

Fracking



SPSE Reading & Writing Test

EXAMPLE

Question: Making reference to the points made in texts 1, 2 & 3, outline the situation and problem(s), summarise the solutions suggested and evaluate their effectiveness. Write between 400-600 words.





Teacher's Notes Reading & Writing Test - SPSE

Time: 1:30 – 2:00 hours Level: *****[/B2/C1]

Lesson Plan

Aim: to develop the students' ability to read three academic texts and highlight key points connected to background, problems, solutions and evaluation. Students then use the key points to write a 400-600 word SPSE essay using summarising, paraphrasing and referencing skills.

<u>Lead in</u>

- What is fracking? Brainstorm the topic and associated vocabulary.
- Associated vocabulary: *oil* & *gas, shale gas, drilling, wells, high pressure water, rock, fracking chemicals, contamination, pollution (pollutants), waste water, treatment plants, underground water aquifers, hazardous, carcinogenic.*

SPSE Revision

- Remind students what an SPSE essay is.
- Go here: <u>https://www.academic-englishuk.com/spse</u> (models / Language).

<u>Task</u>

1. Students read essay question and check understanding.

Essay Question: Making reference to the points made in texts 1,2 & 3, outline the situation and problem(s), summarise the solutions suggested and evaluate their effectiveness. Write between 400-600 words.

- 2. Distribute SPSE essay outline & the three texts.
- 3. Students take notes on the three texts using the SPSE essay outline.
- 4. Students write essay from their outlines. Allow 1.30 2.00 hours.
- Feedback: Either distribute SPSE essay outline answers & model essay for students to check themselves or take in and mark. Use error correction code: https://www.academic-englishuk.com/error-correction

Scaffolding/differentiation

- Students compare with SPSE essay outline answers before writing the essay.
- Key phrases sheet to support students with SPSE language at the back of this book.

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Fracking – extracting natural gas

Text 1 by Wilson and Rakenberg (2018)		
Fracking is the technique of drilling on land to extract oil and gas from underground reservoirs and		
wells. The to as shale gas extraction, uses a		
high-pressure water mixture directed at the rock below the		
Water, sand and chemicals (injected into the rock at		
allows the gas to flow out to the head of the well. The process can		
be carried out vertically or, more commonly, The term fracking		
refers to how by the high pressure mixture (see figure 1).		
HYDRAULIC FRACTURING		
The most widespread concern is the water contamination of underground aquifers due to the		
and chemicals , the most		
significant risk is the wastewater disposal on the surface surrounding the well. Indeed, this week a		
North		
water This was due to human error (BBC, 2016).		
House Energy and Commerce Committee (2015), of the		
country's most active hydraulic fracturing companies had reported blowouts spilling over 866		
million frack job uses 5 million gallons of		
water, containing thousands of gallons of fracking chemicals). It is being suggested that stricter		
limitations are hazardous waste and harsher		
penalties (million dollar fines) for polluting ecosystems, although how this can be done is still		
the long-term effects of fracking pollutants		
on the environment and also regulating fracking company spillages.		















Outline Plan

Situation		
Problem	Solution	
Evaluation		
Conclusion		





SPSE Outline Answers

Situation			
Process – Shale gas & fossil fuels.			
Fracking – drilling, rocks.	with chemicals that extract gas from		
Associated problems with accidents (blowouts), chemicals.	fracking		
Outline			
Problems	Solutions		
Fracking Fluid Water – hazardous & carcinogenic – include Zylene and Ethylbenzene & 5 million gallons of water per frack (Wilson and Rakenberg (2016).			
Problem 1: Blow out & (Wilson and Rakenberg, 2016). Example Pennsylvania, million gallons of contamination (House Energy and Commerce Committee (2015). Problem 2: Waste water – permeable / porous geology = water it (US Environmental Agency, 2018).	Solution: Limitation, higher fines (Wilson and Rakenberg, 2016). Solution: Store water underground or use (Peterson, 2012) treats water on site processing 50 gallons a minute (Peterson (2017).		
Evaluation			
Policy, limitations, Lacks evidence & research. Difficult to regulate (Wilson and Rakenberg, 2016).			
The Evaporator is not encourage frackers to take more responsibility. Questionable about what happens to waste chemicals & storage is not a solution (Peterson (2017).			
Human (Wilson and Rakenberg, 2016).			
Conclusion			
Overall, it needs commitment.			





Model Essay

Extracting natural gas from deep underground wells is done through a process called fracking. It is a			
relatively . It is a process of drilling wells on			
land and injecting these wells with high pressure water consisting of a range of chemicals that fractures			
the rock releasing the shale with fracking			
because each frack can create over 5 million gallons of waste water mixed with toxic chemicals. This			
essay will highlight the key problems associate with fracking, suggest possible solutions			
effectiveness.			
The main key problem is using and disposing of the fracking fluid water. This water contains a number			
of hazardous substances such , which are			
carcinogenic to the environment. If mismanaged these chemicals can pollute ground water			

. Wilson & Rakenberg (2016) state that the

most serious danger is blowouts through human error, with fourteen fracking companies this year reporting that they have experienced these accidents.

that cause the spillage of thousands of gallons of fracking water into the surrounding environment of contaminated fracking liquid has polluted the environment already this year (House Energy and Commerce Committee, 2015). One solution that has been suggested by Wilson & Rakenberg (2016) is to create improved responsibility and awareness of such accidents. Although this could be quite in how fracking pollutants affect the

environment and how fracking companies can be monitored and regulated.

Another key problem associated with the contaminated waste water is its disposal. The US Environmental Agency (2016) notes that the water back into wells but in areas where the geology is porous and permeable this cannot be done. Therefore, the to be processed through water treatment plants but these plants are unable to cope to with the hazardous fracking chemicals within the water (The New York Times, 2017). Peterson (2017) contaminated water which is the use of an Evaporator. This is a mobile waste water processing machine that can be placed on a truck which is capable of processing 50 gallons of fracking liquid a minute,

to processing and recycling water on site. The evaporator works well in principle but is not the perfect solution due to the questionable fact of how to dispose of the . This does not seem to have a viable solution yet.

Overall, fracking offers new avenues to extract gas and this meets the ever increasing energy demands of the future. problems but with governmental regulation and policy these can be overcome. The biggest concern and perhaps the most difficult to safety protocols and higher fining systems this

is something that can be reduced.

[Words 531]



SPSE Language Phrases

Key phrases for writing an SPSE essay

Situation

Follows the conventions of an introduction

(general > specific > definition > situation >outline)

Outline: This essay will discuss two problems, propose possible solutions and evaluate the effectiveness of these solutions.

Problems

<u>Adjective</u>: *central / main / major / common / immediate / serious / significant.*

<u>Verbs</u>: associate / raise / consider / discuss / address / resolve / discuss.

- The most significant problem is...
- ... poses / presents an immediate problem because...
- Another possible issue is ...

Cause & effect language

Leads to / results in / gives rise to / as a consequence / owing to / because of / as a result.

Cause and effect phrases

This suggests / ... Is linked to / associated with / connected to / ...may be affected by...

<u>Solution</u>

<u>Adjective</u>: long-term / short-term / proposed / effective / comprehensive / possible / practical / feasible / cost-effective / workable / realistic.

<u>Verbs</u>: propose / put forward / suggest / adopt / provide.

- One possible solution would be to.... / One way of solving the problem is...
- One practical approach could be to...

Evaluation [Show both positive effects and negatives]

- Implementation of these solutions would ... However, ...
- Although these solutions provide..., there are a number of limitations. The first one is...
- Overall, these solutions offer a range of ..., but it needs to be highlighted that...

Conclusion [Make a decision]

In conclusion / to sum up / to conclude.

If clause: if these solutions are implemented, then this would ...

