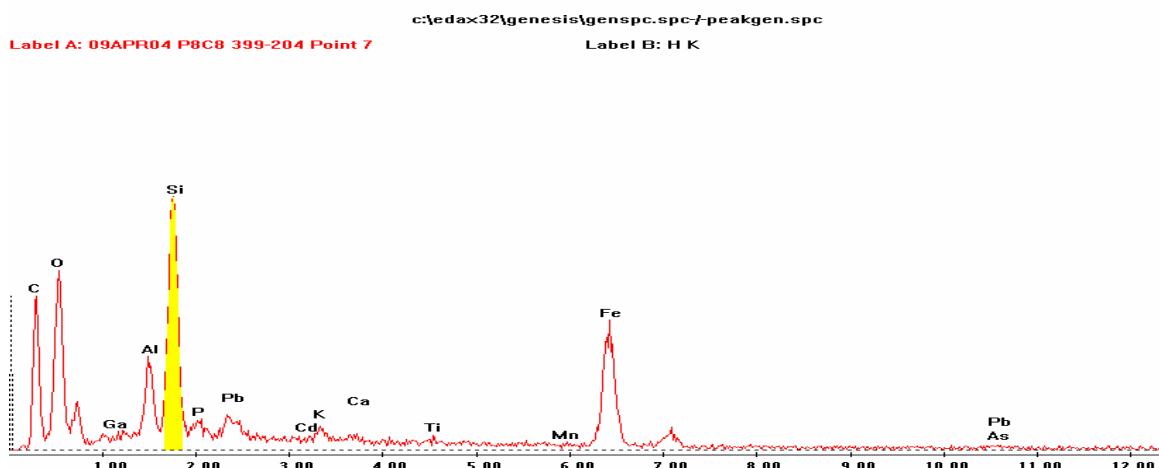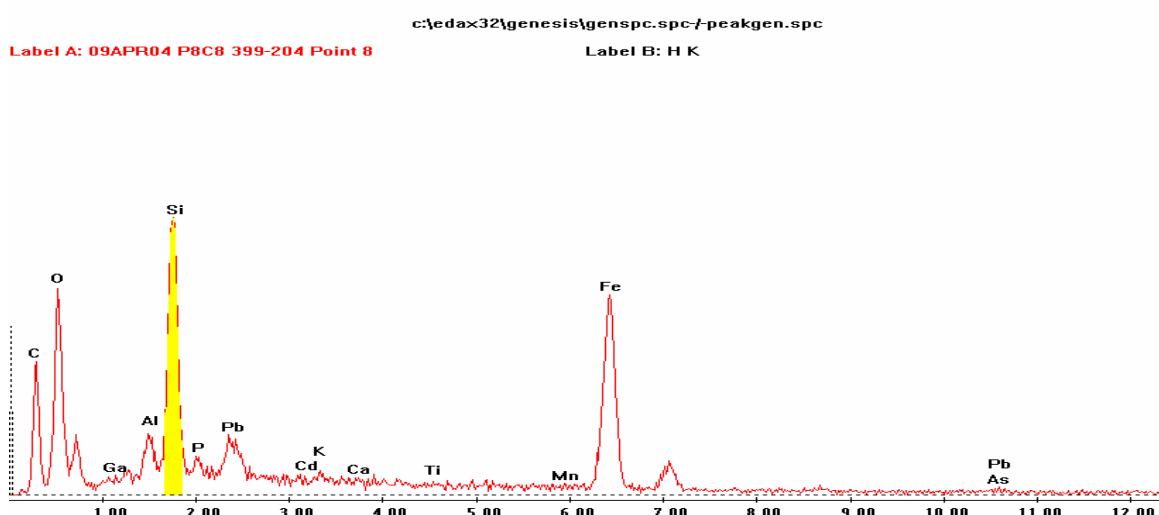
Point 9

Label A: 09APR04 P8C8 399-204 Point 9   Label B: H K

Point 10

Label A: 09APR04 P8C8 399-204 Point 10   Label B: H K

A-358

P8C8 – 413, 208
BSE Image
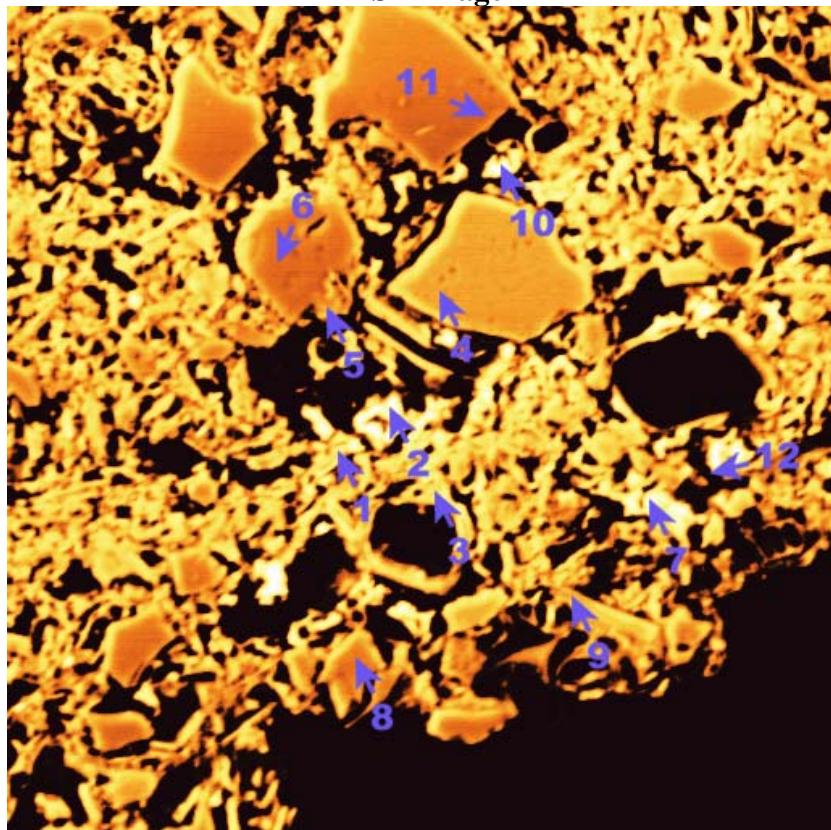
Iron (Fe)

Manganese (Mn)
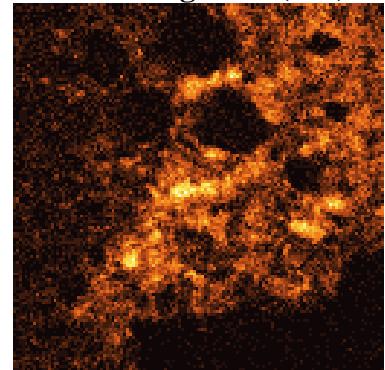
Silicon (Si)
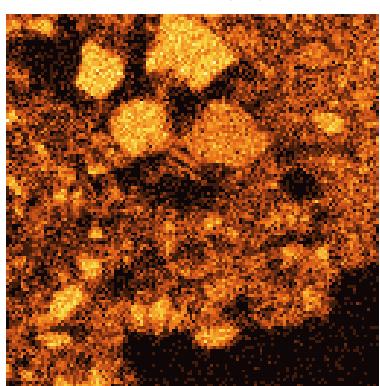
Lead (Pb)

Phosphorus (P)
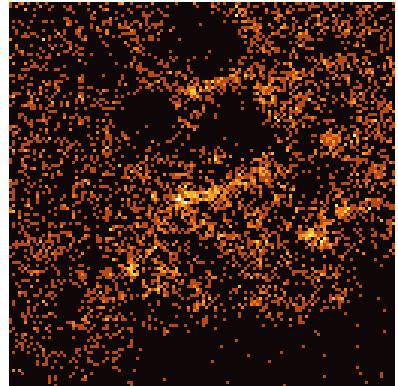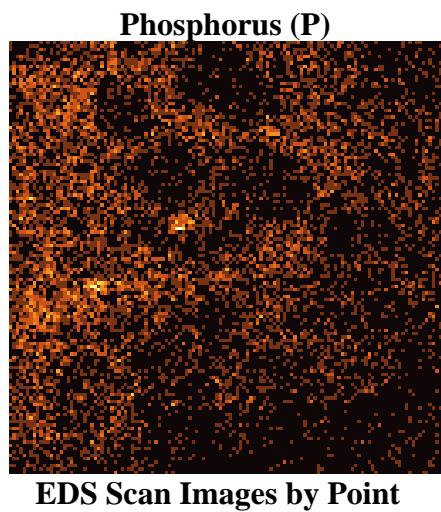
EDS Scan Images by Point

Point 1

Label A: 09APR04 P8C8 413 208 Point 1   Label B: H K
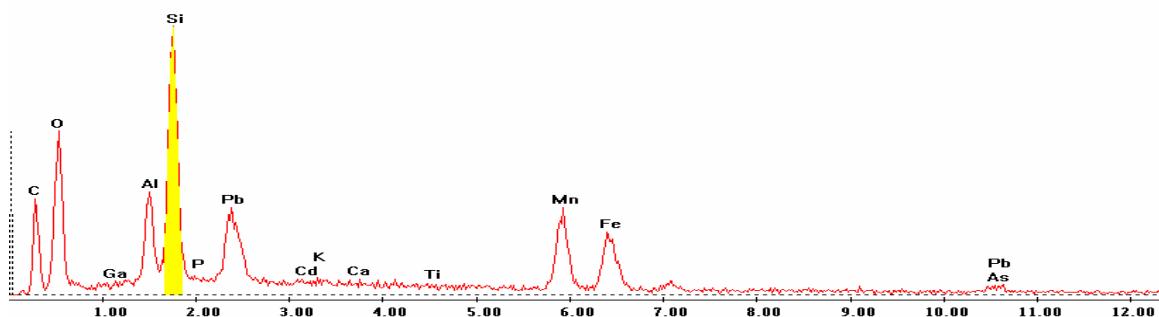
Point 2

Label A: 09APR04 P8C8 413 208 Point 2   Label B: H K

A-360

Point 3

Label A: 09APR04 P8C8 413 208 Point 3   Label B: H K

Point 4

Label A: 09APR04 P8C8 413 208 Point 4   Label B: H K

Point 5

Label A: 09APR04 P8C8 413 208 Point 5   Label B: H K

A-361
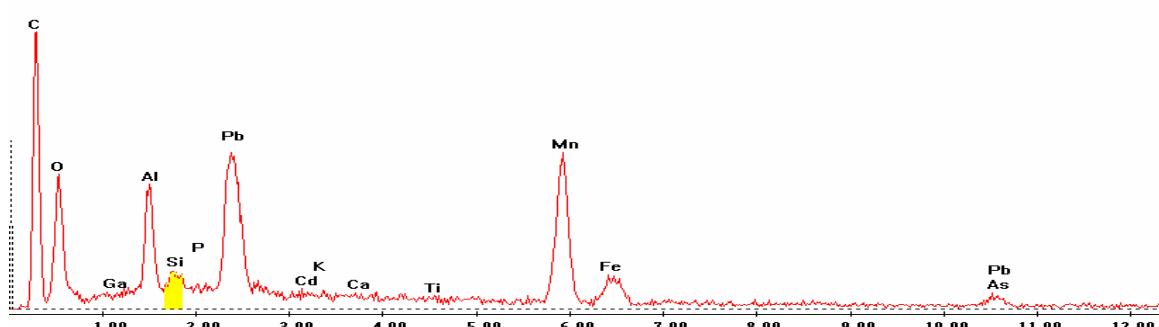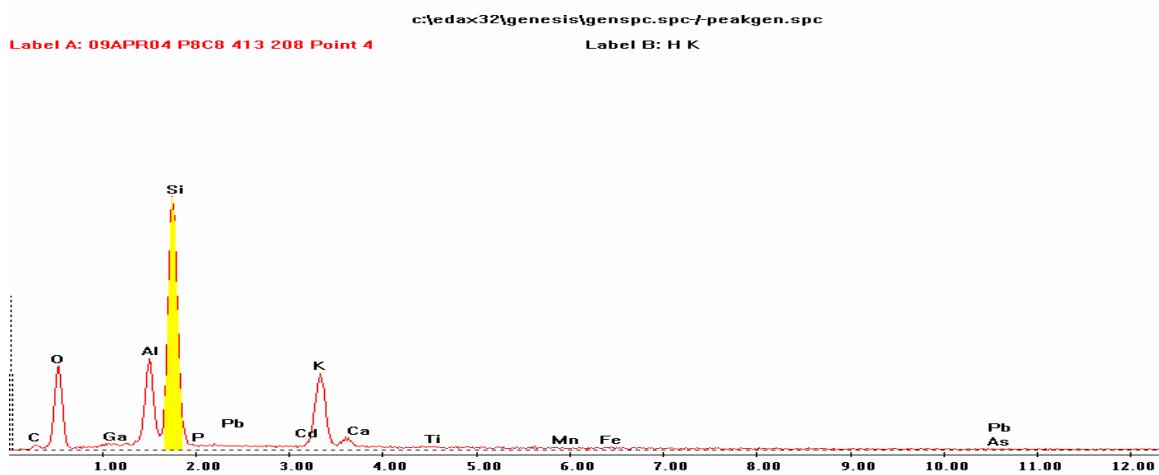
Point 6

Label A: 09APR04 P8C8 413 208 Point 6   Label B: H K
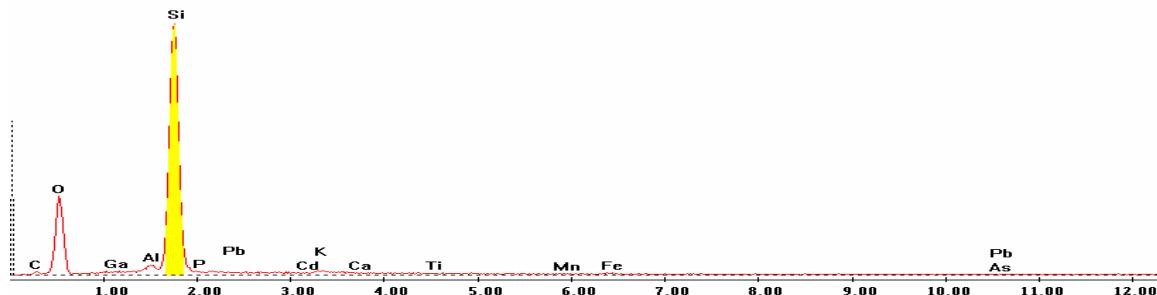
Point 7

Label A: 09APR04 P8C8 413 208 Point 7   Label B: H K
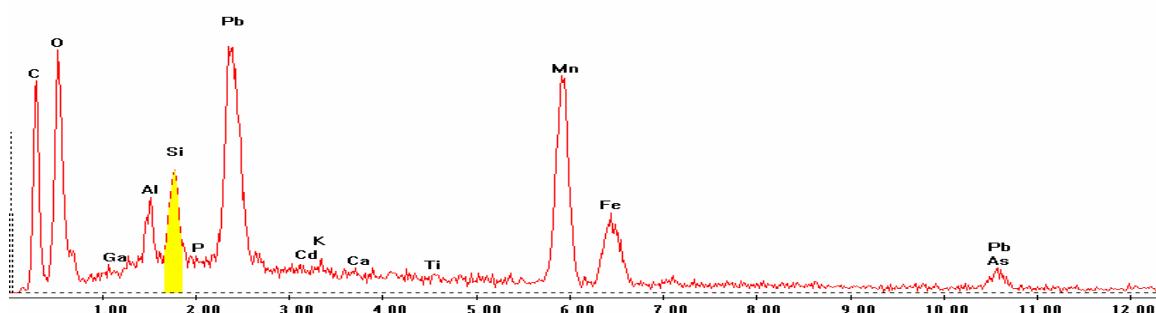
Point 8

Label A: 09APR04 P8C8 413 208 Point 8   Label B: H K

Point 9

Label A: 09APR04 P8C8 413 208 Point 9   Label B: H K

Point 10

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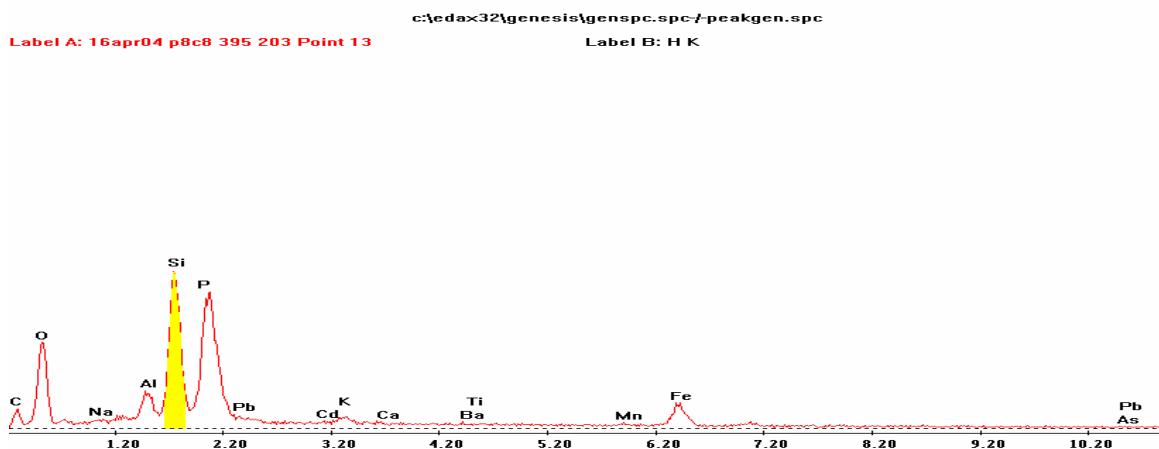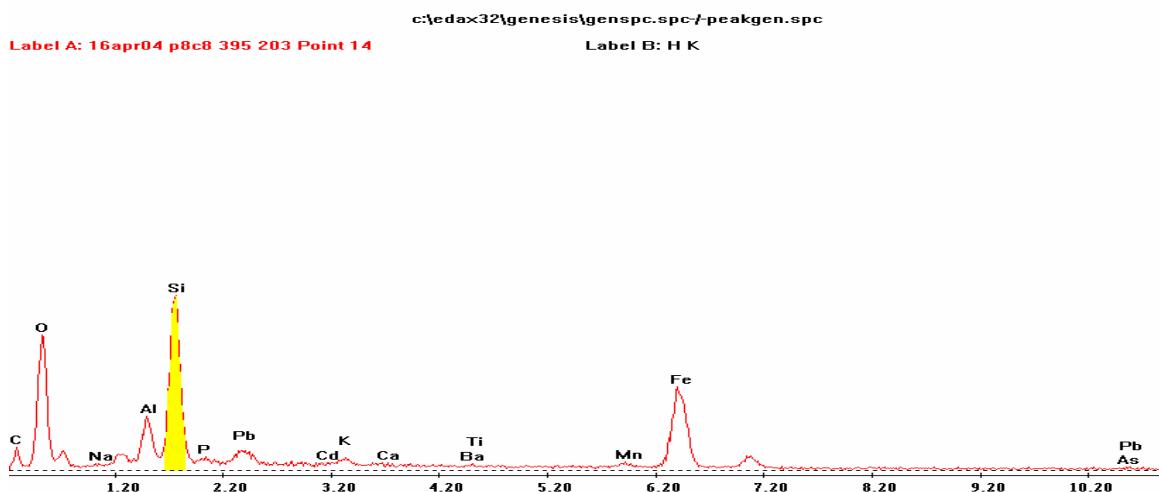Label A: 09APR04 P8C8 413 208 Point 10   Label B: H K

Point 11

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Label A: 09APR04 P8C8 413 208 Point 11   Label B: H K

A-363
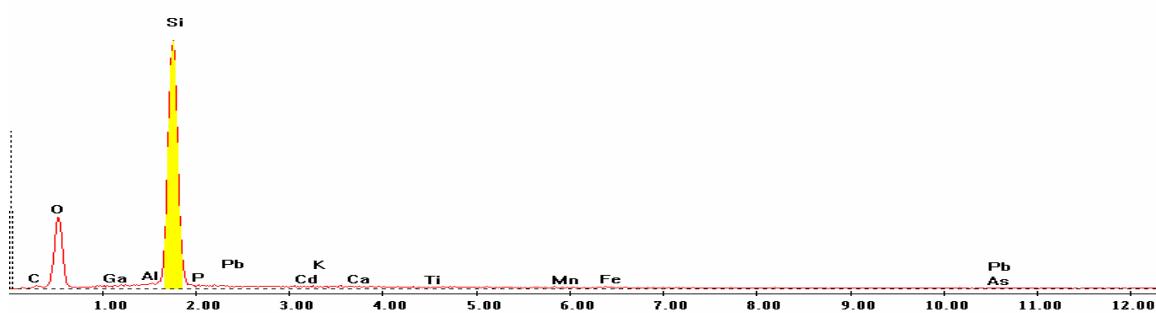
Point 12

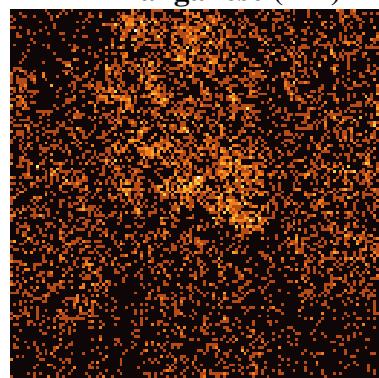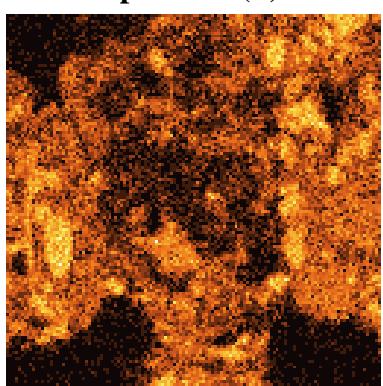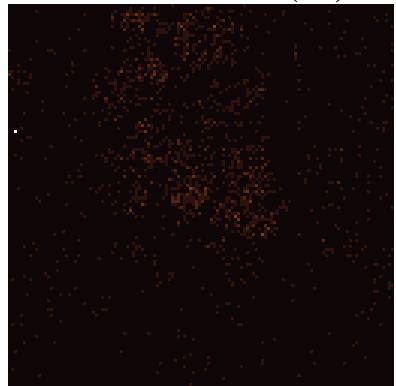**Label A: 09APR04 P8C8 413 208 Point 12**   Label B: H K


A-364

P8C8 – 429, 346
BSE Image
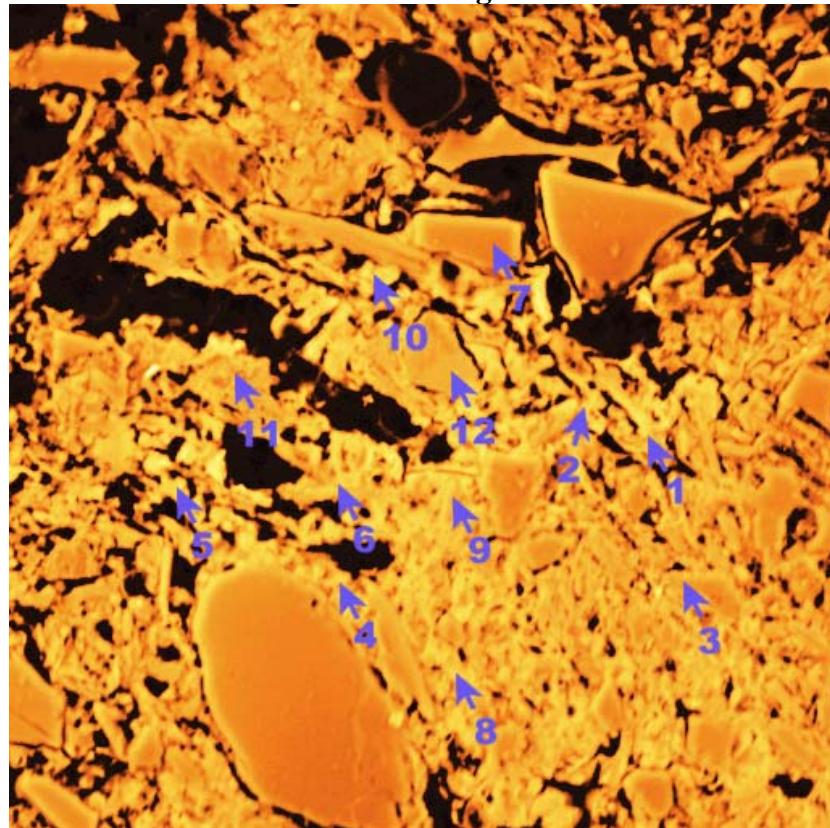
Iron (Fe)
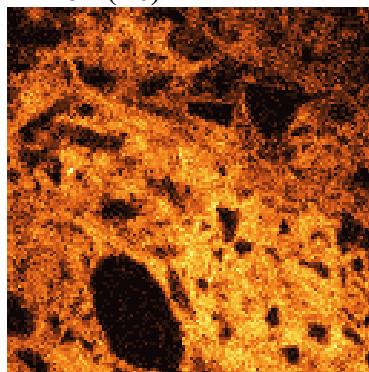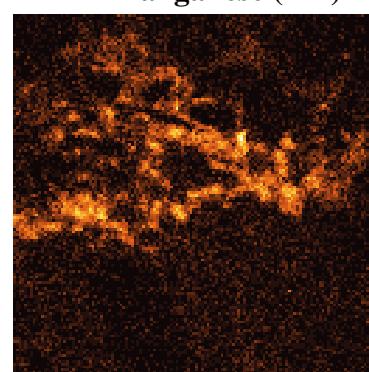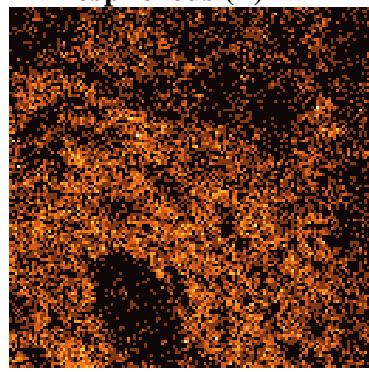
Manganese (Mn)

Phosphorous (P)

Lead (Pb)

Silicon (Si)
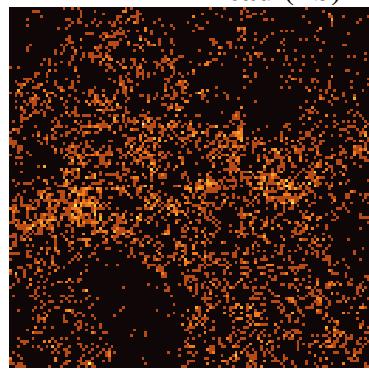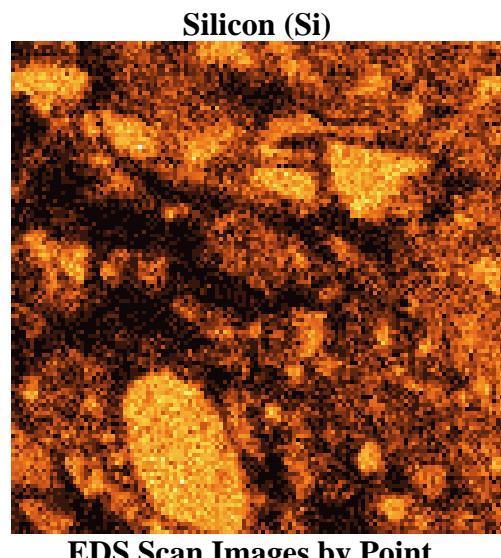
EDS Scan Images by Point

Point 1

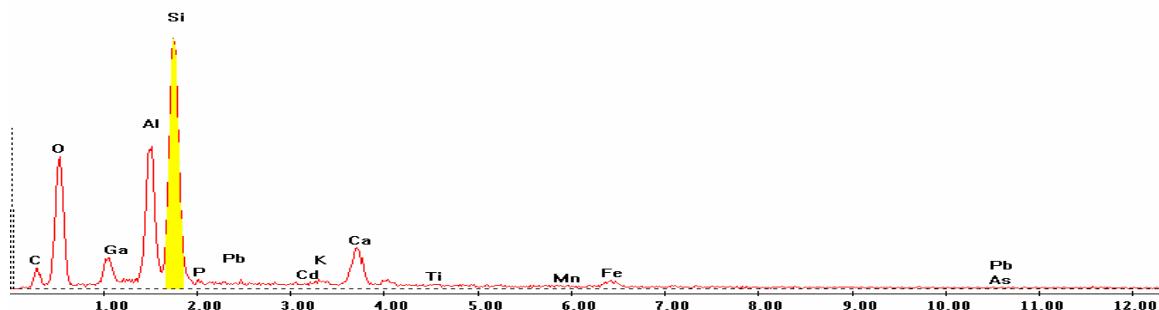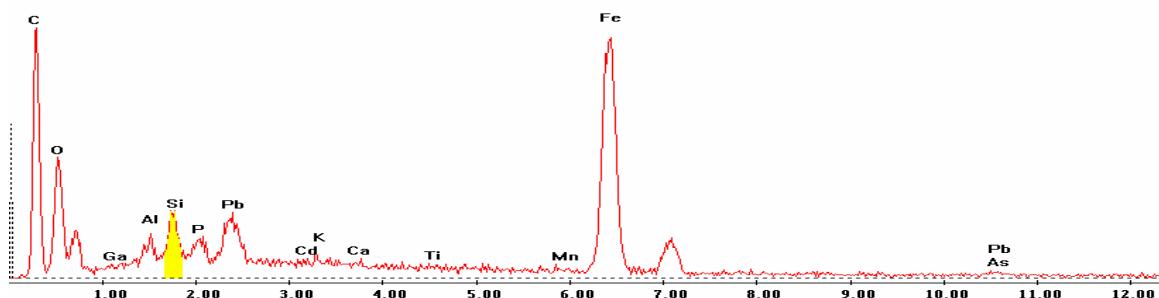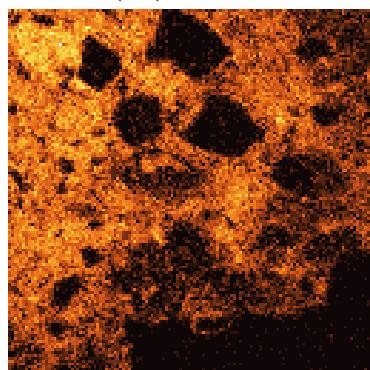Label A: 16apr04 p8c8 429 346 Point 1   Label B: H K
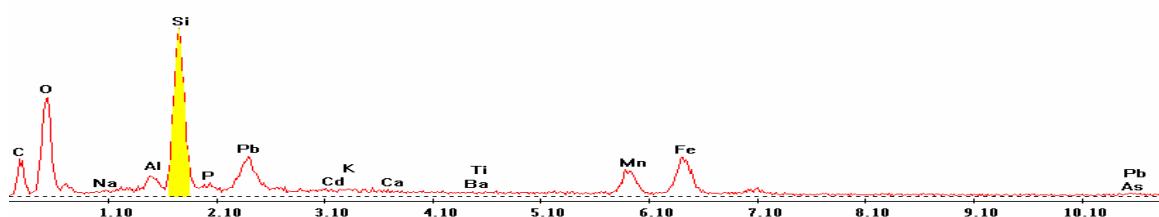
Point 2

Label A: 16apr04 p8c8 429 346 Point 2   Label B: H K

A-366
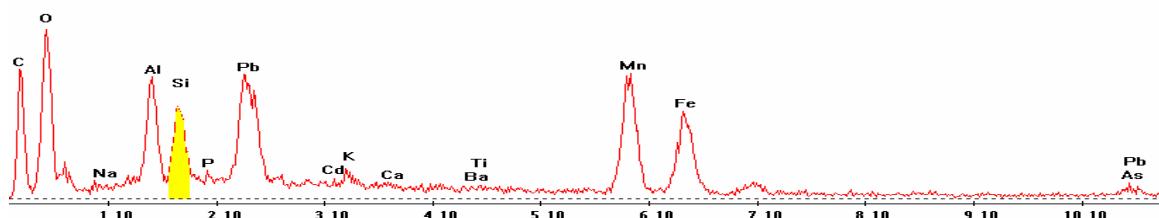
Point 3

Label A: 16apr04 p8c8 429 346 Point 3   Label B: H K
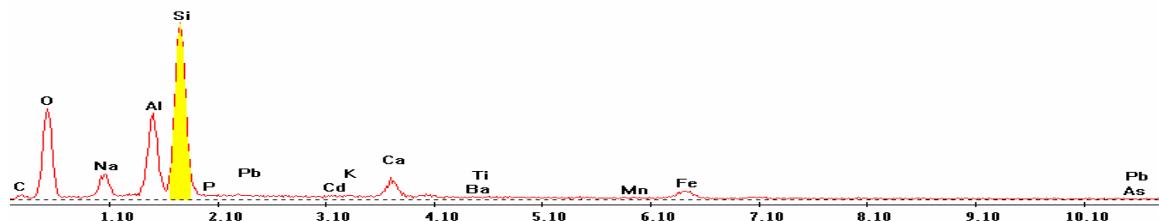
Point 4

Label A: 16apr04 p8c8 429 346 Point 4   Label B: H K
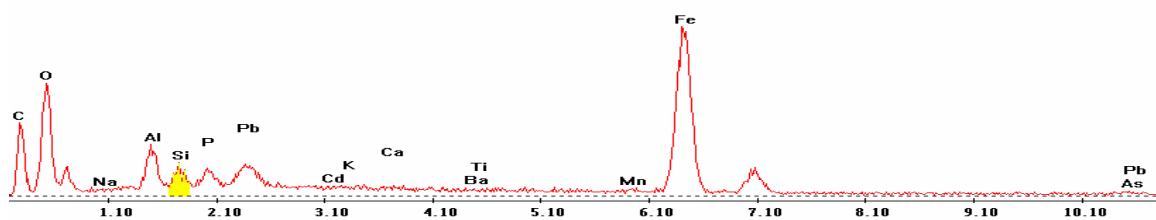
Point 5

Label A: 16apr04 p8c8 429 346 Point 5   Label B: H K

A-367
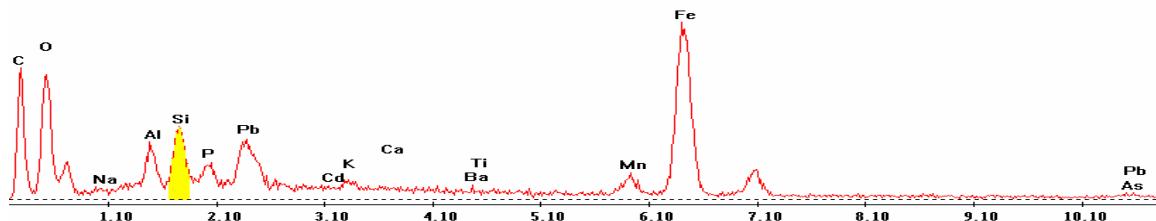
Point 6

Label A: 16apr04 p8c8 429 346 Point 6   Label B: H K
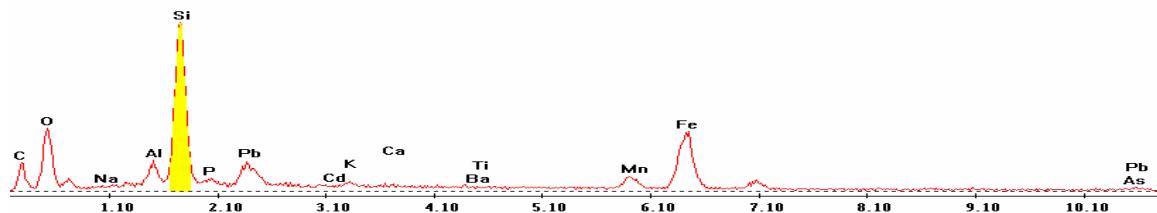
Point 7

Label A: 16apr04 p8c8 429 346 Point 7   Label B: H K
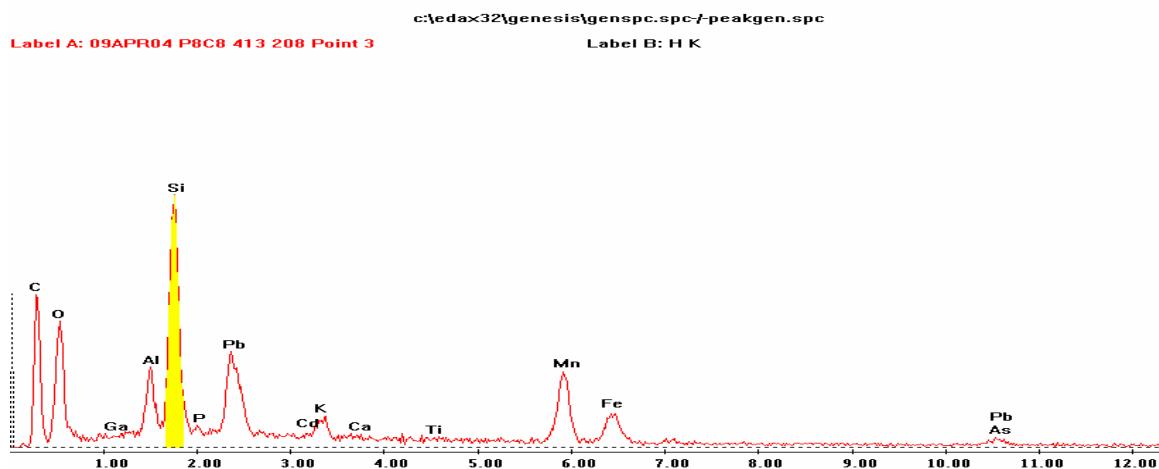

Point 8

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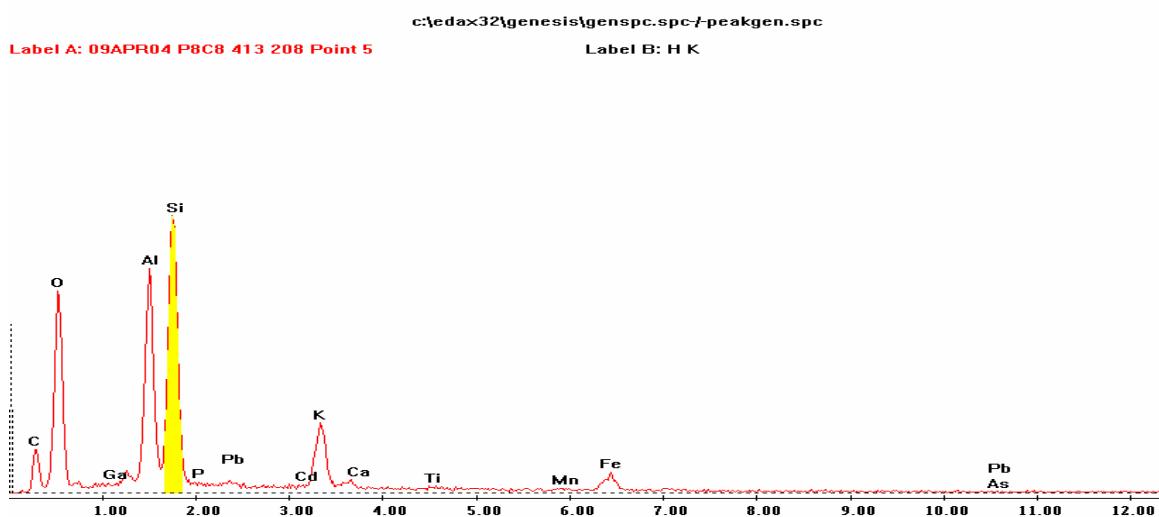
Label A: 16apr04 p8c8 429 346 Point 8   Label B: H K

A-368

Point 9

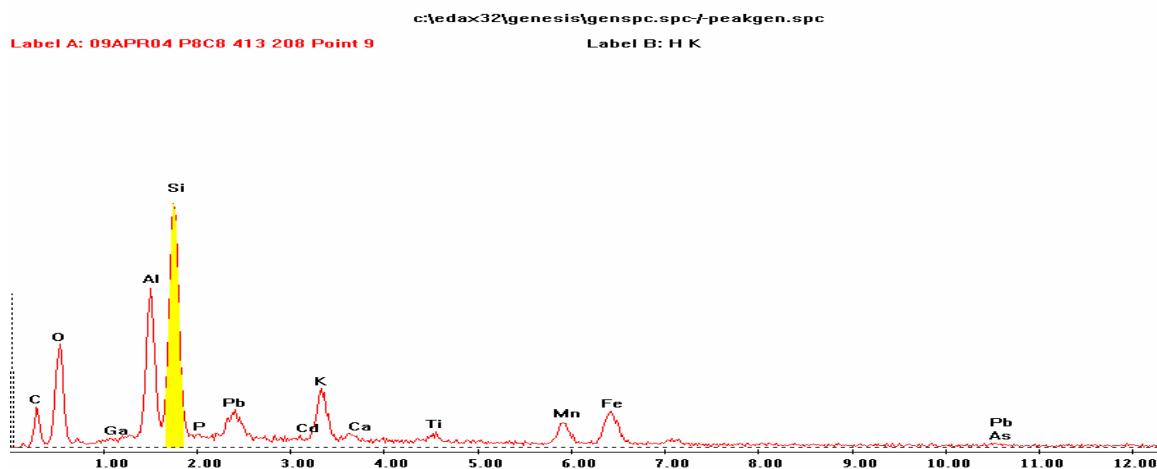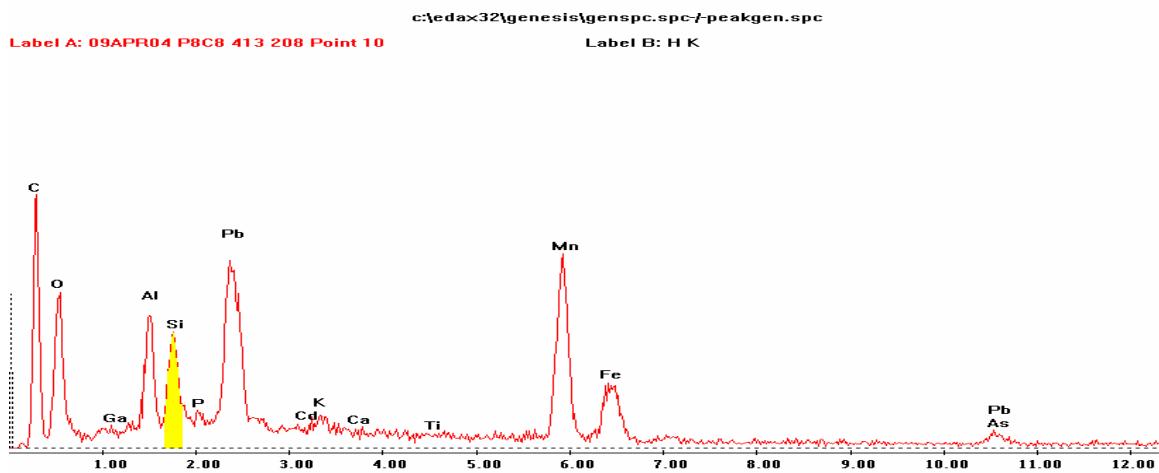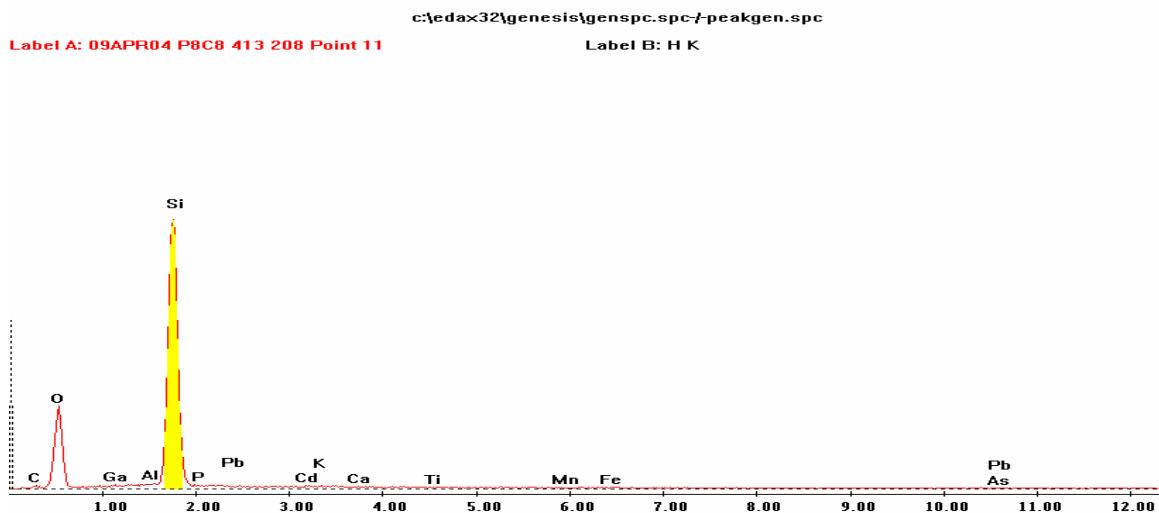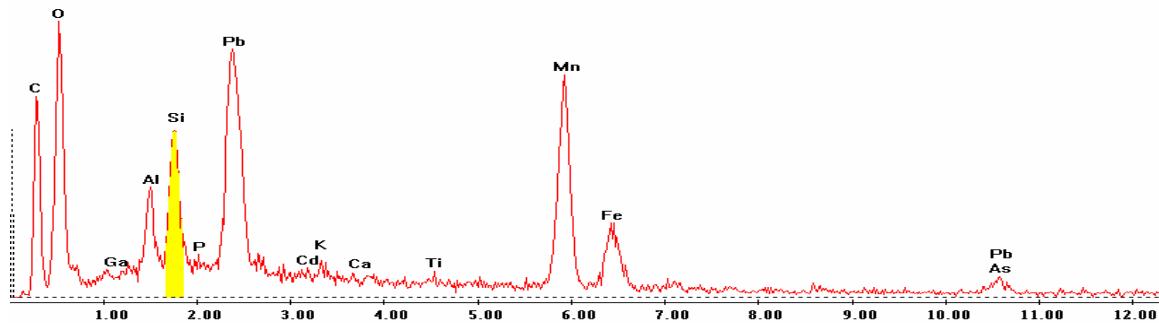Label A: 16apr04 p8c8 429 346 Point 9   Label B: H K
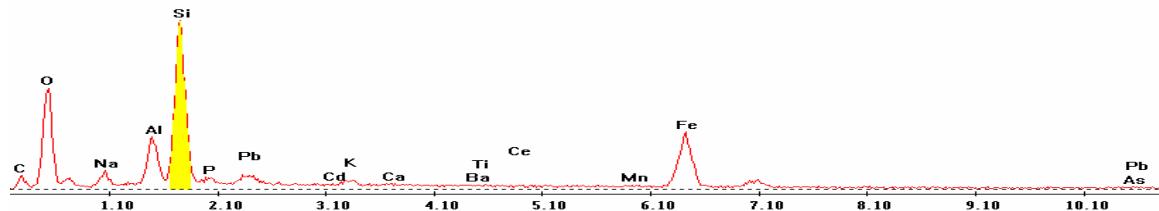
Point 10

Label A: 16apr04 p8c8 429 346 Point 10   Label B: H K

Point 11

Label A: 16apr04 p8c8 429 346 Point 11   Label B: H K

A-369

Point 12

Label A: 16apr04 p8c8 429 346 Point 12   Label B: H K

P8C8 – 442, 252
BSE Image


Iron (Fe)

Manganese (Mn)
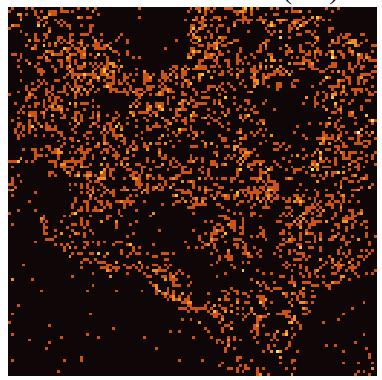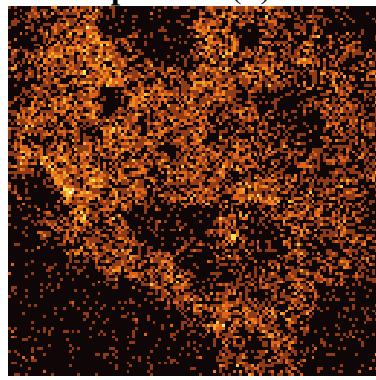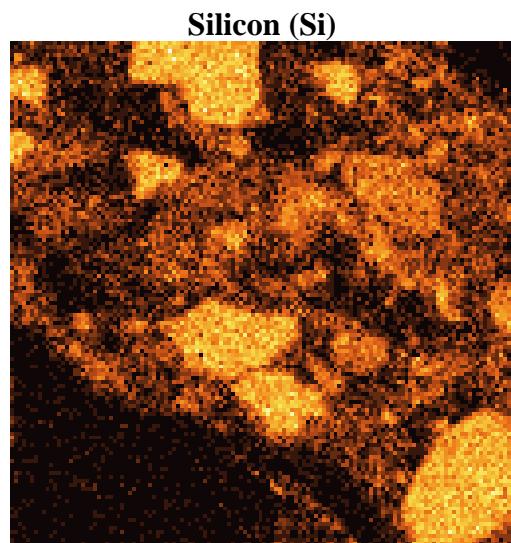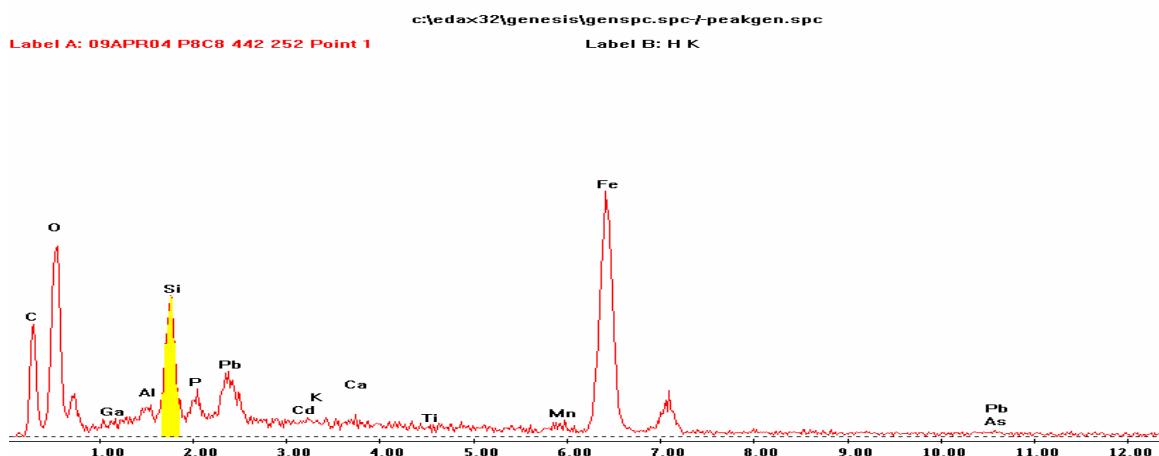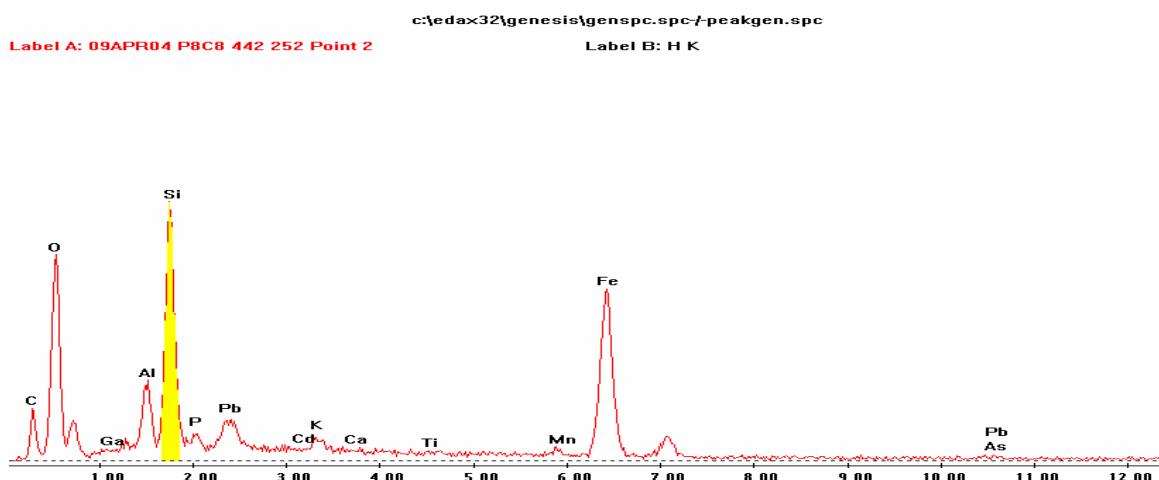
Phosphorous (P)

Lead (Pb)

Silicon (Si)

EDS Scan Images by Point
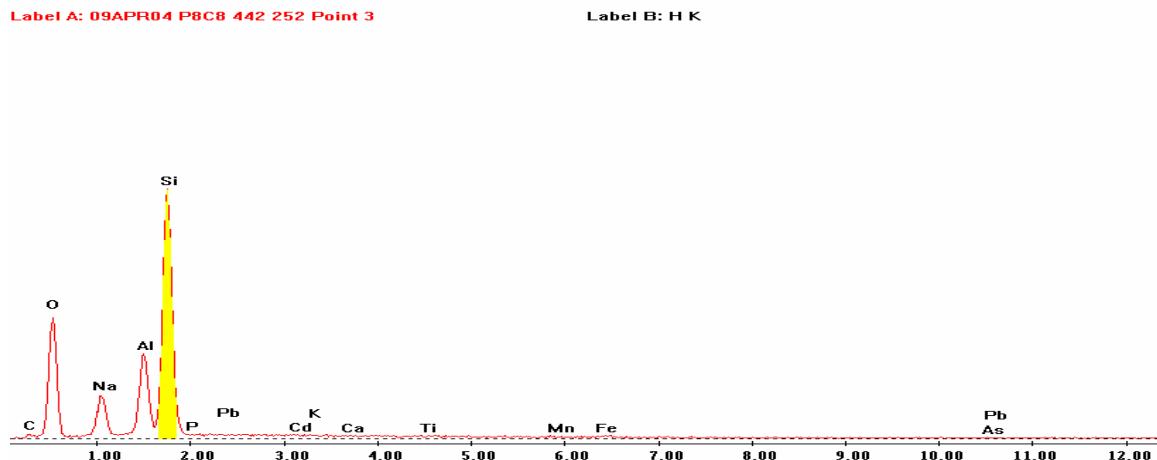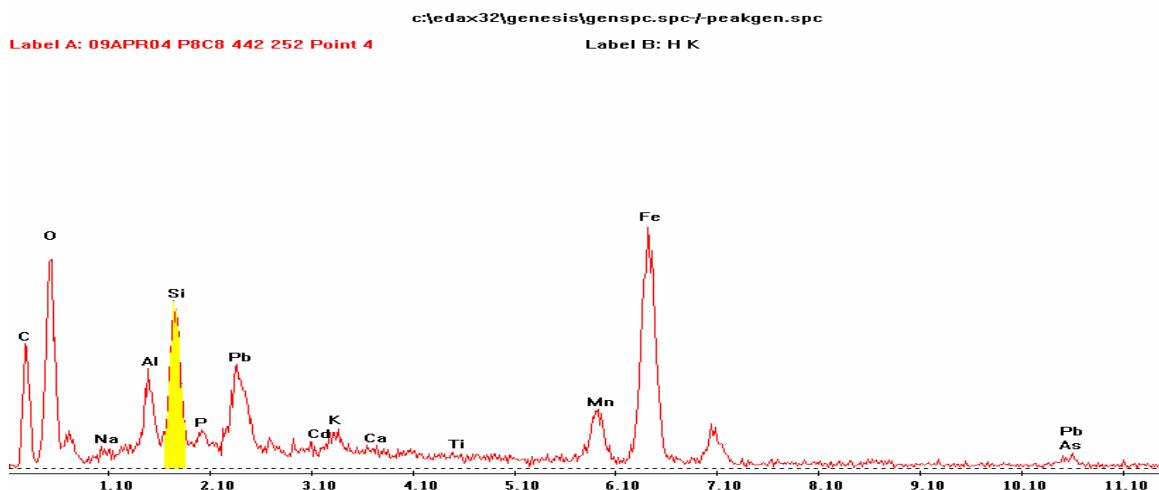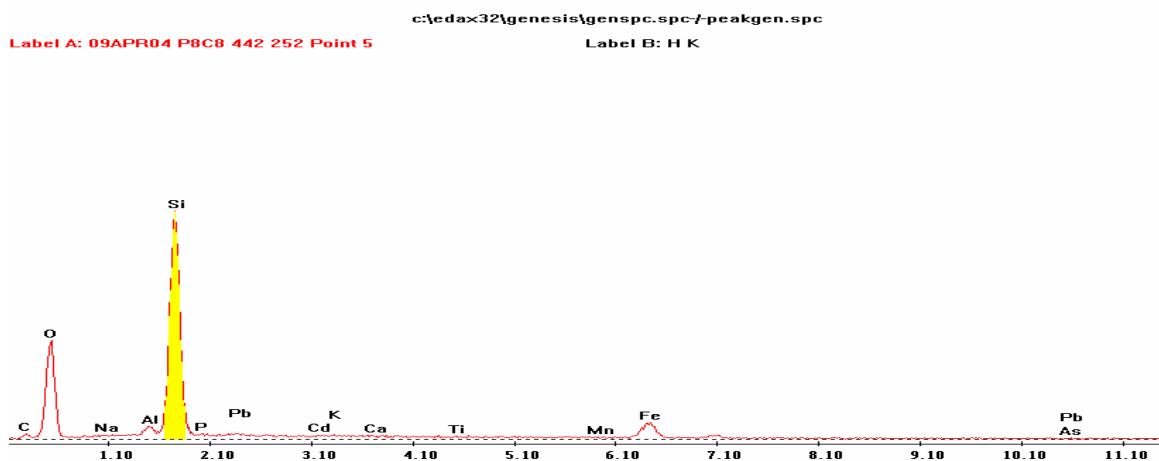
Point 1

Label A: 09APR04 P8C8 442 252 Point 1   Label B: H K

Point 2

Label A: 09APR04 P8C8 442 252 Point 2   Label B: H K

Point 3

Point 4

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Point 5

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Point 6

Label B: H K

Point 7

Label B: H K

Point 8

Label B: H K

Point 9

Label A: 09APR04 P8C8 442 252 Point 9   Label B: H K

Point 10

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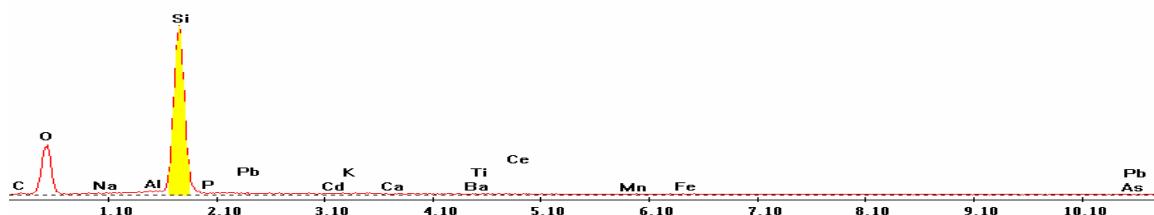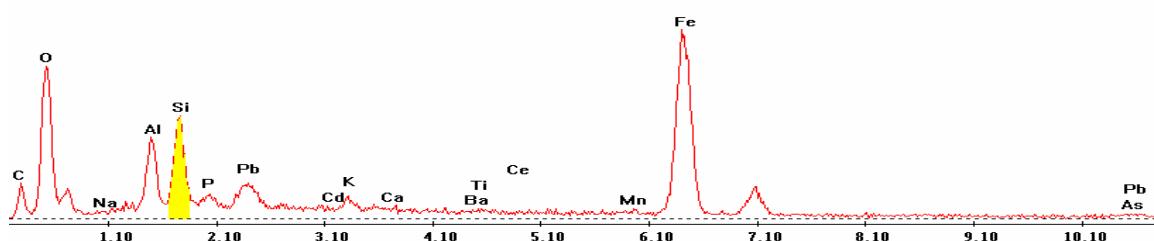Label A: 09APR04 P8C8 442 252 Point 10   Label B: H K

P8C8 – 472, 213
BSE Image

Iron (Fe)
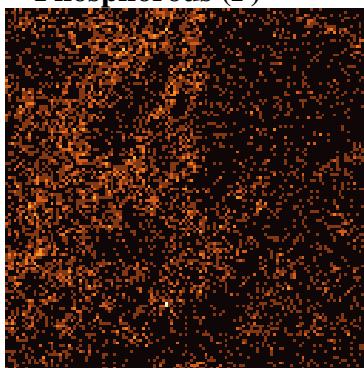
Manganese (Mn)

Phosphorous (P)

Lead (Pb)

Silicon (Si)
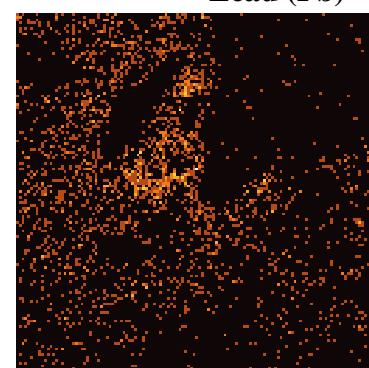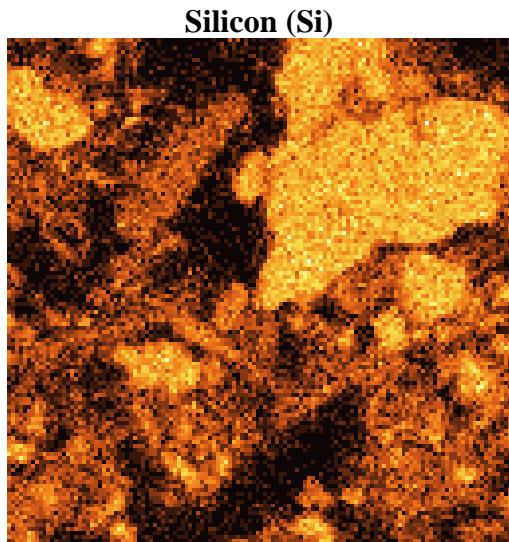
EDS Scan Images by Point

Point 1

Label A: 09APR04 P8C8 472 213 Point 1   Label B: H K
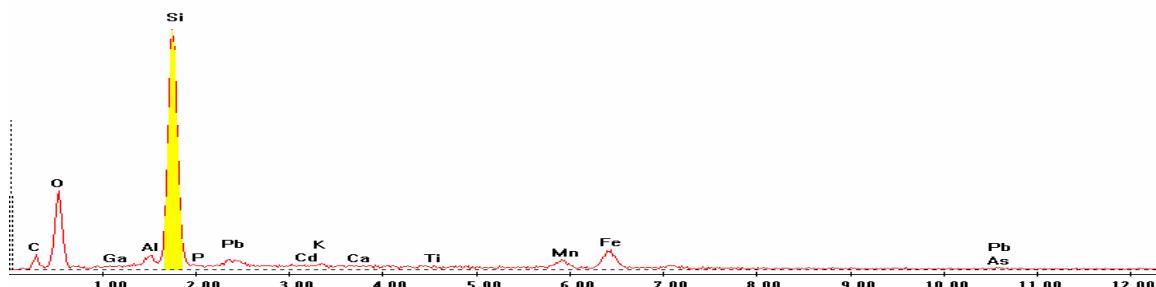
Point 2

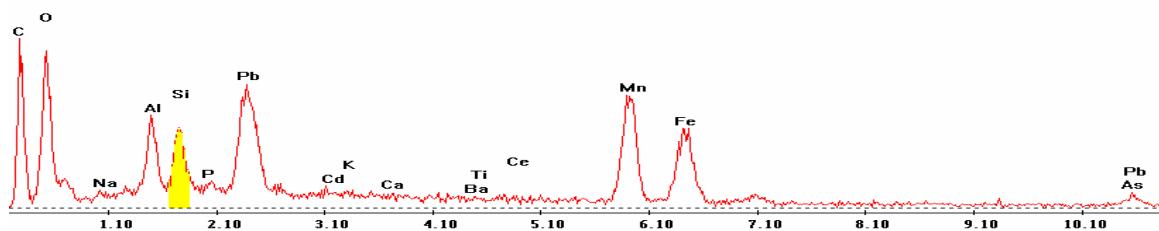Label A: 09APR04 P8C8 472 213 Point 2   Label B: H K

Point 3

Label A: 09APR04 P8C8 472 213 Point 3   Label B: H K
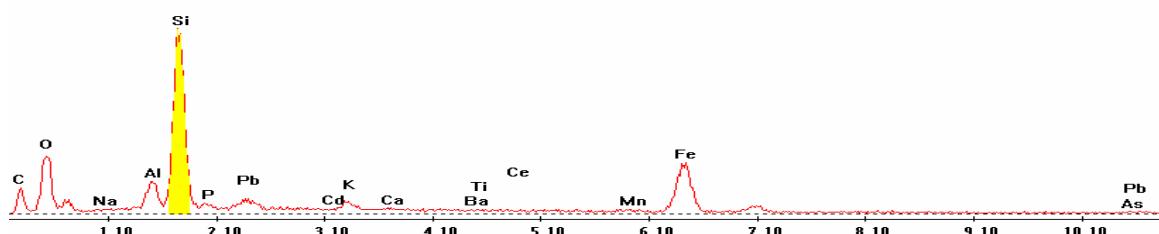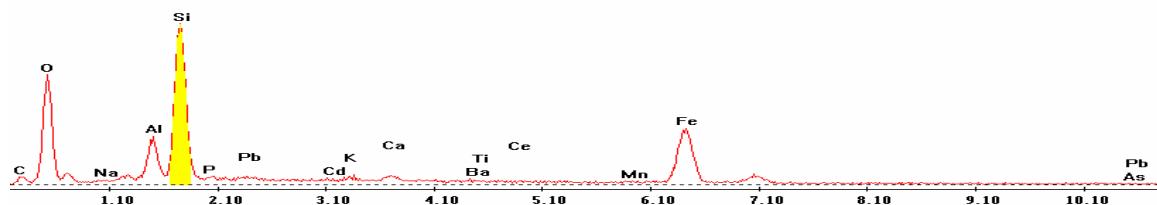

Point 4

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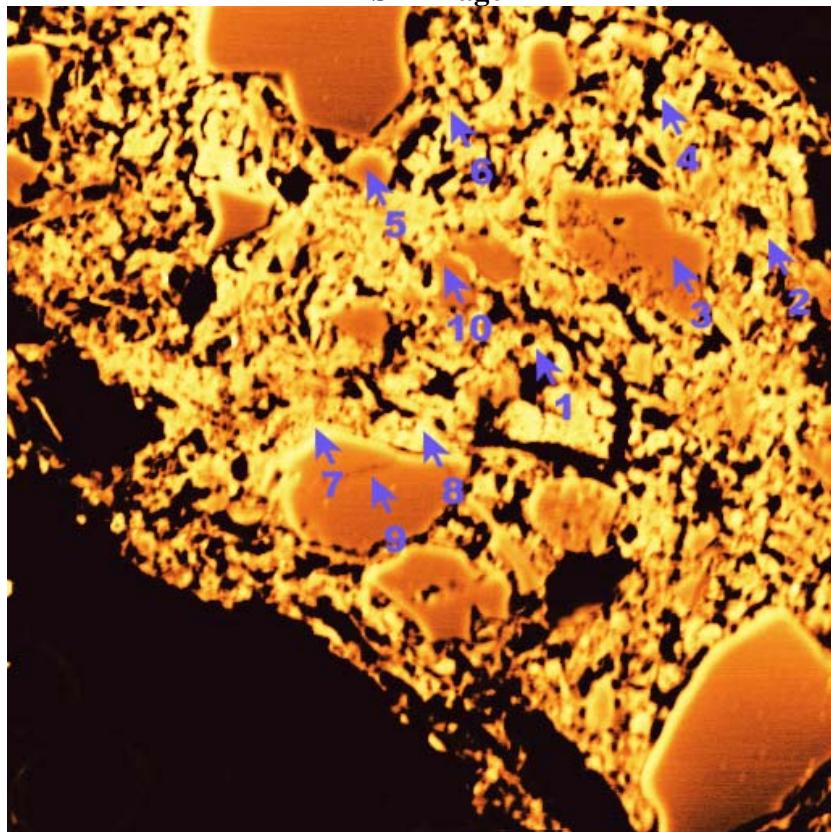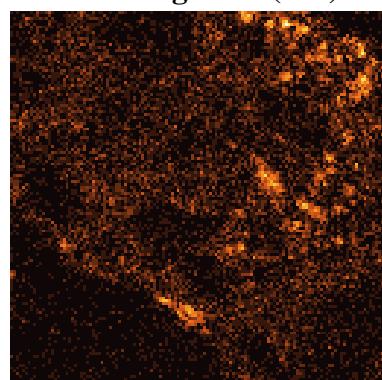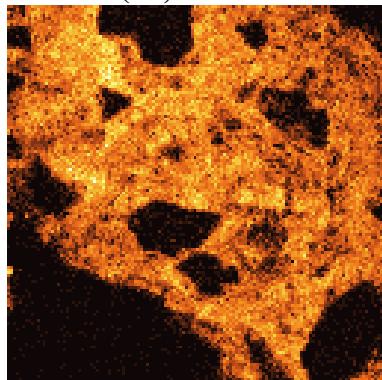Label A: 09APR04 P8C8 472 213 Point 4   Label B: H K

Point 5

c:\edax32\genesis\genspc.spc-/-peakgen.spc

Label A: 09APR04 P8C8 472 213 Point 5   Label B: H K

A-378
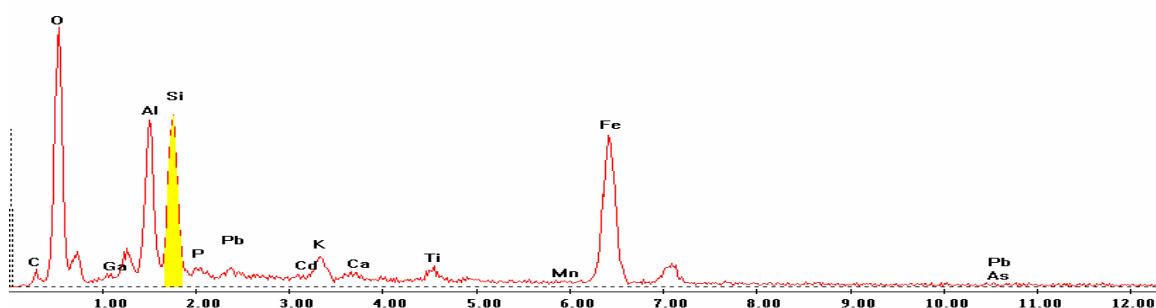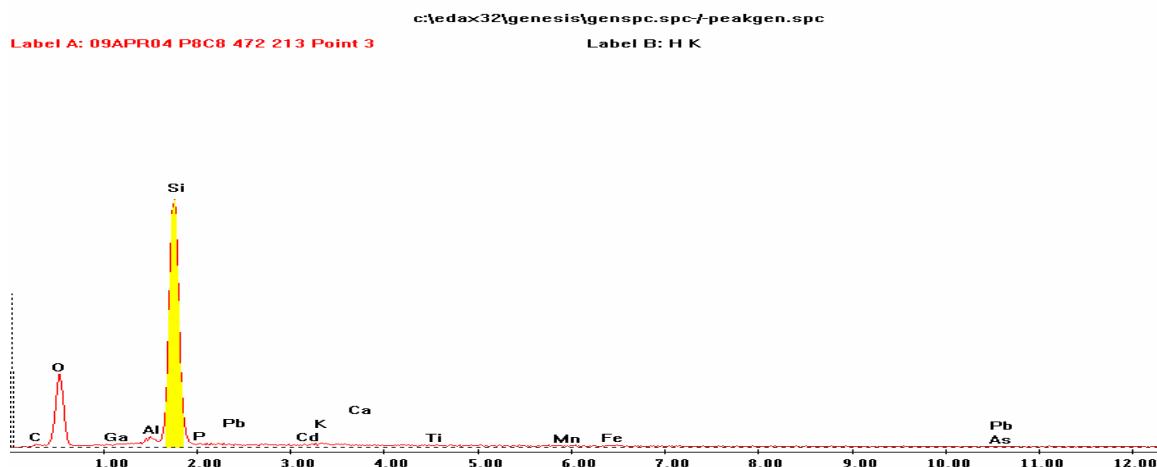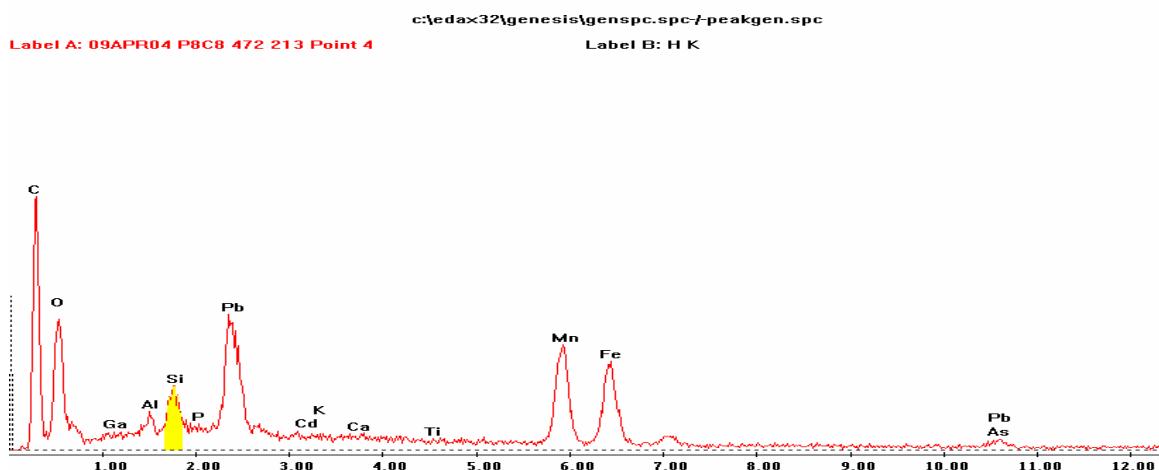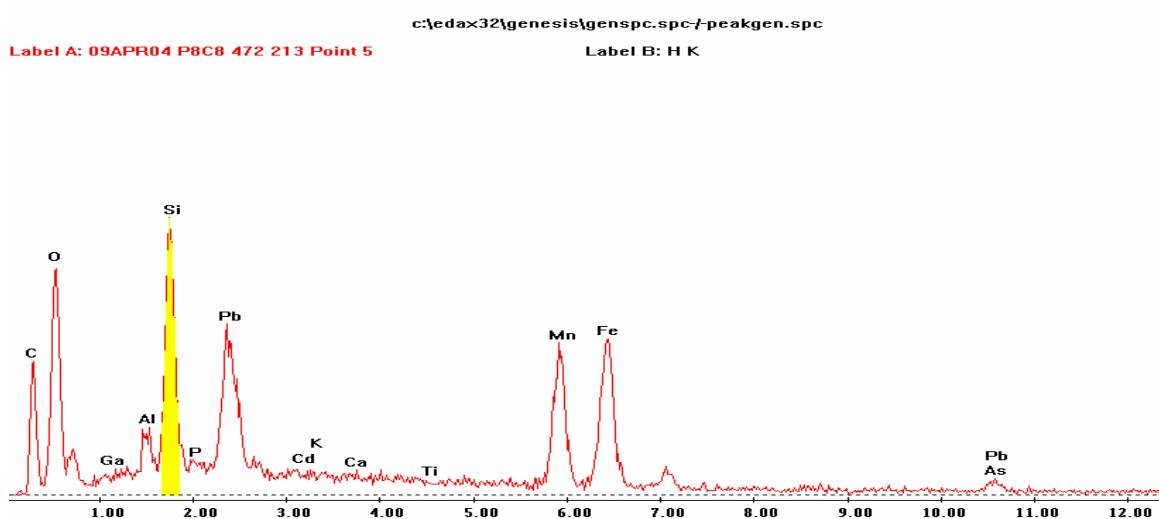
Point 6

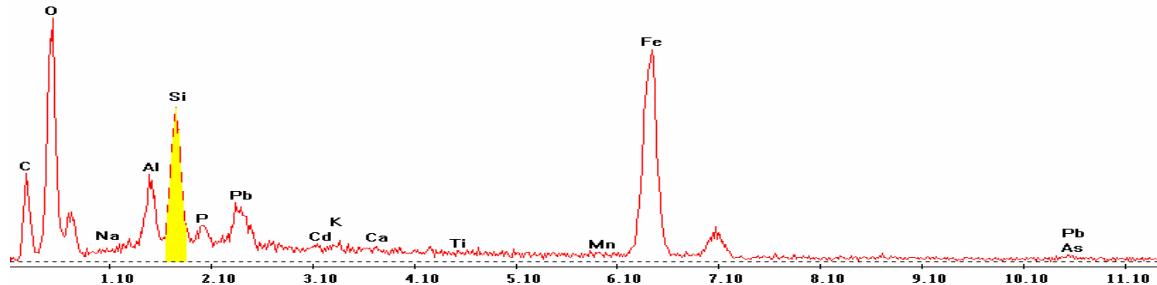Label A: 09APR04 P8C8 472 213 Point 6   Label B: H K
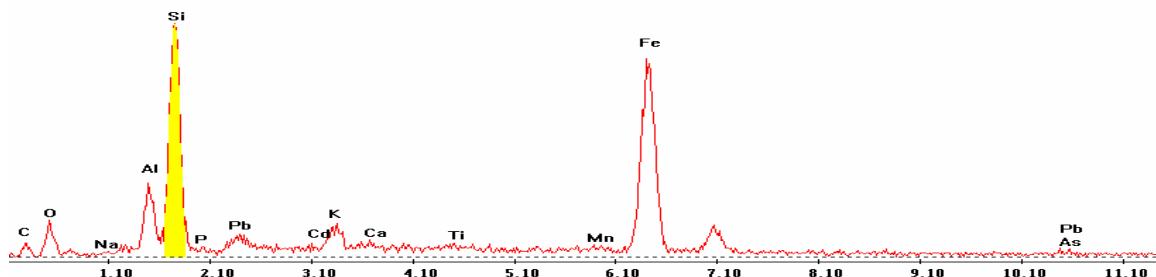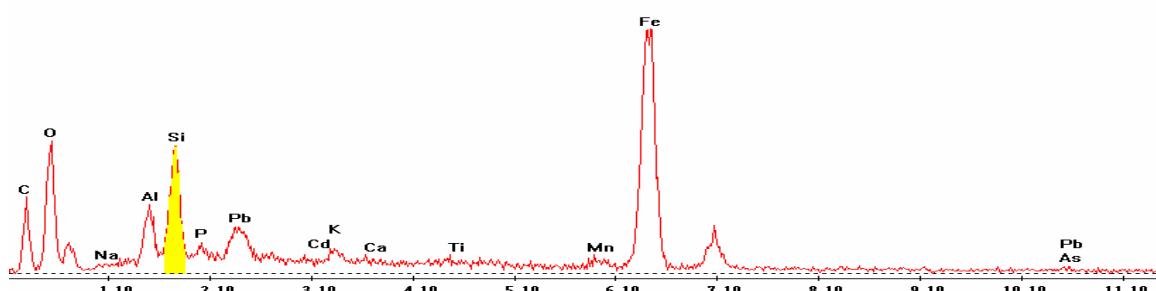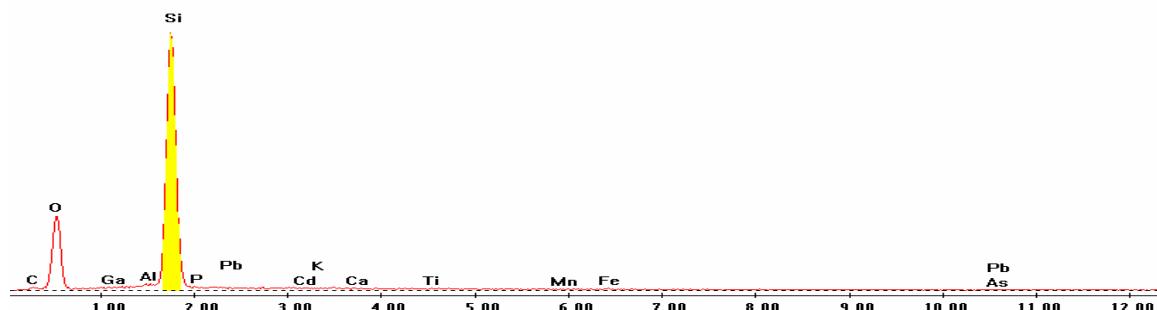

Point 7

c:\edax32\genesis\genspc.spc-/-peakgen.spc

Label A: 09APR04 P8C8 472 213 Point 7   Label B: H K
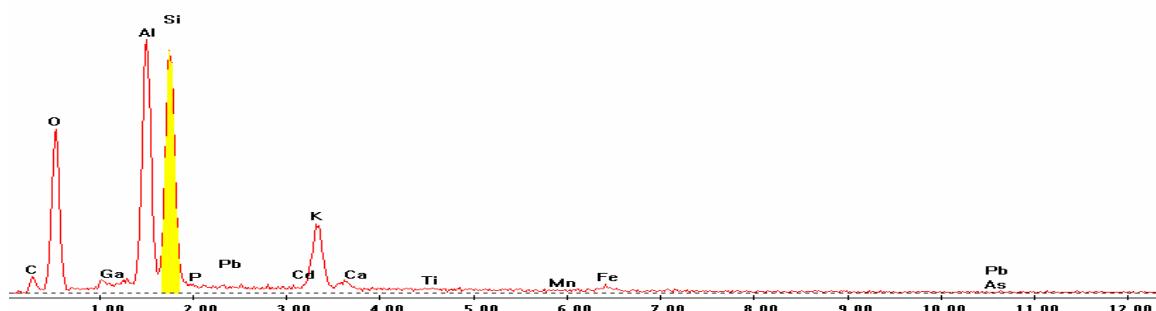
Point 8

c:\edax32\genesis\genspc.spc-/-peakgen.spc

Label A: 09APR04 P8C8 472 213 Point 8   Label B: H K

A-379

Point 9

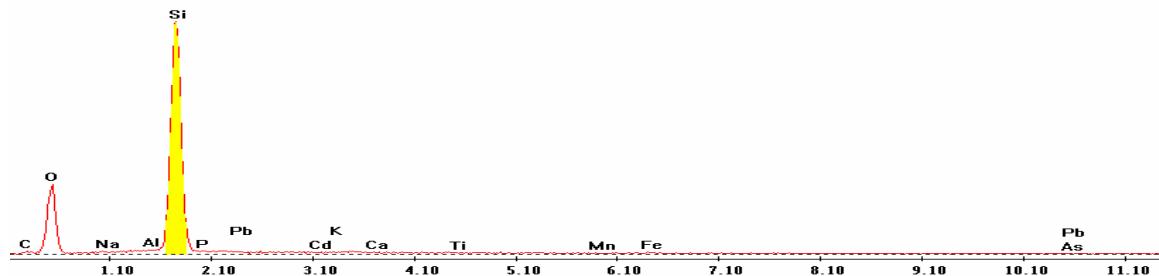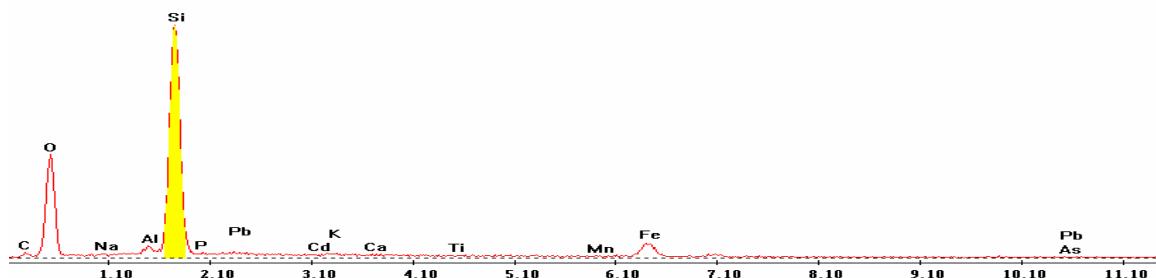Label A: 09APR04 P8C8 472 213 Point 9   Label B: H K

Point 10

c:\edax32\genesis\genspc.spc-/-peakgen.spc

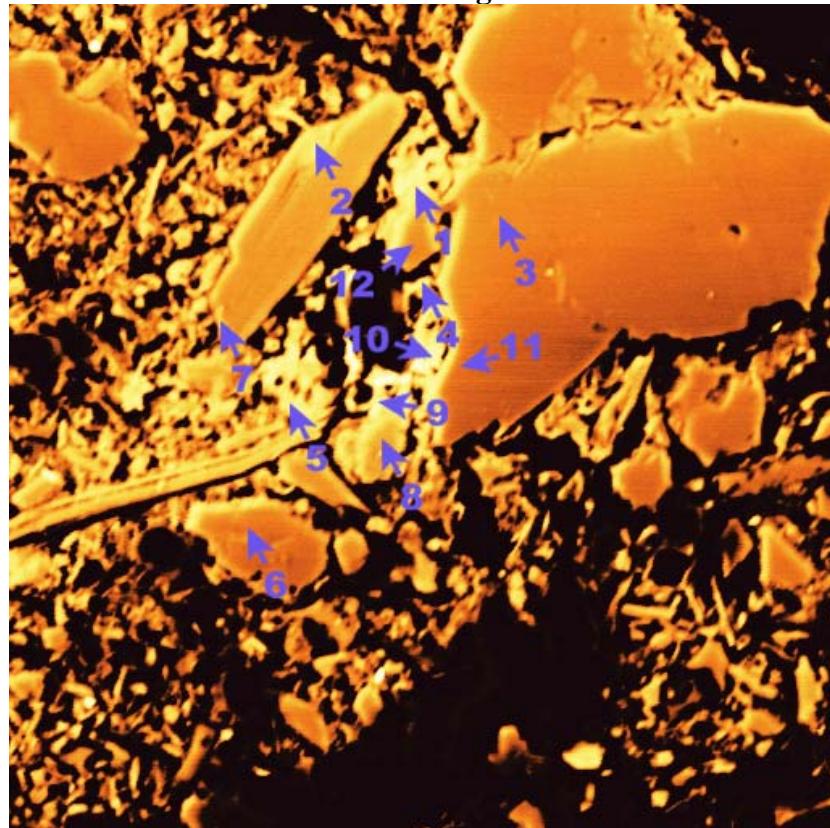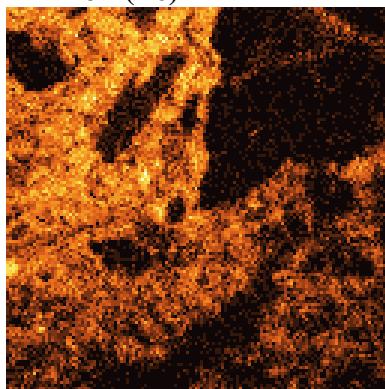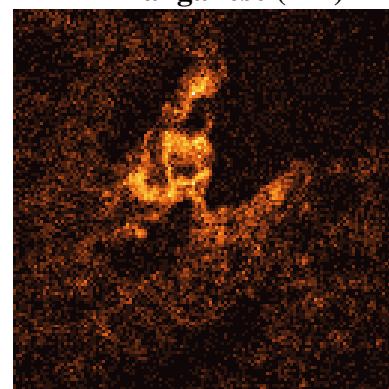Label A: 09APR04 P8C8 472 213 Point 10   Label B: H K

Point 11

c:\edax32\genesis\genspc.spc-/-peakgen.spc

Label A: 09APR04 P8C8 472 213 Point 11   Label B: H K

A-380

Point 12

Label A: 09APR04 P8C8 472 213 Point 12   Label B: H K

A-381

P8C9 – 413, 154
BSE Image
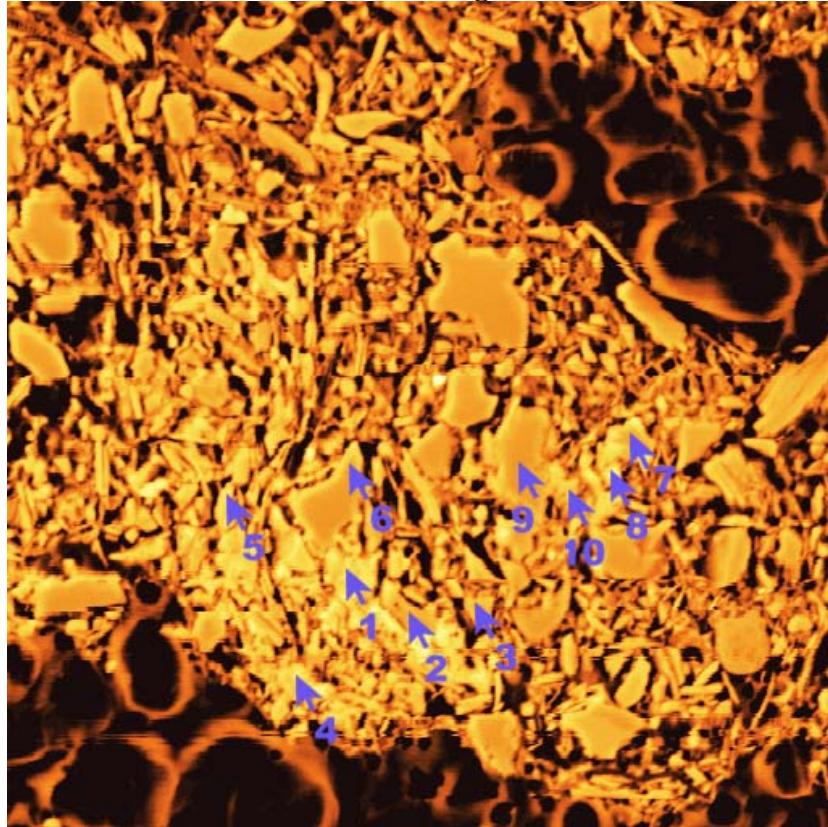
Iron (Fe)

Manganese (Mn)

Phosphorous (P)

Lead (Pb)

Silicon (Si)
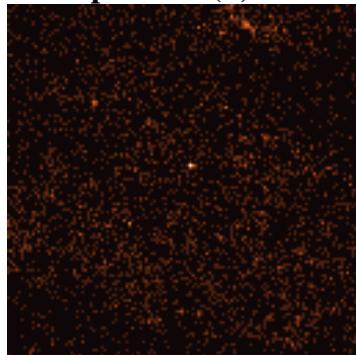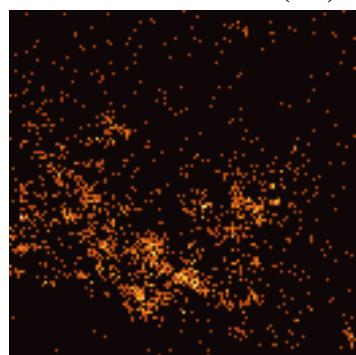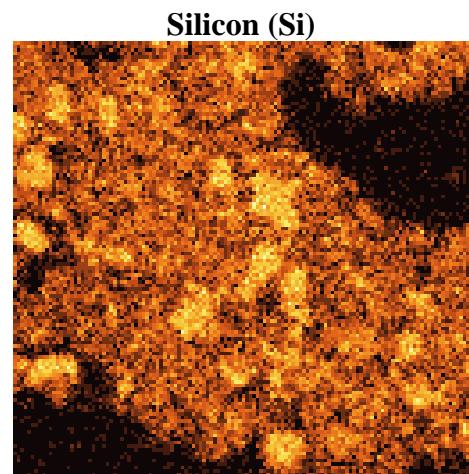
## EDS Scan Images by Point

Point 1

c:\edax32\genesis\genspc.spc-/-peakgen.spc

Label A: 13APR04 P8C9 413 154 Point 1   Label B: H K
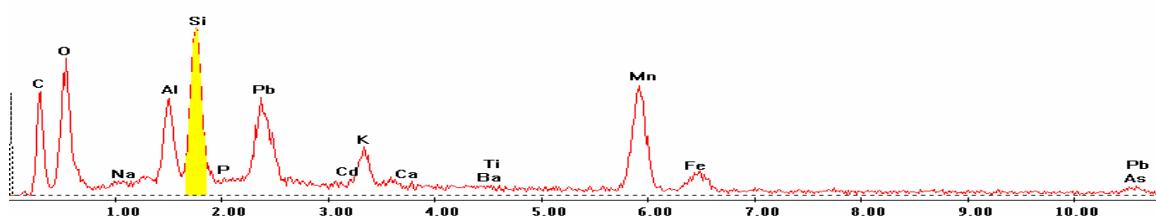
Point 2

c:\edax32\genesis\genspc.spc-/-peakgen.spc

Label A: 13APR04 P8C9 413 154 Point 2   Label B: H K
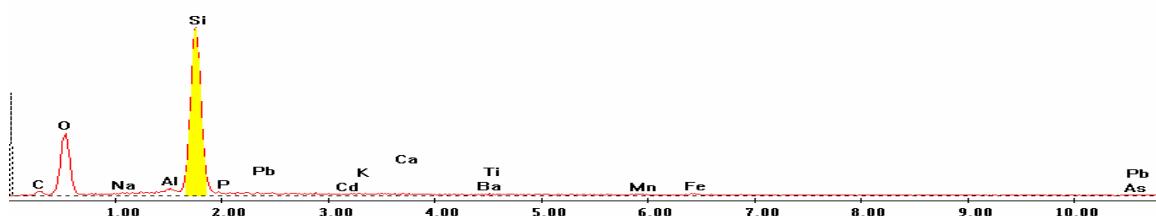
A-383

Point 3

Label A: 13APR04 P8C9 413 154 Point 3   Label B: H K
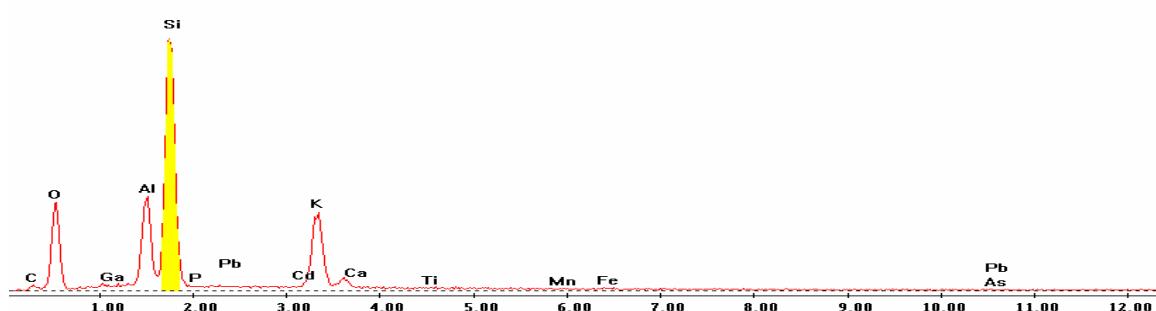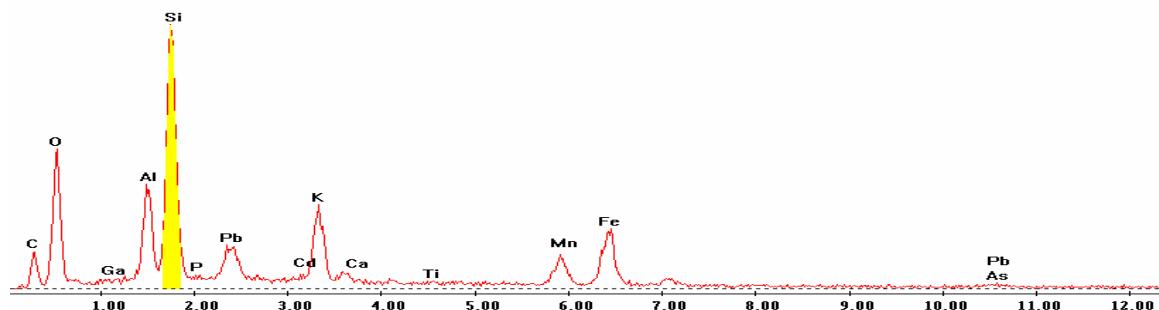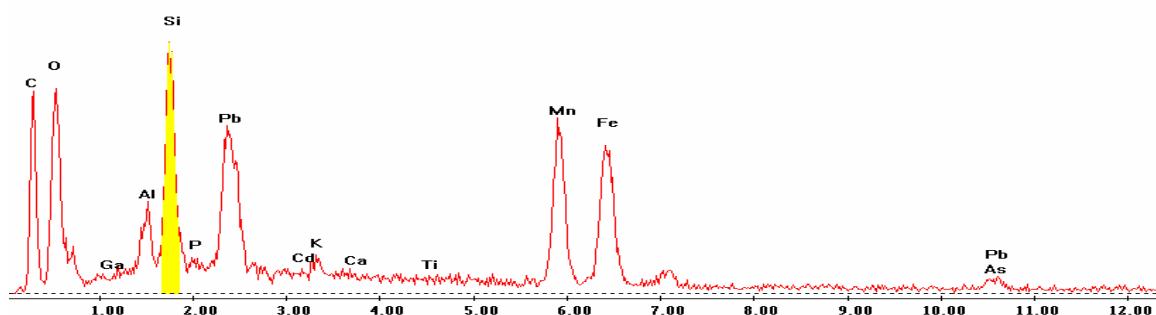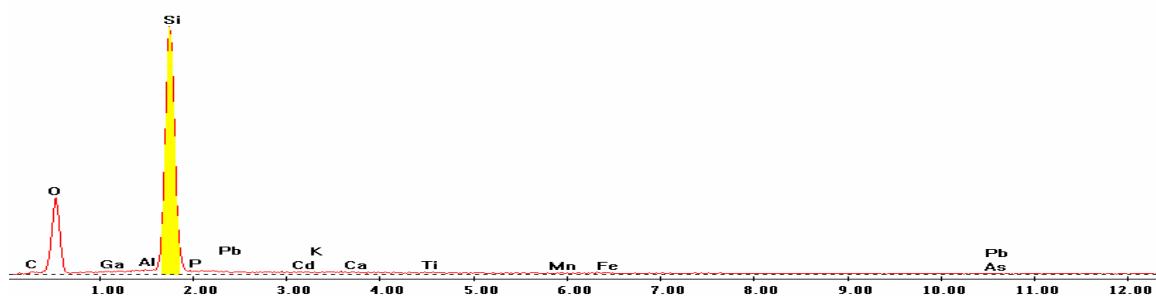

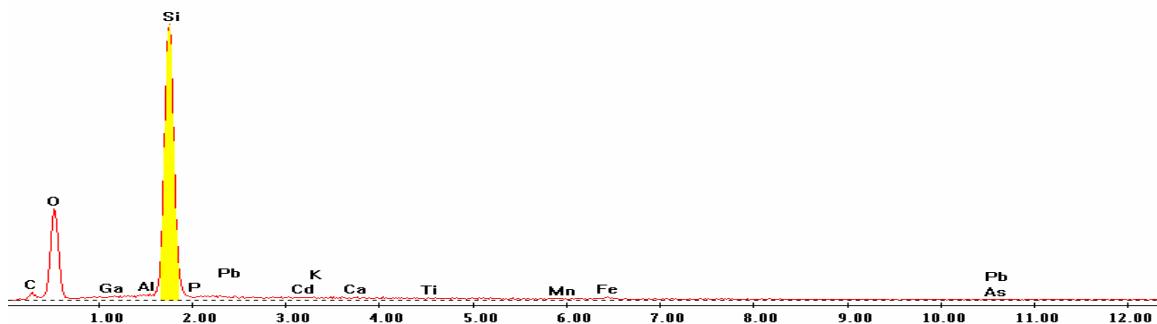## Point 4

c:\edax32\genesis\genspc.spc-/-peakgen.spc

Label A: 13APR04 P8C9 413 154 Point 4   Label B: H K

Point 5

c:\edax32\genesis\genspc.spc-/-peakgen.spc
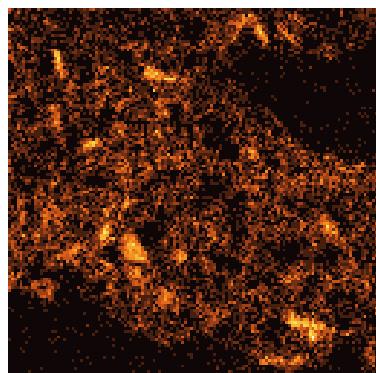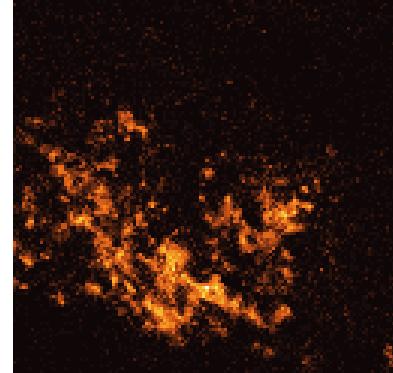
Label A: 13APR04 P8C9 413 154 Point 5   Label B: H K

A-384

Point 6

Point 7

Point 8

Point 9

Label A: 13APR04 P8C9 413 154 Point 9   Label B: H K

Point 10

Label A: 13APR04 P8C9 413 154 Point 10   Label B: H K


A-386

P8C9 – 448, 239
BSE Image

Iron (Fe)
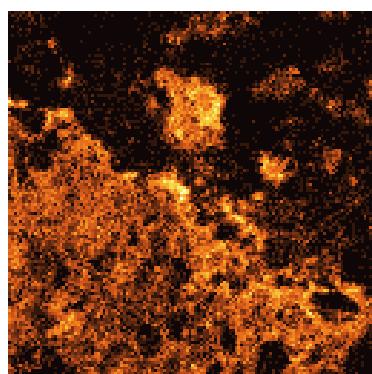

Manganese (Mn)

Phosphorous (P)

Lead (Pb)

Silicon (Si)
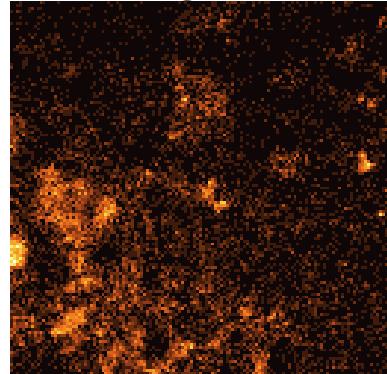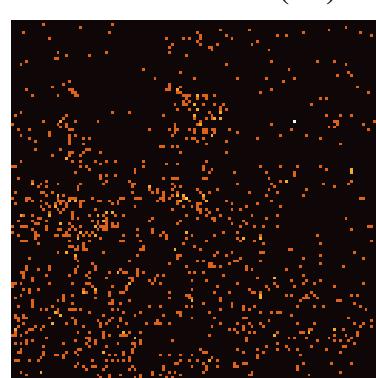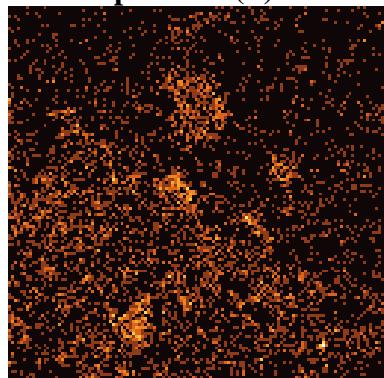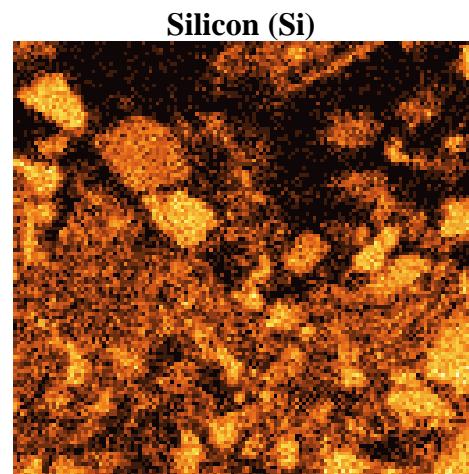
EDS Scan Images by Point

Point 1

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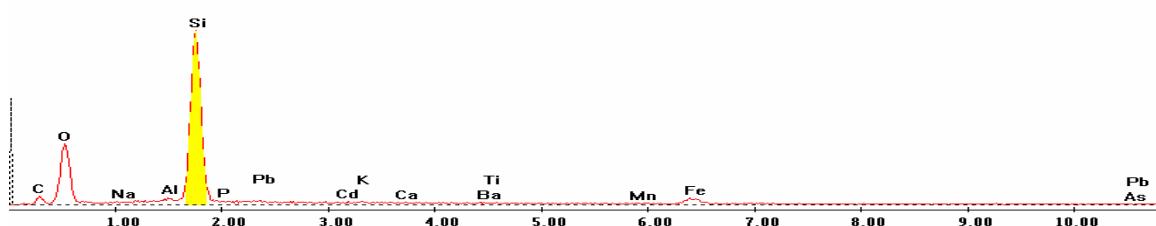
Point 2

Label A: 13APR04 P8C9 448 239 Point 2   Label B: H K
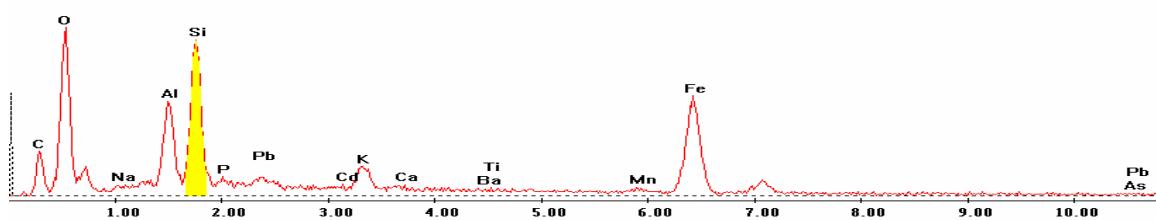
Point 3

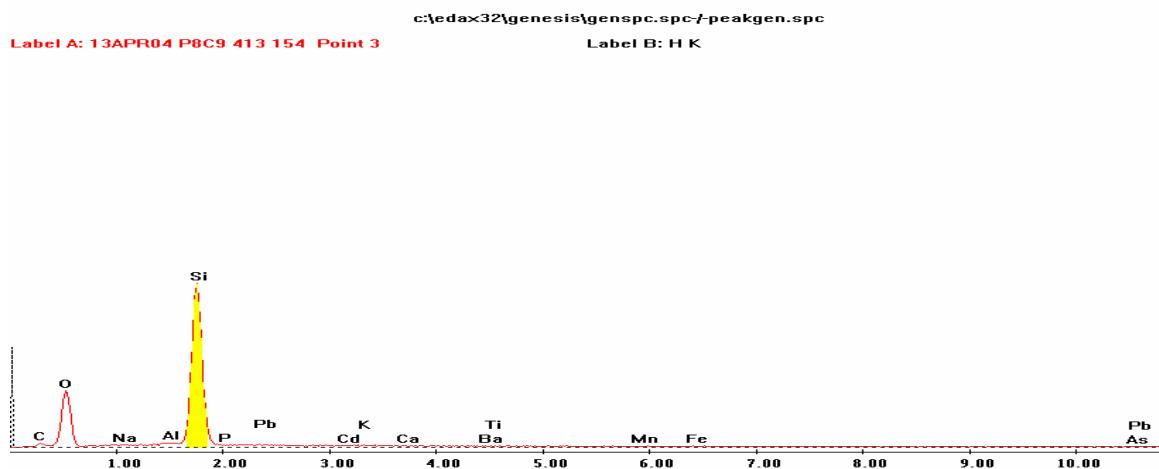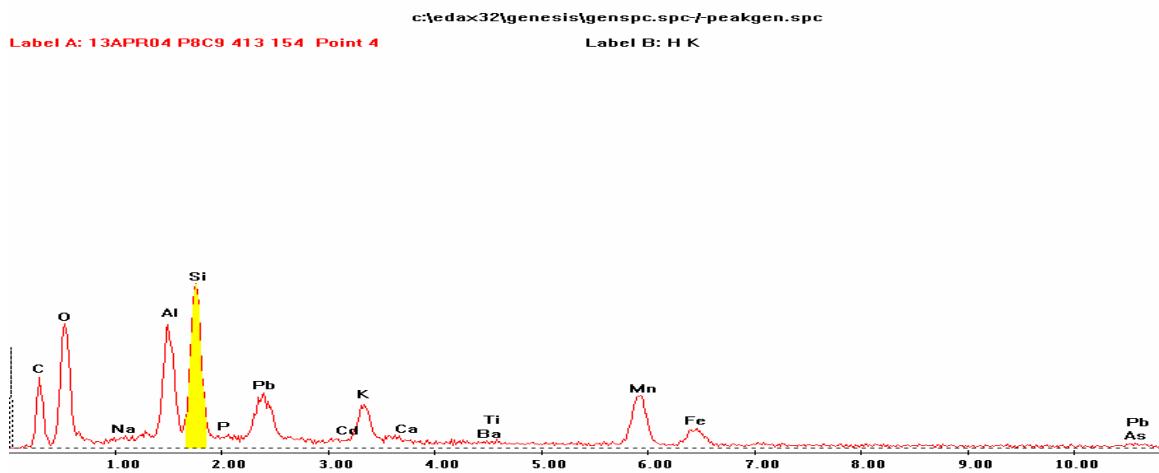Label A: 13APR04 P8C9 448 239 Point 3   Label B: H K

Point 4

c:\edax32\genesis\genspc.spc-/-peakgen.spc

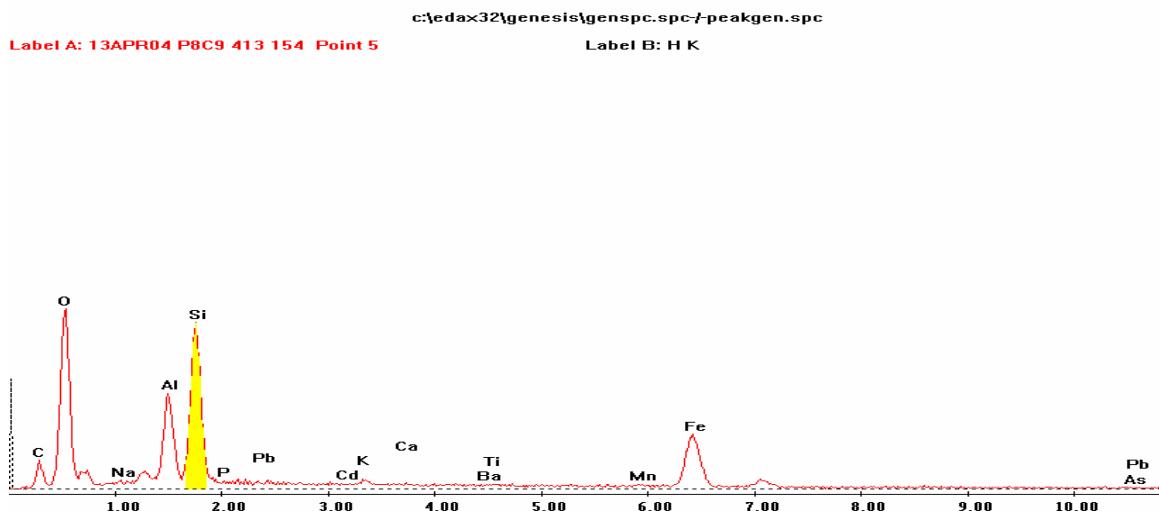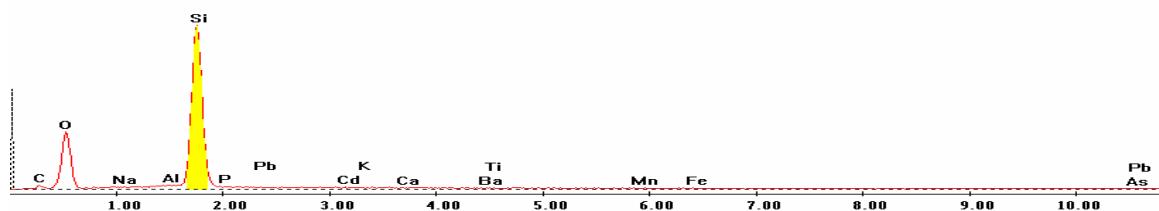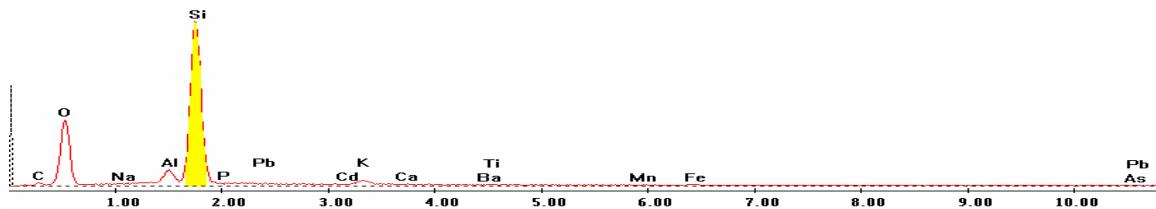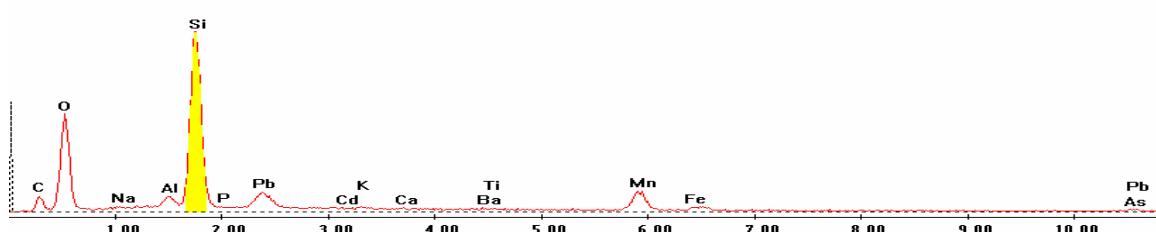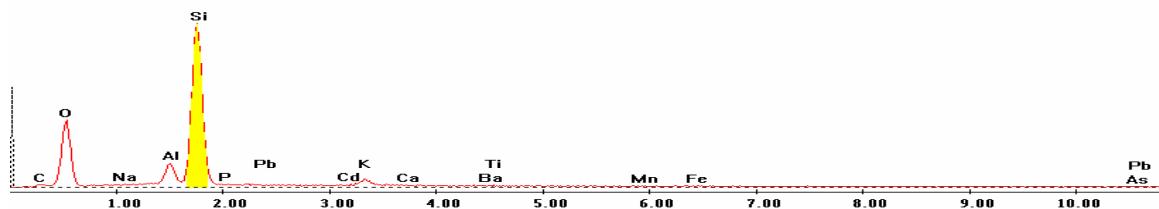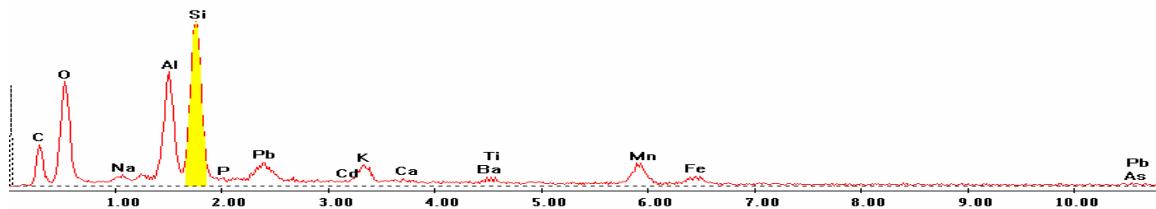Label A: 13APR04 P8C9 448 239 Point 4   Label B: H K

Point 5

c:\edax32\genesis\genspc.spc-/-peakgen.spc

Label A: 13APR04 P8C9 448 239 Point 5   Label B: H K

Point 6

Label A: 13APR04 P8C9 448 239 Point 6   Label B: H K

Point 7

c:\edax32\genesis\genspc.spc-/-peakgen.spc

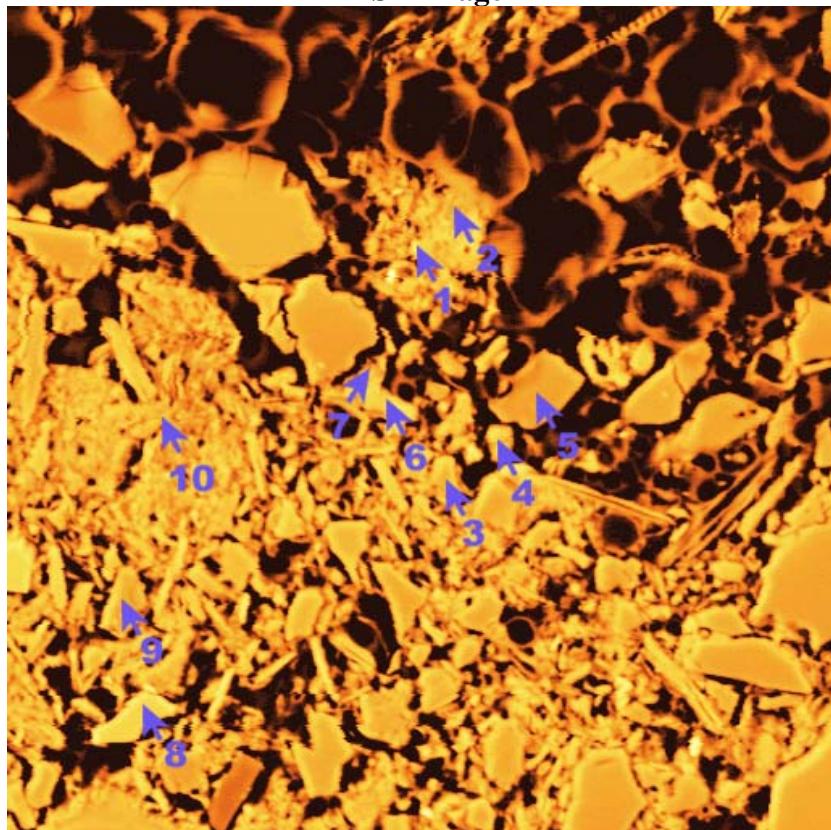Label A: 13APR04 P8C9 448 239 Point 7   Label B: H K

Point 8

c:\edax32\genesis\genspc.spc-/-peakgen.spc

Label A: 13APR04 P8C9 448 239 Point 8   Label B: H K


A-390

Point 9

Label A: 13APR04 P8C9 448 239 Point 9   Label B: H K

Point 10

Label A: 13APR04 P8C9 448 239 Point 10   Label B: H K


A-391

P8C9 – 451, 293
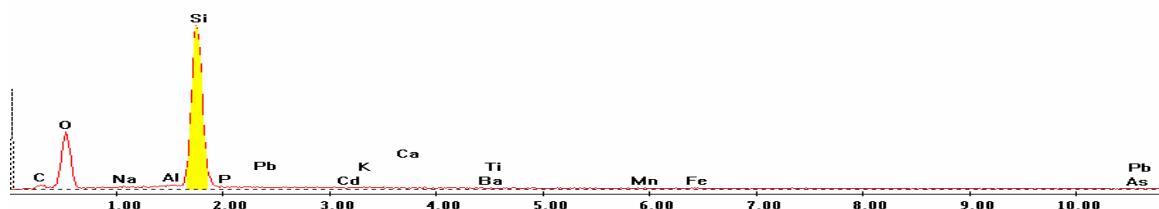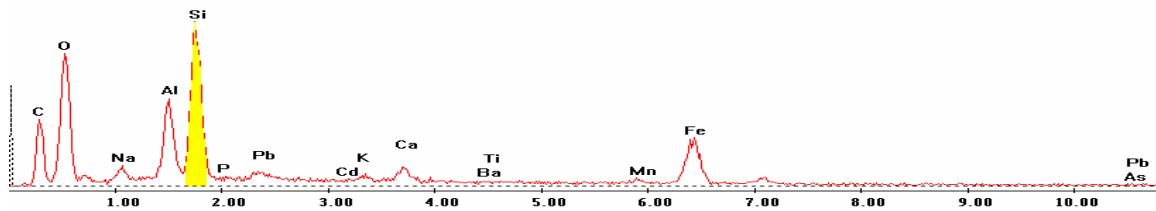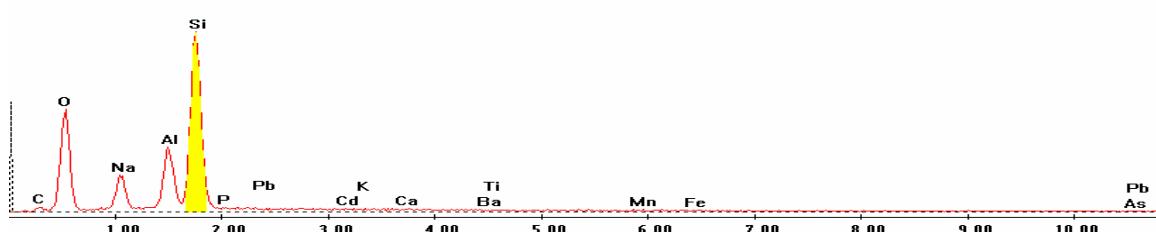**BSE Image**

Iron (Fe)

Manganese (Mn)

Phosphorous (P)

Lead (Pb)

Silicon (Si)

EDS Scan Images by Point

Point 1

Point 2

A-393

Point 3

Label A: 13APR04 P8C9 451 293 Point 3   Label B: H K

Point 4

c:\edax32\genesis\genspc.spc-/-peakgen.spc

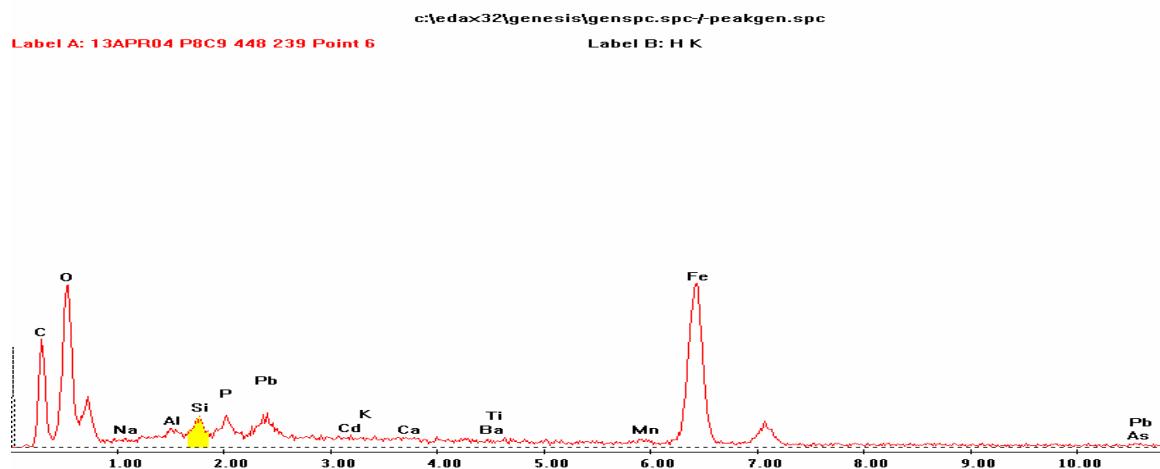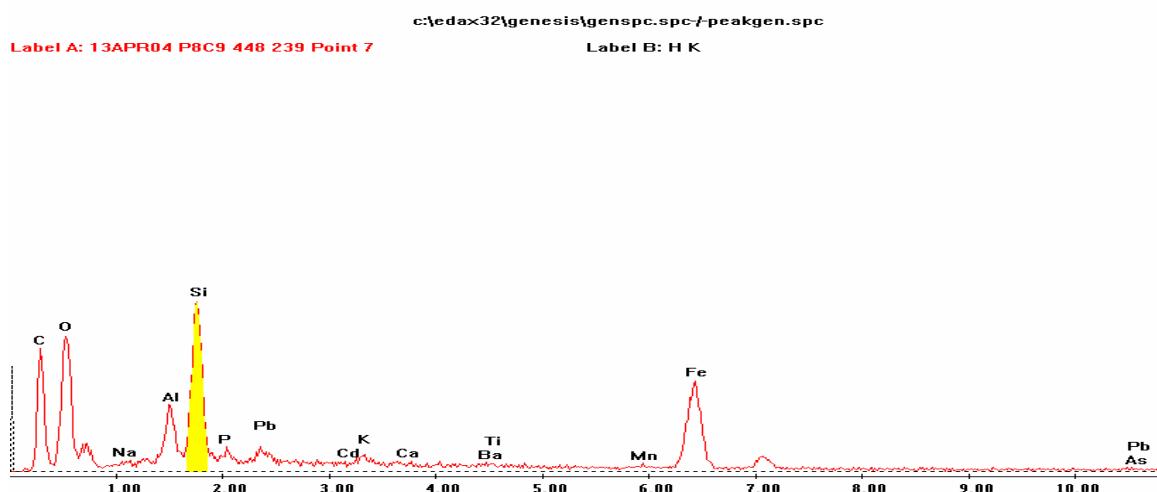Label A: 13APR04 P8C9 451 293 Point 4   Label B: H K

Point 5

c:\edax32\genesis\genspc.spc-/-peakgen.spc

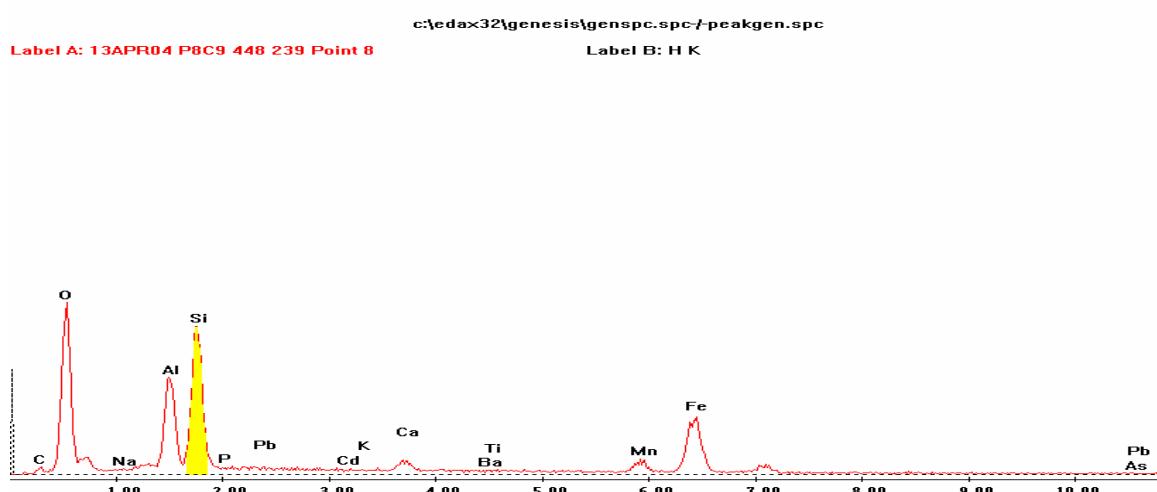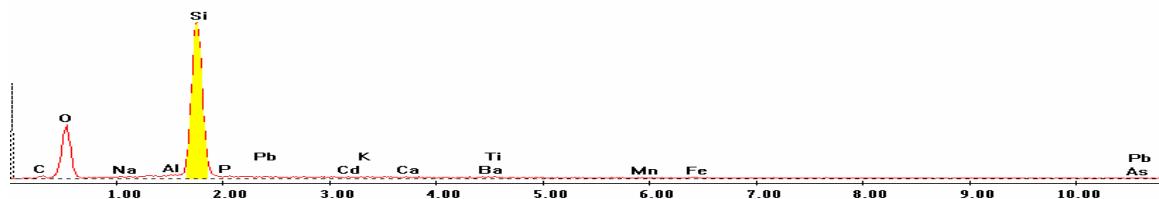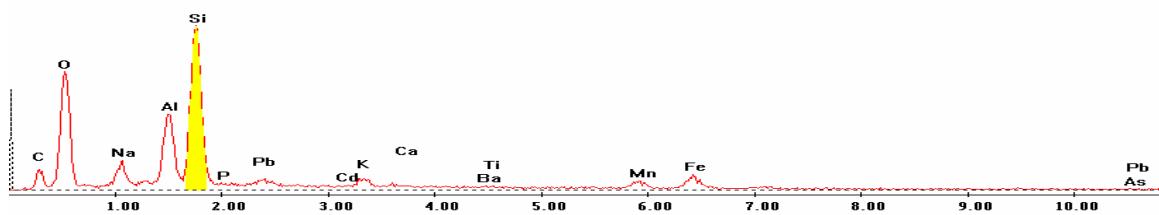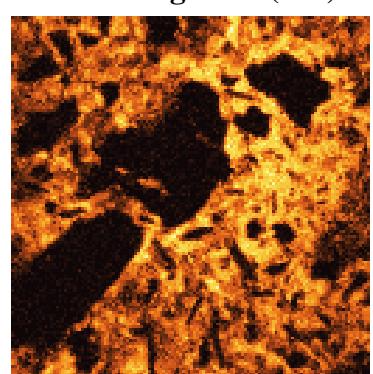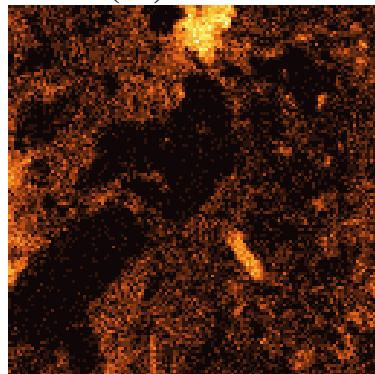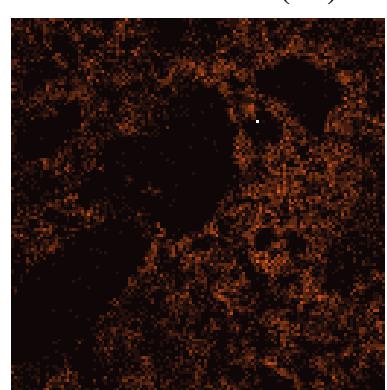Label A: 13APR04 P8C9 451 293 Point 5   Label B: H K

A-394

Point 6

Label A: 13APR04 P8C9 451 293 Point 6   Label B: H K

Point 7

Label A: 13APR04 P8C9 451 293 Point 7   Label B: H K

Point 8

Label A: 13APR04 P8C9 451 293 Point 8   Label B: H K

A-395

Point 9

Label A: 13APR04 P8C9 451 293 Point 9   Label B: H K

Point 10

c:\edax32\genesis\genspc.spc-/-peakgen.spc

Label A: 13APR04 P8C9 451 293 Point 10   Label B: H K
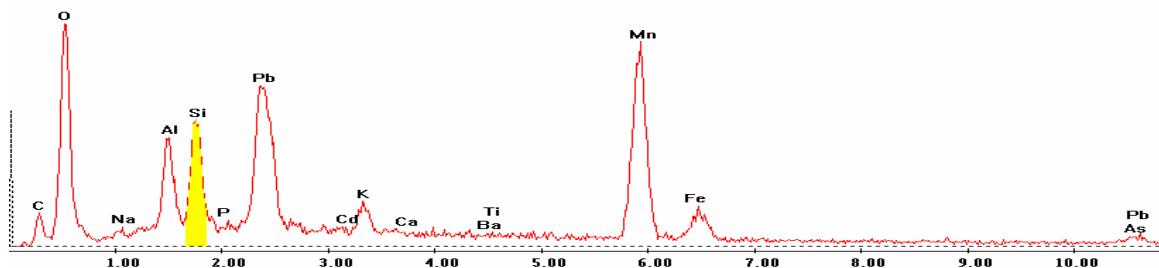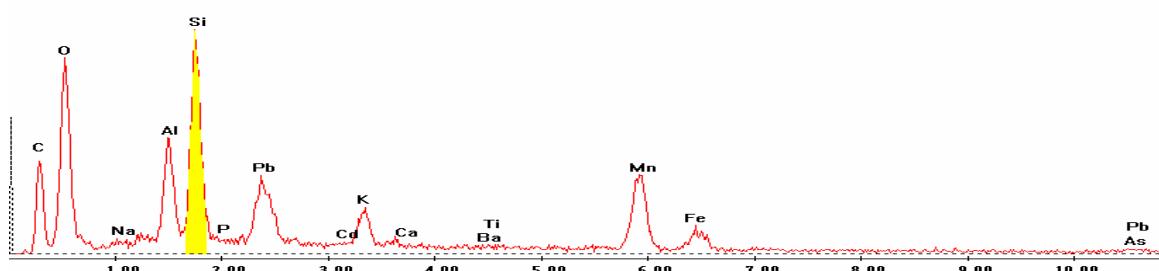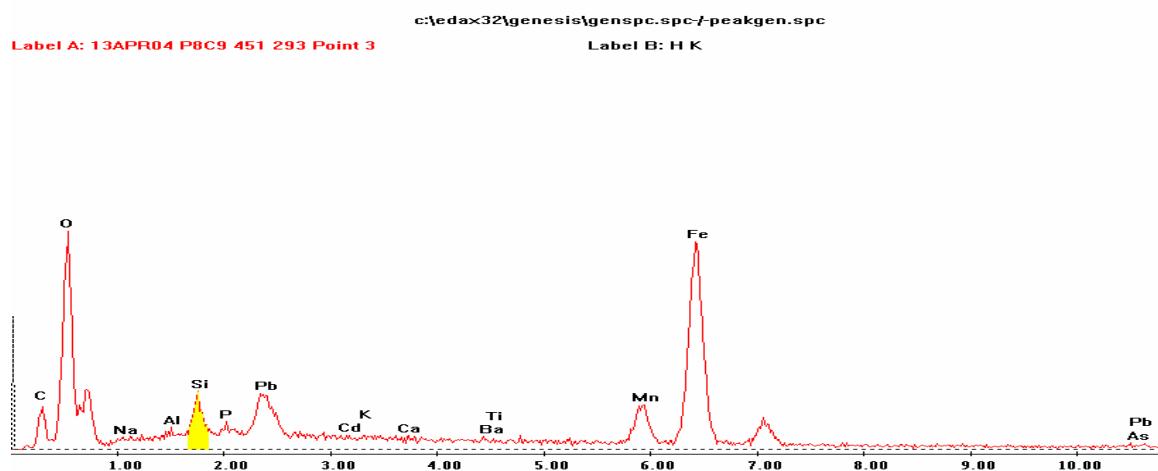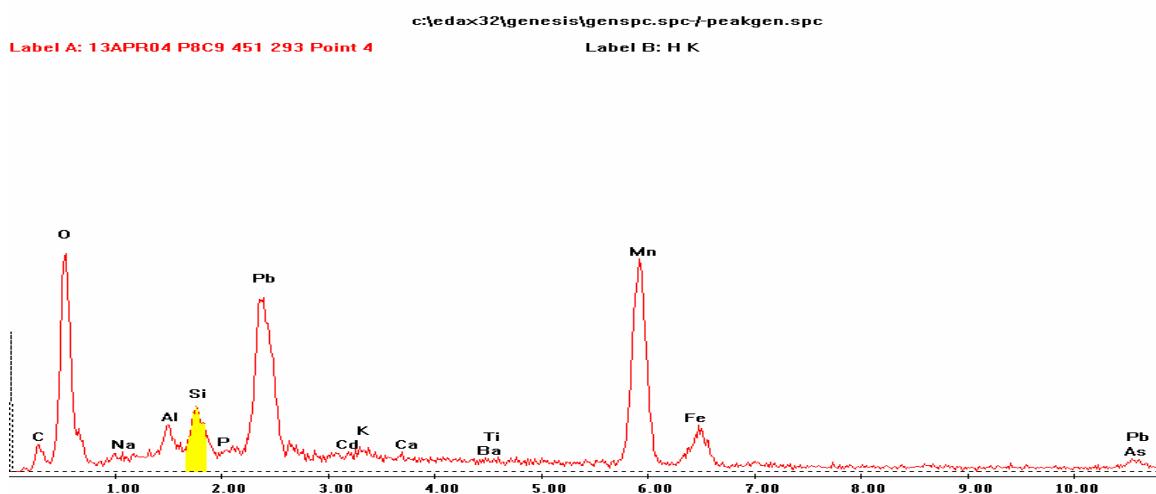

Point 11

c:\edax32\genesis\genspc.spc-/-peakgen.spc

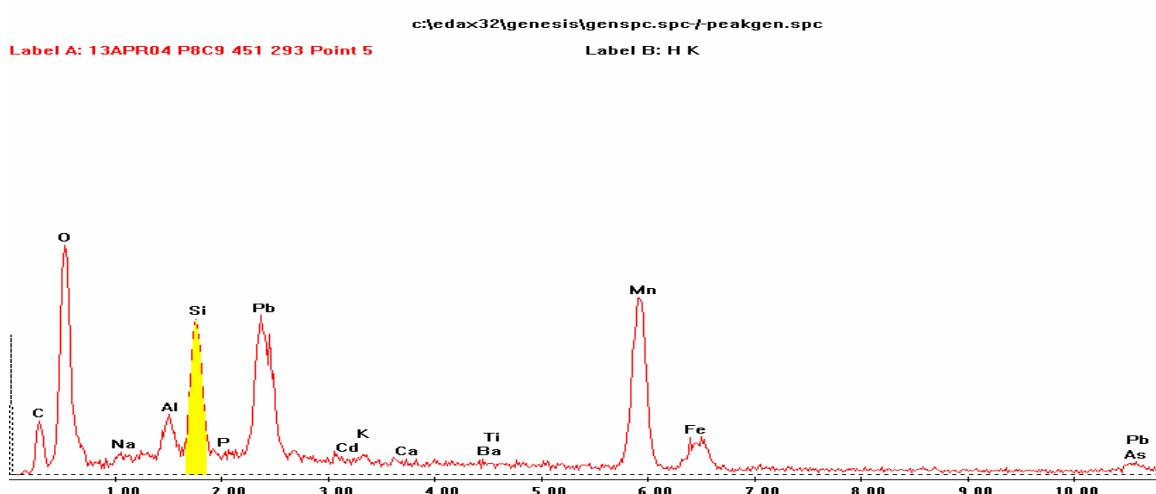Label A: 13APR04 P8C9 451 293 Point 11   Label B: H K