

U.S. Office of Personnel Management  
Office of Merit Systems Oversight and Effectiveness  
Classification Appeals and FLSA Programs

San Francisco Oversight Division  
120 Howard Street, Room 760  
San Francisco, CA 94105-0001

**Classification Appeal Decision**  
**Under section 5112 of title 5, United States Code**

**Appellant:** [The appellant]

**Agency classification:** Research Geologist  
GS-1350-12

**Organization:** [Appellant's organization/location]  
Department of Health & Human Services

**OPM decision:** Research Geologist  
GS-1350-12

**OPM decision number:** C-1350-12-02

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Carlos A. Torrico  
Classification Appeals Officer

October 11, 2002  
Date

As provided in section 511.612 of title 5, Code of Federal Regulations, this decision constitutes a certificate that is mandatory and binding on all administrative, certifying, payroll, disbursing, and accounting officials of the government. The agency is responsible for reviewing its classification decisions for identical, similar, or related positions to ensure consistency with this decision. There is no right of further appeal. This decision is subject to discretionary review only under conditions and time limits specified in the *Introduction to the Position Classification Standards*, appendix 4, section G (address provided in appendix 4, section H).

**Decision sent to:**

**Appellant:**

[The appellant's address]

**Agency:**

[The appellant's servicing human resources office]  
Department of Health and Human Services

Deputy Assistant Secretary for Human  
Resources  
Department of Health and Human Services  
HHH Building  
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## **Introduction**

On May 14, 2002, the San Francisco Oversight Division of the U. S. Office of Personnel Management (OPM) accepted a classification appeal from [the appellant]. On May 31, 2002, the Division received the agency's complete administrative report concerning the appeal. His position is currently classified as Research Geologist, GS-1350-12. However, he believes the position should be graded at the GS-13 level. The appellant works in the [appellant's organization/location], Department of Health and Human Services. We have accepted and decided this appeal under section 5112 of title 5, United States Code (U.S.C.).

This decision is based on a review of all information submitted by the appellant, his agency, and from a variety of references provided by both the appellant and the agency. In addition, an Oversight Division representative conducted separate telephone interviews with the appellant and his supervisor [title of supervisor].

## **General issues**

The appellant's supervisor has certified to the accuracy of the appellant's official position description (PD) [number]. However, the appellant believes his PD is inaccurate and has been unable to resolve that issue within his agency. In such cases, it is OPM policy to decide the appeal based on the actual duties assigned by management and that the appellant performs.

In the appeal file, the appellant makes various statements about his agency's review of his position, and in particular the peer panel evaluation of his work conducted in March 2002. In adjudicating this appeal, our only concern is to make our own independent decision on the proper classification of the appellant's position. By law, we must make that decision solely by comparing the appellant's current duties and responsibilities to OPM standards and guidelines (5 U.S.C. 5106, 5107, and 5112). Since comparison to standards is the exclusive method for classifying positions, we have considered his comments only insofar as they are relevant to that comparison.

## **Position information**

The appellant works as a researcher in the [appellant's organization], which is one of two research facilities of the Mining Health and Safety program. The laboratory conducts research to develop methods and technology for reducing health and safety hazards in mining and mining-related activities and disseminates the results of its research to the private sector. The appellant performs independent and collaborative research with peers covering the identification and quantification of changes in mine structures using geophysical monitoring techniques. His current major project involves the examination of electromagnetic emissions as precursors to ground failure (rock bursts).

## **Series, title, and standard determination**

The agency classified the appellant's position in the Geology Series, GS-1350, and he does not disagree. We concur with the agency's determination. As described in the Job Family Standard

for Professional Physical Science Work, GS-1300P, work in the GS-1350 series involves the performance of professional and scientific work in the field of geology. This includes the application of the fundamental principles and theories of geology and related sciences in the collection, measurement, analysis, evaluation, and interpretation of geologic information concerning the structure, composition, and history of the earth. Because the appellant is engaged in research activities in the field of geology, the proper title for his position as specified in the standard is Research Geologist.

The agency applied Part I of the Research Grade-Evaluation Guide (RGEG) for grading purposes and we concur. The RGEG is used across series lines to determine the grade levels of research positions. Part I of the RGEG is used to evaluate positions at the GS-11 through GS-15 grade levels that are engaged in basic or applied research in the sciences, when the functions involve the personal performance, as the highest level function and for a substantial portion of the time, of professionally responsible research. The appellant spends all his time performing geological mining research, i.e., identifying and quantifying changes in mine structures using geophysical monitoring techniques.

### **Grade determination**

Part I of the RGEG includes four factors: Factor I - The research situation, or assignment; Factor II – Supervision received; Factor III – Guidelines and originality; and Factor IV – Qualifications and scientific contributions. They are considered and rated separately, with the total point value then being converted to a grade level by use of the grade-determination chart provided in the RGEG.

Each factor is evaluated at one of five degree levels. Degrees A, C, and E (with corresponding point values) are used to define and evaluate the proper degree of work assigned. Definitions are not included for intermediate Degrees B and D. However, they are to be used when an element is determined to fall between the defined degrees.

#### *Factor I: The research situation, or assignment*

This factor deals with the nature, scope, and characteristics of current studies being undertaken by the employee. It is intended to reflect the situation or assignment in the current job, rather than a summation of the employee's assignments over a long period of time. Therefore, while we recognize that the appellant has been involved in various geological research projects at the research laboratory for many years, we have focused our analysis on his current research assignments. The agency rated this factor at Degree B, but the appellant believes that Degree C is warranted.

At Degree A, the employee's projects consist of scientific investigations of limited scope, with readily definable objectives, which require only fairly conventional techniques. Such investigations may stand alone as studies of specific phenomena or problems, or they may be segments in a structure of related investigations. Projects may be studies in new areas, where the objectives are clear-cut and fairly conventional means can be used; they may involve applying existing theory or methods to new classes of subjects, or to classes of subjects previously

experimented with, under various controlled changes in conditions; or they may involve reruns or adaptations of previous studies in the light of changes in theory, improvements in techniques and instrumentation, etc. Projects are expected to result in a publishable addition to scientific knowledge or in a comparable contribution to the development of a new or recognizably improved method or technique.

At Degree C, the employee is responsible for formulating and conducting a systematic research attack on a problem area of considerable scope and complexity. Typically the scope of the problem area is such that it must be approached through a series of complete and conceptually related research studies. These may be carried out by the employee, or a team where the employee is the leader. In terms of complexity, problems are difficult to define, require unconventional or novel approaches and sophisticated research techniques, and/or present other features of more than average difficulty.

Research studies at Degree C characteristically will result in a series of published contributions that will:

- (a) answer important questions in the scientific field, account for previously unexplained phenomena, and open significant new avenues;
- (b) represent an important contribution to the validation or modification of scientific theory or methodology;
- (c) result in important changes in existing products, processes, techniques, or practices; and
- (d) be definitive of a specific topic area.

We find that the appellant's assignments clearly exceed Degree A where projects are of limited scope and require only fairly conventional techniques. His current research project regarding electromagnetic (EM) emissions exceeds Degree A in that his research techniques are unconventional as applied to underground mining that is subject to mining induced seismicity. The appellant utilizes and determines creative means to resolve many problem situations encountered during the project.

The appellant's research work does not fully meet Degree C where the approach to the problem consists of a series of complete and related studies. Unlike that degree, the appellant's project problems do not typically require that they be approached through a series of complete and conceptually related research studies. The appellant is involved in a major project for the purpose of proving or disproving his hypothesis. In terms of complexity, it is difficult to distinguish and measure valid electromagnetic signals as precursors to seismic activity. He is using measurement technology (computerized software and hardware) that is unusual, and he modifies accordingly, e.g., the appellant "...installed 2 new antennas 300 feet long at the 5500 level of the [name] mine (twice as big as those previously installed) to assist in more accurate/sensitive data collection." While the equipment is challenging to use, it is all commercially available. The appellant's current assignment should produce some publishable contributions to knowledge, but the scope of those studies and impact will not result in the level of knowledge found at Degree C. At this point it is unknown what those contributions may be. Based on our review, the position does not meet the threshold for Degree C.

Degree B is assigned for 4 points.

*Factor II: Supervision received*

This factor deals with the supervisory guidance and control exercised over the researcher in the current job situation. The agency rated this factor at Degree B. The appellant contends that his position should be rated at Degree C. He states that he has unlimited freedom within his primary work/interest to conduct research without prior approval from his supervisor, and that his supervisor does not oversee his work.

At Degree A, typically the employee's supervisor assigns the specific problem with general instructions as to scope and objectives of the study. The study may, however, be suggested by the employee and undertaken after supervisory approval. The researcher confers with his supervisor regarding definition of the problem, its relationship to broader research goals of the activity, and the development of a plan of attack. Decisions that materially change the nature of the work (e.g., decisions to discontinue work, change emphasis, or change plan of attack) originate elsewhere, or are approved by the supervisor. The researcher interprets results of own work and prepares reports and papers, which are reviewed for inclusion of necessary supporting information, completeness, clarity, and results. Work is reviewed for adequacy of method, for completeness and for results.

At Degree C in applied research, the researcher is typically assigned a broad problem area. The researcher has substantial freedom to identify, define, and select specific problems for study, being responsible for determining what appear to be the most fruitful investigations and approaches to the problem area. The researcher is responsible, with little or no supervisory assistance, for formulating hypotheses, for developing and carrying out the plan of attack, for coping with novel and difficult problems requiring modification of standard methods, for analyzing and interpreting results, and for preparing comprehensive reports of findings. The supervisor is kept informed, through occasional discussions, of general plans and the progress of the work. The supervisor approves plans, which call for considerable investments of time or equipment, and is responsible for final decisions concerning direction of the work, and concerning changes in or discontinuance of important lines of investigation, particularly if they involve abandonment of what had been thought to be promising lines of investigation or of a substantial research investment. However, the researcher's professional judgment is relied on to such an extent that his/her recommendations are ordinarily followed. The researcher has full responsibility for decisions regarding the use of available equipment and other resources, and the completed work and reports are reviewed principally to evaluate overall results.

Level A is exceeded in that the appellant works with substantial freedom from supervision, and interaction with the appellant's supervisor is minimal. Assignments are made in broadly defined terms and are reviewed primarily for general acceptability and feasibility in relation to the overall program. The appellant has wide latitude for independent initiative and action in managing his activities as a team researcher or as a project leader, e.g., in designing the test plans, assembling and testing the instrumentation and other field equipment, taking the data in the field, and analyzing and reporting on the results.

The appellant's position does not fully meet Degree C where the employee is allowed substantial freedom in identifying, defining, and selecting specific problems for study. On the contrary, within the broad objectives of the research unit's mission, we find that the appellant is not free to select his specific areas for research. The initial direction, conceptual input, and objectives during the planning process of the appellant's present project (i.e., study of electromagnetic emissions as precursors to catastrophic ground failure) were established not by the appellant but by management and senior staff prior to his being assigned the work. Another specialist developed the applied research plan, and a contractor performed some of the primary research to include isolating the specific problem for study. In addition, we found no indication that the appellant has been faced with novel or difficult problems requiring modification of standard methods.

While the appellant works with considerable independence, making all necessary arrangements and overseeing work in progress, the supervisor prioritizes work once the [installation] staff has determined that a need for research is warranted. While we agree with the appellant that all research must have prior approval, the initial direction and conceptual input during the planning process, the review of proposed work plans, and ongoing technical oversight over his project fail to meet Degree C. In the appellant's case, the initial concepts and hypotheses for his project work originated from others, although specific issues were not defined by the supervisor. The supervisor is available to address any problems of a particularly difficult or unusual nature and maintains his authority to review assigned work for adequacy of results and overall program requirements.

Given the fact that the appellant's supervision exceeds Degree A but falls short of Degree C, Degree B is assigned for this factor and 4 points are credited.

*Factor III: Guidelines and originality*

This factor deals with the creative thinking, analyses, syntheses, evaluation, judgment, resourcefulness, and insight that characterize the work performed by the researcher in the current job situation. The agency rated this factor at Degree C and the appellant agrees.

As in the previous two factors, this factor deals with work performed in the current job situation. Therefore, we may not consider the appellant's earlier work in evaluating this factor. The RGEG instructs that in assessing the impact of creativity found in the position, three considerations are important. The first involves the requirement for original and independent creation, analysis, reasoning, evaluating, judging, and choosing between alternative methodologies. The second is the required interpretation of findings, translation of findings into a problem solution, and recording of these findings and interpretations in a form usable by others as well as in application to specific end products. The third consideration is the impact of theories, principles, concepts, techniques, and approaches developed by the researcher upon the scientific field of the research effort.

At Degree A, existing theory and methods are generally applicable to most parts of the problem. Available material may contain some inconsistencies, may be partially unconfirmed, and/or may suggest several different possibilities of dealing with the problem at hand. Originality is required

in developing a complete and adequate research design for the specific problem by selecting and adapting available methods and techniques. This may involve applying highly complex, but established experimental techniques, or some modification of details of technique or method. This degree involves only a limited amount of innovation or modification of procedures and techniques.

In applied research, Degree C typically involves development and application of new techniques and original methods of attack to the solution of important problems presenting unprecedented or novel aspects. This includes application of a high degree of insight to isolate and define the critical features of the problems. It also requires application of a high degree of originality and ingenuity in adapting, extending, and synthesizing existing theory, principles, and techniques into original and nonobvious combinations or configurations, and in defining and conducting the specific research studies necessary for the solution of the problems dealt with.

The appellant's research exceeds Degree A, where only limited modification of procedures and techniques is to be expected. The appellant's supervisor verified that the assignment is considered a difficult one and technically challenging, i.e., to distinguish and measure valid electromagnetic signals as precursors to seismic activity. Very little information exists in the area of the appellant's current research. The instruments used by the appellant are difficult to operate, and he uses unusual measurement technology (computerized software and hardware) which he significantly modifies. This was the case when the appellant had to determine the validity of data gathered by a mining official concerning the measurement of radiation during the rock breaking process. He altered the approach by the use of filters more conducive to the frequency range of EM radiation, increased the sampling rate, and installed longer antennas to provide more accurate and sensitive data collection. While this is a major change in methodology, unlike Degree C it does not equate to the development and application of new techniques and original methods of attack to the solution of problems presenting unprecedented or novel aspects. His work does not require the level of adaptation and extension of existing theory characteristic of Degree C.

Because Degree C is not fully met, Degree B is assigned and 4 points credited.

*Factor IV: Qualifications and scientific contributions*

This factor measures the total qualifications, professional standing and recognition, and scientific contributions of the researcher, insofar as these bear on the dimensions of the current research situation and work performance. It is given twice the weight of the other factors. The RGEG instructs that although the total history of accomplishment is to be considered under this factor, recent research, which assures maintenance of research competence, is essential to full credit for past accomplishments. The peer review panel rated this factor at Degree B, but the appellant contends that his position should be rated at Degree C.

At Degree A, the researcher typically performs independent research, or serves as a full member of a research team. The researcher has demonstrated through satisfactory planning and execution of one or a few research studies, ability to define the problems clearly, to perform the necessary background research, to develop an appropriate plan of attack, to execute the research plan, to organize and evaluate the results, and to prepare acceptable reports of findings, with some



guidance as to objectives and occasional consultations during the progress of his study. Work may be expected to result (or has resulted) in co-authorship, in a secondary role, or one or more major papers or reports of considerable interest to the scientific field, or in primary authorship of one or more minor papers or reports which will serve (or have served) chiefly to fill narrow blanks in an existing framework of knowledge, or corroborate existing theory, or to report findings of limited scope. Researchers serve as a source of information on their own research projects, principally to researchers within their own laboratory or sphere of investigation and on related or similar projects elsewhere.

At Degree C, the researcher has demonstrated his ability as a mature, competent, and productive worker. The researcher will typically have authored one or more publications of considerable interest and value to his or her field (as evidenced by favorable reviews, by citation in the work of others, by presentations of papers to professional societies, etc.) and/or he or she will have contributed inventions, new designs or techniques which are of material significance in the solution of important applied problems. Contributions involve leadership of a productive research team or leadership in the conception and formulation of productive research ideas (as evidenced by the fact that the researcher's ideas have been the basis for productive studies by others, within or outside the researcher's immediate organization), and/or highly productive (in terms of both quantity and quality) personal performance of research of such originality, soundness, and value as to have marked the researcher as a significant contributor to his or her professional field. Colleagues who are professionally mature researchers seek the researcher out for consultation. Further evidence of the researcher's emerging recognition may be selection to serve in important committee assignments of professional groups. The researcher is qualified to speak and deal responsibly concerning technical matters in his or her area of immediate specialization with researchers within and outside his own organization.

Degree A is exceeded in that the appellant not only performs independent research, but he has also led research teams. He independently plans his research projects (e.g., the application of geology to the problems of mining induced seismicity and stress in tomography), sets project objectives, and makes technical decisions within the framework of the project. The appellant performs with a marked degree of technical expertise and serves as a source of information beyond his installation in the area of tomography and mining stress. He has successfully authored or co-authored publications contributing to his specific field.

Although the appellant's position exceeds Degree A, it does not fully meet Degree C. The appellant has demonstrated his competence as a researcher and aspects of "emerging recognition" in the field through various citations of his work in the publications of others and through the publication of his paper in at least two important, quality journals. An article that he co-authored was chosen as the lead article in the [name of journal], a leading international journal. This is notably a testament to the quality of his work, but as yet has not marked him as a significant contributor to his professional field. Co-researchers at the [installation] have written letters that favorably evaluate the appellant's performance. However, we find that the appellant's articles are unlike typical publications at Degree C in that they have received few, if any, published favorable reviews. Citations of his work have been for the most part from [installation] colleagues/associates. Senior researchers at the [installation], as well as other knowledgeable individuals in the engineering rock mechanics and mining geophysics fields,

indicated that the appellant's publications provide an illustration of his field activities. They find no evidence to suggest that his published work (i.e., in the relationship of geologic structure to seismicity, seismic tomography, or in electromagnetic emissions as precursors to seismicity) has had a significant impact in the rock mechanics and mining geophysics research fields. We further find no evidence that the appellant has conceived, formulated, or published research ideas that have been the sole or primary basis for formal, funded productive research studies by others, as envisioned at Degree C. Unlike Degree C, he has not contributed new research techniques that are of material significance in solving important problems in his field.

The appellant claims that his research conducted from 1992 to 1997 on seismic tomography was state-of-the-art technology, and the basis for a private firm to commercialize the technology. However, senior [installation] staff provided information that the appellant applied seismic tomography techniques that were developed earlier by other individuals. The development of tomography codes for mining applications started in the late 1980s. These codes were then applied to mine stress and structure problems. Work on collecting measurements was conducted and the findings were presented in a paper, "A 2-D P-Wave Velocity Tomographic Experiment in an Idaho Silver Mine" (1990). A professor and his group at Queen's University and a Canadian industry group also reported on these types of measurements in hard rock mines in 1992 and earlier in a series of well-known papers. The appellant's work came after these earlier studies. The results of applying tomography techniques by the appellant to different mine sites have not produced a significant impact in the area of rock mechanics or geophysics. A professor from West Virginia University, who is considered an expert in certain areas of ground control and rock mechanics, stated that the appellant cannot be credited with developing seismic tomography in hard-rock mines, and that he is not one of the half-dozen people that developed seismic tomography. It appears that the appellant applied, rather than developed, this technique.

With respect to being productive in terms of quantity, the appellant indicates that since 1988 he has authored eight peer-reviewed publications, eight peer-reviewed international publications, and co-authored two peer-reviewed publications, and co-authored seven peer-reviewed international publications. However, we must stress the importance of recent accomplishment. The record indicates within the past five years, the appellant has published as the lead author only a couple of papers, i.e., one each in 1998 and in 1999. For the past two and a half years, he has not had any published papers. Based on this consideration, we judge that the appellant does not meet the productivity typical of Degree C.

The appellant indicated that he has participated on committees and in meetings, led research teams, and represented the agency in his area of expertise. However, senior [installation] researchers and managers aware of the appellant's work indicated that he has not achieved the level of scientific expertise and reputation typical of a strong contributor in his field. The appellant has directed the fieldwork of several projects that have attempted to use sophisticated scientific methods. However, his leadership on these projects has been limited to designing the test plans, assembling and testing the instrumentation and other field equipment, taking the data in the field, and analyzing and reporting on the results, all based on established, existing methodology. He has not advanced mining methodologies to the next level, but rather adapted them to new mining applications. As a result, he has not been sought out to perform a key role in resolving issues that affect scientific geological programs, and his ideas have not been the basis

for productive and significant studies by others (other than to provide technical guidance, counsel, and recommendations based on his experience and knowledge of his field). Unlike Degree C, we find that there is very limited, if any, acknowledgment and continuing collaboration by others who are in the forefront in the scientific fields of rock mechanics or geophysics regarding the appellant's work.

Based on the preceding analysis, the appellant's qualifications and scientific contributions exceed Degree A, but fall short of Degree C. Therefore, Degree B is assigned and 8 points are credited.

*Summary*

<i>Factor</i>	<i>Degree</i>	<i>Points</i>
I. The research situation, or assignment	B	4
II. Supervision received	B	4
III. Guidelines and originality	B	4
IV. Qualifications and scientific contributions	B	8
<i>Total</i>		20

A total of 20 points falls within the range for GS-12 (16 to 22 points), according to the grade-determination chart in the Research Grade Evaluation Guide. Therefore, the final grade is GS-12.

**Decision**

The appellant's position is properly classified as Research Geologist, GS-1350-12.