

POSITION DESCRIPTION						
1. Position Number			2. Explanation (show any positions replaced)			
3. Reason for Submission <input type="checkbox"/> New <input type="checkbox"/> Redescription <input type="checkbox"/> Reestablishment <input type="checkbox"/> Standardized PD <input type="checkbox"/> Other						
4. Service <input type="checkbox"/> HQ <input type="checkbox"/> Field	5. Subject to Identical Addition (IA) Action <input type="checkbox"/> Yes (multiple use) <input type="checkbox"/> No (single incumbent)					
6. Position Specifications Subject to Random Drug Testing <input type="checkbox"/> Yes <input type="checkbox"/> No Subject to Medical Standards/Surveillance <input type="checkbox"/> Yes <input type="checkbox"/> No Telework Suitable <input type="checkbox"/> Yes <input type="checkbox"/> No Fire Position <input type="checkbox"/> Yes <input type="checkbox"/> No Law Enforcement Position <input type="checkbox"/> Yes <input type="checkbox"/> No			7. Financial Statement Required <input type="checkbox"/> Executive Personnel-OGE-278 <input type="checkbox"/> Employment and Financial Interest-OGE-450 <input type="checkbox"/> None required		10. Position Sensitivity and Risk Designation <u>Non-Sensitive</u> <input type="checkbox"/> Non-Sensitive: Low-Risk <u>Public Trust</u> <input type="checkbox"/> Non-Sensitive: Moderate-Risk <input type="checkbox"/> Non-Sensitive: High-Risk <u>National Security</u> <input type="checkbox"/> Noncritical-Sensitive: Moderate-Risk <input type="checkbox"/> Noncritical-Sensitive: High-Risk <input type="checkbox"/> Critical-Sensitive: High-Risk <input type="checkbox"/> Special Sensitive: High-Risk	
		8. Miscellaneous Functional Code: -- BUS: --	9. Full Performance Level Pay Plan: Grade:			
11. Position is <input type="checkbox"/> 2-Supervisory <input type="checkbox"/> 4-Supervisor (CSRA) <input type="checkbox"/> 5-Management Official <input type="checkbox"/> 6-Leader: Type I <input type="checkbox"/> 7-Leader: Type II <input type="checkbox"/> 8-Non-Supervisory		12. Position Status <input type="checkbox"/> Competitive <input type="checkbox"/> SES <input type="checkbox"/> Excepted (specify in remarks) <input type="checkbox"/> SL/ST			15. Fair Labor Standards Act <input type="checkbox"/> Exempt <input type="checkbox"/> Nonexempt	
	13. Duty Station	14. Employing Office Location	16. Cybersecurity Code #1: #2: -- #3: --	17. Competitive Area Code: Competitive Level Code:		
18. Classified/Graded by	Official Title of Position		Pay Plan	Occupational Code	Grade	Initial Date
a. Department, Bureau, or Office						
b. Second Level Review			--		--	
19. Organizational Title of Position (if different from, or in addition to, official title)			20. Name of Employee (if vacant, specify)			
21. Department, Agency, or Establishment U.S. Department of the Interior			c. Third Subdivision			
a. Bureau/First Subdivision			d. Fourth Subdivision			
b. Second Subdivision			e. Fifth Subdivision			
22. Supervisory Certification. I certify that this is an accurate statement of the major duties and responsibilities of this position and its organizational relationships and that the position is necessary to carry out Government functions for which I am responsible. This certification is made with the knowledge that this information is to be used for statutory purposes relating to, but not limited to: FLSA determinations; position sensitivity and requirements; and appointment/payment of public funds. False or misleading statements may constitute violations of such statutes or their implementing regulations.						
a. Typed Name and Title of Immediate Supervisor			b. Typed Name and Title of Higher-Level Supervisor or Manager (optional)			
Signature		Date	Signature		Date	
23. Classification/Job Grading Certification. I certify that this position has been classified/graded as required by Title 5, U.S. Code, in conformance with standards published by the U.S. Office of Personnel Management or, if no published standards apply directly, consistently with the most applicable published standards.			24. Position Classification Standards Used in Classifying/Grading Position			
Typed Name and Title of Official Taking Action						
Signature		Date				
25. Position Review	Initials	Date	Initials	Date		
a. Supervisor						
b. Classifier						
26. Remarks						

DOI Standard PD
PD# DN01400

Classification: Geologist, GS-1350-11

Introduction

This position performs scientific work exercising independent judgment in support of a DOI Bureau/Office or an operating subdivision of a Bureau/Office. Position serves as a source of expertise to other scientists or program specialists, resolving issues that impact scientific projects and programs. Provides expertise and coordination in one or more subdisciplines of geology: Geomorphology, Sedimentology, Stratigraphy and Geochronology, Sedimentary/Igneous/Metamorphic Petrology, Structural Geology, Economic and/or Mining Geology, Petroleum Geology, Engineering Geology, Paleontology, Geochemistry, or Volcanology. The position performs a range of geologic studies that typically involves application of conventional methods but go beyond clear precedent.

Major Duties (Accounts for the minimum of 25% of work time)

Methods and Procedures: Applies a variety of processes and analytical methods to the preparation and analysis of field/remote sensing observations and/or laboratory samples. Methods employed may include scanning electron microscopy; laser diffraction; bathymetry, real time kinematic GPS, lidar and other scanning techniques. Methods may also include geologic and geomorphic field mapping, both detailed and reconnaissance; subsurface investigations such as drilling, trenching or other excavations; analysis of orbital and aerial remote sensing data; stratigraphic and soil profile descriptions; and utilization of radioisotope and relative dating techniques. Methods employed are standard but require adaptation to fit needs of the particular study.

Data Collection/Analysis/Synthesis: Applies a broad range of geologic and/or geochemical techniques to acquire data and samples. Makes geological observations, computations, and measurements. Assesses the validity of procedures and techniques to correct for errors and improve results. Areas of investigation varies depending on particular assignment; examples may include contributing to studies of geomorphology, paleo seismology, planetary sciences, paleontology, paleoclimatology, sedimentology, limnology, resource assessments, geologic mapping, structural assessments and specifications, and safety assessments related to new or existing major structures such as dams , depth of water tables and other types of conditions which impact projects. Works with data sets from varied sources, including data published by various State, Federal, and International entities. Synthesizes data using techniques such as meta-analysis, descriptive synthesis, and other methods of qualitative and quantitative syntheses, depending on study type and expected end products.

Geologic Interpretation: Analyzes and interprets geological and geophysical data and independently carries out detailed investigations. Investigations may involve but are not limited to: reservoir identification and classification, well log analysis and correlation, seismic and other geophysical data interpretation, surficial and subsurface mapping, developing geologic cross sections, and reserves and resource estimation, conservation of resources, lease sale evaluations for fair market value determination, and worst-case discharge analyses. Reviews geological problems, such as those associated with geologic

structure and stratigraphy, hydrocarbon exploitation, and environmental geology, while in conformance with safe operating procedures, economic considerations, environmental factors, and statutory and regulatory requirements. Analyses often require integration several data sets. Utilizes and is proficient in data interpretation software and various PC-based software applications in order to adequately evaluate geologic-related projects, make determinations, and for the purpose of inputting, displaying, and organizing geological, geochemical, geophysical and/or engineering data for retrieval and evaluation.

Reporting/Documenting: Personally prepares or contributes technically authoritative reports on geologic and related studies, which may require adaptation of methods of field, remote sensing and/or laboratory investigation and that convey complex geologic, geomorphic, geochemical, biological, and/or hydrologic information. Audiences for reports may be academic researchers, government entities, commercial concerns, cooperating entities, or other users of government data and reports. Reports contribute to decision-making by bureau or cooperating entity officials. May develop or edit geologic maps for digital or print publication.

Communication of Findings: Communicates findings in a variety of formats and settings. Makes oral presentations of technical documentation at professional meetings, coordination meetings, design briefings, or other technical briefings, in some cases in support of enforcement activities as part of Federal oversight of regulatory programs. May makes presentations to officials in circumstances where technical information must be presented in a way that is comprehensible to non-technical personnel. Topics communicated may be technical, safety and emergency management oriented, address permitting and compliance issues, or other purposes of interest to the Bureau, DOI, cooperating agencies, Federal contractors, or the general public and commercial concerns.

Proposal Writing/Project Design/Science Planning: Develops science investigations related to geological sciences, including defining the hypotheses to be tested, methods to be used, and estimating the budget and schedule required to complete the investigation. Develops project guidelines, protocols, and procedures that are specific to the project. Makes oral presentations of technical documentation at coordination meetings and other technical briefings, in some cases in support of enforcement activities as part of Federal oversight of regulatory programs. Contributes to planning of future projects in accordance with DOI priorities and bureau resources and priorities.

Other Duties (Cannot account for more than 75% of work time)

- **Project Management:** Develops, monitors, and manages project plans that outline the scope, schedule, and/or budget of assigned projects. This includes: permitting, data acquisition and procurement, coordinating and communicating with other groups and offices throughout the organization such as program and project managers, finance, maintenance, permit compliance, and acquisition; managing changes to the project plans with external stakeholders, tribes, and regulatory authorities; identifying and addressing issues prior to adverse impacts to the schedule and/or budget; and participating on and/or leading technical teams.
- **Contracting Officer's Representative/Grants Management/Awards Management:** Works with Contracting Officer/Grants Officer/Awarding Official to implement and administer a variety of assigned contracts, including construction contracts, service or supply contracts, P.L. 93-638 Indian Self Determination and Education Assistance Act as amended contracts/agreements,

interagency agreements, and financial assistance agreements. Initiates timely actions and technically monitors the contract/agreement to ensure that they are carried out to completion as outlined in the contract/agreement. Researches the background on problems, identifies and devises courses of action in coordination with the Contracting Officer, Grants Officer, or Awarding Official as appropriate, and prepares recommendations for decision by management.

- **Compliance:** Provides support in connection with regulatory program oversight, policy and rulemaking efforts, review of regulatory compliance issues, and resolution of geology related issues as they are encountered. This may include review of lands unsuitable for mining petitions.
- **Database Management:** Uses relational databases to maintain geologic data for conducting operational and planning analyses. Oversees development and operation of geologic data collection systems directly and/or in coordination with other government agencies and non-Federal sources. Ensures necessary data is collected, transmitted, downloaded, decoded, and received for its intended purpose.
- **Participation in Conferences/Representation at Technical Meetings:** Participates on technical work groups or teams. May collaborate on teams external to the organization, including meeting with external stakeholders and partners.

Performs other duties as assigned.

FACTORS 1 - KNOWLEDGE REQUIRED BY THE POSITION

FL1-7 1250 points

Position requires knowledge of geology and related physical sciences such as geophysics, oceanography, physics, volcanology, hydrology, or chemistry to design, conduct, interpret, and document scientific investigations. Areas of specialization may include geomorphology; structural geology; sedimentary, igneous or metamorphic petrology; planetary geology; economic or mining geology; engineering geology; paleoclimatology; paleontology; geochemistry; geochronology; soil science; volcanology; geodesy; and resource assessments for petroleum, geothermal, mineral, and engineering geologic analysis of infrastructure and geotechnical investigations.

Knowledge of a wide range of geologic concepts, principles, and methods applicable to investigate and characterize geologic conditions associated with varied and complex problems, projects, or studies that may involve diverse geologic, engineering, hydrologic, biologic, chemical, man-made or other environmental conditions and varying processes. Problems encountered demand skills sufficient to apply and modify standard practices, adapt precedents, and make departures from existing approaches and techniques. The incumbent should have knowledge of agency and industry-accepted scientific standards and guidelines. The work may call for knowledge of applicable environmental and cultural statutes and regulations, and agency safety standards. For positions responsible for public safety, the incumbent requires knowledge of processes to evaluate risk of failure for various types of critical infrastructure and/or geologic hazards. For positions responsible for construction support, knowledge of documentation of geologic conditions related to construction activities and foundation treatment if required.

Knowledge of data collection methods, data management, computer sciences and programming language(s) as they relate to the field of geology. Skill in computer systems and hardware platforms, with a strong background in experiment design, to interface field, remote sensing, and laboratory instrumentation with computers for data acquisition and processing is required. Knowledge of

mathematics, statistical sampling and statistical modeling techniques applied to geophysical, physical, and/or geochemical processes. Knowledge of probabilistic geological hazard analysis, resource and environmental assessment analysis, source characterization, site response, and spatial variability of structural, stratigraphic, and/or framework geology. Knowledge of risk assessments techniques applied to one or more areas of geology, which may include methods of assessing economic risk, environmental risk, dam safety risk.

Knowledge of geological, geochemical, engineering geology, and instrumentation, electronics, and communications as related to the acquisition, recording, transmission, storage and analysis of geological data. Knowledge of one or more specialized areas of geologic studies such as those involving geophysics; remote sensing; sediment chemistry and radio geochemistry; volcanology; paleontology and paleoclimatology; or mineralogy.

Knowledge of a range of data analysis methods applied to geosciences, incorporating such techniques as remote sensing, field mapping and modeling, geochronology, coherence filtering, depth migration, and geochemical characterization. Ability to apply statistical models to large data sets and analyze data consistent with scientific and statistical principles.

Ability to plan, organize, and independently acquire and analyze data to document geologic processes and provide data and tools to support effective management strategies. Ability to plan, organize, and analyze a variety of geologic data to interpret, map, and predict a variety of hazards within the area of geoscience.

FACTOR 2 - SUPERVISORY CONTROLS

FL2-4 450 points

The supervisor provides guidance on overall objectives based on mission priorities. The employee and supervisor, in consultation, develop deadlines, projects, and work to be done. The employee independently plans, conducts, and documents the work; coordinating with other scientists to resolve problems and characterize geologic conditions.

The employee plays a key role in resolving significant issues and keeps the supervisor informed of any unusual situations, potential adverse publicity, or the potential for increase to public risk. The scientist's analysis, recommendations, and conclusions are relied upon on as technically accurate and authoritative.

Completed work is reviewed for integrity of scientific methods employed, overall adherence to policy, compatibility with other studies, and attainment of study objectives.

FACTOR 3 – GUIDELINES

FL3-3 275 points

Guidelines consist of bureau, agency, and government-wide policy, regulations and operating procedures; industry technical standards, technical reports, and published and unpublished scientific reports.

Guidelines also include technical documentation related to mapping and visualization systems, instrumentation, geologic characterization, statistical and chemical modeling software, and computers. Guidelines and precedents are available addressing preferred approaches and resolution to commonly encountered problems.

The scientist uses judgment to research, select, modify, and adapt, existing precedents and guidelines to specific problems or issues encountered.

FACTOR 4 – COMPLEXITY

FL4-4 225 points

Work consists of a wide range of duties requiring the employee to apply different, unrelated processes, methods, technologies, and analytical techniques. Problems may involve interdependent resources or issues that must be addressed.

The scientist decides the course of action for investigations by researching and evaluating available information, considering alternatives, and determining the course of action what will best meet the needs of the project or situation.

The employee exercises judgment and originality in devising solutions to problems encountered and modifying and adapting existing processes to meet specific conditions.

FACTOR 5 - SCOPE AND EFFECT

FL5-3 150 points

Work of the position involves investigating, and analyzing a variety of conventional geological and/or geotechnical problems or issues using or adapting a broad range of standard techniques. The analyses, maps and other products are used complete projects and investigations and to inform decision making.

Work of the position affects the agency creditability with internal and external customers, the design and safe operation of structures, the adequacy and effectiveness of studies and services, or the well-being of the general public in the immediate area serviced.

FACTOR 6 & 7 – NATURE AND PURPOSE OF CONTACTS

FL6-3 & 7-C 180 points

Contacts are with technical, administrative, and scientific personnel within and outside the immediate organization. Other contacts typically include scientific and technical personnel from other Federal and State Agencies, regulatory bodies, industrial and consulting firms, professional and scientific societies and academic institutions. Positions involved in disaster response may have contact with emergency responders, land managers, and counterparts from foreign governments. Some positions require contact with the media and general public, sometimes in emergency response situations.

The purpose of contacts is to provide technical direction and coordination of work related to projects, monitoring networks, and geosciences investigations. Contacts outside the government may be skeptical about trusting government employees, have competing interests with the bureau or agency, and may be unwilling to cooperate or comply. The scientist must be diplomatic in presenting ideas and employ skill and professionalism to establish rapport with uncooperative contacts.

FACTOR 8 - PHYSICAL DEMANDS

FL8-1 or 8-2 5 or 20 points

8-1 Some work of the position takes place mostly in an office or laboratory setting. No special physical effort is required.

OR

8-2 During emergency response periods, training of personnel on new equipment, or field work, the scientist may be expected to hike distances of several kilometers over uneven terrain while carrying equipment. Field work may require working in remote field sites with limited to no services.

Field work may require the use of proper personal protective gear, working in dusty, hot, humid, and extreme cold environments, occasional off-road driving of 4-wheel drive vehicles, traveling to remote field sites in helicopters or small fixed wing planes, and/or boats. Lifting of equipment and objects weighing up to 20 kilograms may be necessary.

FACTOR 9 - WORK ENVIRONMENT

FL9-1 or 9-2 5 or 20 points

9-1 Some work takes place in office or laboratory settings with adequate heat, light, and ventilation.

Office conditions do not require special safety precautions; field conditions may include extreme heat or cold, rain or snow, and hazardous conditions such as exposure to extreme temperature, noxious or toxic gasses, ice or flooding.

OR

9-2 Field work may involve encounters with dangerous fauna and flora, and other wilderness dangers. International field work may be conducted in culturally hostile areas.

Geology position with duties that involve subsurface investigation require geologists to work near drill rigs and heavy equipment. Geology positions with duties that involve construction support require geologists to work near heavy equipment and construction hazards. Some work is carried out in proximity to explosives.

Total Points and Grade Conversion

Total Points = 2540 to 2570

Point Range = 2355-2750

Grade = GS-11

Other Significant Facts

Incumbent may be required to have certification as a Contracting Officer's Technical Representative (COTR) or Contracting Officer's Representative (COR) and/or Agreements Technical Representative (ATR) depending on bureau/office requirements.

EVALUATION STATEMENT

STANDARDS APPLIED

Job Family Standard (JFS) for Professional Work in the Physical Science Group, GS-1300 December 1997; JFS for Work in the Engineering and Architecture Group, 0800, November 2008; Introduction to the Position Classification Standards, revised 8/09

SERIES AND TITLE DETERMINATION

The 1300 JFS defines the Geologist series as work requiring application of knowledge of the principles and techniques of geology and related sciences in the investigation, measurement, analysis, evaluation, and interpretation of geologic data, and chemical, biological, and physical phenomena related to the structure, composition, and physical properties of the earth and its atmosphere. Like work described in the standard, positions covered by this standard PD perform a broad range of geological studies and provide technical review and oversight of tasks or programs related to sedimentary, metamorphic, and (or) igneous petrography, geology, mineralogy, structural and framework geology, resources assessments and other areas related to physical properties of the earth or other planets. The title for such positions is Geologist.

GRADE LEVEL DETERMINATION

The 1300 JFS is a narrative standard. When applying narrative standards each position is placed at the grade with the descriptive material that best represents the overall work of the position.

The GS-09 level is the first full professional level in the 1350 Geology series. The most obvious GS-9 work assignment is independent responsibility for applying established technology in routine ways to well-defined, moderate sized physical science projects, but GS-9's might also work in support of larger projects using less established technology. GS-9 scientists plan and carry out routine work. They select and make minor adaptations to procedures and accepted practices and handle unexpected conditions arising in the normal course of the work. For recurring assignments, GS-9 scientists are responsible for organizing the work, following prescribed methods and guidelines, and recognizing conditions and results that may affect the findings.

Work of this position exceeds the GS-09 level. Rather, like the GS-11 level, this position exercises wide latitude for the exercise of independent judgment, to perform responsible work of considerable difficulty requiring somewhat extended professional, scientific, or technical training and experience. Assignments generally do not involve radical departures from past practices or require the development of new, novel or innovative approaches, methods or techniques. By comparison, GS-9 scientists perform assignments that have fewer variables and produce relatively obvious results and conclusions. Some GS-11 scientists provide technical guidance and instructions to lower graded professional or technical employees generally for the duration of a given assignment.

A GS-11 Geologist may, for example, lead or independently perform a multi-year study to assess the occurrence of an important industrial ore as part of a comprehensive land assessment project. Studies background data, analyzes and resolves conflicts in archival information, and locates and obtains

substantive unrecorded data from sources such as mine owners and state officials. Prepares the geologic portion of the report for publication. Recommendations and conclusions are expected to be logical and the product of a trained scientist and reviewed primarily for the adequacy of conclusions presented. GS-11 scientists conduct projects, investigations, or evaluations of considerable scope that require application of a broad range of standard procedures, processes, and analyses.

Work of this position does not reach the GS-12 level, where work involves reporting on original studies or ongoing studies requiring a fresh approach to resolve new problems. The complexity of assignments requires extensive modification and adaptation of standard procedures, methods, and techniques, and development of totally new methods and techniques to address problems for which guidelines or precedents are not substantially applicable.

Note: The 1300 JFS does not provided detailed descriptions and illustrations in the field of geology that fit many aspects of the work covered by this PD. As such, the 0800 JFS grading criteria was used to confirm grade level. The score derived from application of the 0800 JFS ranges from 2540 and 2570 which equates to the GS-11 level on the grade conversion table.

FINAL CLASSIFICATION

Position classifies as GS-1350-11, Geologist