

Table 2. Samples analyzed by electron microprobe, Peninsular Ranges batholith, San Diego County, California							
Sample No.	Suite/unit ² (map symbol)	30' x 60' quadrangle	7.5-minute quadrangle	Latitude (°N) ° ' "	Longitude (°W) ° ' "	Lithology ¹	Remarks
86CA001 ³	Granite Mountain (Kgm)	El Cajon	Alpine	32 48 12	116 49 10	granodiorite	subidiomorphic texture
86CA006	"	"	"	32 45 23	116 46 13	tonalite	"
86CA023	"	Borrego Valley	Earthquake Valley	32 36 44	116 30 03	tonalite	moderate subsolidus recrystallization
86CA026	"	El Cajon	Agua Caliente Springs	32 57 13	116 18 10	tonalite	strong subsolidus recrystallization
86CA043	Khsm ⁴	Borrego Valley	Hot Springs Mountain	33 16 11	116 36 58	tonalite	Kgm/Klp (eastern)-type
86CA045	Khsm	"	"	33 16 24	116 37 19	granodiorite	"
EV3	Granite Mountain (Kgm)	"	Earthquake Valley	33 02 20	116 24 32	tonalite	
J32A	"	"	Ranchita	33 07 35	116 36 01	quartz diorite	
ML42	"	El Cajon	Cameron Corners	32 43 47	116 28 41	tonalite	
SS832	"	"	Campo	32 36 28	116 28 25	granodiorite	
86CA048	"	Borrego Valley	Beauty Mountain	33 22 41	116 42 24	tonalite	Kgm/Klp (eastern)-type
MP8A	"	El Cajon	Monument Peak	32 59 01	116 24 26	leucotonalite	pegmatite
A47	"	"	Alpine	32 48 09	116 49 13	tonalite	
SY921	"	Borrego Valley	Santa Ysabel	33 06 26	116 39 24	tonalite	
W6	"	El Cajon	In-ko-pah Gorge	32 42 22	116 03 09	tonalite	hornblende-rich phase in Klp pluton
86CA009	La Posta (Klp)	El Cajon	Cameron Corners	32 43 23	116 26 35	granodiorite/tonalite	La Posta type locality (Miller, 1935)
86CA031	"	"	In-ko-pah Gorge	32 41 53	116 03 41	"	Kgm/Klp (eastern)-type
W1	"	"	Jacumba	32 38 02	116 08 47	granodiorite	
W2	"	"	In-ko-pah Gorge	32 39 37	116 05 38	tonalite	
W3	"	"	Live Oak Springs	32 40 28	116 16 52	granodiorite	
W4	"	"	Cameron Corners	32 42 45	116 22 50	"	
WSP16	"	"	Sweeney Pass	32 52 08	116 13 50	tonalite	
TS43A	Cuyamaca Gabbro (Kc)	El Cajon	Tule Springs	32 55 34	116 37 53	hornblende gabbro	Kc mingling with tonalite (Ka) along contact; A= basaltic blobs,
TS43B	"	"	"	32 55 34	116 37 53	diorite/quartz diorite	B= contaminated granitic matrix of A
TS92B	"	"	"	32 54 59	116 39 23	hornblende gabbro	Kc mingling with Kcp tonalite; fine-grained gabbroic schlieren
VM40	"	"	Viejas Mountain	32 45 02	116 40 19	"	small gabbro body
TS93	"	"	Tule Springs	32 53 25	116 38 57	opx-bt-hbl diorite	"
TS57	"	"	"	32 55 33	116 39 34	hornblende gabbro	small gabbro body in Tule Springs plutonic complex
D59	"	"	Descanso	32 49 26	116 30 14	"	Sunrise Highway gabbro pluton
A76	"	"	Alpine	32 48 55	116 51 45	hbl-px diorite	fine-grained gabbro in metavolcanic screen in Kvj
VM75X	Mafic enclave	El Cajon	Viejas Mountain	32 50 06	116 44 59	diorite	mafic enclave in VM75 (Ka)
VM41	Mafic/intermediate dikes (Kmid)	"	"	32 50 16	116 39 35	tonalite	fine-grained mafic dike in Kcp
VM76A	"	"	"	32 51 29	116 40 59	"	dark-gray, fine to medium-grained porphyritic dike in Kvj
W5	"	"	Cameron Corners	32 43 21	116 28 28	"	mafic rock in Kgm (mingling)
VM76C	"	"	Viejas Mountain	32 51 29	116 40 59	"	fine-grained mafic dike in Kvj, small phenocrysts
D52	"	"	Descanso	32 50 29	116 36 33	bt-hbl basaltic dike	very fine-grained mafic dike in Kcm; undeformed
D103B	"	"	"	32 49 10	116 32 34	bt-hbl gabbro	plagioclase-phyric chilled mafic dike in Jcr
W1A	"	"	Jacumba	32 38 02	116 08 47	tonalite	fine-grained mafic rock in Klp (mingling)
A1	Alpine (Ka)	El Cajon	Alpine	32 50 19	116 46 49	tonalite/granodiorite	
A98	"	"	"	32 52 14	116 51 05	tonalite	transitional to Klb (interfingering contact)
A99	"	"	El Cajon Mountain	32 52 33	116 49 11	tonalite	"
41252	"	"	"	32 57 03	116 45 33	tonalite	
86CA036	"	"	Alpine	32 50 23	116 46 01	"	
TS37	"	"	Tule Springs	32 54 16	116 38 42	"	
TS65	"	"	"	32 57 03	116 38 17	quartz diorite	mingling with small gabbro bodies
VM75	"	"	Viejas Mountain	32 50 06	116 44 59	tonalite	contains swarms of mafic enclaves
VM77	Corte Madera (Kcm)	El Cajon	Viejas Mountain	32 47 25	116 39 38	syenogranite	Japatul Valley plutonic complex
D6216	"	"	Descanso	32 50 29	116 36 33	monzogranite	strong subsolidus recrystallization
86CA005	"	"	Alpine	32 45 14	116 46 26	granodiorite	more mafic than average Kcm because of incorporated gabbro
D94	"	"	Descanso	32 45 44	116 36 47	"	strong subsolidus recrystallization
VM69	Chiquito Peak (Kcp)	El Cajon	Viejas Mountain	32 50 16	116 39 35	granodiorite	Chiquito Peak pluton; gneissic
VM25	"	"	"	32 51 32	116 40 52	tonalite/granodiorite	dike in Kvj

VM932	"	"	"	32 52 11	116 44 42	leucotonalite	fine-grained dike
86CA013	"	"	Cuyamaca Peak	32 54 31	116 34 32	monzogranite	
CC7B	"	"	Cameron Corners	32 43 10	116 29 50	tonalite	protomylonite; abundant mafic/gabbroic enclaves
CP128	"	"	Cuyamaca Peak	32 58 26	116 34 17	monzogranite	white euhedral K-feldspar megacrysts
CP133	"	"	Descanso	32 51 40	116 35 21	tonalite/granodiorite	abundant mafic enclaves
CP925	"	"	Cuyamaca Peak	32 55 59	116 34 29	monzogranite	Cuyamaca Peak plutonic complex
SPL3	"	Borrego Valley	San Pasqual	33 00 13	116 57 25	monzogranite/granodiorite	Woodson Mountain pluton
86CA037	"	"	"	33 00 22	116 58 00	leucomonzogranite	"
SVR1	"	El Cajon	San Vicente Reservoir	32 55 10	116 52 58	monzogranite	Barona Valley pluton
VM5	"	"	Viejas Mountain	32 50 29	116 39 13	"	Chiquito Peak pluton
TS11B	"	"	Viejas Mountain	32 50 29	116 39 13	"	"
CP50	"	"	Cuyamaca Peak	32 53 55	116 33 20	"	
SS831	"	"	San Vicente Reservoir	32 55 12	116 52 52	"	Barona Valley pluton
VM68	"	"	Viejas Mountain	32 50 16	116 39 35	granodiorite	Chiquito Peak pluton; contaminated by mafic dikes
TS23A	East Mesa (KJem)	El Cajon	Cuyamaca Peak	32 54 53	116 36 52	quartz diorite	
86CA015	"	"	"	32 54 44	116 33 06	tonalite	
CP117A	"	"	"	32 54 30	116 30 34	quartz diorite	
CP49	Japatul Valley (Kjv)	El Cajon	Cuyamaca Peak	32 53 55	116 33 20	tonalite	
EC1	"	"	El Cajon	32 48 41	116 52 32	tonalite/granodiorite	
VM511	"	"	Viejas Mountain	32 45 25	116 39 40	tonalite/granodiorite	
86CA003	"	"	Alpine	32 48 22	116 48 23	tonalite	
86CA004	"	"	Viejas Mountain	32 46 14	116 41 52	"	
TS17	"	"	Tule Springs	32 57 20	116 39 32	"	
VM39	"	"	Viejas Mountain	32 46 19	116 40 16	"	
WD100	"	"	Descanso	32 45 45	116 36 46	"	strong subsolidus recrystallization
ML12	Las Bancas (Klb)	El Cajon	Mount Laguna	32 47 32	116 23 35	granodiorite	Mount Laguna pluton
ML13	"	"	"	32 48 43	116 24 12	tonalite	"
ML26	"	"	"	32 51 15	116 26 10	quartz monzodiorite	"
VM6	"	"	Viejas Mountain	32 50 22	116 39 13	granodiorite	Las Bancas pluton
VM89	"	"	"	32 49 02	116 44 12	granodiorite	dike in Alpine pluton (Ka)
ML29	"	"	Mount Laguna	32 45 48	116 28 06	tonalite	Mount Laguna pluton
A293	"	"	Alpine	32 49 13	116 46 34	"	
A61	"	"	"	32 49 31	116 47 34	quartz diorite	
A931	"	"	Viejas Mountain	32 48 02	116 44 53	tonalite	
D28D	"	"	Descanso	32 49 22	116 35 43	"	Las Bancas pluton
ECM1	"	"	El Cajon Mountain	32 52 57	116 48 43	"	
ML3	"	"	Mount Laguna	32 51 21	116 28 06	"	Mount Laguna pluton
VM933	"	"	Viejas Mountain	32 49 19	116 37 39	granodiorite	Las Bancas pluton
CP25	Pine Valley (Kpv)	El Cajon	Cuyamaca Peak	32 55 48	116 36 15	monzogranite	
D58	"	"	Descanso	32 49 02	116 31 01	monzogranite	Pine Valley pluton
WD80A	"	"	"	32 50 10	116 32 09	granodiorite	"
CP117B	"	"	Cuyamaca Peak	32 54 30	116 30 34	pegmatite	
86CA046	Cuyamaca Reservoir (Jcr)	Borrego Valley	Hot Springs Mountain	33 22 29	116 37 16	tonalite	Chihuahua Valley pluton
86CA007	"	El Cajon	Descanso	32 49 22	116 33 19	pyroxene granodiorite	
CP153	"	Borrego Valley	Julian	33 00 22	116 33 20	quartz monzodiorite	Cuyamaca Reservoir pluton
D29	"	El Cajon	Descanso	32 48 03	116 33 13	tonalite	
D50 (=ML4)	"	"	"	32 50 57	116 29 23	tonalite	
BH1	"	Borrego Valley	Boucher Hill	33 17 11	116 52 52	tonalite	hornblende-bearing phase
ML5	"	El Cajon	Mount Laguna	32 51 15	116 28 32	granodiorite	
ML30	"	"	"	32 44 36	116 27 08	tonalite/granodiorite	Kitchen Creek pluton
TS55	"	Borrego Valley	Santa Ysabel	33 00 10	116 42 29	tonalite	
TS56	"	El Cajon	Tule Springs	32 57 22	116 38 50	tonalite	
1079H	"	"	Viejas Mountain	32 46 41	116 38 31	tonalite	
SY911	"	Borrego Valley	Santa Ysabel	33 04 26	116 43 06	granodiorite	hornblende-bearing phase
D101	"	El Cajon	Descanso	32 50 05	116 32 41	tonalite	hornblende and biotite; mafic enclaves
D103A	"	"	"	32 49 10	116 32 34	tonalite	"
CP178	"	Borrego Valley	Julian	33 00 02	116 33 58	tonalite	Cuyamaca Reservoir pluton

J38	"	"	"	33 05 26	116 34 48	granodiorite	
CP177	Orthoamphib. ⁵	El Cajon	Cuyamaca Peak	32 52 58	116 31 20	amphibolite	layer in Julian Schist (JTrm)
CP170B	Orthoamphib.	"	"	32 59 02	116 30 28	"	"
J915	Orthoamphib.	Borrego Valley	Julian	33 07 02	116 35 03	"	layer in Harper Creek Gneiss (Jhc)
1079C1	Western metavolcanic rocks (Kmv)	El Cajon	Alpine	32 49 35	116 51 44	amphibolite	screen in Kjv
TS45	"	"	Tule Springs	32 55 02	116 39 02	"	screen in Ka
1079B	"	"	Alpine	32 51 17	116 51 04	meta-dacite tuff	Lake Jennings screen
1079A1	"	"	El Cajon	32 52 10	116 53 05	pelitic schist	minor interbed in metavolcanic sequence
WS912	Harper Creek (Jhc)	Borrego Valley	Hot Springs Mountain	33 22 29	116 37 08	quartz-rich granitoid	
J40	"	"	Julian	33 05 33	116 35 41	granodiorite	
MP6	"	El Cajon	Monument Peak	32 58 20	116 28 30	quartz-rich granitoid	
CP113	"	"	Descanso	32 51 47	116 30 11	granodiorite/tonalite	mylonitic
CP65	"	"	Cuyamaca Peak	32 56 34	116 32 19	granodiorite	
CP66	"	"	"	32 56 33	116 32 15	"	
J902	"	Borrego Valley	Julian	33 01 43	116 32 57	tonalite/granodiorite	
J914	"	"	"	33 07 02	116 35 03	tonalite	
Jhc15	"	El Cajon	Mount Laguna	32 52 06	116 25 14	metaquartzite	in Jhc; cordierite
1079E	"	"	Descanso	32 48 52	116 31 26	tonalite	
1079F	"	"	"	32 52 12	116 30 40	quartz-rich granitoid	
CP106	"	"	Descanso	32 52 22	116 30 32	monzogranite	
MP35	"	"	Monument Peak	32 56 19	116 29 03	granodiorite	
PO1	"	Borrego Valley	Palomar Observatory	33 21 49	116 50 08	"	
1079G	"	El Cajon	Viejas Mountain	32 46 46	116 38 29	tonalite/granodiorite	
84SC2	Stephenson Peak facies (Jsp)	Borrego Valley	Earthquake Valley	33 06 40	116 26 46	tonalite	
EV911	"	"	"	33 07 02	116 26 25	tonalite/granodiorite	
84SC1	"	"	"	33 06 40	116 26 46	granodiorite	cordierite, garnet
1079M	"	"	Julian	33 04 14	116 32 36	"	
1079J	Julian Schist (JTrm)	Borrego Valley	Julian	33 03 47	116 34 06	pelitic schist	
1079L1	"	"	"	33 00 13	116 37 17	"	
1079K	"	"	"	33 03 47	116 34 06	metaquartzite	
¹ Px-pyroxene; opx-orthopyroxene; bt-biotite; hbl-hornblende							
² Suite/unit and map symbol from Todd (2004)							
³ Samples with 86CA prefix analyzed by J.M. Hammarstrom, U.S. Geological Survey, Reston, VA; remaining samples analyzed by S.E. Shaw, Macquarie University, New South Wales, Australia							
⁴ Khsm = Hot Springs Mountain pluton							
⁵ Orthoamphib. = orthoamphibolite layer/lens in JTrm; as restite in Jhc, Jsp							