Geologist Licensing in Washington State

http://www.dol.wa.gov/business/geologist/

Bob Mitchell – rjmitch@wwu.edu
32 States Require Geologist Licensure
Since 2001, Washington State requires that all practicing geologists have a professional license

18.220 RCW & 308-15 WAC

WAC = Washington Administrative Code (policy interpretations of the law )

RCW = Revised Code of Washington (laws)
Why is licensure necessary in WA?

To ensure the protection of the environment and the public's health, safety, and welfare.
Who needs to be licensed?

Anybody **who** practices geology or represents that they can perform the work of a geologist (e.g., uses verbal claim, sign, advertisement, letterhead, business card)
WA Geologist Licensing Exemptions

• Working under a licensed geologist’s supervision (e.g., your first job)
• US Federal Government (e.g., USGS, EPA, Forest Service)
• Energy & minerals exploration
• Research and teaching
Why get a license?

• Because it is the law! 18.220 RCW & 308-15 WAC

• More job opportunities and professional growth potential.

• Portable to 32 states + Puerto Rico (it is the law in most western states, e.g., California, Idaho, Oregon and there are reciprocity agreements between states).
Where are geologists working?

States with the highest employment level in Geoscientists, Except Hydrologists and Geographers:

<table>
<thead>
<tr>
<th>State</th>
<th>Employment (1)</th>
<th>Employment per thousand jobs</th>
<th>Location quotient (9)</th>
<th>Hourly mean wage</th>
<th>Annual mean wage (2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Texas</td>
<td>4,960</td>
<td>0.41</td>
<td>2.42</td>
<td>$69.69</td>
<td>$144,950</td>
</tr>
<tr>
<td>California</td>
<td>3,370</td>
<td>0.20</td>
<td>1.22</td>
<td>$50.61</td>
<td>$105,280</td>
</tr>
<tr>
<td>Colorado</td>
<td>1,920</td>
<td>0.73</td>
<td>4.36</td>
<td>$51.80</td>
<td>$107,750</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>1,090</td>
<td>0.20</td>
<td>1.17</td>
<td>$38.06</td>
<td>$79,150</td>
</tr>
<tr>
<td>Washington</td>
<td>690</td>
<td>0.22</td>
<td>1.29</td>
<td>$46.78</td>
<td>$97,310</td>
</tr>
</tbody>
</table>

[https://www.bls.gov/oes/current/oes192042.htm#st](https://www.bls.gov/oes/current/oes192042.htm#st)
In what discipline areas are geologists working?

Areas of expertise for geologists who are members of the American Institute of Professional Geologists

- Environmental Geology 24%
- Petroleum 5%
- Economic Geology 7%
- Exploration 7%
- Engineering Geology 5%
- Environmental Site Assessment 4%
- Mining Geology 3%
- Hazardous Waste 2%
- Coal Management 2%
- Hydrogeology 24%
- Other 15%

ASBOG® Task Analysis Survey
Practice of Geology Blueprint - Domain Percentages

- Economic Geology and Energy Resources 15%
- Engineering Geology 19%
- Geomorphology, Surficial Processes, and Quaternary Geology 8%
- Structure, Tectonics, and Seismology 8%
- Sedimentology, Stratigraphy, and Paleontology 6%
- Mineralogy, Petrology, and Geochemistry 5%
- Field and General Geology 20%
- Hydrogeology 19%

How do geologists make a living in 2019?

Visit the WA State Geologist Licensing web site for information.

https://www.dol.wa.gov/professional-licenses/geologists
WA Geologist Licensing is managed by a Board

### Board members

<table>
<thead>
<tr>
<th>Member</th>
<th>Role</th>
<th>Term expires</th>
</tr>
</thead>
<tbody>
<tr>
<td>James Struthers</td>
<td>Geologist/Engineering Geologist - Chair</td>
<td>May 1, 2023</td>
</tr>
<tr>
<td>Casey Hanell</td>
<td>State Geologist/Engineering Geologist - Vice Chair</td>
<td>Ex-officio</td>
</tr>
<tr>
<td>Carla Brock</td>
<td>Geologist and Hydrogeologist - Secretary</td>
<td>May 1, 2025</td>
</tr>
<tr>
<td>Tom Tebb</td>
<td>Geologist/Engineering Geologist/Hydrogeologist</td>
<td>May 1, 2024</td>
</tr>
<tr>
<td>Eileen Webb</td>
<td>Geologist</td>
<td>May 1, 2024</td>
</tr>
<tr>
<td>Vacant</td>
<td>Geologist</td>
<td></td>
</tr>
<tr>
<td>Vacant</td>
<td>Public Member</td>
<td></td>
</tr>
</tbody>
</table>

### Who's on the board?

There are 7 members, all are WA residents:

- 5 licensed geologists, 2 must be licensed in a specialty of geology (Engineering Geologist, Hydrogeologist).
- 1 from the general public with no family or business connection with the practice of geology.
- Department of Natural Resources’ Supervisor of Geology (ex-officio member).
Steps to Geologist Licensure

Meet WA State’s educational requirements and pass ASBOG’s Fundamentals of Geology Exam

Geologist in Training (GIT)

Have a geology degree and acquire 5-years of working experience and pass ASBOG’s Practice of Geology Exam

Professional Geologist (PG)

Document 5 years of working experience in a specialty and pass the Specialty Exam

Licensed Engineering Geologist (LEG) or Hydrogeologist (LHG)
Steps to Geologist Licensure

Meet WA States’ educational requirements and pass ASBOG’s Fundamentals of Geology Exam
Educational Requirements

(2) Education. You have graduated from an accredited college or university with:

(a) A degree in the geological sciences, or a related degree approved by the board, and have either:

(i) 24-semester or 36-quarter hours of upper division geology courses that includes 14 semester or 21 quarter credits (nonrepeatable) from the following list:

- Earth Materials (combination of mineralogy and petrology)
- Economic Geology
- Engineering Geology
- Field Camp
- Geochemistry
- Geomorphology
- Geophysics
- Hydrogeology
- Mineralogy
- Petrology
- Sedimentology
- Stratigraphy
- Structural Geology
Educational Requirements

(ii) Or

Successfully completed coursework that is determined by the board to be educationally equivalent in content and rigor to the classes listed above. You must submit documentation that demonstrates your coursework is equivalent to the requirements in (a)(i) of this subsection acceptable to the board. Examples of documentation include course syllabi, copies of study materials, and the tables of contents of books used in the course.
Steps to Geologist Licensure

Meet WA State's educational requirements and pass ASBOG's Fundamentals of Geology Exam

You meet the education requirements if you receive a B.S. Degree in Geology at WWU.

<table>
<thead>
<tr>
<th>B.S. Upper Division Core</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>306  Mineralogy</td>
<td>4</td>
</tr>
<tr>
<td>310  Geomorphology</td>
<td>5</td>
</tr>
<tr>
<td>318  Structural Geology</td>
<td>4</td>
</tr>
<tr>
<td>352  Geophysics</td>
<td>4</td>
</tr>
<tr>
<td>406  Petrology</td>
<td>4</td>
</tr>
<tr>
<td>409  Field Methods and Theory</td>
<td>6</td>
</tr>
<tr>
<td>410  Field Mapping</td>
<td>6</td>
</tr>
<tr>
<td>415  Stratigraphy and Sedimentation</td>
<td>4</td>
</tr>
</tbody>
</table>

21 credits

37
If you choose the B.S. in Geophysics degree plan, make sure you take enough upper division geology courses (300 and above) to accumulate 36 credits and 21 of the credits must be from the requirement list.

21 quarter credits (nonrepeatable) from the following list:

- Earth Materials (combination of mineralogy and petrology)
- Economic Geology
- Engineering Geology
- Field Camp
- Geochemistry
- Geomorphology
- Geophysics
- Hydrogeology
- Mineralogy
- Petrology
- Sedimentology
- Stratigraphy
- Structural Geology
If you choose the B.A. in Geology degree plan, make sure you take enough upper division geology courses (300 and above) to accumulate 36 credits and 21 of the credits must be from the list.

21 quarter credits (nonrepeatable) from the following list:

- Earth Materials (combination of mineralogy and petrology)
- Economic Geology
- Engineering Geology
- Field Camp
- Geochemistry
- Geomorphology
- Geophysics
- Hydrogeology
- Mineralogy
- Petrology
- Sedimentology
- Stratigraphy
- Structural Geology
Steps to Geologist Licensure

Meet WA State’s educational requirements and pass ASBOG’s Fundamentals of Geology Exam

The State has adopted the national Association of State Boards of Geology (ASBOG) standardized exam as the Fundamentals Exam (140 multiple choice questions)

Computer-based testing starting in Spring 2023

https://www.isoqualitytesting.com/locations.aspx
Education Requirements

You can take the ASBOG Fundamentals Exam without a degree if you have accumulated 36 quarter credits of upper division geology courses (300 or above) and 21 of those credits are from this list.

- Earth Materials (combination of mineralogy and petrology)
- Economic Geology
- Engineering Geology
- Field Camp
- Geochemistry
- Geomorphology
- Geophysics
- Hydrogeology
- Mineralogy
- Petrology
- Sedimentology
- Stratigraphy
- Structural Geology
Fundamentals Exam application procedures

http://kula.geol.wwu.edu/rjmitch/geolicense.html
If you want to take the ASBOG Fundamentals Exam before graduating, you must meet the educational requirements about three months in advance, because there is a 90-day administrative processing period.

For example, the spring ASBOG Fundamentals Exam is **March 23, 2023**, but the **application deadline is December 31, 2022**.

Make sure your fall-quarter grades are recorded on your transcript before you have WWU send it to the WA DOL.
The **ASBOG Fundamentals Exam** has 140 multiple choice questions in the categories below.

- Engineering Geology 11%
- Economic Geology 9%
- General and Field Geology 21%
- Mineralogy, Petrology, and Geochemistry 11%
- Sedimentology, Stratigraphy, and Paleontology 12%
- Structure, Tectonics, and Seismology 11%
- Geomorphology, Surficial Processes, and Quaternary Geology 13%
- Hydrogeology 12%
How to prepare
GEOLOGY STUDY MANUAL

Review for
the National (ASBOG) Geology Licensing Exam

Published by

REG REVIEW, Inc.
37 Rosewell Road
Bedford, NH 03110

http://regreview.com

We have two hard copies of this in the Geology office.
CANDIDATE RESOURCES

FAQs
Examination Application Process
Examination Schedule
Examination Blueprint
Candidate Study Material
Institution Codes 2020
Cross Section Documents

LICENSEE RESOURCES

Examination Score Request
Tasks of a Geologist
Academic Assessment
CPAT Universities

MEMBER RESOURCES

State Requirement Matrix
Member Boards (clickable map)
Affiliate Members
International Members
2015 Task Analysis Summary
Model Law (2017)
Model Rules and Regulations
Model Cooperative Agreement

ASBOG® RESOURCES

ByLaws
Past Executive Committees
Service Awards
Previous Meeting Locations
Code of Conduct/Harassment
Photo Policy

Examination Candidates... here are some useful resources for examination preparation
(use Ctrl+f to search)

I. ASBOG® Candidate Handbook ... click
II. Physical Geology (Open Textbook Library) ... click
III. MIT Open Courseware (Geology Topics)... click
IV. Basic Groundwater Hydrology- USGS WRI 2220 ... click
V. Engineering Geology Field Manual (Bureau of Reclamation) - Volume I & II ... click
VI. Rock Mechanics (Rocscience (Evret Hoek, Ph.D.)) ... click
VII. Visible Geology Web Site ... click
VIII. Rock and Mineral Jeopardy ... click
IX. AGI Data Sheets 5th Edition ($for purchase)... click
X. AGI GOLI Webinars ... click

Last Updated: September 12, 2020

https://www.asbog.org/candidates/candidates.html
Join the WWU AEG Student Chapter

Association of Environmental and Engineering Geologists
https://www.aegweb.org/students

Professional Development (work on your exit strategy!)

• Free AEG Membership
• Networking at AEG Meetings in Seattle
• Geology Licensing Resources
• **ASBOG FG Exam Study Groups**
• Resume/Cover Letter Reviews
• Grad School Information
• Case Study Presentations from Employers
• Internship/Scholarship Applications
ASBOG Fundamentals Exam Pass Rates 2019 - 2022

<table>
<thead>
<tr>
<th>Fundamentals</th>
<th>All Jurisdictions</th>
<th>WA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spring 2019</td>
<td>65.9%</td>
<td>82.4%</td>
</tr>
<tr>
<td>Fall 2019</td>
<td>65.5%</td>
<td>78.0%</td>
</tr>
<tr>
<td>Spring 2020</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Fall 2020</td>
<td>67.4%</td>
<td>87.2%</td>
</tr>
<tr>
<td>Spring 2021</td>
<td>65.2%</td>
<td>82.3%</td>
</tr>
<tr>
<td>Fall 2021</td>
<td>65.0%</td>
<td>79.2%</td>
</tr>
<tr>
<td>Spring 2022</td>
<td>68.8%</td>
<td>76.4%</td>
</tr>
<tr>
<td>Fall 2022</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Western is top in the nation for number of people taking the FG Exam

Number of people that have taken the ASBOG between 1992 and 2017. Note Washington started administering the exam in 2002.
Steps to Geologist Licensure

Meet WA State’s educational requirements and pass ASBOG’s Fundamentals of Geology Exam

Geologist in Training (GIT)

Have a geology degree and acquire 5-years of working experience and pass ASBOG’s Practice of Geology Exam
WA Geology Experience Requirements

You must accumulate 5 years of professional geological practice after receipt of a geoscience degree and meet the educational requirements.

• experience earned prior to receiving a degree will not be considered (e.g., summer internships)

• at least 3-years of the 5 must be under the supervision of licensed geologist or others who, in the opinion of the board, are qualified to be in responsible charge

• part-time experience will be prorated

• A graduate degree can be counted as a maximum of two years of practicing experience.

• Geological research or teaching at the university or college level is credited year for year if, in the judgment of the board, it is comparable to experience obtained in the practice of geology.
Steps to Geologist Licensure

Meet WA State’s educational requirements and pass ASBOG’s Fundamentals of Geology Exam

Geologist in Training (GIT)

Have a geology degree and acquire 5-years of working experience and pass ASBOG’s Practice of Geology Exam

Computer-based testing starting in Spring 2023

https://www.isoqualitytesting.com/locations.aspx
### ASBOG Practice Exam Pass Rates 2019 - 2022

<table>
<thead>
<tr>
<th>Practice</th>
<th>All Jurisdictions</th>
<th>WA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spring 2019</td>
<td>78.4%</td>
<td>93.9%</td>
</tr>
<tr>
<td>Fall 2019</td>
<td>75.4%</td>
<td>92.6%</td>
</tr>
<tr>
<td>Spring 2020</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Fall 2020</td>
<td>79.5%</td>
<td>94.9%</td>
</tr>
<tr>
<td>Spring 2021</td>
<td>73.0%</td>
<td>83.3%</td>
</tr>
<tr>
<td>Fall 2021</td>
<td>78.3%</td>
<td>90.0%</td>
</tr>
<tr>
<td>Spring 2022</td>
<td>79.0%</td>
<td>90.3%</td>
</tr>
<tr>
<td>Fall 2022</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

![Practice Exam Pass Rates](chart)
WA Specialty Professional License Options

Hydrogeologist

State of Washington
Licensed Geologist
000
Your Name Here

Engineering Geologist

State of Washington
Licensed Geologist
000
Your Name Here
Steps to Geologist Licensure

Meet WA State’s educational requirements and pass ASBOG’s Fundamentals of Geology Exam

Geologist in Training (GIT)

Have a geology degree and acquire 5-years of working experience and pass ASBOG’s Practice of Geology Exam

Professional Geologist (PG)

Document 5 years of working experience in a specialty and pass the Specialty Exam

Licensed Engineering Geologist (LEG) or Hydrogeologist (LHG)
WA Specialty Education Requirements

WAC 308-15-055

Completed advanced study in the specialty

• 18 semester/27 quarter hours of specialty course work, OR

• 270 hours of seminars or workshops, OR

• 540 hours of on-the-job training under the supervision of a licensed specialist or others who in the opinion of the board, are qualified to be in responsible charge of specialty work, OR

• or a combination of the above
Complete 5 years of professional specialty practice after completing the advanced education requirements

- 3 years under the supervision of licensed specialist or others who in the opinion of the board are qualified to be in responsible charge
- Part-time experience will be prorated
Alternative experience credit

- Each year of graduate study counts as one year of training up to a maximum of **two** years
- Geological research or teaching at the university or college level is credited year for year if, in the judgment of the board, it is comparable to experience obtained in the practice of a specialty
# Current WA Geologist Licensure Demographics

## Geologist Licensee Counts by Age & Status

<table>
<thead>
<tr>
<th>Status with Age License Type</th>
<th>Status</th>
<th>Age Classification</th>
<th>Between 55 and 64</th>
<th>Between 45 and 54</th>
<th>Between 35 and 44</th>
<th>Between 25 and 34</th>
<th>Less than 25</th>
<th>Grand Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Geologist</td>
<td>Active</td>
<td>432</td>
<td>555</td>
<td>401</td>
<td>289</td>
<td>143</td>
<td>7</td>
<td>1820</td>
</tr>
<tr>
<td></td>
<td>Canceled</td>
<td>4</td>
<td>2</td>
<td>1</td>
<td></td>
<td></td>
<td>7</td>
<td>384</td>
</tr>
<tr>
<td></td>
<td>Expired</td>
<td>246</td>
<td>111</td>
<td>27</td>
<td></td>
<td></td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>Inactive</td>
<td>4</td>
<td>3</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>Inactive - Retired</td>
<td>23</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td>24</td>
<td></td>
</tr>
<tr>
<td>Geologist in Training</td>
<td>Active</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>19</td>
<td>128</td>
<td>22</td>
<td>171</td>
</tr>
<tr>
<td><strong>Grand Total</strong></td>
<td></td>
<td><strong>459</strong></td>
<td><strong>810</strong></td>
<td><strong>516</strong></td>
<td><strong>336</strong></td>
<td><strong>271</strong></td>
<td><strong>22</strong></td>
<td><strong>2414</strong></td>
</tr>
</tbody>
</table>

Canceled, Expired include last 5 years

## Licensee Endorsement Counts

<table>
<thead>
<tr>
<th>License Type</th>
<th>Endorsement Text</th>
<th>Endorsement Text</th>
<th>Age Classification</th>
<th>Between 55 and 64</th>
<th>Between 45 and 54</th>
<th>Between 35 and 44</th>
<th>Between 25 and 34</th>
<th>Less than 25</th>
<th>Grand Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Geologist</td>
<td>Engineering Geologist</td>
<td>74</td>
<td>80</td>
<td>59</td>
<td>33</td>
<td>13</td>
<td>259</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Engineering Geologist, Hydrogeologist</td>
<td>49</td>
<td>40</td>
<td>5</td>
<td>2</td>
<td>96</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Hydrogeologist</td>
<td>159</td>
<td>203</td>
<td>79</td>
<td>49</td>
<td>11</td>
<td>501</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Grand Total</strong></td>
<td></td>
<td><strong>282</strong></td>
<td><strong>323</strong></td>
<td><strong>143</strong></td>
<td><strong>84</strong></td>
<td><strong>24</strong></td>
<td><strong>856</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

License status counts current as of May 11, 2022
For future reference see my web site

http://kula.geol.wwu.edu/rjmitch/index.html