## APPENDICES

Appendix 1 Microscopic observation of rock thin section

| Saxple no. | Rock nase | $\lambda$ xes name | - zexture |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | Secondary mineras |  |  |  |  |  |  |  |  |  | Reerask |
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|  | orphytize andesice | Chranq, <rong | 2atexectal, posphyrita |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | Premenatisecd |  |
| ] | anderatec yelded cotct | Chants Xnons | eutax202c |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| $3 \times \mathrm{CB}$-923 | Dilivine basme | Chatang moons | intercganular |  |  |  |  |  | O |  |  |  |  |  |  |  |  |  |  |  | $\triangle$ | $\triangle$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| - 1 CRF 032 | bioht granita | ${ }_{\text {chinang Kmons }}$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 1- |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| -5. $\operatorname{scx-0.09}$ | andessitic eut anate | ${ }^{\text {chinagag Koiong }}$ | elytaxtic |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | O |  |  |  |  |  |  |  |  |  |  |  |  | O | O |  | - |  |  | , | $\triangle$ | rmol metanorphic |
| 7 l | Ixporeme andegite | Chinat Mhens | intersaetat deatusate |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | degeite foroxem andemete | Chhenag xnong | $\frac{\text { sphaiz2cic }}{\text { intersextal }}$ |  | - |  |  | 1 - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | . |  |  |  | - |  |  |  |  |  | qx-ch1-carb ve: |
|  | Terraxericice outs | Chand Krong |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | $\bigcirc$ |  | 0 |  | $\triangle$ |  |  |  |  | devatritication |
| $12 \mathrm{cck}-012$ | pyrroxene andesite | Chanag krong | calone coopohuritic |  | $\bigcirc$ |  |  | $\triangle$ |  |  |  |  |  |  |  |  |  | - |  |  |  |  |  |  |  |  |  |  | $\triangle$ |  |  |  |  |  |  |  | - |  |  |  |  |  |  |  |
| $\frac{12.0 C R}{20008}$ | pyoxene andesiso | ${ }_{\text {ching }}$ Chinge Lemong | incesazanular |  | (a) | 1 |  |  |  |  |  |  |  |  |  | O $\triangle$ | 10 |  |  |  | 0 |  |  | . |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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|  | dendesitie curt | ${ }^{\text {chinas }}$ Chinas Mong | arons:c |  | 156 | \% |  |  | 0 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | $\triangle 0$ | 0 |  | O |  | $\stackrel{-}{4}$ |  |  |  |  |  |
| -17 717 CeR 8.007 | pyroxener andosise | chanse K coong | Hval 2 peinitic |  | 0 |  |  |  |  |  |  |  |  |  |  |  |  | O |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | $\triangle$ |  |  | $\triangle$ |  |  |  |  |  |  |  |
| 1. $1 . \operatorname{ccch}$-01 | Ancestice |  | Entersoeral ${ }^{\text {arani }}$ |  |  | $\triangle$ |  |  | 10 |  |  |  |  |  |  |  |  |  |  |  | . |  |  |  |  |  |  |  |  |  |  |  |  |  | O |  |  |  |  |  |  |  |  | akornzeed |
| (19.cish-003 | diohb ytanse | Doi chong |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | (1) |  | - | O | - |  |  |  |  |  | ortive the crat elfected |
|  | bearemy | Dos chong |  |  |  |  |  |  |  | $\triangle$ |  |  |  |  |  |  |  |  |  |  | , | , |  |  |  |  |  |  |  |  |  |  |  |  |  |  | $\stackrel{\square}{6}$ |  |  |  | A |  |  | ancondary muscovite, mexmerat |
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|  | bea-hb-taus) qrante | Doz chong. | qaranitic |  | - | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | $\bigcirc$ | $\bigcirc$ |  |  |  | Q | $\triangle$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  | tseurnator |
|  | calcaresu sandeos | ${ }^{\text {Por Chang }}$ | Porphusicte |  | O- | $\triangle$ |  |  |  | $\stackrel{\square}{\square}$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 0 |  |  | ¢ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | Oniy cranise compenemis |
|  | jranule conslognate | 100: Chong |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | arcuysate? |
|  | 1 2euco-aranite | Eoi criong | granmic |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | lisanite porthry |  | Posphytitac |  | $0^{\circ}$ | + |  |  |  |  |  | $\wedge$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | $\triangle$ |  | - | , |  | , |  |  | $\triangle$ |  |  |
| 31 EOP -020 | diorneic mylonite | jor chong | mytonicic |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 3z P908-002 | mus-biogranice | $\frac{1}{\text { jor chena }}$ |  |  | \% |  |  |  |  |  |  |  |  | 0 |  |  |  | $\triangle$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 34, 3 H0R-0934 | j20-hb grante | Oos, Chong | gramaxis |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | $\triangle$ |  |  |  |  |  |  |  |  |  |  |
| $35.1428-005$ | Sranite myionjitn | Dos. Shors | mylenitic |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 36 Jjop-002 |  |  | $\frac{\text { granneze }}{\text { granicie }}$ |  | 10 ${ }^{\circ}$ |  |  |  | $\stackrel{1}{4}$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 39 P2-002 | boomin crante | Parchaburi | frani ixic |  |  | C |  |  | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | Dioums cranice | Preachapur: | $\frac{\text { granti2s }}{\text { graniese }}$ |  |  |  |  |  |  | $\triangle$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | Restshabur |  |  |  | $1{ }^{\text {a }}$ |  |  | $\triangle$ |  |  |  |  | 0 |  |  |  |  |  | $\triangle$ | , $\triangle$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | bio dranite | Ratechaburi | fisantic |  |  |  |  |  | $\Delta$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 0 |  |  |  |  |  |  |  |  |  |  |  | Unik phyy 12 2ece |
| -63.CR-CO1 | arkost sands | $\frac{\text { Patechayer }}{\text { Rater }}$ |  |  |  |  |  |  |  |  | $\triangle$ |  |  |  |  |  |  |  |  |  | $1 \cdot$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | say casaciastie |
|  | four-Tus eranit |  | haranitic |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | biocmus asante | P Ratchabusi | ${ }_{\text {cranitle }}$ |  |  | Q |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | xehy |
|  |  | - Ratechauri | Satanisic |  |  |  |  |  | , |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | - |  |  |  |  |  |
|  | biso-nus-cour aranite. | $\frac{\text { Prechaburs }}{\text { Prechabue }}$ | istanitac |  |  |  |  |  |  | 10, |  |  | $\triangle$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 20r3tyrocaseje |
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A-1
(1)

|  | Sample | Rock Type | Location | Ore Mineral |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | Gangue Mineral |  |  |  |  |  |  |  |  |  |  |  | Remaks |
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| No | No. |  |  | E1 | H0 | $C_{P}$ | Cv | cc | 80 | 1 | Sp | Pe | Mg | Py | Po | Mc | II | He | [a | Ge | Bu | Ch | Mu | 8p | Ab | P1 | W | St | 92 | DP | Ze | Bi | Cb |  |
| 1 | ACP-015 | Quartz Vein | Chiang Yhong Area |  |  |  |  |  |  |  |  |  |  |  |  |  |  | $\Delta$ | - | © |  |  |  |  |  |  |  |  | (6) |  |  |  |  | Oxidation |
| 2 | AC8-017 | Oartz Yein | Chiang Khong Area |  |  | - |  |  |  |  |  |  |  | $\triangle$ |  |  | $\Delta$ |  |  |  | $\bigcirc$ |  | $\triangle$ | 0 |  | $\Delta$ |  | - | - |  |  |  |  |  |
| 3 | ACL-018 | Quartz Vein | Chiang Khong Ares |  |  |  |  |  |  |  |  |  |  | $\Delta$ |  |  | 0 |  |  |  | $\bigcirc$ | $\Delta$ | - | $\Delta$ |  |  |  |  | - |  | $\triangle$ |  |  |  |
| 4 | ACR-020 | Andesite with Prxite | Chiang Xhong Area |  |  | . |  |  |  |  |  |  |  | $\Delta$ | 0 | - | $\bigcirc$ |  |  |  | $\Delta$ | $\Delta$ | $\bigcirc$ |  |  | $\Delta$ | $\triangle$ | - | - | $\bigcirc$ |  |  | $\Delta$ | Skarnization? |
| 5 | ECR-007 | Epidote - Ouartz Vein | Chiang Xhong Arca |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 0 |  |  |  |  | - |  |  |  |  |  |
| 6 | BCR-010 | Quartz Vein | Criang Xhong area |  |  |  |  |  |  |  |  |  |  | . |  |  |  |  |  | $\bigcirc$ | $\Delta$ | - | 0 |  |  |  |  |  | (1) |  |  |  |  |  |
| 7 | BCR-014 | Andesite with Sulfide | Chiang Xhong area |  |  | . |  |  |  |  |  |  |  | $\bigcirc$ | - |  | 0 |  |  |  | $\Delta$ | 0 | $\Delta$ |  |  | 0 |  |  | - | $\bigcirc$ |  |  |  | Skarnization? |
| 8 | BCL-020 | Andesite with Sulfide | Chiang Xhong area |  |  | $\triangle$ |  |  |  |  | - |  |  | © |  | - |  |  |  |  | $\bigcirc$ | $\bigcirc$ | $\triangle$ |  |  | - |  | - | © |  |  |  | - |  |
| 9 | CCI-002 | Andesite with Sulfide | Chiang Xhong area |  |  |  |  |  |  |  |  |  |  |  |  |  |  | (3) | (a) | © |  | $\Delta$ |  |  |  |  |  |  | $\bigcirc$ |  |  |  |  |  |
| 10 | CCR-019 | Quartz Vein | Chiang khong Area |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | $\cdot$ |  |  |  |  |  |  | * |  |  |  |  |  |
| 11 | CCR-020 | Ouartz Vein | Chiang Khong area |  |  | - | - |  |  |  |  |  |  | - | - |  | $\Delta$ | $\bigcirc$ |  |  | $\Delta$ |  | $\bigcirc$ |  |  |  | $\bigcirc$ |  | © |  |  |  |  |  |
| 12 | DCR-001 | Andesite with Pyrite | Chiang Khong Area |  |  |  |  |  |  |  |  |  |  | $\Delta$ |  |  |  | 0 | $\Delta$ |  |  | $\bigcirc$ | $\bigcirc$ | - |  | - |  |  | © |  |  |  |  | Silicification |
| 13 | ECR-023 | Quartz Yein | Chiang Xhong Area |  |  |  |  |  |  |  |  |  |  | - | . |  |  | 0 | - | © | $\Delta$ | 0 | $\Delta$ |  |  |  |  |  | - |  |  |  |  |  |
| 14 | ECR-024 | Quarts Vein | Chiang Xhoug Area |  |  |  |  |  |  |  |  |  |  | - |  |  |  | 0 | - | - | 0 | $\triangle$ | $\Delta$ |  |  |  |  |  | - |  |  |  |  |  |
| 15 | ECR-025 | Quartz Vein | Chiang Xhong Ares |  |  |  |  |  |  |  |  |  |  | - |  |  |  | - | 0 | $\bigcirc$ | - | , | - |  |  |  |  |  | - |  |  |  |  |  |
| 16 | ECB-030 | Altered Andesite | Chiang Xhions Area |  |  |  |  |  |  |  |  |  |  | © |  |  |  | $\Delta$ | (1) | (2) |  |  | 0 |  |  |  |  |  | * |  |  |  |  | Silicification |
| 17 | PCA-004 | Andesitic Tuff | Chiang Ethong Area |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 0 | $\triangle$ |  | $\bigcirc$ |  | $\bigcirc$ |  |  | - |  | . | © |  |  |  |  | Silicification |
| 18 | HCR-002 | Quarts Yein | Chiang khoug Area |  |  |  |  |  |  |  |  |  |  | - |  |  |  |  |  |  | . |  |  |  |  |  |  |  | (6) |  |  |  |  |  |
| 19 | ADR-007 | Quartz Vein | Doi Chong tree |  |  |  |  |  |  |  |  |  |  | - |  |  |  |  | 0 | $\Delta$ | $\bigcirc$ | 0 | 0 |  |  | 0 |  | . | © |  |  |  |  |  |
| 20 | ADR-010 | Diorite with Sulfide | Doi Chong area |  | $\Delta$ | . |  |  |  |  |  | - |  | - |  |  |  |  |  |  | $\bigcirc$ | $\bigcirc$ | - |  |  | $\Delta$ |  | . | © |  |  |  |  |  |


 ze: Zeolite Bi: Biotite Cb : Carbonate,

|  | Saaple$\mathrm{Mc} .$ | zock 1ype | Lecation | Ore Mineral |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | Gangue Minersl |  |  |  |  |  |  |  |  |  |  |  | lemiks |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| \%o |  |  |  | 81 | $\mathrm{HO}_{0}$ | $C_{P}$ | Cv | cc | Bo | 61 | Sp | Pe | M8 | Py | Po | Mc | 11 | He | 5 | Ge | Bu | Ch | M | Ep | Ab | P1 | 飴 | Sh | Qz | Dp | Ze | Bi | Cb |  |
| 21 | C08-003 | Guarts Yein | Doi Chong Area |  | $\bigcirc$ |  |  |  |  |  |  |  |  |  | - |  |  |  |  |  | $\triangle$ | $\Delta$ | $\bigcirc$ |  |  |  | - | - | - |  |  |  |  |  |
| 22 | DDR-009 | Ouartz Vein | Doil Chong Area |  |  |  |  |  |  |  |  |  |  | - | , |  |  |  | $\Delta$ |  | $\Delta$ | - | $\cdot$ |  |  |  |  | - | - |  |  |  |  |  |
| 23. | DDE-012 | Guarts Vein | Doi Chong Area |  |  |  |  |  |  |  |  |  |  | - |  |  |  |  | 0 | $\bigcirc$ |  | $\Delta$ |  |  |  |  |  |  | - |  |  |  |  |  |
| 24 | D08-018 | Quartz Yein | Doit Chang Area |  |  |  |  |  |  |  |  |  |  | - |  |  |  | . | $\Delta$ |  |  | * | - |  |  |  |  |  | - |  |  |  |  |  |
| 25 | BDR-005 | Quarts Vein | Doi Chong Ares |  |  |  |  |  |  |  |  |  |  | - |  |  |  | $\bigcirc$ | - | $\Delta$ | 0 | $\Delta$ | $\bigcirc$ |  |  |  |  |  | - |  |  |  |  |  |
| 28 | 808-006 | Quarts Vein | Doi Chong Area |  |  |  |  |  |  |  |  |  |  | ? | ? |  |  |  |  |  |  |  | - |  |  |  |  |  | - |  |  |  |  |  |
| 27 | 308-011 | Diorite with Mematite | Doi Chong Area |  |  |  |  |  |  |  |  |  | - |  |  |  |  | $\Delta$ |  |  | 0 | $\bigcirc$ | $\Delta$ |  | $\Delta$ | - |  |  | - |  |  |  | - |  |
| 28 | GDir-001 | Quartz Vein | Doi Chong Area |  |  |  |  |  |  |  |  |  |  | - |  |  |  |  |  |  | $\Delta$ | $\Delta$ | $\bigcirc$ |  |  |  | - | - | - |  |  |  |  |  |
| 29 | AR-001 | Quarta Vein | Batchaburi Ares |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | ? |  |  |  |  |  |  | - |  |  |  |  |  |
| 30 | AR-009 | Quarts Yein | Ratchaburi Area |  |  |  |  |  |  |  |  |  |  | ? | ? |  |  |  |  |  | 0 |  | $\bigcirc$ |  | $\triangle$ |  |  |  | - |  |  |  |  |  |
| 31. | 3R-003 | Quartsite | Batchaburi Ares. |  | $\triangle$ | - | - |  |  |  |  |  |  | $\Delta$ |  | - |  |  |  |  | $\Delta$ | 0 | 0 |  | $\Delta$ |  |  | - | - |  |  |  |  |  |
| 32 | C8-601 | Altered Shale | 3atchaburi Area |  |  | $\Delta$ | . | - | - |  |  |  |  | 0 |  | - |  |  | - |  | $\Delta$ | $\Delta$ | 0 |  |  |  |  | - | - |  |  |  | $\bigcirc$ |  |
| 33 | DR-006 | Quartz Yein | gatchaburi Ares. |  |  |  |  |  |  |  |  |  |  | - | - |  |  |  | $\Delta$ | - | - | $\Delta$ |  |  |  |  |  | - | - |  |  |  |  |  |
| 34 | Di-008 | Quartz Vein | natchaburi Area |  |  | $\triangle$ |  |  |  | $\Delta$ |  |  |  | 0 |  |  |  |  | 0 |  | - |  | 0 |  |  | $\Delta$ |  |  | - |  |  |  |  |  |
| 35 | DR-010 | Quartz Vein | Matchaburi Area |  |  |  |  | . |  |  |  |  |  | - | - |  |  |  | $\triangle$ |  |  |  | $\bigcirc$ |  |  |  |  |  | - |  |  |  |  |  |
| 36 | DR-013 | guarts Yein | Ratchaburi Area |  |  | . |  |  |  |  |  |  |  | - | $\Delta$ |  |  |  | - |  | $\Delta$ |  | - |  |  |  |  |  | - |  |  |  |  |  |
| 37 | B1-014 | Quartz Vein | Ratchaburi Area |  |  |  |  |  |  |  |  |  |  | - |  |  |  |  |  |  | - | ? | 0 |  |  | - |  | - | - |  |  |  |  |  |
| 38 | DB-018 | Ouertz Yein | Ratchaburi Area |  |  |  |  |  |  |  |  |  |  | ? |  |  |  |  | 0 |  |  |  | 0 |  |  |  |  |  | (1) |  |  |  |  |  |
| 39 | ER-002 | Altered Andesite | Matchaburi Area | - |  | - | - |  |  |  |  |  |  | 0 | ? |  |  |  |  |  | $\Delta$ | 0 | 0 |  |  |  |  |  | © | - |  | - |  | Alteration Perfeet |
| 40 | ER-008 | Cusrtz Vein | Matchaburi Area | . |  |  |  |  |  |  |  |  |  | - |  |  |  |  | - | 0 |  | $\Delta$ |  |  | ? |  |  |  | $\bullet$ |  |  |  |  |  |
| 41 | 8R-009 | Homblende Quartz Rock | Ratchaburi Area |  |  |  |  |  |  |  |  |  |  | $\cdot$ |  |  |  |  |  |  | 0 | - |  |  |  |  | - | $\Delta$ | - | - |  |  |  |  |


 II: Mnenite, he: Henatite, is: Limonite
$\mathrm{Ze}_{\mathrm{e}}:$ Zeolite $\mathrm{Bi}:$ Biotite $\mathrm{CD}:$ Carbonate,
Appendix $3 \quad$ Results of X-ray diffraction

|  | Area Name | Sample No. | Qz | Pi | Kf | Px | Amp | CH | Ep | Mus | Mon | M 1 | Ce | Kao | Gyp | Ha | Py | Hem | Goe |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | Chiang Khong | ACR-009 | $\bigcirc$ |  | ? |  |  | . |  | ? |  |  | $\bigcirc$ |  |  |  |  |  |  |
| 2 |  | BCR-007 | 0 |  |  |  |  |  | © |  |  |  |  |  |  |  |  |  |  |
| 3 |  | BCR-016 | $\bigcirc$ |  |  |  |  | © |  | $\triangle$ |  |  |  |  |  |  |  |  |  |
| 4 |  | CCR-017 | $\bigcirc$ | ? |  |  |  | $\triangle$ |  | $\triangle$ |  |  |  | $\triangle$ |  |  |  |  |  |
| 5 |  | DCR-010 | $\bigcirc$ |  |  |  |  | $\triangle$ |  | $\bigcirc$ | $\triangle$ |  |  |  | ? |  |  |  | ? |
| 6 |  | ECR-003 | $\bigcirc$ |  |  |  |  |  |  | $\bigcirc$ |  |  |  |  |  |  |  |  |  |
| 7 |  | ECR-022 | $\bigcirc$ | ? |  |  |  |  |  | $\triangle$ |  |  |  | © |  |  |  |  |  |
| 8 |  | ECR-026 | 0 |  |  |  |  |  |  |  |  | $\bigcirc$ |  |  |  | $\bigcirc$ |  |  |  |
| 9 |  | ECR-028 | $\bigcirc$ | - |  |  |  |  |  |  |  | $\triangle$ |  |  |  | $\bigcirc$ |  |  |  |
| 10 |  | ECR-029 | $\bigcirc$ |  |  |  |  | - |  | - |  |  |  |  |  |  |  |  |  |
| 11 |  | ECR-030 | $\bigcirc$ |  |  |  |  | - |  | ? | - |  |  |  |  |  |  |  |  |
| 12 | Doi Chong | BDR-003 | $\bigcirc$ |  | ? |  |  | © |  | © |  |  |  |  |  |  |  |  |  |
| 13 |  | CDR-003 | (2) |  |  |  |  | - |  |  |  |  |  |  |  |  |  |  |  |
| 14 |  | CDR-004 | © |  |  |  |  |  |  | - |  |  |  |  |  |  |  |  |  |
| 15. |  | CDR-007 | $\triangle$ | $\triangle$ |  | $\bigcirc$ |  |  |  |  |  | - |  | $\bigcirc$ |  |  |  |  | $\triangle$ |
| 16 |  | EDR-014 | 0 |  |  |  |  | ? |  | ? |  |  |  |  |  |  |  |  |  |
| 17 |  | GDR-001 | (0) |  |  |  |  | - |  | - |  |  |  |  |  |  |  |  |  |
| 18 | Ratchaburi | AR-003 | 0 | © | $\bigcirc$ |  | ? |  |  | $\bigcirc$ |  |  |  |  |  |  |  |  |  |
| 19 |  | AR-005 | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ |  |  | ? |  | $\bigcirc$ |  |  |  |  |  |  |  |  |  |
| 20 |  | AR-006 | © |  |  |  |  |  |  | © |  |  |  |  |  |  | ? |  |  |
| 21 |  | AR-009 | © |  |  |  |  |  |  | $\bigcirc$ |  |  |  |  |  |  |  |  |  |
| 22 |  | BR-014 | 0 |  |  |  |  | ? |  | $\bigcirc$ |  |  |  |  |  |  |  | - |  |
| 23 |  | CR-003 | © |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 24. |  | ER-017 | © |  |  |  |  |  |  | $\triangle$ |  |  |  |  |  |  |  |  |  |
| 25 |  | ER-027 | $\bigcirc$ | $\bigcirc$ | O |  | ? | ? |  | © |  |  |  |  |  |  |  |  |  |

© : Abundant $\bigcirc$ : Coman $\Delta:$ Rare $\cdot$ : Tiny ?: Uncertain

Appendix 4 Chemical data of stream sediments in Chiang Khong area (1)

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Appendix 6 Chemical data of stream sediments in Ratchaburi area
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## Appendix 7 Ore assay data of rock samples in Chiang Khong area

| Ho S | Sample No. | Rock Type | Elewent | Au | Au | Ag | Cu | Pb | 7n | $\mathrm{w}_{3}$ | Sn | 的 | Ta | Nb |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Dnit | $\mathrm{g} / \mathrm{t}$ 02 | 0z/t | ppa | \% | \% | \% | \% | \% | \% | \% | \% |
| 1. | ACS-002 | Quartz Vein |  | $<0.03<$ | < 0.001 | 2 | $<0.001$ | 0.012 | < 0.001 | <0.01 | < 0.01 | 0.004 | $<0.001$ | < 0.001 |
| 2 A | ACR-007 | Quartz Vein |  | $<0.03<$ | < 0.001 | 2 | $<0.001$ | 0.002 | 0.009 | $<0.01$ | $<0.01$ | 0.112 | $<0.001$ | 0.002 |
| 3 A | ACR-011 | Tuff Breccia |  | $<0.03<$ | $<0.001$ | 2 | $<0.001$ | 0.002 | 0.012 | $<0.01$ | < 0.01 | 0.102 | $<0.001$ | 0.003 |
| 4 A | АСР-012 | Quartz Vein |  | $<0.03<$ | $<0.001$ | $<2$ | $<0.001$ | < 0.001 | $<0.001$ | $<0.01$ | $<0.01$ | 0.021 | $<0.001$ | $<0.001$ |
| 5 A | ACB-014 | Quartz Vein |  | $<0.03<$ | < 0.001 | <2 | < 0.001 | $<0.001$ | $<0.001$ | $<0.01$ | $<0.01$ | 0.003 | < 0.001 | $<0.001$ |
| 6 | ACR-015 | Quartz Vein |  | $<0.03<$ | $<0.001$ | 6 | 0.052 | 0.004 | 0.022 | $<0.01$ | $<0.01$ | 1.360 | $<0.001$ | < 0.001 |
| 7 | ACR-017 | Guartz Yein |  | $<0.03$ < | $<0.001$ | 4 | $<0.001$ | 0.005 | 0.008 | 0.01 | $<0.01$ | 0.045 | $<0.001$ | 0.001 |
| 8 | ACR-018 | Skarnized Rock |  | $<0.03<$ | $<0.001$ | 4 | <0.001 | 0.003 | 0.041 | 0.01 | $<0.01$ | 0.093 | $<0.001$ | 0.001 |
| 9 | ACR-020 | Andesite with Pyrite |  | $<0.03<$ | $<0.001$ | 4 | < 0.001 | 0.002 | 0.013 | 0.02 | $<0.01$ | 0.062 | $<0.001$ | 0.001 |
| 10 | ACR-023 | Sandstone with green C | opyriet | $<0.03<$ | < 0.001 | 8 | 1.565 | 0.023 | 0.004 | 0.02 | $<0.01$ | 0.131 | $<0.001$ | 0.001 |
| 11 | BCR-005 | Cilicified Rhyolite |  | $<0.03$ | $<0.001$ | 2 | 0.013 | 0.006 | 0.002 | 0.01 | $<0.01$ | 0.043 | < 0.001 | 0.002 |
| 12 | BCR-007 | Epidopte - Quartz Vein |  | 0.03 | 0.001 | 2 | 0.006 | 0.010 | $<0.001$ | 0.02 | $<0.01$ | 0.104 | $<0.001$ | < 0.001 |
| 13 | BCR-010 | Quartz Vein |  | 0.03 | 0.001 | $<2$ | $<0.001$ | 0.004 | $<0.001$ | $<0.01$ | $<0.01$ | 0.015 | < 0.001 | 0.003 |
| 14 | BCR-011 | quartz Vein |  | 0.03 | 0.001 | $<2$ | $<0.001$ | 0.001 | < 0.001 | 0.01 | < 0.01 | 0.235 | < 0.001 | < 0.001 |
| 15 | BCR-014 | Andesite rith Sulfide |  | $<0.03$ | $<0.001$ | 2 | 0.001 | 0.002 | 0.002 | 0.01 | <0.01 | 0.114 | $<0.001$ | 0.001 |
| 16 | RCR-017 | Altered Andesite |  | 0.12 | 0.004 | <2 | < 0.001 | 0.004 | 0.001 | 0.01 | $<0.01$ | 0.016 | $<0.001$ | < 0.001 |
| 17 | BCR-620 | Andesite with Sulfide |  | $<0.03$ | < 0.001 | 2 | < 0.001 | 0.003 | 0.007 | 0.01 | $<0.01$ | 0.064 | < 0.001 | 0.002 |
| 18 | CCB-002 | Andesite with Sulphide |  | $<0.03$ | <0.001 | 2 | 0.003 | 0.004 | 0.018 | 0.03 | $<0.01$ | 0.016 | < 0.001 | < 0.001 |
| 19 | CCR-006 | grartz Vein |  | < 0.03 | <0.001 | $<2$ | <0.001 | <0.001 | $<0.001$ | $<0.01$ | $<0.01$ | 0.001 | $<0.001$ | < 0.001 |
| 20 | CCR-008 | quartz Vein |  | 0.03 | 0.001 | $<2$ | $<0.001$ | 0.001 | <0.001 | < 0.01 | < 0.01 | 0.003 | $<0.001$ | < 0.001 |
| 21 | CCR-009 | Quartz Vein |  | < 0.03 | < 0.001 | 2 | < 0.001 | 0.002 | <0.001 | < 0.01 | < 0.01 | 0.002 | $<0.001$ | 0.003 |
| 22 | CCR-017 | Quartz Yein |  | $<0.03$ | <0.001 | $<2$ | 0.001 | 0.001 | 0.005 | $<0.01$ | $<0.01$ | 0.027 | $<0.001$ | 0.001 |
| 23 | CCR-018 | Quartz Vein |  | 0.03 | 0.001 | <2 | 0.001 | 0.003 | $<0.001$ | $<0.01$ | $<0.01$ | 0.001 | $<0.001$ | 0.001 |
| 24 | CCR-019 | quartz Vein |  | 0.03 | 0.001 | $<2$ | $<0.001$ | $<0.001$ | <0.001 | < 0.01 | < 0.01 | 0.003 | $<0.001$ | $<0.001$ |
| 25 | CCB-020 | quartz Yein |  | < 0.03 | $<0.001$ | 2 | $<0.001$ | 0.006 | < 0.001 | $<0.01$ | $<0.01$ | 0.004 | <0.001 | 0.001 |
| 26 | DCR-001 | Andesite with Pyrite |  | $<0.03$ | < 0.001 | 2 | $<0.001$ | 0.003 | 0.002 | < 0.01 | < 0.01 | 0.040 | < 0.001 | 0.001 |
| 27 | DCB-005 | quartz Vein |  | <0.03 | < 0.001 | $<2$ | <0.001 | $<0.001$ | $<0.001$ | $<0.01$ | $<0.01$ | 0.004 | <0.001 | $<0.001$ |
| 28 | DCR-006 | Quartz Vein |  | < 0.03 | $<0.001$ | 4 | $\leq 0.001$ | 0.001 | < 0.001 | 0.01 | $<0.01$ | 0.079 | <0.001 | $<0.001$ |
| 29 | DCR-007 | quartz Vein |  | < 0.03 | < 0.001 | 2 | $<0.001$ | 0.001 | $<0.001$ | 0.01 | $<0.01$ | 0.033 | $<0.001$ | $<0.001$ |
| 30 | DCR-013 | Andesite |  | <0.03 | <0.001 | 2 | $<0.001$ | 0.006 | 0.005 | 0.01 | $<0.01$ | 0.038 | $<0.001$. | 0.002 |
| 31 | DCR-015 | Aplite with Pyrite |  | 0.03 | 0.001 | 4 | 0.001 | 0.002 | < 0.001 | 0.01 | $<0.01$ | 0.005 | < 0.001 . | 0.002 |
| 32. | DCR-016 | Quartz Vein |  | 0.16 | 0.005 | 2 | $<0.001$ | 0.001 | < 0.001 | 0.01 | < 0.01 | 0.004 | < 0.001 | $<0.001$ |
| 33 | ECR-001 | Quartz Vein |  | $<0.03$ | < 0.001 | $<2$ | $<0.001$ | 0.001 | < 0.001 | 0.01 | $<0.01$ | 0.009 | < 0.001 | $<0.001$ |
| 34 | ECR-607 | Quartz Yein |  | $<0.03$ | <0.001 | $<2$ | $<0.001$ | 0.003 | 0.002 | 0.01 | $<0.01$ | 0.018 | < 0.001 | 0.002 |
| 35 | ECB-015 | quartz Vein |  | 0.03 | 0.001 | 2 | 0.002 | 0.001 | 0.001 | 0.02 | $<0.01$ | 0.034 | <0.001 | 0.001 |
| 36 | ECR-017 | quartz Yein |  | $<0.03$ | < $<0.001$ | 2 | 0.001 | 0.006 | < 0.001 | $<0.01$ | < 0.01 | 0.005 | $<0.001$ | $<0.001$ |
| 37 | ECR-020 | Quartz Vein |  | $<0.03$ | <0.001 | 2 | $<0.001$ | 0.002 | < 0.001 | < 0.01 | $<0.01$ | 0.008 | < 0.001 | $<0.001$ |
| 38 | ECR-023 | Quartz Yein |  | 0.03 | 0.001 | 2 | 0.002 | < 0.001 | 0.001 | <0.01 | $<0.01$ | 0.008 | <0.001 | <0.001 |
| 39 | ECR-024 | quartz Yein |  | 0.03 | 0.001 | 2 | 0.003 | 0.002 | $\bigcirc 0.001$ | 0.01 | $<0.01$ | 0.002 | < 0.001 | 0.001 |
| 40 | ECR-025 | Quartz Vein |  | $<0.03$ | <0.001 | 2 | 0.004 | 0.001 | 0.001 | 0.01 | $<0.01$ | 0.003 | <0,001 | $<0.001$ |
| 41 | 1 ECR-026 | White Clay |  | $<0.03$ | <0.001 | 2 | $<0.001$ | 0.001 | 0.001 | 0.02 | <0.01 | 0.001 | < 0.001 | 0.001 |
| 42 | ECR-027. | Slate with Graphite |  | < 0.03 | 3 < 0.001 | <2 | 0.002 | 0.004 | < 0.001 | < 0.01 | $<0.01$ | 0.001 | <0.001 | 0.001 |
| 43 | 3 ECR-029 | Altered Andesite |  | $<0.03$ | < 0.001 | <2 | $<0.001$ | 0.003 | 0.008 | 0.01 | $<0.01$ | 0.004 | < 0.001 | 0.002 |
| 44 | 4 ECR-030 | Altered Andesite |  | 0.03 | 0.001 | 2 | 0.002 | 0.014 | 0.012 | 0.01 | $<0.01$ | 0.003 | < 0.001 | $<0.001$ |
| 45 | 5 FCB-004 | Andesitic Tuff nith Cla |  | < 0.03 | < 0.001 | 4 | $<0.001$ | 0.002 | 0.006 | < 0.01 | $<0.01$ | 0.024 | $<0.001$ | 0.001 |
| 46 | 6. HCR-001 | Quartz Vein |  | < 0.03 | < 0.001 | $<2$ | < 0.001 | 0.006 | 0.001 | 0.01 | $<0.01$ | 0.025 | < 0.001 | 0.001 |
| 47. | $7.1 \mathrm{CCP}-002$ | Quartz Vein |  | <0.03 | $3<0.001$ | 2 | $<0.001$ | <0.001 | $<0.001$ | $<0.01$ | $<0.01$ | 0.002 | <0.001 | $<0.001$ |
| 48 | 8 HCR-003 | Quartz Yein |  | <0.03 | $3<0.001$ | 2 | < 0.001 | 0.001 | <0.001 | 0.01 | $<0.01$ | 0.003 | < 0.001 | < 0.001 |
| 49 | 9 HCP-005 | puartz Vein |  | < 0.03 | 3 <0.001 | 2 | < 0.001 | <0.001 | <0.001 | < 0.01 | $<0.01$ | 0.019 | < 0.001 | <0.001 |
| 50 | $0 \cdot$ JCE-001 | Andesite with Clay and | Pyrite | < 0.03 | $3<0.001$ | 4 | < 0.001 | 0.008 | 0.005 | 0.02 | <0.01 | 0.016 | $<0.001$ | 0.002 |

Appendix 8 Ore assay data of rock samples in Doi Chong area

| No | Sample No. | Rock Type ${ }^{\text {E }}$ Elewent | Au | Au | Ag | Cu | Pb | 2 n | W0, | Sn | 血 | Ta | Mb |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | th | $\mathrm{g} / \mathrm{t}$ | 02/t | ppe | \% | \% | \% | \% | \% | \% | \% | \% |
| 1 | ADR-601 | Aplite with Salfide | $<0.03$ | $<0.001$ | $<2$ | $<0.001$ | 0.004 | 0.004 | 0.01 | < 0.01 | 0.020 | < 0.001 | 0.002 |
| 2 | ADE-003 | Silicified Rock | < 0.03 | $<0.001$ | 2 | 0.001 | 0.001 | 0.002 | 0.02 | < 0.01 | 0.015 | $<0.001$ | < 0.001 |
| 3 | ADR-004 | Jasperoid Bock | < 0.03 | $<0.001$ | 2 | $<0.001$ | < 0.001 | < 0.001 | 0.02 | < 0.01 | 0.001 | $<0.001$ | $<0.001$ |
| 4 | ADS-005 | Aplite with Quartz Vein | < 0.03 | $<0.001$ | <2 | $<0.001$ | 0.003 | 0.002 | 0.01 | $<0.01$ | 0.030 | < 0.001 | 0.002 |
| 5 | ADS-006 | Quartz Vein | $<0.03$ | <0.001 | <2 | 0.001 | 0.003 | 0.003 | <0.01 | $<0.01$ | 0.036 | $<0.001$ | $<0.001$ |
| 6 | ADR-007 | Quartz Yein | < 0.03 | $<0.001$ | $<2$ | $<0.002$ | 0.003 | 0.004 | 0.03 | $<0.01$ | 0.015 | $<0.001$ | 0.002 |
| 7 | ADR-008 | Diopside Skarn | < 0.03 | $<0.001$ | $<2$ | $<0.001$ | < 0.001 | 0.004 | <0.01 | $<0.01$ | 0.049 | $<0.001$ | <0.001 |
| 8 | ADR-010 | Diorite with | < 0.03 | < 0.001 | $<2$ | 0.002 | 0.001 | 0.011 | <0.01 | <0.01 | 0.034 | $<0.001$ | 0.001 |
| 9 | ADR-013 | Quartz Yein | < 0.03 | $<0.001$ | <2 | $<0.001$ | 0.001 | < 0.001 | $<0.01$ | $<0.01$ | 0.013 | < 0.001 | < 0.001 |
| 10 | ADR-014 | Quartz Vein | <0.03 | < 0.001 | $<2$ | < 0.001 | 0.001 | $<0.001$ | 0.01 | < 0.01 | 0.003 | < 0.001 | < 0.001 |
| 11 | ADR-017 | Quartz Vein | $<0.03$ | $<0.001$ | $<2$ | $<0.001$ | 0.001 | < 0.001 | $<0.01$ | $<0.01$ | 0.002 | < 0.001 | $<0.001$ |
| 12 | BDR-003 | Quartz Phyllite xith Pyrite | $<0.03$ | < 0.001 | $<2$ | 0.001 | 0.002 | 0.021 | 0.03 | < 0.01 | 0.091 | $<0.001$ | 0.001 |
| 13 | B $\mathrm{D}_{\mathrm{R}}$-004 | Phyllite with Pyrite | $<0.03$ | <0.001 | $<2$ | $<0.001$ | 0.001 | 0.001 | 0.01 | $<0.01$ | 0.012 | $<0.001$ | 0.001 |
| 14 | BDR-006 | Granite with Quartz Vein | $<0.03$ | < 0.001 | $<2$ | $<0.001$ | 0.006 | 0.004 | 0.02 | $<0.01$ | 0.053 | 01 | 0.002 |
| 15 | BDR-007 | Quartz Vein | < 0.03 | <0.001 | $<2$ | < 0.001 | 0.002 | 0.001 | 0.01 | $<0.01$ | 0.002 | $<0.001$ | < 0.001 |
| 16 | BDP-011 | Quartz Yein | $<0.03$ | $<0.001$ | <2 | $<0.001$ | 0.001 | 0.001 | 0.01 | < 0.01 | 0.001 | $<0.001$ | < 0.001 |
| 17 | BDR-015 | Quartz Vein | $<0.03$ | $<0.001$ | <2 | < 0.001 | 0.002 | 0.001 | 0.01 | < 0.01 | 0.002 | $<0.001$ | < 0.001 |
| 18 | COR-003 | Quartz Yein | <0.03 | $<0.001$ | <2 | < 0.001 | 0.002 | 0.001 | 0.01 | $<0.01$ | 0.002 | < 0.001 | 0.001 |
| 19 | CDR-004 | Quartz Yein | <0.03 | $<0.001$ | <2 | $<0.001$ | 0.001 | 0.003 | < 0.01 | $<0.01$ | 0.005 | < 0.001 | < 0.001 |
| 20 | CDR-010 | Quartz Yein | $<0.03$ | <0.001 | <2 | < 0.001 | 0.001 | 0.001 | $<0.01$ | <0.01 | 0.002 | $<0.001$ | $<0.001$ |
| 21 | CDR-012 | Quartz | < 0.03 | <0,001 | <2 | $<0.001$ | 0.001 | 0.001 | < 0.01 | < 0.01 | 0.001 | 0.001 | 1 |
| 22 | CDE-013 | Quartz Vein | <0.03 | <0.001 | <2 | $<0.001$ | 0.001 | 0.002 | $<0.01$ | < 0.01 | 0.001 | <0.001 | $<0.001$ |
| 23 | DDR-001 | Quartz Schist | $<0.03$ | <0.001 | <2 | $<0.001$ | 0.006 | 0.003 | 0.01 | <0.01 | 0.020 | $<0.001$ | < 0.001 |
| 24 | DDB-008 | Quartz Vein | $<0.03$ | $<0.001$ | <2 | 0.001 | $<0.001$ | 0.012 | < 0.01 | $<0.01$ | 0.113 | $<0.001$ | 0.001 |
| 25 | DIB-009 | Quartz Yein | $<0.03$ | $<0.001$ | $<2$ | $<0.001$ | $<0.001$ | 0.006 | < 0.01 | $<0.01$ | 0.017 | < 0.001 | 0.001 |
| 26 | DDR-010 | Granite with Quartz Yein | $<0.03$ | $<0.001$ | 2 | < 0.001 | 0.030 | 0.001 | 0.03 | < 0.01 | 0.023 | 0.001 | 0.004 |
| 27 | DDR-012 | Quartz Vein | $<0.03$ | <0.001 | 2 | 0.003 | 0.001 | $<0.001$ | 0.05 | <0.01 | 0.033 | < 0.001 | 0.001 |
| 28 | DDR-013 | Quartz Veín | < 0.03 | < 0.001 | 2 | $<0.001$ | 0.003 | 0.002 | 0.01 | <0.01 | 0.039 | 0.001 | 0.005 |
| 29 | DDR-015 | Quartz Vein | 0.12 | 0.004 | <2 | < 0.001 | 0.001 | 0.001 | < 0.01 | $<0.01$ | 0.004 | <0.001 | <0.001 |
| 30 | DDR-016 | Siliceous Conglomerate | $<0.03$ | $<0.001$ | $<2$ | 0.001 | 0.001 | 0.001 | $<0.01$ | $<0.01$ | 0.008 | $<0.001$ | $<0.001$ |
| 31 | DDA-018 | Guartz Vein | $<0.03$ | < 0.001 | <2 | < 0.001 | 0.001 | < 0.001 | < 0.01 | $<0.01$ | 0.001 | $<0.001$ | <0.001 |
| 32 | DDR-021 | Quartz Vein | $<0.03$ | < 0.001 | <2 | < 0.001 | < 0.001 | < 0.001 | $<0.01$ | $<0.01$ | 0.001 | < 0.001 | < 0.001 |
| 33 | EDR-001 | Quartz Vein | $<0.03$ | < 0.001 | <2 | < 0.001 | 0.002 | 0.003 | 0.03 | < 0.01 | 0.007 | < 0.001 | 0.001 |
| 34 | EDR-003 | Quartz Yein | $<0.03$ | < 0.001 | <2 | < 0.001 | 0.001 | 0.001 | 0.04 | $<0.01$ | 0.008 | < 0.001 | 0.001 |
| 35 | coR-004 | Diorite with Quartz Yein | $<0.03$ | < 0.001 | 2 | $<0.001$ | 0.001 | 0.001 | 0.06 | $<0.01$ | 0.086 | <0.001 | 0.002 |
| 36 | EDR-006 | Quartz Vein | $<0.03$ | $<0.001$ | $<2$ | $<0.001$ | <0.001 | $<0.001$ | <0.01 | <0.01 | 0.002 | < 0.001 | < 0.001 |
| 37 | EDR-00? | Quartz Vein | $<0.03$ | < 0.001 | <2 | < 0.001 | < 0.001 | < 0.001 | 0.01 | <0.01 | 0.003 | <0.001 | 0.002 |
| 38 | EOR-010 | Quartz Vein | $<0.03$ | < 0.001 | <2 | < 0.001 | 0.007 | 0.003 | 0.01 | $<0.01$ | 0.020 | < 0.001 . | 0.001 |
| 39 | CDR-011 | Diorite with Sulfide | $<0.03$ | < 0.001 | <2 | < 0.001 | $<0.001$ | 0.003 | 0.02 | < 0.01 | 0.059 | < 0.001 | < 0.001 |
| 40 | ROR-012 | Skarnized Limestone | <0.03 | < 0.001 | $<2$ | $<0.001$ | < 0.001 | 0.001 | 0.01 | $<0.01$ | 0.021 | <0.001 | $<0.001$ |
| 41 | EDR-014 | Quartz Yein | not/ss | not/ss | 24 | 0.004 | 0.006 | 0.012 | 0.02 | $<0.01$ | > 2.500 | $<0.001$ | < 0.001 |
| 42 | ERR-017 | Guartz Yein | $<0.03$ | < 0.001 | $\leq 2$ | < 0.001 | < 0.001 | <0.001 | $<0.01$ | $<0.01$ | 0.001 | $<0.001$ | < 0.001 |
| 43 | EDR-018 | Quartz Yein | <0.03 | < 0.001 | <2 | $<0.001$ | <0.001 | < 0.001 | $<0.01$ | $<0.01$ | 0.001 | < 0.001 | $<0.001$ |
| 44 | FDR-004 | Quartz Vein | < 0.03 | < 0.001 | $<2$ | $<0.001$ | 0.001 | < 0.001 | 0.04 | $<0.01$ | 0.019 | < 0.001 | < 0,001 |
| 45 | GDR-001 | Quartz Vein | $<0.03$ | $<0.001$ | <2 | $<0.001$ | 0.001 | $<0.001$ | 0.05 | $<0.01$ | 0.005 | $<0.001$ | 0.001 |
| 46 | HDR-002 | Quartz Vein | $<0.03$ | < 0.001 | <2 | $<0.001$ | 0.001 | < 0.001 | 0.10 | $<0.01$ | 0.014 | $<0.001$ | <0.001 |
| 47 | SR-001 | Quartz Yein | $<0.03$ | $<0.001$ | $<2$ | $<0.001$ | 0.010 | 0.004 | 0.06 | $<0.01$ | 0.026 | $<0.001$ | 0.002 |
| 48 | KDR-001 | Quartz Vein | $<0.03$ | < 0.001 | <2 | <0,001 | 0.001 | $<0.001$ | 0.04 | < 0.01 | 0.036 | < 0.001 | 0.001 |
| 49 | $\mathrm{K} 3 \mathrm{R}-002$ | Quartz Yein | <0.03 | < 0.001 | <2 | 0.002 | 0.001 | 0.001 | 0.04 | <0.01 | 0.036 | < 0.001 | $<0.001$ |

Appendix 9 Ore assay data of rock samples in Ratchaburi area

| No | Sample No. | Lock Type | Elerent | Au | Au | Ag | Cu | Pb | 2 n | \% 0 | Sn | 彻 | 12 | Nb |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Init | $\mathrm{g} / \mathrm{t}$ | 0z/t | pp | \% | \% | \% | \% | \% | \% | \% | \% |
| 1 | AB-001 | Quartz Vein |  | < 0.03 | $<0.001$ | $<2$ | $<0.001$ | 0.001 | $<0.001$ | 0.02 | $<0.01$ | 0.002 | $<0.001$ | < 0.001 |
| 2 | AR-007 | Quartz Yein |  | < 0.03 | $<0.001$ | <2 | < 0.001 | 0.001 | 0.010 | 0.02 | 0.48 | 0.100 | 0.013 | 0.006 |
| 3 | AR-008 | Quartz Vein |  | < 0.03 | $<0.001$ | $<2$ | $<0.001$ | < 0.001 | 0.001 | 0.01 | < 0.01 | 0.020 | < 0.001 | 0.001 |
| 4 | AR-009 | Quartz Vein |  | < 0.03 | < 0.001 | $<2$ | < 0.001 | 0.002 | 0.001 | 0.01 | $<0.01$ | 0.005 | $<0.001$ | 0.002 |
| 5 | BR-003 | Quartzite with Pyrite |  | < 0.03 | < 0.001 | <2 | $<0.001$ | 0.003 | $<0.001$ | 0.01 | $<0.01$ | 0.003 | $<0.001$ | 0.001 |
| 6 | BR-008 | Quartz Vein |  | <0.03 | $<0.001$ | <2 | <0.001 | 0.088 | $<0.001$ | 0.01 | $<0.01$ | 0.001 | <0.001 | 0.001 |
| 7 | BR-013 | guartz Vein |  | <0.03 | $<0.001$ | $<2$ | < 0.001 | 0.007 | 0.004 | 0.01 | $<0.01$ | 0.071 | $<0.001$ | < 0.001 |
| 8 | BR-014 | Altered Tuff |  | $<0.03$ | $<0.001$ | <2 | 0.001 | 0.002 | 0.006 | 0.01 | $<0.01$ | 0.012 | $<0.001$ | 0.001 |
| 9 | CR-001 | Altered Shale |  | $<0.03$ | $<0.001$ | <2 | 0.001 | 0.001 | 0.006 | 0.01 | $<0.01$ | 0.045 | $<0.001$ | 0.001 |
| 10 | CR-002 | Granite with Sulfide |  | $<0.03$ | $<0.001$ | <2 | < 0.001 | 0.006 | 0.001 | 0.01 | $<0.01$ | 0.013 | $<0.001$ | $<0.001$ |
| 11 | C7-004 | vuartz Vein |  | $<0.03$ | < 0.001 | <2 | < 0.001 | 0.001 | 0.003 | 0.03 | $<0.01$ | 0.023 | 0.004 | 0.009 |
| 12 | DR-001 | Quartz Vein |  | $<0.03$ | < 0.001 | <2 | < 0.001 | 0.001 | 0.001 | 0.02 | $<0.01$ | 0.019 | < 0.001 | 0.001 |
| 13 | DR-006 | Quartz Yein |  | $<0.03$ | $<0.001$ | <2 | $<0.001$ | 0.001 | <0.001 | 0.01 | $<0.01$ | 0.029 | $<0.001$ | < 0.001 |
| 14 | DR-007 | Quarta Yein |  | $<0.03$ | $<0.001$ | <2 | $<0.001$ | 0.001 | < 0.001 | 0.01 | $<0.01$ | 0.021 | 0.001 | 0.001 |
| 15 | DR-008 | Quartz Vein |  | 0.03 | 0.001 | 2 | 0.017 | 0.010 | 0.001 | < 0.01 | $<0.01$ | 0.012 | < 0.001 | 0.001 |
| 16 | DR-009 | Quartz Vein |  | < 0.03 | $<0.001$ | <2 | < 0.001 | 0.020 | 0.002 | <0.01 | $<0.01$ | 0.003 | <0.001 | <0.001 |
| 17 | DR-010 | Quarts Vein |  | < 0.03 | < 0.001 | <2 | $<0.001$ | 0.002 | $<0.001$ | $<0.01$ | $<0.01$ | 0.002 | $\leq 0.001$ | < 0.001 |
| 18 | DR-011 | Quartz Vein |  | <0.03 | < 0.001 | <2 | $<0.001$ | < 0.001 | $<0.001$ | $<0.01$ | < 0.01 | 0.002 | < 0.001 | 0.001 |
| 19 | DR-012 | Quartz Vein |  | < 0.03 | < 0.001 | $<2$ | $<0.001$ | 0.002 | <0.001 | 0.01 | $<0.01$ | 0.001 | $<0.001$ | 0.001 |
| 20 | DR-013 | Quartz Vein |  | $<0.03$ | $<0.001$ | 2 | 0.008 | 0.046 | 0.002 | 0.01 | $<0.01$ | 0.010 | $<0.001$ | 0.001 |
| 21 | DR-014 | Quartz Yein |  | $<0.03$ | <0.001 | 2 | 0.001 | 0.002 | 0.002 | < 0.01 | $<0.01$ | 0.007 | $<0.001$ | 0.001 |
| 22 | DR-016 | Quartz Vein |  | $<0.03$ | <0.001 | $<2$ | $<0.001$ | 0.001 | < 0.001 | $<0.01$ | $<0.01$ | 0.003 | <0.001 | < 0.001 |
| 23 | DR-018 | Quartz Vein |  | < 0.03 | < 0.001 | <2 | < 0.001 | 0.001 | < 0.001 | $<0.01$ | 0.06 | 0.005 | <0.001 | < 0.001 |
| 24 | ER-002 | Altered Andesite |  | < 0.03 | $<0.001$ | 2 | $<0.001$ | 0.003 | 0.005 | 0.01 | <0.01 | 0.051 | $<0.001$ | 0.001 |
| 25 | ER-003 | Silicified Kornfels |  | < 0.03 | < 0.001 | 2 | 0.001 | 0.002 | 0.006 | 0.02 | $<0.01$ | 0.044 | $<0.001$ | 0.001 |
| 26 | ER-007 | Quartz Vein |  | $<0.03$ | <0.001 | $<2$ | < 0.001 | 0.002 | 0.001 | 0.05 | $<0.01$ | 0.010 | $<0.001$ | 0.001 |
| 27 | ER-008 | Quartz Vein |  | $<0.03$ | $<0.001$ | $<2$ | 0.002 | $<0.001$ | $<0.001$ | 0.05 | $<0.01$ | 0.002 | < 0.001 | $<0.001$ |
| 28 | ER-009 | Hornblend Quartz Rock |  | $<0.03$ | $<0.001$ | $<2$ | $<0.001$ | 0.001 | 0.015 | 0.01 | <0.01 | 0.026 | 0.003 | 0.007 |
| 29 | 88-014 | Quartz Vein |  | < 0.03 | < 0.001 | <2 | < 0.001 | 0.003 | 0.001 | 0.01 | <0.01 | 0.019 | < 0.001 | 0.001 |
| 30 | ER-012 | Quartz Yein |  | $<0.03$ | < 0.001 | 4 | 0.008 | 0.012 | 0.006 | 0.02 | <0.01 | 0.019 | $<0.001$ | 0.001 |
| 31 | 兓-014 | Quartz Vein |  | $<0.03$ | < 0.001 | 10 | 0.001 | 0.359 | 0.003 | 0.07 | < 0.01 | 0.004 | < 0.001 | 0,001 |
| 32 | ER-015 | Quartz Vein |  | $<0.03$ | <0.001 | <2 | 0.002 | 0.008 | 0.010 | 0.30 | $<0.01$ | 0.086 | 0.002 | 0.001 |
| 33 | ER-016 | guartz Vein |  | $<0.03$ | $<0.001$ | <2 | 0.001 | 0.054 | 0.001 | 0.02 | <0.01 | 0.004 | <0.001 | $<0.001$ |
| 34 | ER-017 | quartz Vein |  | 0.03 | 0.001 | 2 | $<0.001$ | 0.002 | $<0.001$ | 0.01 | < 0.01 | 0.012 | $<0.001$ | $<0.001$ |
| 35 | ER-018 | Quartz Yein |  | < 0.03 | <0.001 | <2 | $<0.001$ | 0.003 | < 0.001 | 0.01 | < 0.01 | 0.007 | < 0.001 | 0.001 |
| 36 | ER-019 | Quartz Vein |  | < 0.03 | < 0.001 | <2 | $<0.001$ | 0.003 | $<0.001$ | 0.02 | < 0.01 | 0.008 | $<0.001$ | 0.001 |
| 37 | ER-020 | Quartz Vein |  | $<0.03$ | $<0.001$ | <2 | <0.001 | 0.002 | $<0.001$ | 0.01 | $<0.01$ | 0.004 | $<0.001$ | 0.001 |
| 38 | ER-021 | Quartz Vein |  | 0.03 | 0.001 | $<2$ | <0.001 | < 0.001 | < 0.001 | 0.02 | $<0.01$ | 0.006 | < 0.001 | 0.001 |
| 39 | ER-022 | Siliceous Tuff |  | $<0.03$ | $<0.001$ | <2 | < 0.001 | 0.002 | 0.003 | 0.02 | <0.01 | 0.059 | 0.004 | 0.006 |
| 40 | ER-023 | Muartz Yein |  | < 0.03 | < 0.001 | <2 | $\bigcirc 0.001$ | 0.005 | 0.003 | 0.09 | $<0.01$ | 0.019 | < 0.001 | 0.001 |
| 41 | ES-024 | Quartz Yein |  | $<0.03$ | $<0.001$ | <2 | < 0.001 | $<0.002$ | < 0.001 | 0.02 | $<0.01$ | 0.008 | < 0.001 | < 0.001 |
| 42 | [ B -025 | Quartz Vein |  | $<0.03$ | $<0.001$ | 2 | $<0.001$ | 0.002 | 0.001 | 0.04 | $<0.01$ | 0.010 | 0.001 | 0.002 |
| 43 | ER-026 | Quartz Vein |  | $<0.03$ | < 0.001 | 2 | < 0.001 | 0.001 | 0.001 | 0.23 | $<0.01$ | 0.037 | $<0.001$ | 0.001 |
| 44 | ER-029 | Quartz Yein |  | < 0.03 | < 0.001 | $<2$ | 0.001 | 0.002 | <0.001 | 0.05 | $<0.01$ | 0.004 | $<0.001$ | $<0.001$ |
| 45 | ER-030 | Quartz Yein |  | $<0.03$ | < 0.001 | 2 | < 0.001 | 0.001 | 0.001 | 0.02 | $<0.01$ | 0.017 | $<0.001$ | 0.001 |
| 46 | ER-032 | quartz Vein |  | $<0.03$ | < 0.001 | <2 | < 0.001 | < 0.001 | < 0.001 | 0.02 | < 0.01 | 0.008 | $<0.001$ | 0.001 |
| 47. | EP-033 | Quartz Vein |  | 0.03 | 0.001 | 2 | $<0.001$ | 0.003 | $<0.001$ | 0.01 | $<0.01$ | 0.006 | $<0.001$ | 0.001 |
| 48. | KR-001 | Quartz Vein |  | $<0.03$ | <0.001 | 2 | <0.001 | 0.003 | 0.001 | 0.02 | $<0.01$ | 0.018 | $<0.001$ | 0.002 |
| 49 | KR-002 | Quartz Vein |  | < 0.03 | < 0.001 | 2. | < 0.001 | 0.001 | 0.002 | 0.02 | < 0.01 | 0.033 | $<0.001$ | 0.001 |
| 50 | KR-003 | Aplite with quartz Vein |  | $<0.03$ | < 0.001 | <2 | < 0.001 | 0.003 | 0.001 | 0.03 | $<0.01$ | 0.017 | $<0.001$ | 0.001 |
| 51. | IR-003 | Quartz Yein |  | $<0.03$ | $<0.001$ | <2 | $<0.001$ | $<0.001$ | < 0.001 | 0.04 | $<0.01$ | 0.002 | < 0.001 | $<0.001$ |
| 52 | TB-004 | Quartz Vein |  | < 0.03 | <0.001 | <2 | < 0.001 | <0.001 | 0.001 | 0.01 | $<0.01$ | 0.009 | 0.001 | 0.002 |

Appendix 10 Chemical and normative compositions of rock samples in Chiang Khong area

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|  |  | $\underline{\square}$ |  |  <br>  $\qquad$ | 名 | $\stackrel{\square}{\infty}$ |  | $\cdots$ |
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| 颜 | $\left\lvert\, \begin{array}{ll} \infty & \infty \\ \infty & \infty \\ \infty & \infty \\ \infty & \infty \\ \infty & \infty, \\ \infty & \infty \\ \infty & \infty \\ \infty \end{array}\right.$ | $\stackrel{\oplus}{\circ}$ |  |  <br>  | $\begin{gathered} \overrightarrow{0} \\ \dot{0} \\ \text { 心. } \end{gathered}$ | － |  |  |
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|  |  | $\left\{\left.\begin{array}{l} \infty \\ \infty \\ \infty \end{array} \right\rvert\,\right.$ |  |  <br>  $\qquad$ |  | $\stackrel{\infty}{\infty}$ |  | 8 |
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|  |  <br>  | $8$ |  |  |  |  |  |  |

Appendix 11 Chemical and normative compositions of rock samples in Doi Chong area

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|  |  <br>  | $\left\|\begin{array}{l} \dot{0} \\ \dot{8} \end{array}\right\|$ |  |  |  | $\begin{aligned} & \vec{N} \\ & \infty \\ & \infty \\ & \infty \end{aligned}$ | $\xrightarrow{\text { W }}$ |
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|  |  <br>  N： $\begin{array}{rllllll}-1 & 1 & 1 & 1 & 1 & 1 \\ 1 & 1 & 1 & 1 & 1 \\ 1\end{array}$ | W W ¢ |  |  | $\begin{aligned} & \mathbf{~} \\ & \stackrel{y}{\circ} \\ & \stackrel{y}{2} \end{aligned}$ | $\stackrel{8}{+}$ | $\stackrel{0}{\sim}$ |
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Appendix 12 Chemical and normative compositions of rock samples in Ratchaburi area

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Appendix 13 Soil geochemical data of the east Ban Na Ban Rai gold occurrence

| Element | Au | Ag | Cu | Pb | Zn | Hg | As | Fe | H | Sn | Sb | F | Ta | Nb |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: |
| Init | ppb | ppa | ppm | ppm | ppm | ppb | ppm | $\%$ | ppma | ppm | ppm | ppm | ppm | ppH |
| Detection | 1 | 0.2 | 1 | 2 | 2 | 10 | 2 | 0.01 | 10 | 2 | 2 | 20 | 2 | 5 | limit

No. Sample No.

| 1 | A-001 | 20 | -0.2 | 29 | 90 | 22 | 20 | 56 | 7.70 | -10 | -2 | 2 | 210 | $-1.0$ | 10 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 2 | A-002 | 16 | -0.2 | 27 | 66 | 16 | 10 | 56 | 8.21 | -10 | -2 | 2 | 180 | 1.0 | 12 |
| 3 | A-003 | 8 | -0.2 | 18 | 68 | 16 | 30 | 34 | 4.61 | -10 | -2 | 2 | 100 | 1.2 | 10 |
| 4 | A-004 | 17 | -0.2 | 27 | 56 | 16 | 10 | 58 | 7.84 | -10 | -2 | 2 | 260 | $-1.0$ | 10 |
| 5 | A-005 | 13 | -0.2 | 36 | 66 | 30 | 20 | 78 | 11.20 | -10 | -2 | -2 | 210 | $-1.0$ | 10 |
| 6 | A-006 | 13 | -0.2 | 27 | 48 | 20 | 10 | 56 | 7.19 | $-10$ | -2 | 2 | 270 | $-1.0$ | 12 |
| 7 | A-007 | 477 | -0.2 | 28 | 54 | 22 | 10 | 72 | 9.35 | $-10$ | -2 | 2 | 280 | $-1.0$ | 10 |
| 8 | A-008 | 12 | -0.2 | 19 | 34 | 18 | 30 | 42 | 6.54 | -10 | -2 | 2 | 150 | $-1.0$ | 12 |
| 9 | A-009 | 12 | -0.2 | 18 | 40 | 18 | 20 | 40 | 5.24 | -10 | -2 | 2 | 150 | -1.0 | 12 |
| 10 | A-010 | 11 | -0.2 | 17 | 34 | 16 | 20 | 38 | 5.00 | -10 | -2 | 2 | 150 | $-1.0$ | 14 |
| 11 | A-011 | 12 | -0.2 | 19 | 26 | 18 | 20 | 34 | 4.00 | -10 | -2 | 2 | 260 | 1.0 | 14 |
| 12 | B-001 | 32 | -0.2 | 26 | 52 | 18 | 30 | 24 | 5.49 | -10 | -2 | -2 | 250 | $-1.0$ | 12 |
| 13 | B-002 | 19 | -0.2 | 25 | 52 | 18 | 10 | 30 | 4.86 | -10 | -2 | 2 | 390 | $-1.0$ | 10 |
| 14 | B-003 | 12 | -0.2 | 24 | 56 | 18 | 10 | 40 | 5.32 | -10 | -2 | -2 | 370 | -1.0 | 12 |
| 15. | 8-004 | 14 | -0.2 | 22 | 56 | 18 | 10 | 26 | 4.94 | 10 | -2 | -2 | 320 | -1.0 | 12 |
| 16 | B-005 | 27 | -0.2 | 29 | 54 | 20 | 20 | 56 | 7.44 | -10 | -2 | 2 | 390 | -1.0 | 10 |
| 17 | B-006 | 13 | -0.2 | 32 | 46 | 20 | 10 | 60 | 8.94 | 10 | -2 | 2 | 480 | 1.1 | 10 |
| 18 | B-007 | 6 | 0.2 | 19 | 28 | 12 | 20 | 42 | 5.82 | 10 | -2 | -2 | 240 | -1.0 | 16 |
| 19 | B-008 | 9 | -0.2 | 19 | 30 | 16 | 10 | 44 | 5.56 | -10 | -2 | -2 | 250 | 1.0 | 14 |
| 20 | B-009 | 8 | 0.4 | 19 | 34 | 20 | 20 | 32 | 5.55 | 20 | -2 | -2 | 260 | $-1.0$ | 12 |
| 21 | B-010 | 14 | -0.2 | 26 | 32 | 20 | 20 | 34 | 5.07 | 30 | -2 | 2 | 540 | -1.0 | 12 |
| 22 | B-011 | 9 | -0.2 | 19 | 24 | 20 | 20 | 40 | 3.51 | 50 | -2 | -2 | 330 | -1.0 | 14 |
| 23 | C-001 | 13 | -0.2 | 24. | 68 | 26 | 20 | 18 | 3.17 | 10 | -2 | -2 | 470 | -1.0 | 8 |
| 24 | C-002 | 27. | -0.2 | 36 | 42 | 20 | 20 | 28 | 6.78 | 10 | -2 | -2 | 360 | -1.0 | 8 |
| 25 | C-003 | 60 | -0.2 | 39 | 56 | 56 | 10 | 32 | 7.07 | 10 | -2 | -2 | 460 | -1.0 | 8 |
| 26 | C-004 | 25 | -0.2 | 34 | 58 | 24 | 20 | 64 | 8.29 | 20 | -2 | -2 | 480 | $-1.0$ | 8 |
| 27 | C-005 | 15 | -0.2 | 31 | 70 | 22 | 20 | 66 | 8.80 | 20 | -2 | 4 | 380 | -1.0 | 12 |
| 28 | C-006 | 52 | -0.2 | 35 | 46 | 22 | 20 | 80 | 10.75 | -10 | -2 | -2 | 450 | -1.0 | 8 |
| 29 | C-007 | 25 | -0.2 | 36 | 58 | 30 | 20 | 62 | 8.67 | -10 | -2 | -2 | 490 | -1.0 | 8 |
| 30 | C-008 | 16 | -0.2 | 42 | 54 | 36 | 20 | 60 | 9.48 | -10 | -2 | 6 | 550 | -1.0 | 10 |
| 31 | C-009 | 14 | -0.2 | 41 | 42 | 38 | 30 | 30 | 8.09 | -10. | -2 | 4 | 880 | -1.0 | 8 |
| 32 | C-010 | 13 | -0.2 | 42 | 34 | 38 | 30 | 20 | 5.16 | 60 | -2 | 2 | 780 | -1.0 | 8 |
| 33 | c-011 | 16 | -0.2 | 28 | 34 | 34 | 30 | 28 | 3.59 | 50 | -2 | -2 | 390 | -1.0 | 10 |

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