POSITION DESCRIPTION													
1. Position Number						2. Explanation (show any positions replaced)							
3. Reason for Submissio													
□ New □ Redese	Othe	r											
4. Service													
☐ HQ ☐ Field ☐ Yes (multiple use) ☐ No (single incumb													
6. Position Specifications	7. Financial Statement Required						10. Position Sens	itivity and Ri	sk Designati	on			
Subject to Random Dr	☐ Executive Personnel-OGE-278						Non-Sensitive						
	☐ Employment and Financial Interest-OGE-4				150	☐ Non-Sensitive: Low-Risk							
Subject to Medical Sta	☐ None required						Public Trust						
Telework Suitable	8. Miscellaneous 9. Full Performance Level					evel	☐ Non-Sensitive: Moderate-Risk						
Fire Position			Functional Code: Pay Plan:						☐ Non-Sensitive: High-Risk				
Law Enforcement Pos	BUS: Grade:						National Security						
11. Position is							☐ Noncritical-Sensitive: Moderate-Risk						
		12. Position Status	□ SES				□ Noncritical-Sensitive: High-Risk						
☐ 2-Supervisory		☐ Excepted (specify in remarks)				SL/ST			☐ Critical-Sensitive: High-Risk				
4-Supervisor (CS)	13. Duty Station							☐ Special Sensitive: High-Risk					
☐ 5-Management O	fficial												
☐ 6-Leader: Type I	14. Employing Office	ng Office Location				15. Fa	iir La	ibor Standards Ac		Nonexempt			
☐ 7-Leader: Type II 16. Cybersecurity C			de				17. Competitive Area Code:						
■ 8-Non-Supervisor	#1:						-	titive Level Code:					
18. Classified/Graded by Official			l Title of Position			Pay Pl	Pay Plan Occ		cupational Code	Grade	Initial	Date	
a. Department, Bureau,				1									
b. Second Level Review													
19. Organizational Title of Position (if different from, or in addition to, official title)						20. Nam	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 positio 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 successions.										to,			
a. Typed Name and Title of Immediate Supervisor						b. Typed Name and Title of Higher-Level Supervisor or Manager (optional)							
0' 1													
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.						sition Cla	assificat	tion S	tandards Used in (Classifying/G	rading Posit	ion	
Typed Name and Title of Official Taking Action													
Signature Date													
25. Position Review	Initials	Date	Initials	Date									
a. Supervisor									The standards, and				
b. Classifier					available in the personnel office. The classification of the position may be reviewed and corrected by the agency or the U.S. Office of Personnel Management. Information on classification/job grading appeals, and complaints on exemption from FLSA, is available from the personnel office or the U.S. Office of Personnel Management.								
26. Remarks				1	. P.32					a			

Form HC-08 (July 2020) Office of Human Capital

DOI Standard PD PD# DN01200

Classification: Geologist, GS-1350-13

Introduction

This position performs scientific work of unusual difficulty, with wide latitude for the exercise of independent judgment in support of a DOI Bureau/Office or an operating subdivision of a Bureau/Office. Position typically represents an authoritative source for consultation for other scientists and program specialists. 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. At this level work often involves long-range or large-scale investigations where the scientist must defend finding and recommendations in high-level forums.

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

Methods and Procedures: Applies a variety of sophisticated processes and analytical methods to the preparation and analysis of field/remote sensing observations and/or laboratory samples. Methods employed often involve the application of experimental theories and/or new applications. These may include use of 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. Determines stratigraphic, structural, geochemical, framework geology, and magmatic or thermal evolution of terranes and reservoirs through mapping, field sampling, and/or compilation of existing geoscience data. Keeps abreast of state-of-the-art technological developments, provides significant and innovative recommendations for advancing program goals, and execute projects/investigations with impact on operating programs.

Data Collection/Analysis/Synthesis: Applies experimental theories and advanced methodologies to geologic and/or geochemical techniques to acquire data and samples. Makes geological observations, computations, and measurements. Determines adequacy of data collected, resolves unique or novel problems in collection methods by altering standard practices, equipment, and known techniques. Assesses the validity of procedures and techniques to correct for errors and improve results. Areas of investigation varies widely depending on particular assignment; examples may include geomorphology, paleo seismology, planetary sciences, paleontology, paleoclimatology, sedimentology, limnology, resource assessments, geologic mapping, structural assessments and specifications, and safety assessments related major structures such as dams, depth of water tables and other types of conditions which impact projects. Works with, sometimes huge, 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 that often have significant impact on science priorities for the Bureau/Office and/or Department. Investigations may involve but are not limited to: reservoir identification and classification, well log analysis and correlation, seismic and other geophysical data interpretation, subsurface mapping, developing geologic cross sections, national reserve and resource estimation, conservation of resources, lease sale evaluations for fair market value determination in areas of economic uncertainty, and worst-case discharge analyses for broad geographic areas. Investigations require considerable interpretation and judgment on the importance of complex combinations of multi-layered and multi-disciplinary attributes of complex geologic systems. Analyses require integration of all available geological, geophysical, petrophysical, paleontological, environmental and engineering data. Maintains mastery of 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, evaluation, and to make recommendations that influence decision-making for the Bureau/Office and/or DOI. Prepares detailed technical exhibits, presentation, and reports of geological findings in forums including Bureau or DOI leadership, other Federal, State, Tribal and local agencies, or the public.

Reporting/Documenting: Personally prepares or contributes to complex, technically authoritative reports on geologic and related studies which typically require development or application of new 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 are frequently of intense interest to the scientific or resource management community and often serve as the basis for decision-making by Bureau and DOI management officials, resource managers, other Federal Agencies, state and local entities, and major industrial or commercial concerns. Some geologists at this level develop and/or edit highly complex geologic maps employing multiple data collection and interpretation techniques for digital or print publication.

Communication of Findings: Communicates findings in a variety of formats and settings. Makes oral presentations in a full range of technical meetings, in some cases in support of enforcement activities as part of Federal oversight of regulatory programs. Presents findings and recommendations to program managers, senior Bureau or Department leadership, the news media or interested publics as a technical expert. Provides guidance and expert advice to management and other officials on technical, systems, or process related topics. Makes presentations to senior management officials, in public forums, and under other 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 new and original 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. Participates in or serves as subject matter expert reviewer of Bureau directives, standards, and policies. Evaluates, edits and reviews technical documentation such as technical memoranda and reports, study analyses and results, correspondence, publications, design

criteria, calculations, operating procedures, evaluation and oversight reports, value studies reports, inspection and assessment reviews, impact assessments, permit applications, emergency action plans and exercises, construction plans and reports, quantity estimate worksheets, specifications, solicitation packages, required planning, design, and cost estimates such as Independent Government Cost Estimates (IGCE) and contract correspondence including responses to submittals and Request for Information (RFI). 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. Serves as a senior advisor to management officials in the bureau and/or Department on planning of future projects in accordance with DOI priorities and bureau resources and priorities.

Mentoring and Development: Provides technical and peer review of work of scientists and/or engineers across the assigned organizations, reviews and/or serves as signatory authority on project designs, technical documents, specifications, and contract correspondence; ensuring documents are accurate and scientific quality assurance processes were followed. Provides technical mentorship, guidance, training, and advice to scientists and technicians and other internal and external stakeholders. Often serves as technical approval authority in accordance with Bureau and Department policies, directives, and standards.

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 Development/Management: Develops, modifies, and utilizes 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 and/or leads technical work groups or teams. May provide technical organizational representation and collaboration on teams external to the organization, including external stakeholders and partners.

Performs other duties as assigned.

FACTOR 1 – KNOWLEDGE REQUIRED BY THE POSITION

FL1-8 1550 points

Mastery of and skill in applying advance theories, principles, processes and practices of geology and related physical sciences such as geophysics, oceanography, physics, hydrology, or chemistry to design, conduct, interpret, and document highly complex and/or multi-disciplinary scientific investigations. Areas of specialization may include geomorphology; structural geology; sedimentary, igneous or metamorphic petrology; planetary geology; economic or mining geology; engineering geology; paleoclimatology; paleoclimatology; paleontology; geochemistry; geochronology; soil science; volcanology; geodesy; and resource assessments for petroleum, geothermal, mineral, and engineering geologic analysis of infrastructure and geotechnical investigations.

Authoritative knowledge of a wide range of geologic concepts, principles, and methods applicable to novel problems or geologic conditions not susceptible to treatment by accepted methods that may involve diverse geologic, engineering, hydrologic, biologic, chemical, man-made or other environmental conditions and varying processes. Problems encountered demand competencies sufficient to make significant departures from existing approaches and techniques. Work requires knowledge of agency and industry-accepted scientific standards and guidelines. Some projects require knowledge of applicable environmental and cultural statutes and regulations, and agency safety standards. For positions responsible for public safety, work requires knowledge of common failure mode and failure effect processes to accurately evaluate risk and make emergency management recommendations to Bureau/Agency leadership or resources managers related to critical infrastructure and/or geologic hazards. For positions responsible for construction support, authoritative knowledge is required to provide recommendations for, and documentation of geologic conditions related to construction activities and foundation treatment in highly complex geologic settings; and knowledge to provide formal approval of foundations. For positions responsible for Outer Continental Shelf resource development, knowledge of seismic, subsurface, structural, and well log interpretation, petrophysical analysis, reservoir analysis and characterization, salt tectonics, wavelet analysis and reflectivity, key sequence stratigraphic surfaces and systems, spatial data, synthetic seismograms, regional hydrocarbon plays and trends, hydrate and sulfur evaluation, prospect risking and economics, and resource assessment is essential. 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.

Authoritative 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 minerology.

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; develop and test statistical models; and make recommendations to management on the viability of models, sample designs, or estimation methods.

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 considered authoritative for the field. Work is reviewed only for overall feasibility, adherence to policy, compatibility with other studies, and attainment of study objectives.

FACTOR 3 – GUIDELINES

FL3-4 450 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. Most available guidelines are not directly applicable to the work and require adaptation to apply to specific projects.

The employee must use judgment and creativity in interpreting and applying guidelines. The scientist at this level serves as a senior professional providing other scientists and technicians with definitive interpretations of guidelines, policies, and regulations. While equipment and software are generally commercially produced, such equipment and software frequently require extensive adaptation to suit the needs of the work. The scientist applies experienced judgment in adapting equipment, devising new techniques and developing methods that depart from established practices.

Work consists of a wide range of duties requiring the employee to apply different, unrelated processes, methods, technologies, and analytical techniques. Work is often further complicated by volume of data and/or the need to react almost instantaneously to changing conditions that may represent serious threats to life and property. The scientist is often faced with conflicts between different requirements or problems and situations for which no precedent exists. Problems studied are often highly visible.

The scientist must often devise techniques to resolve discrepancies between data systems and interpret multiparametric data requiring unique approaches and extension of existing analytic methods, often in limited timeframes or with few resources. Problems are frequently difficult to define due to the novelty of techniques or the lack of available data and previous research in the given geographic or topical area.

The employee must apply discernment and ingenuity to provide cogent advice on changing systems and technologies, improvements to techniques and abilities in the field of geology and related fields and provide advice on how these changes can impact policy, regulation, and bureau or agency priorities. Work may require the scientist to initiate or modify technical policy and evaluate proposed projects.

FACTOR 5 - SCOPE AND EFFECT

FL5-5 325 points

Work of the position is critical to one or more bureau and/or agency priorities such as protection of life and property, planning, design and construction of engineering projects, dam safety and infrastructure evaluation, and management of valuable petroleum and mineral resources, and provision of science information tools and technologies to inform decisions of the Federal government, State and local governments, and all manner of resource managers and users. Work typically involves developing and advising on new methods, technologies or approached.

The projects, analyses, maps and other products are used by resources managers and bureau and agency leadership to inform decision making. Outcomes of the work may affect the work of other experts in the field, important aspects of DOI scientific programs, or the well-being of a substantial number of people.

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 50 pounds 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 positions 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 = 3290 - 3320Point Range = 3155-3600

Grade = GS-13

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 standard describes work at the GS-12 as typically involve planning, executing, and 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. Works free from technical supervision, although the scientist informs the supervisor of general progress and any unusual findings, problems, or results. Work of this position clearly exceeds the GS-12 level.

Work of the position, like work described in the JFS at the 13 level, is that of a senior level expert addressing technical problems that are controversial, uncertain, or where data are highly incomplete. The scientist at this level serves as an authoritative source of consultation and may be called on to review or approve investigation or management proposals. Scientists at the GS-13 level solve problems that would be considered novel or obscure within the occupation, extending and modifying existing techniques, and developing new approaches for other experienced scientists to use in solving a variety of problems. GS-13 scientists represent their organizations or programs or the Governments interests, in some cases including representing the agency before public bodies on controversial projects. Some positions include staff work with responsibility for reviewing and coordinating field work in a narrow program area or reviewing and developing legislative or regulatory proposals. Other positions may involve planning, organizing, and leading teams to prepare requirements and specifications for new, large scale systems or to evaluate overall plans. Typical projects at this level involve wide variety of geologic conditions and problems associated with geotechnical and/or geophysical issues for an extensive geographical area. Work often involves addressing competing interests and coordinating with private landowners, tribal authorities, industrial concerns, or the

public. Study findings may be incorporated into USGS or DOI standards, guidelines, or form the basis of regulatory changes.

Work of the position does not reach the GS-14 level, which typically involves planning and directing a major professional, scientific, or administrative program where the scientist has demonstrated leadership and unusual professional attainments. Responsibilities at this level tend to involve highly unstructured and interconnected problems involving both difficult technology and complex human relations or programmatic issues. The level differs significantly from the GS-13 level in that the GS-14 scientist is one that other recognized senior technical experts turn to for advice and counsel, not only because of the position, but because of the incumbent's personal reputation in the field. At this level, the work typically has special significance for the success of the organization. At the GS-14 level, scientists lead projects that may present obscure or novel problems, or where the accepted solution of one complicating factor have a solution that complicates another facet of the work. At the GS-14 grade level, the scientist is responsible for the sustained progress of the projects in accordance with scope, cost, and scheduled baseline, as well as the human health and safety and environmental soundness.

Note: The 1300 JFS does not provide detailed descriptions and illustrations in the field of geology that fit many aspects of 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 3290 to 3320 points which equates to the GS-13 level on the grade conversion table.