California Specific Examination (CSE) for Professional Geologist Test Plan

Effective January 2020

General Definition of geology:

"Professional geological work" is work performed at a professional level rather than at a subprofessional or apprentice level and requires the application of scientific knowledge, principles and methods to geological problems through the exercise of individual initiative and judgment in investigating, measuring, interpreting and reporting on the physical phenomena of the earth. Implicit in this definition is the recognition of professional responsibility and integrity and the acknowledgment of minimal supervision. (Title 16, CCR 3003)

This area of practice is structured into five primary content areas:

I. Hydrogeology (23%)

II. Environmental Geology (26%)

III. Engineering Geology (24%)

IV. Energy Resources and Mining Geology (9%)

V. Geomorphology and General Geology (18%)

BPELSG California Specific Exam-2018	
	Percentage of Questions on the Exam
I. Hydrogeology **Professional Activities:** **1. Plan and conduct hydrogeologic investigations and evaluate results** **2. Evaluate and protect water resources, assess aquifer characteristics, groundwater quality, and sustainability** **3. Provide the geologic interpretation to support the design, installation, development, and decommissioning of water wells in accordance with California laws and regulations**	**23%**
Test questions on these professional activities may include one or more of the following:	
A. California laws and regulations related to the development of groundwater sustainability plans	
B. Methods and procedures for preventing cross-contamination	
C. Methods and procedures for well design, construction and destruction	
D. Hydrogeologic considerations for selecting well locations	
E. Procedures and California laws and regulations for aquifer testing	
F. Groundwater quality and aquifer characteristics as they pertain to the use of groundwater resources	
G. Hydrogeologic conceptual models for assessing water quality and impacts to beneficial use	
II. Environmental Geology **Professional Activities:** **1. Plan and implement sampling and monitoring programs to characterize geologic media (e.g., soil, groundwater, soil vapor) and assess potential impacts** **2. Evaluate results of environmental geologic investigations** **3. Plan and implement remediation of geologic media** **4. Provide geologic interpretation to support the design, installation, development, and decommissioning of wells in accordance with California laws and regulations**	**26%**
Test questions on these professional activities may include one or more of the following:	
A. The geologic factors involved in environmental evaluations of school properties	
B. The geologic factors involved in environmental review for land use planning	
C. The geologic factors involved in developing a conceptual site model and planning an environmental investigation	
D. Geologic conditions affecting surface water quality	
E. Methods and procedures for collection and analysis of water, soil, and soil vapor samples	

F. The fate and transport of chemicals in geologic media	
G. Procedures and California laws and regulations related to remediation of water, soil and soil vapor	
H. California laws and regulations related to environmental geologic aspects of waste disposal facility development, operations and closure	
III. Engineering Geology **Professional Activities:** **1. Plan and conduct engineering geologic investigations and evaluate the results** **2. Evaluate the geologic factors and processes affecting planning, design, construction, maintenance and vulnerability of civil engineering works** **3. Characterize, evaluate, and provide recommendations regarding geologic and seismic hazards**	**24%**
Test questions on these professional activities may include one or more of the following:	
A. Procedures and California laws and regulations for investigation and evaluation of surface fault rupture hazards	
B. Geologic features related to active faulting	
C. Engineering geology and seismology data collection and analyses requirements for the development of public schools, hospitals and essential services buildings	
D. Geologic and seismic aspects and California laws and regulations related to soil and foundation investigations for structures and grading	
E. Geologic features related to identification, characterization, and mitigation of mass wasting	
F. Geologic factors applicable to the design and construction of flood control systems and water resources infrastructure	
G. California laws and regulations related to engineering geologic aspects of waste disposal facility development, operations and closure	
H. Geologic hazards related to coastal processes	
I. Investigation methods and analyses for seismically-induced ground deformation and slope instability	
IV. Energy Resources and Mining Geology **Professional Activities:** **1. Identify, map and characterize geologic resources for beneficial use** **2. Provide the geologic interpretation to support the design of energy and mining development operations** **3. Provide geologic support for the reclamation, and closure of energy and mining operations**	**9%**
A. Identification and characterization of energy and mineral resources and associated hazards	
B. Procedures and California laws and regulations for geologic evaluation to support development of energy and mineral resources	

C. Procedures and California laws and regulations for geologic evaluation in support of reclamation and closure of energy and mining operations	
V. Geomorphology and General Geology **Professional Activities:** **1. Provide geologic interpretations and recommendations to support land and watershed protection, restoration and maintenance** **2. Identify, map, and evaluate geomorphic features and geologic units** **3. Identify and evaluate surface processes** **4. Identify soil and rock units or formations with potential for protected paleontologic resources**	**18%**
A. California mineralogy and associated hazards	
B. California laws and regulations related to paleontologic resources	
C. California geomorphic provinces and their associated geological processes and hazards	
D. Geologic factors related to Basin Plans	
E. Geologic factors related to impacts from forestry practices	
F. Methods and procedures for watershed maintenance and restoration	