



## Research Ethics and Integrity Assessment Form PART 1 - First Pass Assessment

### General Data Protection Regulation (GDPR)

Data protection legislation will change on 25 May 2018 when the General Data Protection Regulation (GDPR) comes into force replacing the existing Data Protection Act 1998. Whenever we use personal data we must have a legal basis for doing so. In the case of surveys the legal basis is 'processing in the public interest'. Please detail below your public interest case for conducting this survey. Please also ensure that a 'Participant Information Sheet (PIS)' (also referred to as Privacy Notice or Privacy Statement) detailing how the data will be gathered, stored and reported is included at the start of your survey.

Guidance on this can be found here:

### Necessary for public tasks:

<https://www.ed.ac.uk/records-management/guidance/checklist/legal-basis/public-tasks>

### Privacy notices:

<https://www.ed.ac.uk/records-management/guidance/checklist/privacy-notice>

Surveys will not be considered for approval by the GeoSciences Ethics & Integrity Committee without a public interest case or a privacy notice.

#### 1. Are you an undergraduate, MSc or PhD student?

☒

YES Complete Part 2 of the Research Ethics and Integrity Assessment Form (as 'Self' or 'Full').

☐

NO **Go to Question 2**

#### 2. Has your research been reviewed by an external body (e.g. NHS, BAS)?

☐

YES Complete a Confirmation of External Review Form .

☒

NO **Go to Question 3**

#### 3. Does your research involve human subjects (e.g. interviewing, participant observation, PAR, survey, audio/film recording)?

☐

YES Complete Part 2 of Research Ethics and Integrity Assessment Form (as 'Self' or 'Full').

☒

NO **Go to Question 4**

#### 4. Does your research involve environmental fieldwork (e.g. sampling, directly monitoring a site, environmental disturbance, trans-boundary movement of specimens /samples)?

☐

YES Complete Part 2 of the Research Ethics and Integrity Assessment Form (as 'Self' or 'Full').

☒

NO **Go to Question 5**

5. Does your research involve the use of data/material provided by an external source (e.g. other researcher, agency, data repository) or archival work?

☒ YES Complete Part 2 Research Ethics and Integrity Assessment Form (as 'Self' or 'Full').

☐ NO **Go to Question 6**

6. Are you confident that you understand the requirements of the General Data Protection Requirements (GDPR) (2018) and that you have appropriate documented agreements and procedures in place to cover your collaborative working relationships with academic or non-academic partners (including local field assistants), extending to how intellectual property, publication and authorship will be shared?

☒ YES **Go to Question 7**

☐ NO Complete Part 2 Research Ethics and Integrity Assessment Form (as 'Self' or 'Full').

7. Are you confident that your work meets the standards of integrity required by the UoE and that you have a sound and justifiable plan regarding dissemination of the results of the research (e.g. to potential beneficiaries such as funders, study participants, land occupiers or owners, local communities, etc.)?

☒ YES **Please email the Research Ethics and Integrity Secretary ([ethics.geos@ed.ac.uk](mailto:ethics.geos@ed.ac.uk)) with your project title and a copy of this First Pass Assessment. The Research Ethics and Integrity Committee reserve the right to obtain a written record of your reasoning.**

☐ NO Complete Part 2 of the Research Ethics and Integrity Assessment Form (as 'Self' or 'Full').




## PART 2 - Research Ethics and Integrity Assessment Form

<b>Tick either Self or Full Assessment</b>		
<b>SELF ASSESSMENT</b>	<input checked="" type="checkbox"/>	Read Research Ethics and Integrity Self-Assessment Guidance Notes
<b>FULL ASSESSMENT</b>	<input type="checkbox"/>	Read Self-Assessment Guidance Notes in conjunction with Full Research Ethics and Integrity Assessment Guidance Notes
Has a member of the Committee been consulted prior submission?	<input type="checkbox"/>	If ticked please provide the name of Committee Member <b>Name</b>

Title of Research Project: Investigating geothermal heat resources of legacy mine workings, why are some mine waters hotter than others?

Duration of Research Project: 3.5 years

Name of Principal Investigator: Mylene Receveur

Signature of Principal Investigator:  Date: 01/05/2020  
(Electronic signatures / typed names are accepted)

Research Institute (staff and PhD only): Earth & Planetary Science

Email of Principal Investigator: M.Receveur@sms.ed.ac.uk

Co-Investigator(s) email(s) (if applicable):

<b>Student supervisor information</b> (if applicable)
Name of Supervisor: Dr. Christopher McDermott
Signature of Supervisor*: Christopher McDermott Date: 25.05.2020 (Electronic signatures accepted or typed name and date if supplied with the email from your supervisor which verifies approval)

Type of student (if applicable)	Tick	Student Number	Name of your programme secretary
Undergraduate Honours	<input type="checkbox"/>		
		<i>Undergraduate students should attach the completed form to their dissertation research/project proposal. The ONLY time an Undergraduate student should submit a form to the School Research Ethics and Integrity Committee is if their research requires a Full Assessment.</i>	
Taught MSc	<input type="checkbox"/>		
MSc by Research	<input type="checkbox"/>		
		<i>MSc students should attach the completed form (signed by their supervisor) to their dissertation research/project proposal or forward the form to their Programme Director for review as instructed in their programme handbook. The ONLY time a Masters student should submit a form to the School Research Ethics and Integrity Committee is if their research requires a Full Assessment.</i>	
PhD	<input checked="" type="checkbox"/>	S1995204	pgrsupport@geos.ed.ac.uk
		<i>PhD students should submit their form (signed by their supervisor) to the School Ethics and Research Integrity Committee at least 3 weeks in advance of their Confirmation Meeting.</i>	

<b>Check List before submission</b>	
I have read the appropriate Guidance Notes	x
I have completed all relevant check boxes	x
I have included a Research Summary	x
I have completed the Additional Statement box (where appropriate)	x
I have appended all other relevant documents (where appropriate) (NB: If you are an undergraduate, MSc or PhD student submitting a Full Research Ethics and Integrity Assessment please attach your Plain Language Statement(s), Consent Form(s), and copies of formal agreements, email correspondence, etc. as appropriate)	x

## After this form is completed

Email the completed form (along with any additional supporting documents) to the Committee Secretary by emailing [ethics.geos@ed.ac.uk](mailto:ethics.geos@ed.ac.uk). The form will be logged and reviewed by the Committee and a Determination returned to you within 3 weeks.

## Research Project Assessment

### Research Summary

The research consists in investigating the key controls on the mine-water temperature within flooded abandoned coal mine workings in the UK. This includes getting a better understanding of the temperature distribution within mine workings as well as assessing the heat recharge mechanisms and the relative contributions of different heat sources. The research methods will mainly involve developing hydrogeological conceptual models and numerical representations of mine workings, based on existing data. The open-sources finite-element modelling software OpenGeoSys will be used to solve numerically for hydraulic and heat flow equations and model temperature profiles. The work is expected to demonstrate convective flow in highly connected subsurface voids, demonstrate the influence of natural heat flow, and the influence of local and regional groundwater flow. Generic modelling approaches will first be developed. In a second phase, the approaches will be applied to specific case studies and models will be validated using data available from the Coal Authority (CASE partner), that have been provided under terms of data sharing agreements. Data provided by the Coal Authority includes information from in-situ sensors, legacy data from previous mining companies (i.e. mine plans, GIS data). Data available from other open-source archives will also be collated to support the research, such as temperature data collected in published literature and geological data from open-source BGS database. Ultimately, the research will aim at scoping out the size of the temperature resources available to use, and contribute to a better characterisation of the heat potential for geothermal production from flooded mines. A key outcome of this work will be the development of a predictive tool/model or conceptual approach that enables the scientific estimation of the extent and nature of the heat available over the long term from mine workings. This tool would also enable to anticipate the rate of renewal of heat in mines and to scientifically guide the licensing of heat from mines by the Coal Authority.

<b>1</b>	<b>Legal, moral responsibilities, codes of conduct</b> This box must be completed for all research projects	yes	no	N/A
A	Are there any conflicts of interest between the researchers, funding bodies, the institution, and/or research subjects/environments?		x	
B	Is the research compliant with the General Data Protection Requirements (GDPR) (2018) and University of Edinburgh Data Protection procedures?	x		
C	Separate from any legal obligations, is there a moral responsibility to provide feedback or results to research participants/landowners?	x		
D	Will you take all necessary measures to maintain the integrity of the research?	x		
E	Are you aware of codes of conduct from professional associations that should guide your research?	x		
F	If the research is to take place outside the UK, will the research be, or has the			x

	research been, reviewed in the host country?			
G	Does your research concern groups which may be construed as terrorist or extremist?		x	
<p><i>Guidance relating to legal and moral responsibilities and a sample list of Codes of Conduct can be found in the Self-Assessment Guidance Notes. If applicable, include a statement on how conflicts of interest will be addressed in the Additional Statement box at the end of the form. If applicable, include a statement on why the research will not be ethically reviewed in the host country in the Additional Statement box at the end of the form. If you answer YES to 1G please complete and submit a Prevent Duty Form (available via the ethics webpages) alongside your completed Ethics Assessment Form.</i></p>				

<b>2</b>	<b>Rights of human subjects</b> Complete this box <i>only if</i> the project involves living human subjects, or if your work requires extensive interaction with land users or other people in the course of your research.	yes	no	N/A
A	Is confidentiality adequately handled by normal tenets of ethical academic research?			x
B	Are the research subjects capable of understanding their rights and of providing informed consent?			x
C	Are the research subjects 18 years of age or over?			x
D	Will research subjects be informed of your responsibilities to report any evidence of abuse or criminal activity?			x
E	Will research participants be informed about your obligations under the General Data Protection Requirements (GDPR) (2018)?			x
<p><b><i>If NO to any of these, Full Ethics Assessment required</i></b></p> <p><i>Guidance relating to subjects' rights, confidentiality, and the General Data Protection Requirements (GDPR) (2018) can be found in the Self-Assessment Guidance Notes (those completing a 'Full' assessment should also read the Full Ethics Assessment Guidance Notes). If applicable, procedures for maintaining confidentiality and data protection issues must be addressed in the Additional Statement box at the end of the form. If applicable, please also append forms/statements that will be used to obtain informed consent and a Plain Language Statement to the end of the form.</i></p>				

<b>3</b>	<b>Potential harm, discomfort or stress for living human subjects or non-humans</b> This box must be completed for all research projects.	yes	no	N/A
A	Is there significant foreseeable potential for psychological harm or stress for those involved in your research (including the research team)?		x	
B	Is there significant foreseeable potential for physical harm or discomfort for those involved in your research (including the research team)?		x	
C	Is there significant foreseeable potential for violation of cultural or social norms/practices?		x	
D	Is there significant foreseeable potential for conflict or discomfort for any humans or non-humans your research will impact upon?		x	
<p><b><i>If YES to any of these, Full Assessment is required</i></b></p> <p><i>Guidance relating to the minimisation of harm, discomfort, or stress can be found in the Self-Assessment Guidance Notes. If applicable, include a statement on procedures to minimise harm, discomfort and/or your stance in relation to the violation of cultural norms and practices in the Additional Statement box at the end of the form.</i></p>				

<b>4</b>	<b>Effect on environment</b> Complete this box <i>only if</i> your project includes environmental fieldwork that involves sampling or directly monitoring a site, or if your research will involve movement in or	yes	no	N/A
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	through sensitive environments.			
A	Will the fieldwork be conducted in an environmentally sensitive area or area of Special Scientific Interest, OR require <i>crossing</i> a sensitive area?			x
B	Have appropriate steps been taken to gain permission to access the field site(s) (including privately held land)?			X
C	Will the landowner/responsible agency be informed of your responsibilities to report any evidence of abuse or criminal activity?			X
D	Will samples be collected and removed in sufficient quantities to have a negative physical/environmental impact on the site and/or its eco-system?			x
E	Will the conduct of the fieldwork significantly disrupt the site and/or its environment?			x
F	Does the fieldwork involve sampling rare/endangered or harmful taxa/species?			X
G	Will the research involve transporting samples/specimens between countries or across other significant boundaries?			x
<b>If YES to A, D, E, F or G, Full Ethics Assessment required</b>				
Guidance relating to environmental fieldwork can be found in the Self-Assessment Guidance Notes (those completing a 'Full' assessment should also read the Full Ethics Assessment Guidance Notes). If applicable, include a statement on how you will attempt to gain permission in the Additional Statement box at the end of the form. If applicable, append any written agreement with the land owner to the end of the form.				

<b>5</b>	<b>Institutional/agency consent</b> This box must be completed for all research projects	yes	no	N/A
A	Have permissions for access to archives and data repositories been arranged?	x		
B	Where data has or will be obtained from another researcher, agency, archive, or other source, is it clear that the intended usage adheres to the terms of supply?	x		
C	Will issues of data handling and consent be dealt with adequately and following procedures agreed with agencies, archives, and/or land managers?	x		
Guidance relating to data protection and consent can be found in the Self-Assessment Guidance Notes				

<b>6</b>	<b>Collaborative working</b> Complete this box <i>only if</i> the research will involve working collaboratively with other academic/non-academic partners and/or employing local field assistants (including guides/translators).	yes	no	N/A
A	Is there a formal agreement in place regarding the collaborative relationship with the academic partner(s) (if applicable)?			X
B	Is there a formal agreement in place regarding the collaborative relationship with the non-academic partner(s) (if applicable)?	X		
C	Is there a formal agreement in place regarding the employment of local field assistants (including guides and translators)?			X
D	Will care be taken to ensure that all individuals involved in implementing the research adhere to the ethical and research integrity standards set by the UoE?	X		
E	Have you reached agreements relating to intellectual property, publication and authorship?	X		
Guidance relating to collaborative working, the employment of local field assistants, and intellectual property rights can be found in the Self-Assessment Guidance Notes. If you answer YES to A, B or C please outline the format of this (e.g. written contract, email correspondence, witnessed verbal agreement) in the Additional Statement box at the end				

of the form. If you answer NO to any of the above please include a statement on your plans for agreeing the nature of any collaborative/working relationship(s) in the Additional Statement box at the end of the form. If applicable, append any written agreements to the end of the form.

7	Dissemination and benefit sharing	yes	no	N/A
	This box must be completed for all research projects			
A	Will the research reports, associated publications and other outputs accurately reflect the data collected?	X		
B	If the research will be undertaken outside the UK, will the research findings, associated publications and, where feasible, data be made available in the country where the research took place?			X
C	Will you disseminate the findings to the study participants or land owners?	X		
D	Is the research expected to benefit the academic partners (directly or indirectly)?			X
E	Is the research expected to benefit the non-academic partners, research participants and/or local communities (directly or indirectly)?	X		

Guidance relating to dissemination and benefit sharing can be found in the Self-Assessment Guidance Notes. If you answer NO to A, B or C please include a statement justifying your decision in the Additional Statement box at the end of the form.

8	Other Approval	yes	no	N/A
A	Does the sponsor require formal prior ethical review?		X	
	If Yes, by what date is a response required?			
B	Does the project require the approval of any other institution and/or ethics committee?		X	
	If Yes, by what date is a response required?			

### Additional Statement

The research conducted through this PhD does not involve any subjects or fieldwork. All research will be exclusively conducted within the UK, either at the University of Edinburgh or at the Coal Authority Mansfield office, under the supervision of Ian Watson. All conditions regarding intellectual property, integrity, publication, authorship, and data confidentiality have been addressed by the "Studentship Agreement" and "Assignment and Confidentiality agreement" signed by all parties: the non-academic CASE partner (The Coal Authority), The University of Edinburgh and the student (Mylene Receveur). Research-related data will be stored and made accessible under the terms set by those agreements.

As part of mandatory placements of at least 3 month throughout the PhD duration, a Coal Authority *ICT User Policy* and *Information Risk Management Policy (IRMP)* have moreover been signed. In addition, a DBS security check has been completed and a *Basic Disclosure certificate* obtained from Disclosure Scotland.

If any new partnership is created to access data from private companies, we will ensure that this is made through written agreement or data license, and we will guarantee to provide feedback on any results and findings obtained from these data.

**END OF FORM TO SUBMIT**