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«Амурский государственный университет»

MINING

Методические указания

для самостоятельной работы студентов

по специальности 130400.65 «Горное дело»

Издание для преподавателя

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А.. **Mining.** Методические указания для развития у студентов навыков самостоятельной работы по чтению английских интернет-статей (на материале статей сайта Voice of America о добыче полезных ископаемых в разных странах и проблемах, связанных с нею). – Благовещенск: Амурский гос. ун-т, 2013

Методические указания предназначены для обучения чтению, критическому анализу прочитанного, а также элементам говорения и письма на основе прочитанного студентов специальности «Горное дело».

В авторской редакции.

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ПРЕДИСЛОВИЕ

Целью настоящих методических указаний является обеспечение развития умений и навыков эффективной самостоятельной работы с текстами профессиональной направленности на английском языке. Цель достигается решением двух основных *задач*:

- развитие навыков восприятия информации профессионального характера, изложенной в письменной форме, и реагирование на неё в устной и письменной формах (ответы на вопросы и написание сочинения);

- развитие навыков чтения профессиональной литературы на английском языке с детальным пониманием изложенного материала.

В методических указаниях уделяется немало внимания работе по усвоению лексических единиц общей и, особенно, профессиональной направленности. Выполнение ряда упражнений предполагает развитие навыков говорения и письма на профессиональные темы, что, безусловно, поможет проводить обоснование тех или иных предлагаемых проектных решений в области горного дела на английском языке.

В качестве материала для данных методических указаний были взяты статьи с официального сайта свободного доступа «Голос Америки». Представлены тематические разделы, посвящённые добыче, переработке и сбыту различных полезных ископаемых, а также проблемам, связанным с этими процессами.

СТРУКТУРА МЕТОДИЧЕСКИХ УКАЗАНИЙ

Каждый из семи тематических разделов (units) представлен текстом для чтения с упражнениями, часть которых выполняется во время чтения, а часть — на послетекстовом этапе. В текстах рассматриваются следующие темы: добыча полезных ископаемых со дна океана / моря; добыча, переработка и экспорт платины; добыча полезных ископаемых на территории

Антарктики; кибер-преступность в горнодобывающей промышленности; проблемные аспекты золотодобычи; проблемы монополии Китая на экспорт редких ископаемых, используемых при высокотехнологичном производстве; разработка новых месторождений нефти и газа.

Послетекстовые упражнения представлены упражнениями на поиск эквивалентов (English equivalents), на словообразование (word building), на определение синонимов (rephrase) и антонимов (opposites) и заполнение пропусков (fill in the gaps). Детальное понимание текста проверяется с помощью вопросов (questions).

Поиск английских эквивалентов следует делать в тексте, при необходимости пользуясь словарём. Следует обратить внимание на то, что во многих случаях в тексте выражение приводится с глаголом в той или иной видо-временной форме, а в упражнении запрашивается начальная форма (инфинитив). В данном упражнении через запятую перечисляются несколько слов или выражений в одном пункте списка лексических единиц, после знаков «/» (слэш) приводятся синонимы, в круглых скобках к лексической единице даются пояснения.

На основе прочитанного материала и усвоенной лексики предлагается выполнение письменного творческого задания (Over to you) — сочинение по предложенной схеме с изложением аргументов «за» и «против» того или иного проекта, той или иной ситуации в региональной горнодобывающей промышленности. Заданная схема не является жёсткой и представляет общую структуру сочинения. В её пределах можно варьировать в соответствии с индивидуальной стратегией и желанием обучаемого.

UNIT 1

Text: Ocean Floor is Prime Target of Mining Industry

*Phil Mercer
June 07, 2012*

There has been a new call for the incoming government in Papua New Guinea to stop the Canadian mining company Nautilus from going ahead with a **deep sea mining project**. **Conservationists** say most mining projects in the country have been an **environmental disaster**. In recent years, there has been a rush by companies to **explore the sea floor for concentrated deposits of valuable minerals** found around **hydrothermal vents**.

Ocean Floor a Prime Target of Mining Industry

The next great **frontier** for the mining industry could be hydrothermal vents that **lie deep** on the ocean floor. The **super-hot flues** create deposits of **sulfide**, which contain **precious metals** such as **gold, silver, copper and zinc**.

Chris Yeats, an **ore deposit geologist** at Australia's **state-sponsored scientific and research organization**, CSIRO, believes that plans by Nautilus Minerals, which **has a license to mine sulfide** on the floor of the Bismarck Sea off Papua New Guinea, will be **safe and productive**.

"The activities that Nautilus are proposing are something like **plowing a field or raking your garden**, that you're **stirring up** the environment, but you're not **fundamentally changing** it," said Yeats.

Nautilus has not commented on its plans, nor on calls for authorities in Papua New Guinea **to abandon** the deep sea project, which would **involve sophisticated marine technology**.

Stefan Williams from the University of Sydney's Australian Center for Field Robotics is helping **exploration** companies **peer into the dark depths of the ocean**.

"One of the main **challenges obviously** [is] the environment, then pressures that are associated with depths, so actually getting equipment into deep water it has to be designed to **withstand those kinds of pressures and corrosive environment of saltwater**," said Williams.

His work on **vehicles capable of high-resolution surveys** of the sea floor is **casting light on a mysterious world**.

"There's not a lot down there. It's kind of a big, muddy flat plain for the most part but then you **come across** some **weird** and wonderful sea life, things [you] just don't know what to make of - pretty **astounding**," explained Williams.

Asked whether he thinks this is an area **ripe for exploration in the future**, Williams was optimistic.

"I think so. There are a lot of areas of the ocean that we don't know a lot about," he said. "Some people have suggested we know a lot more about the moon than we do about the **bottom** of the ocean just because it's something we can see. And so I think there will be good opportunities for extensive exploration and understanding what resources are available in these deep-sea environments and the possibility, I guess, of **exploiting those in the future**."

Cindy Lee Van Dover, a professor of **biological oceanography**, has explored almost all of the world's hydrothermal vent fields. **Chains of these mineral-rich outlets lie along fault lines**, including the **Pacific Ring of Fire and the Mid-Atlantic Ridge**.

She says that the **precise impact** of deep-sea mining needs to be known before the exploitation of such valuable resources can begin.

"If mining of **extraction of metals** on the **seabed** takes place, we'd like to know what happens and how quickly the animals come back," she said. "We'd like to work with industry to understand what baselines we really need to put in place to be able to monitor the change as the animals come back and **recolonize**. If one site **recovers from** mining very quickly in a matter of years or decades, maybe that's not such a bad thing, but we need to understand how to know that."

Seabed mining used to be far too expensive to be **worthwhile**, but there are concerns from conservationists that advances in technology, making mining more **feasible**, **pose a threat to** the world's oceans.

The success or failure of the Nautilus deep sea project is seen as **crucial to the future of** deep-sea mining, according to Charles Roche, **the executive director** of the Australia-based Mineral Policy Institute.

"This is not going to be a **bonanza**," said Roche. "It is going to be a very small mine actually, especially compared to some of the larger **terrestrial mines**. It's really a **trial** mine. It's an experimental one that the locals in Papua New Guinea like to call it that they are **guinea pigs** - that it's an experimental mine. So really this is about proving the technology and the concept. What they are trying to do is prove that we can extract the minerals from the bottom of the sea and it is economically viable."

The first commercial deep-sea mine is expected to begin in Papua New Guinea next year and exploration is **booming** across the South Pacific and in the Atlantic and Indian Oceans.

International regulators set up by the United Nations have **signed four new contracts** with groups looking to explore the ocean floor. This includes **agreements** with government and private organizations from China, Japan, South Korea and Russia.

A. VOCABULARY EXERCISES

Exercise 1. Find English equivalents to the following Russian ones in the Text

1) проект по добыче полезных ископаемых глубоко под водой; 2) сторонники консервации природных ресурсов; 3) экологическое бедствие; 4) исследовать морское дно / дно океана; 5) богатые залежи ценных минералов; 6) гидротермальные кратеры; 7) граница / территория, требующая освоения; 8) глубоко залегать; 9) очень горячие потоки; 10) сульфид (зд.=соединение металла с серой); 11) содержать драгоценные металлы; 12) золото, серебро, медь, цинк, руда; 13) геолог; 14) спонсируемый государством; 15) научно-исследовательская организация; 16) иметь лицензию на добычу чего-либо; 17) безопасный и продуктивный; 18) распахать поле, 19) разравнивать граблями землю в саду; 20) всколыхнуть / потревожить; 21) коренным образом изменить; 22) прекратить проект; 23) предполагать использование сложных морских технологий; 24) разработка / изучение; 25) заглянуть в тёмные глубины океана; 26) сложная задача / проблема; 27) очевидный; 28) выдерживать давление и не подвергаться коррозии в солёной воде; 29) средство передвижения; 30) способный обеспечить высокое разрешение изображения при исследовании; 31) пролить свет на загадочный мир; 32) столкнуться с; 33) странный, поразительный / удивительный; 34) созревший / готовый к разработке в будущем, использование в будущем; 35) биологическая океанография; 36) цепи богатых залежей минералов, выходящие на поверхность; 37) располагаться вдоль линии разлома; 38) Тихоокеанское Огненное Кольцо, Средне-атлантическая Гряда; 39) добыча металлов; 40) заново заселить; 41) восстановить после чего-либо; 42) стоящий / дающий результат; 43) выполнимый / реальный; 44) представлять угрозу для; 45) решающий / ключевой для будущего чего-либо; 46) исполнительный директор; 47) доходное предприятие / «золотое дно»; 48) наземный рудник / шахта, пробный рудник / пробная шахта; 49) свинья-копилка; 50) расцветать; 51) подписать контракт / соглашение; 52) международные контролёры

Exercise 2. *Fill in the gaps where necessary while doing word building using the Text*

- 1) conserve — conserva____ (n) — conserva____(n);
- 2) environment — environment__ (adj) — environment____ (n)
- 3) obvious — obvious __ (adv);
- 4) mystery — myster____ (adj)
- 5) extract — extract__ (n)
- 6) explore — explor____ (n)

Exercise 3. *Rephrase the underlined words using the English equivalents of Exercise 1. Give several variants where possible.*

1. It's an experimental mine. (trial)
2. They plan to extract minerals from the bottom of the sea. (mine, seabeds / ocean floor / sea floor).
3. The executive director was making a report about the company's new contracts. (agreements)
4. It's a private industrial enterprise. (government-sponsored scientific organization)
5. Our project is a viable alternative to the conventional systems. (feasible)
6. How can we prevent ecological catastrophe? (environmental disaster)
7. Pretty soon they will become a profitable enterprise. (bonanza)
8. She studies marine mammals and fish. (biological oceanography)
9. Clearly, they aren't gonna make it in such a short period of time. (obviously)
10. Do we have enough metals? (ores)
11. Do you have any devices that would give a clear picture of the seabed? (vehicles capable of high-resolution surveys)
12. She is not ready for such decisions. (ripe)
13. I had a strange feeling. (weird)

14. It is a surprising fact. (astounding)

Exercise 4. Give the opposites to the underlined words using the English equivalents of Exercise 1. Give several variants where possible.

1. They abandoned that deep-water mine. (terrestrial)

2. The authorities don't want to launch that project. (abandon)

3. Our partners are going to break the contract in 10 days. (sign)

4. That mine is dangerous and lossmaking. (safe and productive)

5. Extraction of uranium is fading in that area. (blooming)

6. It is unimportant for the past of the industry. (crucial to the future)

7. They have exhausted mineral resources. (concentrated deposits of valuable minerals)

8. We must leave it as it is. (fundamentally change it)

9. We need to buy more old terrestrial equipment. (sophisticated marine technology)

10. She is an ordinary worker. (executive director)

11. The major easy thing is to stir people up. (challenge)

12. The project is trivial. (worthwhile)

Exercise 5. Fill in the gaps with the appropriate words from Exercise 1.

1. Here are some coins, my little princess. Put them into your _____. – Thanks, dad! (guinea pig)

2. What should I be ready for? – I don't know what you will _____ but be careful. (come across)

3. I hate all sorts of gardening including _____ and _____. (plowing the field, raking the garden)

4. Are _____, _____, _____, and _____ all precious metals? (gold, silver, copper, and zinc)

5. You can't find those minerals on the surface. They_____ on the ocean floor. (lie deep)
6. Is that gold mine dangerous? – Yes, it_____ to the surrounding nature. (poses a threat to)
7. It will take that site 50 years_____ those detrimental consequences. (recover from)
8. Oh my Gosh! There were volcanoes there! – Yes, look at those_____ . (hydrothermal vents)
9. You needn't dig deep because there are many _____. They are almost on the surface. (mineral-rich outlets)
10. Do they_____? – I don't think so. They mine it illegally. (have license to mine sulfide)
11. We don't know much about that natural wonder but their research will _____. (cast light on a mysterious world)
12. Is that mineral located on the bottom of the crater? – No it is on the _____. (fault lines)

B. AFTER-READING QUESTIONS

1. What is the title of the Article? / How is the Article entitled?
2. When was the Article published?
3. Where does the action take place?
4. What do the conservationists worry about? Why do they worry about it? What do some people do?
5. What is Chris Yeats? What is his opinion on the effectiveness of the project and its environmental effect?
6. What technology is used in the project? What are the major technical challenges of the project?
7. Why do people want to study the ocean floor?
8. How rich is the ocean floor with mineral resources?

9. What is the expected environmental effect of the project?
10. What problems did seabed mining face in the past?
11. Is the project going to be a bonanza? Why? / Why not?
12. What economic effect is expected after implementing commercial mines?

C. OVER TO YOU

For / against essay on whether or not to build a trial deep-water mine

Use the following approximate **Model** inserting what you need instead of the underlined items. Use **For and Against arguments** given below

For arguments	Against arguments
1) crucial to the future of the region	1) pose a threat to the environment
2) mineral-rich outlets	2) to fundamentally change the environment
3) casting light on a mysterious world	3) not to recover from
4) to stir the environment	4) to recolonize slowly / not to recolonize
5) bonanza	5) guinea pig
6) other	6) other

Model

Although certain measures have been implemented to improve energy supply of the region, some problems still remain. First of all, Problem 1. Secondly Problem 2. That is why the new project is going to be launched. It has a number of advantages. The main one is For argument 1. The more so, For argument 2. The project is worthwhile because For argument 3. However, the following disadvantages should be taken into account. Unfortunately, Against argument 1. To make things still worth, Against argument 2. Finally, we should not forget about Against argument 3.

To sum up, I consider that the advantages mentioned outweigh the disadvantages / the disadvantages mentioned outweigh the advantages. Therefore certain steps should be taken to make it successful: step 1 is, step 2 is, the final step would be......

In conclusion I'd like to point out that _____.

UNIT 2

Mugabe Threatens to Stop Zimbabwe's Raw Platinum Exports

Reuters
November 11, 2013

HARARE

Zimbabwe may **halt exports** of **raw platinum** to South Africa to force **mining companies** to build a **refinery** in the country as a two-year **deadline** has **expired**, state media quoted President Robert Mugabe as saying.

The threat, if carried out, could affect the world's two largest **platinum producers**, Anglo American Platinum and Impala Platinum Holdings, both of which have operations in Zimbabwe.

The southern African country has the world's second largest known **platinum reserves** but mining companies send the **raw product** to **neighboring** South Africa for **processing**.

Mugabe, who at the age of 89 won re-election in July, told a weekend meeting of his **ruling** ZANU-PF party that platinum producers were **ignoring a government directive** two years ago **to set up** a refinery in the country.

"Let us close our doors **immediately** and say no raw platinum will go to South Africa. The **former** minister gave them two years and we must see them now **arranging to build a refinery**," the **state-run** Herald newspaper quoted Mugabe as saying.

"If they have not started, after that warning, building a refinery then when the time comes for us to demand that all refining has to be done here, they should not blame us."

Zimbabwe produced 350,000 **ounces** of **refined platinum** in 2012, which is 6 percent of world production, according to **the Chamber of Mines**, the country's

mining industry lobby group.

The Chamber has said Zimbabwe would need **to raise platinum output to 500,000 ounces a year to justify a refinery**, which it estimates would cost at least \$2 billion to build, equal to close to a fifth of the country's **gross domestic product**.

A. VOCABULARY EXERCISES

Exercise 1. *Find English equivalents to the following Russian ones in the Text*

1) резко прекратить / остановить экспорт; 2) необработанная платина, обработанная платина, производители платины, запасы платины; 3) горнодобывающие компании; 4) перерабатывающий завод; 5) крайний срок; 6) истекать /заканчиваться; 7) сырьё; 8) соседний; 9) обработка / производство; 9) правление / управление; 11) игнорировать распоряжение правительства; 12) построить / установить; 13) немедленно; 14) бывший; 15) организовать строительство перерабатывающего завода; 16) управляемый государством; 17) унция; 18) Палата горнодобытчиков; 19) группа, лоббирующая интересы горнодобывающей промышленности; 20) увеличить объём добычи платины до ... унций в год; 21) оправдать затраты на строительство и содержание перерабатывающего завода; 22) валовой внутренний продукт

Exercise 2. *Fill in the gaps where necessary while doing word building using the Text*

- 1) produce (v) — produc_____ (n) — produc_____ (n);
- 2) export (n) — export__ (v);
- 3) neighbor (n) — neighbor ____ (adv);

- 4) threat (n) — threat____ (v);
- 5) direct (v) — direct____ (n);
- 6) refine (v) — refine____ (n);
- 7) dead (adj) — dead ____ (n)

Exercise 3. *Rephrase the underlined words using the English equivalents of Exercise 1. Give several variants where possible.*

1. You can't stop export of raw materials from Russia. (halt)
2. How can we increase the amount of platinum extracted? (raise platinum output)
3. You must close this mine right now. (immediately)
4. How big is the amount of goods produced inside the whole country? (gross domestic product)
5. Have we got any platinum stock left? (reserves)
6. Stop neglecting the authorities' orders. (ignoring the government directives)

Exercise 4. *Give the opposites to the underlined words using the English equivalents of Exercise 1. Give several variants where possible.*

1. Are we going to import raw platinum? (refined)
2. The current prime minister gave two contradictory directives. (former)
3. It's a private company. (state-run)
4. You must close 3 new mines. (set up)
5. She talked to the gold mine's opponents. (lobby group)
6. When are you going to renew all imports? (halt)

Exercise 5. *Fill in the gaps with the appropriate words from Exercise 1.*

1. It's too late. The deadline _____ a week ago. (expired)
2. He was a good CEO. During 10 years of his _____ no economic crimes occurred. (ruling)

3. We need more gold. How can we _____ twice? (raise output)
4. First, we must _____ and only then start working for profit.
(justify the refinery)
5. All miners in the country are united. They have a special organization called the _____. (Chamber of Mines)
6. Why are you sending raw zinc to Germany for _____. Build the refinery here! (processing)

B. AFTER-READING QUESTIONS

1. What is the title of the Article? / How is the Article entitled?
2. When was the Article published?
3. Where does the action take place?
4. What does Zimbabwe threaten to do?
5. Why may they do that?
6. How big are platinum reserves in the southern African country? What do they do with it?
7. How much platinum did Zimbabwe produce in 2012? What is its share of the world production? How much should they produce to justify a refinery?

C. OVER TO YOU

For / against essay on whether or not to build a refinery in a certain region

*Use the following approximate **Model** inserting what you need instead of the underlined items. Use **For and Against arguments** given below*

For arguments	Against arguments
1) crucial to the future of the region	1) difficult to justify
2) create new high-qualified jobs	2) problems with other producers

3) to get much more profit
4) bonanza
5) other

3) very few high-qualified specialists
4) a lot of competition
5) other

Model

Although certain measures have been implemented to improve the economic situation of the region some problems still remain. First of all Problem 1. Secondly Problem 2. That is why the new project is going to be launched. It has a number of advantages. The main one is For argument 1. The more so, For argument 2. The project is worthwhile because For argument 3. However the following disadvantages should be taken into account. Unfortunately Against argument 1. To make things still worth, Against argument 2. Finally, we should not forget about Against argument 3.

To sum up, I consider that the advantages mentioned outweigh the disadvantages / the disadvantages mentioned outweigh the advantages. Therefore certain steps should be taken to make it successful: step 1 is....., step 2 is....., the final step would be.....

In conclusion I'd like to point out that _____.

UNIT 3

Antarctica Ice Might Include Diamonds

Reuters

December 17, 2013

OSLO

A type of **rock** that often **bears diamonds** has been found in Antarctica for the first time in a hint of **mineral riches** in the vast, icy continent that is off limits to mining, scientists said on Tuesday.

A 1991 environmental accord banned mining for at least 50 years under the Antarctic Treaty that preserves the continent for scientific research and wildlife, from penguins to seals.

Writing in the journal *Nature Communications*, an Australian-led team reported East Antarctic **deposits of kimberlite**, a **rare type of rock** named after the South African town of Kimberley famed for a late 19th century **diamond rush**.

“These rocks represent **the first reported occurrence** of **genuine** kimberlite in Antarctica,” they wrote of **the finds** around Mount Meredith in the Prince Charles Mountains.

No diamonds were found **during the geological work** that is allowed on the continent. Kimberlite, a **volcanic rock** from **deep below the Earth's surface**, has now been discovered on all continents.

Geologists doubted the find could be commercial, largely due to Antarctica's **remoteness**, cold and winter darkness. Teal Riley of the British Antarctic Survey said less than 10 percent of deposits of similar kimberlite were **economically viable**.

“It's a big **leap** from here to mining,” he told Reuters. Minerals including platinum, gold, copper, iron and coal have previously been found in Antarctica.

Extended ban

The Antarctic Treaty is binding only on its 50 **signatories** but has the backing of **major powers**, including the United States and China. Many expect the **ban on mining to be extended** in 2041. “There is likely to be little opposition to an extension of this **prohibition**, despite the potential discovery of a new type of Antarctic 'ice',” Nature Communications said in a statement. Another expert said it was unclear.

“We do not know what the Treaty Parties' views will be on mining after 2041 or what technologies might exist that could make **extraction of Antarctic minerals** economically viable,” said Kevin Hughes, of the Scientific Committee on Antarctic Research.

Riley said there was a **fine line between geological mapping and prospecting with an eye to mining**. Nations including Russia, Ukraine and China have been more active in surveying Antarctica in recent years.

The kimberlite deposit is also **confirmation** of how continents **drift**. The region of East Antarctica was once part of a continent known as Gondwana connected to what is now Africa and India, which also have kimberlite.

A. VOCABULARY EXERCISES

Exercise 1. *Find English equivalents to the following Russian ones in the Text*

1) порода; 2) содержать алмазы; 3) залежи минералов; 4) залежи кимберлита; 5) редкий тип породы; 6) алмазная лихорадка; 7) первое упоминание о нахождении / появлении; 8) настоящий / истинный; 9) находка(и); 10) во время геологических работ, геолог; 11) вулканическая порода; 12) вглубь / в глубине земной поверхности; 13) отдалённость; 14) экономически жизнеспособный; 15) прыжок; 16) соглашение; 17) подписавшиеся; 18) самые влиятельные государства; 19) запрет на; 20) распространяться / продолжаться; 21) добыча минералов; 22) чёткая граница между;

- 23) перспектива с целью добычи ископаемых; 24) картографирование;
25) подтверждение; 26) дрейфовать

Exercise 2. *Fill in the gaps where necessary while doing word building using the Text*

- 1) extract (v) — extract ____ (n)
- 2) geology (n) — geolog____ (n) — geolog _____ (adj)
- 3) confirm (v) — confirm ____ (n)
- 4) drift (v) — drift ____ (n)
- 5) remote (adj) — remote _____ (n)
- 6) prohibit (v) — prohibit ____ (n)

Exercise 3. *Rephrase the underlined words using the English equivalents of Exercise 1. Give several variants where possible.*

1. Everybody mentioned about rich platinum deposits there but found no proof of that. (confirmation)
2. Do they have any rare ores riches? (deposits)
3. He was the first to show that continents move. (drift)
4. We need to discuss that ban as soon as possible. (prohibition)
5. How many people who signed the Antarctic Agreement agree with that policy? (signatories of, Treaty)
6. Now they are talking about planning the extraction of that mineral. (prospecting with an eye to mining)
7. That was a great discovery. (finding)

Exercise 4. *Give the opposites to the underlined words using the English equivalents of Exercise 1. Give several variants where possible.*

1. There has been no permission to mining here since 1982. (ban on)
2. It's a small step to economic progress. (leap)

3. They use only artificial emeralds in their jewelry. (genuine)
4. Closeness of the coal mine is surely beneficial to the ecological situation in the area. (remoteness)
5. Mining Antarctic kimberlite will never be unprofitable. (economically viable)
6. Soon the ban will be eliminated. (extended)

Exercise 5. *Fill in the gaps with the appropriate words from Exercise 1.*

1. Those were the times of _____ . Everybody hurried to open their mines there and find those precious stones. (diamond rush)
2. When did people find out about gold there? — _____ dated back to the 17th century. (the first reported occurrence)
3. The difference is very clear. There is a _____ a profitable and unprofitable mine. (fine line between)
4. Now you should fix the findings of diamonds according to all rules of _____. Those maps will help us further. (geological mapping)
5. You can't find this mineral anywhere. It is a _____. (rare type of rock)
6. No third-world countries will help you. You need the support of _____. (major powers)

B. AFTER-READING QUESTIONS

1. What has recently been found in Antarctica? How did the mineral get its name? Why can it be of great commercial interest?
2. Why was mining banned in Antarctica? When did it happen? In what form and by who was it done?
3. Are all deposits of kimberlite economically viable? What about the one found in Antarctica? What are the reasons of it?
4. What major powers support the ban? How long will the ban last?

5. What can change the situation after 2041?
6. What countries are more active in surveying Antarctica recently?
7. What do deposits of kimberlite confirm? What exactly does it show about the history of our continents?

C. OVER TO YOU

For / against essay on Russia's possible participation in mining in Antarctica

*Use the following approximate **Model** inserting what you need instead of the underlined items. Use **For and Against arguments** given below*

For arguments	Against arguments
1) crucial to the future of our country	1) difficult to justify
2) create new high-qualified jobs	2) 10% of kimberlite bear diamonds
3) to get much more profit	3) remoteness and darkness of the area
4) bonanza	4) long-lasting ban
5) a land of finding about our history	5) major powers as opponents
6) other	6) other

Model

Extracting industries and exporting raw materials have been the major of few sources of income of our country for quite a long time. However, we will face the following problems. First of all, Problem 1. Secondly, Problem 2. In this situation Antarctica can be a welcome source of more income. That is why the new mining project should be launched. It has a number of advantages. The main one is For argument 1. The more so, For argument 2. The project is worthwhile because For argument 3. However the following disadvantages should be taken into account. Unfortunately Against argument 1. To make things still worth, Against argument 2. Finally, we should not forget about Against argument 3.

To sum up, I consider that the advantages mentioned outweigh the disadvantages / the disadvantages mentioned outweigh the advantages. Therefore certain steps

should be taken to make it successful: step 1 is....., step 2 is....., the final step would be.....

In conclusion I'd like to point out that _____.

UNIT 4

Miners Face Rising Threat of Cyber-Attacks

Reuters

November 20, 2013

MELBOURNE, AUSTRALIA

Miners are becoming **increasingly vulnerable** to **cyber-hacking** as they **slash costs, automate equipment, rely more on the internet, and run mines from hundreds of kilometers away**, a survey of nearly 40 mining companies has found.

Threats can come from criminals looking to **make money from supply disruptions, rivals hunting business secrets, governments and state-owned firms looking for a leg up in contract talks**, and political and anti-mining activists, according to a report by Ernst & Young.

More than 40 percent of metals and mining companies in the survey **experienced a rise in external threats** over the past 12 months.

“Criminals are attracted to the sector because of the **massive cash flows**,” the advisory firm said in its report.

The most vulnerable miners are small to **mid-sized companies** who produce **strategic metals** such as **rare earths, tin and tungsten**, rather than the mega miners, who have **tightened security** in their systems over the past few years.

“The big miners have more sophistication in their risk management systems and probably have already experienced some degree of **hacking activity** in the last couple of years. For them it's a real **life battle**,” said Mike Elliott, Ernst & Young's global metals and mining leader.

Back in 2009, former BHP Billiton Chief Executive Marius Kloppers told a U.S.

diplomat in Melbourne he was worried about **espionage** by China and **competitors** like Rio Tinto , according to a report on a diplomatic cable released by WikiLeaks.

Elliott said one fairly large miner was hit by a cyber-attack in the past two years which it **detected only by accident** when it was **examining the reliability** of a piece of equipment in its **supply chain**.

The company discovered coding in the **software** for the equipment had been **changed with an unauthorized amendment**.

“It was designed to cause a problem that never **eventuated** because they picked it up,” Elliott told Reuters. He declined to name the company that was **targeted** or where it was located.

“There are a lot more victims of this sort of activity than would be reported, because people don't like to talk about when these things are detected,” he added.

Iron ore miners **are so aware of** threats that one large producer **requires staff** to remove the batteries from their mobile phones at their most sensitive meetings, a person familiar with the company told Reuters.

Smaller miners are more vulnerable to cyber-hacking because they don't see themselves as targets, and as they look to cut costs they are increasingly using **web-connected technology and automated systems** which could be **infiltrated**.

Web sites are easy targets for political and social activists, or hacktivists. A hacker **defaced and blocked access to** rare earths producer Lynas Corp's web site last year as part of a campaign against the opening of a processing plant in Malaysia.

Lynas has since **moved its web site in-house**.

“It was **a wake-up call for us to bring the web site under the control of IT** and have them **secure** it in the same way as our **internal networks**,” said Gillian Kidson, Lynas Corp's general manager of IT.

A. VOCABULARY EXERCISES

Exercise 1. Find English equivalents to the following Russian ones in the Text

- 1) все более уязвимый; 2) кибер-преступность; 3) сократить расходы;
- 4) автоматизировать оборудование; 5) все больше полагаться на интернет;
- 6) управлять горнодобывающими предприятиями находясь за сотни километров от них; 7) исследование; 8) «делать деньги» на срыве поставок;
- 9) конкурент; 10) охотиться за коммерческими тайнами; 11) предприятия, находящиеся в собственности правительства и государства; 12) искать поддержку при переговорах в ходе заключения контракта; 13) переживать рост;
- 14) внешние угрозы; 15) крупные потоки наличности; 16) компании среднего размера; 17) металлы стратегического значения, редкие ископаемые, олово, вольфрам; 18) ужесточить безопасность, обеспечить безопасность;
- 19) деятельность хакеров; 20) битва не на жизнь, а на смерть; 21) шпионаж;
- 22) абсолютно случайно обнаружить; 23) проверять надёжность; 24) сеть поставок; 25) программное обеспечение; 26) изменить на недостоверные данные; 27) возникать; 28) быть целью; 29) предприятия, добывающие железную руду; 30) осознавать; 31) требовать; 32) штат / персонал;
- 33) интернет-технологии; 34) автоматизированные системы; 35) проникать / «взламывать»; 36) исказить; 37) блокировать доступ к; 38) закрыть доступ к веб-сайту из внешней сети; 39) тревожный сигнал; 40) взять веб-сайт под контроль «айтишников»; 41) внутренняя сеть

Exercise 2. Fill in the gaps where necessary while doing word building using the Text

- 1) secure (v) — secur ____ (n)
- 2) survey (v) — survey ____ (n)
- 3) rely (v) — rel ____ (adj) — rel _____ (n)
- 4) increase (v / n) — increas _____ (adv)
- 5) equip (v) — equip ____ (n)

6) disrupt (v) — disrupt ____ (n)

7) event (n) — event ____ (v)

Exercise 3. *Rephrase the underlined words using the English equivalents of Exercise 1. Give several variants where possible.*

1. We have many rivals in this industry. (competitors)

2. How are you going to cut the expenses? (slash the cost)

3. Before entering the office all the personnel must switch their cell phones off.
(staff)

4. It's a warning sign for us to take serious measures against them. (a wake up call)

5. How did you penetrate into the system? (infiltrate)

6. How did it happen? (eventuate)

7. Why do they demand more iron ores? Don't they have enough? (require)

8. She is very experienced at looking for hidden commercial information. (hunting business secrets)

9. Our company is seeking support in negotiations concerning the agreement. (is looking for a leg up in contract talks)

10 Our independent study demonstrated striking results. (survey)

Exercise 4. *Give the opposites to the underlined words using the English equivalents of Exercise 1. Give several variants where possible.*

1. Sole proprietors dominate in our market. (government and state-owned firms)

2. Their system is resilient to any hacking. (vulnerable)

3. It is a manually regulated process. (an automated)

4. They opened access to their site. (moved their web site in house)

5. Those hackers corrected the information and opened the system of our biggest suppliers. (defaced and blocked the access to)

6. We don't know about the consequences of mining zinc there. (are aware of)

7. I'm interested only in extracting wide-spread minerals. (rare earths)
8. Is there any support from the inside? (external threat)

Exercise 5. *Fill in the gaps with the appropriate words from Exercise 1.*

1. There are people from small mining firms spying out around. No wonder you worry about _____. (espionage)
2. How can I understand whether I can trust that firm or not? -- You should _____. (examine its reliability)
3. There are some delivery problems. We need to check our _____. (supply chain)
4. Why did you pick up that firm? -- It _____ because it was the most vulnerable. (was targeted)
5. We have nothing to lose. It's gonna be a _____. (life battle)
6. They started raising huge money. Nothing could stop that into their pockets. (massive cash flow)
7. Is iron ore included in the list of rare earths? -- No, but _____ and _____ are. (tin, tungsten)

B. AFTER-READING QUESTIONS

1. What is the major disadvantage of running a company via the Internet?
2. What are the major advantages of running a company when you are hundreds of kilometers away from it?
3. What external threats do such companies face?
4. How big is the rise of external threats in metal and mining industries?
5. What are the criminals attracted by?
6. Who is most vulnerable to hackers? What do they produce?
7. What is hacking activity for big companies? What measures did they take?
8. What did a US diplomat worry about in 2009?

9. When and how did they find out about a cyber-attack?
10. What measures do iron ore producers take against hacking activity?
11. What make small producers even more vulnerable to cyber-attacks?
12. What did a hacker do to Lynas Corp's web site? Why did he do that?
13. How did Lynas Corp's general manager of IT classify that event?

C. OVER TO YOU

For / against essay on whether or not to run a Russian Far Eastern mine via the Internet

*Use the following approximate **Model** inserting what you need instead of the underlined items. Use **For and Against arguments** given below*

For arguments	Against arguments
1) slash cost	1) a rise in external threats
2) automate equipment	2) increasingly vulnerable to cyber-
3) run mines from hundreds of kilometers away	hacking
4) massive cash flows	3) rivals hunting business secrets
5) other	4) anti-mining activists
	5) other

Model

It is very convenient to run business on the Internet. It has a number of advantages. The main one is For argument 1. The more so, For argument 2. Such type of running business is worthwhile because For argument 3. However the following disadvantages should be taken into account. Unfortunately Against argument 1. To make things still worth, Against argument 2. Finally, we should not forget about Against argument 3.

To sum up, I consider that the advantages mentioned outweigh the disadvantages / the disadvantages mentioned outweigh the advantages. Therefore certain steps should be taken to make it successful and safe: step 1 is....., step 2 is....., the final step would be......

In conclusion I'd like to point out that _____.

UNIT 5

South Sudan Hopes New Mining Law Will Unearth Treasures

Hannah McNeish
June 01, 2013

South Sudan won independence and **vast oil reserves** in 2011, when it split from civil war foe Sudan. As the rocky relationship with its northern neighbor **jeopardizes** oil exports, however, the new nation hopes a new **mining law** will **attract foreign companies** to **unearth its mineral treasures** and **secure its future fortune**. In the country's "wild east," thousands of people **armed only with picks and pans** are **hunting for gold**.

This "**gold mine**" in Nanakanak, Eastern Equatoria state, is just one of many **spots** across South Sudan's east where a **gold rush** has hit.

Adele Natogo said that like countless others, she left her nine children and village — an eight-hour walk from Nanakanak — a month ago **to sift through the endless piles of terracotta rubble** for gold.

"There are so many people that have come here. They are all over the bush, everyone looking for gold. This is a big place," said Natogo.

But many of the miners say the golden era of finding **nuggets** is over.

Now they **squint at their plastic basins for the tiniest speck of gold** and hope machines will arrive soon to help their hunt.

Trader Samuel Kivuva in the nearest town, Kapoeta, said that when foreigners gave **metal detectors** to **artisanal miners** last year, their **yield** more than **doubled** from 5 kilograms of gold per week.

"Per week they were collecting 12 kilograms of this gold and at least they

were performing, not in the way of these people that use basins and whatever,” said Kivuva.

At the Ministry of Mines in Juba, **undersecretary** of mining Andu Ezbon Adde said the government **suspended previous small-scale mining licenses** while putting the finishing touches to a mining law **aimed at pulling in big investors** - and big money - to extract the gold, copper, iron ore and other metals thought to lie under the earth.

“Coming out of war, things were not well organized. **Giving out the licenses** was not well organized, so the government decided to stop any **exploration** work until the law has been signed. Now the law has been signed we are working on now what they call regulations, which may not be clear to the common man. So I’m sure that this year, we will be giving out licenses,” said Adde.

But until machines arrive **to replace** the picks and pans, **farmers-turned-panners** in this **impoverished and drought-stricken** region are tasked with **uncovering** the minerals that in years to come could **wean** the new nation **off** its **dependency on oil revenue**.

A. VOCABULARY EXERCISES

Exercise 1. *Find English equivalents to the following Russian ones in the Text*

- 1) огромные запасы нефти; 2) поставить под угрозу; 3) закон о добыче полезных ископаемых; 4) привлекать зарубежные компании; 5) извлекать богатства минералов; 6) обеспечить процветание в будущем; 7) вооружиться лишь кирками и лотками, пластиковый таз; 8) охотиться за золотом;
- 9) золотой рудник, золотая лихорадка; 10) место; 11) просеивать;
- 12) бесконечные кучи; 13) золотоносная порода; 14) пытаться разглядеть крупницы чего-либо; 15) метало-детекторы; 16) золотоискатели-одиночки;
- 17) выработка / выход / производительность; 18) удвоить(ся); 19) заместитель

/ помощник министра; 20) приостановить ранее действовавших процесс выдачи лицензий малым инвесторам; 21) нацеливаться на привлечение крупных инвесторов; 22) выдавать лицензии; 23) исследование; 24) заменить; 25) бывшие фермеры, ставшие золотоискателями; 26) бедный и засушливый; 27) отучить от; 28) зависимость от доходов от продажи нефти

Exercise 2. *Fill in the gaps where necessary while doing word building using the Text*

- 1) jeopardy (n) — jeopard_____ (v)
- 2) yield (v) — yield ___ (n)
- 3) depend (v) — depend _____ (adj) — depend _____ (n)
- 4) end (n) — end___ (adj)
- 5) explore (v) — explor_____ (v)
- 6) poverty (n) — ___ pover_____ (adj)
- 7) pan (v) — pan___ (n)

Exercise 3. *Rephrase the underlined words using the English equivalents of Exercise 1. Give several variants where possible.*

1. Are there many places in Russia where you can mine gold? (spots)
2. How many slugs did they find? (nuggets)
3. What is there in your basin? (pan)
4. Did the output of the gold mine change after that? (yield)
5. Is any study allowed in the area? (exploration)
6. I can't make you get rid of that bad habit. (wean you off)
7. What is threatening oil exports? (jeopardizing)
8. How are you going to uncover earth's riches without any machines? (unearth its mineral treasures)
9. They look carefully through their pans to find small particles of gold. (squint at their plastic basins for the tiniest speck)

Exercise 4. Give the opposites to the underlined words using the English equivalents of Exercise 1. Give several variants where possible.

1. You sifted just a little bit of terracotta rubles and found no gold. (endless piles)
2. Now they find only nuggets of gold. (specks)
3. Big mining firms are working there. (artisanal miners)
4. Why did the government give out licenses to big companies? (suspended previous small-scale mining licenses)
5. What did the minister of mining suggest? (undersecretary)
6. It was a rich and humid area. (impoverished and drought-stricken)
7. Their yield decreased two times. (doubled)

Exercise 5. Fill in the gaps with the appropriate words from Exercise 1.

1. The times of picks and pans have gone. We will _____ them with modern machines. (replace)
2. These are no professional gold miners. They are just _____ who came from their villages to try their luck. (farmers-turned-panners)
3. The _____ is growing. Now they can't do without exporting crude oil. (dependency on oil revenue)
4. We need _____ to understand whether there is gold in those rubles or not. (metal detectors)
5. Domestic miners are not enough. We should _____. (attract foreign companies)
6. Saudi Arabia is the largest exporter of oil. It has _____ of it. (vast reserves)
7. What do good panners do? -- They _____ for gold for days. (sift through the endless piles of terracotta rubble)

B. AFTER-READING QUESTIONS

1. What economic advantages did South Sudan win together with their independence in 2011? What is the major disadvantage of the situation?
2. What are many people doing to make their living? What tools do they use? Is that business new to them?
3. How hard did Adele Natogo work? Why did she have to do that? Where does she live?
4. Are gold miners more successful at present compared to the past?
5. What help did foreigners provide? How did it influence the yield?
6. What investors does the Sudanese government support and which ones does it oppose?
7. What will machines do for the mining process?
8. How is the region characterized? What can gold mining do for the region?

C. OVER TO YOU

An essay on the most favorable federal and local policy to attract the best investors for economic prosperity of your region

*Use the following approximate **Model** inserting what you need instead of the underlined items. Use **the words** given below*

1) domestic investors	1) foreign investors
2) suspend small-scale mining licenses	2) pull in big investors
3) unearth its mineral treasures	3) secure future fortune of the region
4) wean off the dependency on oil revenue	4) leak money out of the region
5) contribute to local economy	5) ecological disaster
6) other	6) other

Model

Gold is one of the strategic metals. There are two main ways to develop gold mining in a certain region. We can either do it domestically or with the help of outside companies attracting different investors. Each way has a number of advantages. The main one is For argument 1. The more so, For argument 2. Such type of running business is worthwhile because For argument 3. However the following disadvantages should be taken into account. Unfortunately Against argument 1. To make things still worth, Against argument 2. Finally, we should not forget about Against argument 3.

To sum up, I consider that the best way to develop gold mining in our region is to _____. Therefore certain steps should be taken to make it successful and ecologically friendly: step 1 is....., step 2 is....., the final step would be......

In conclusion I'd like to point out that _____.

UNIT 6

Manipulation of China's Rare Earth Minerals Supply Could Backfire

October 25, 2011

Last week, China's biggest producer of rare earths elements suspended production to try **to boost prices for** the 17 minerals **essential for manufacturing modern technologies**. Although China currently **has a near monopoly on** these **crucial resources**, its **dominance** could soon be challenged as trade partners **lose patience** with the manipulation of the supply chain.

Former Chinese leader Deng Xiaoping declared in 1992 that "The Middle East has its oil, China has rare earths." Chinese companies have **strongly pursued** the rare earths mining business since and now **account for** about 95 percent of the world's total rare earth supplies. The state-linked Baotou Group is responsible for more than 60 percent of that output.

Last week, its management said it is suspending production to stabilize the market and balance **supply and demand**. The move followed a **roughly 20 percent drop in** rare earth prices in recent months.

Risk list

Andrew Bloodworth is the head of science at the British Geological Survey. His team recently compiled the 2011 international 'Risk List' of chemical elements. The list gives an indication of the threat to supplies of those elements and element groups necessary **to drive global economic development**.

Bloodworth says although rare earths are **available** to be mined outside China, **the key issue** for mining businesses is the cost of **separating the element**

from its ore. “The Chinese can do it more cheaply than anyone else, which has meant historically, the price of rare earths has fallen, which has **put mines** in other parts of the world **out of business**,” Bloodworth said. “So, we’re in a situation now where we have a near monopoly situation in terms of supply and rising demand, and people are very concerned that China has dominance in these things.”

Strategic manipulation

China has history when it comes to manipulating rare earth prices by **restricting** supply, having **implemented a similar moratorium** in 2008.

Beijing demonstrated it is willing to use its market dominance as a foreign policy tool when in October 2010, China halted shipments to Japan during a territorial dispute with Tokyo.

That same month, the U.S. Department of Defense debated **the national security implications** of Chinese control of the rare earths market because key technologies including **radar and smart bombs** require the material.

Weeks later, the U.S. Energy Department published its Critical Materials Strategy. This called for a strategic expansion of rare earth supplies and warned **significant harm could be caused** to the United States - which was once self-sufficient in rare earth production - if supplies to **high-tech manufacturers** were **interrupted**.

Market reaction

Unlike previous occasions when Beijing has manipulated supply, the world is now looking increasingly prepared to move away from its dependence on Chinese rare earths.

Manufacturers, including Toyota and General Motors, are already developing processes that minimize the use of rare earths in **vehicle design**, says Matthew Fusarelli, head of **research** at AME. “Rare earths generally have a very **high degree of substitutability**,” Fusarelli said. “So electronics manufacturers can,

over time, change their production processes to use rare earths more **sparingly**, if at all.”

Andrew Bloodworth says it will not take many new suppliers **to alter the dependence on** China. “The amount we use compared to industrial metals is absolutely tiny," he explained. "Last year in the world we mined about 17, 18 million tons of copper. We mined about 130,-140,000 tons of rare earth. A couple of new mines will change the picture completely.”

Alternatives

New mines are being planned in the United States, Russia and Australia. Other mines once **moth-balled** or not developed on concerns about **viability** are moving towards production.

Among these is the Molycorp mine in Mountain Pass, California. This closed in 2002 when China **swamped** the market **with** cheap supplies.

Molycorp directors say they have discovered several new rare earth deposits **at the site** and expect the old mine to be one of the world’s largest rare earth suppliers by 2014.

A. VOCABULARY EXERCISES

Exercise 1. *Find English equivalents to the following Russian ones in the Text*

- 1) повысить цены на; 2) существенный / важный; 3) производство современных технологий; 4) практически монополизировать;
- 5) доминирование; 6) терять терпение; 7) настойчиво продолжать заниматься чем-либо; 8) объяснять / быть причиной; 9) спрос и предложение;
- 10) приблизительно / огрубляя; 11) падение цен; 12) направлять глобальное экономическое развитие; 13) доступный; 14) ключевой(ая) аспект / момент / проблема; 15) отделять элемент от содержащей его руды; 16) вывести из бизнеса; ограничить; 17) ввести мораторий; 18) соображения национальной безопасности; 19) радары и умные бомбы; 20) наносить серьёзный ущерб;

21) производители высоких технологий; 22) нарушать; 23) дизайн автомобилей; 24) исследование; 25) высокая степень заменяемости; 26) скромно; 27) изменить зависимость от; 28) заброшенные шахты; 29) жизнеспособность; 30) наводнить чем-либо; 31) на месторождении

Exercise 2. *Fill in the gaps where necessary while doing word building using the Text*

- 1) viable (adj) — viab_____ (n)
- 2) dominant (adj) — domina____ (v) — domina_____ (n)
- 3) substitute (v) — substitut_____ (n)
- 4) patient (adj) — patien____ (n)
- 5) sparing (adj) — sparing____ (adv)
- 6) depend (v) — depend____ (adj) — depend_____ (n)
- 7) manufacture (v) — manufactur____ (n)
- 8) economy (n) — econom____ (adj)
- 9) rough (adj) — rough____ (adv)

Exercise 3. *Rephrase the underlined words using the English equivalents of Exercise 1. Give several variants where possible.*

1. That mine does not work any more. (is moth-balled)
2. China increased the amount of money paid for rare earths. (boosted prices)
3. The decrease in prices is approximately 5 per cent. (drop, roughly)
4. We can't change people's opinion that quickly. (alter)
5. This mineral is easy to get. (available)
6. It's a crucial resource. (an essential)
7. They are becoming very nervous because of our dominance. (losing patience)
8. Third-world countries flooded the market with cheap labor. (swamped)

Exercise 4. Give the opposites to the underlined words using the English equivalents of Exercise 1. Give several variants where possible.

1. We use rare earths in abundance. (sparingly)
2. We shouldn't eliminate prohibition on imports. (implement moratorium)
3. It can be the reason for little benefit to the environment. (cause significant harm)
4. It's a minor problem for the mining industry. (key issue)
5. That corporation has many competitors on the market of platinum. (near monopoly)
6. Mining rare earths leads to local stagnation. (drives global economic development)
7. They are not interested in mining gold in that region. (strongly pursue)

Exercise 5. Fill in the gaps with the appropriate words from Exercise 1.

1. An automobile must be not only functional but beautiful. I think we should change _____. (vehicle design)
2. If you want to enter the market with your product you need to analyze _____ first. (supply and demand)
3. How much gold of the world output do they produce? -- They _____ 10% of the world output. (account for)
4. Can something be used instead of this rare mineral? -- Yes, easily. It has _____ of _____. (high degree, substitutability)
5. People invented _____ to find and strike enemies effectively. (radars and smart bombs)
6. We are taking such measures for _____. We must protect our country. (the national security implications)

B. AFTER-READING QUESTIONS

1. Why did China suspend production of rare earths?

2. What is the position of China on the world market of rare earths? How important are those minerals?
3. How does China explain their manipulations with prices?
4. What is the reaction of the trade partners of China? What do they want to do?
5. What is the key issue in mining business?
6. What did China use in 2010 and for what purpose?
7. What was the US reaction to the policy of China?
8. What are manufacturers doing to alter the dependence on China?
9. What are the US? Russia and Australia doing in this connection?

C. OVER TO YOU

An essay on advantages and disadvantages of monopolies and near monopolies in mining business

*Use the following approximate **Model** inserting what you need instead of the underlined items. Use **For and Against arguments** given below*

For arguments	Against arguments
1) dominance	1) a rise in external threats
2) balance supply and demand	2) interrupt manufacturers
3) the national security implications	3) cause significant harm
4) foreign policy tool	4) put other mines out of business
5) drive global economic development	5) swamp the market with cheap supply
6) other	6) other

Model

Being a monopoly in mining business is fun to the monopoly but no fun to its trading partners. Monopoly has a number of advantages. The main one is For argument 1. The more so, For argument 2. Such type of running business is

worthwhile because For argument 3. However the following disadvantages should be taken into account. Unfortunately Against argument 1. To make things still worth, Against argument 2. Finally, we should not forget about Against argument 3.

To sum up, I consider that the advantages mentioned outweigh the disadvantages / the disadvantages mentioned outweigh the advantages. Therefore certain steps should be taken to make the world economy and the economy of your region successful and safe: step 1 is....., step 2 is....., the final step would be......

In conclusion I'd like to point out that _____.

UNIT 7

Sasol: First Commercial Crude from Mozambique Seen in 2014

Reuters
November 28, 2013

CAPE TOWN, SOUTH AFRICA

Mozambique's first commercial production and sale of **crude oil** is set for next year from a small but **profitable inland oil field** at Inhassoro, a senior official at South African operator Sasol said on Thursday.

"It's a small development, but it is a sign perhaps there is more," Ebbie Haan, Sasol Petroleum International's managing director, told Reuters on the sidelines of an African oil and gas conference.

"If we were to develop [the field] with one or two **wells** in the first phase, we would be talking about multiples of 1,100. So if we **drill two wells**, you probably get 2,000 barrels a day," he added.

Recent discoveries of gas and coal have **triggered billions of dollars in investment** in the former Portuguese colony.

Haan said Sasol planned to invest around \$2.4 billion in Mozambique for a variety of projects until 2018, when the southern African nation is expected to export its first **cargoes of liquefied natural gas**.

Sasol, the first mover in oil and gas exploration in Mozambique, has **conducted extended well testing** on the Inhassoro **oil rim** and produced over 236,000 barrels of **light oil** to the end of March this year as part of an **appraisal program**.

Haan said commerciality was declared earlier this year on the Inhassoro G6 and G10 **oil reservoirs** in the PSA block, and the natural gas fields in Temane G8 and Temane East are also viable.

Sasol is the world's top gas-to-liquid fuel producer, with a plant in Qatar and others planned in United States and Canada. The company aims **to take advantage of** Mozambique's plans to use gas reserves for power, **fertilizers** and **methanol**.

The company is preparing **to expand an existing Mozambique gas processing facility** and a **pipeline** to South Africa.

Sasol is also exploring **offshore** Mozambique, where some of the world's largest gas discoveries in the last decade have been made.

"We are looking at **the upcoming** bid round, and we have **onshore** exploration blocks left, so we have **a good funnel of opportunities**," Haan said.

Mozambique **is poised to launch its fifth oil and gas bidding round** in 2014, a government official said this week.

Mozambique's image as a stable African success story recently has been **blotted by shootings and ambushes** in the center and north, carried out by fighters from the Renamo opposition movement, which fought a 1975-1992 war with the ruling Frelimo party.

A. VOCABULARY EXERCISES

Exercise 1. *Find English equivalents to the following Russian ones in the Text*

1) сырая нефть, лёгкая / светлая нефть (т.е. с пониженным содержанием смолы); 2) прибыльный; 3) находящийся внутри континента, находящийся в открытом море, прибрежный; 4) месторождение нефти; 5) скважина, бурить скважину; 6) недавние открытия; 7) стимулировать / запустить миллионные инвестиции; 8) груз; 9) сжиженный природный газ; 10) проводить длительное тестирование скважины; 11) оценивающая программа; 12) нефтяной резервуар; 13) использовать преимущество; 14) удобрения; 15) метиловый спирт; 16) расширить существующие возможности производства газа; 17) трубопровод; 18) предстоящий; 19) широкий спектр возможностей;

20) уверенно начать торги нефтью и газом; 21) запятнать; 22) перестрелки и засады

Exercise 2. *Fill in the gaps where necessary while doing word building using the Text*

- 1) liquid (n) — liqu ____ (v)
- 2) invest (v) — invest ____ (n)
- 3) appraise (v) — apprais ____ (n)
- 4) profit (n) — profit ____ (adj)
- 5) discover (v) — discover ____ (n)
- 6) fertilize (v) — fertiliz ____ (n)

Exercise 3. *Rephrase the underlined words using the English equivalents of Exercise 1. Give several variants where possible.*

1. Their reputation has been spoiled by several economic crimes. (blotted)
2. They started selling oil and gas with enthusiasm. (were poised to launch oil and gas bidding round)
3. How many barrels a day do you get from that oil field? (rim)
4. How many oil tanks do they have in that block? (reservoirs)
5. When did the shipment arrive? (cargo)
6. They have plenty of possibilities for extracting oil, gas, and coal. (a good funnel of opportunities)

Exercise 4. *Give the opposites to the underlined words using the English equivalents of Exercise 1. Give several variants where possible.*

1. There are many pleasant political events in that African country. (shootings and ambushes)
2. They are discussing some long-term perspective events. (upcoming)

3. Russia has vast fields of light oil. (crude)
4. When are you going to displace oil-producing equipment? (expand an existing gas processing facility)
5. Those measures will lead to terrible losses. (trigger billions of dollars in investment)

Exercise 5. *Fill in the gaps with the appropriate words from Exercise 1.*

1. If you want to manufacture oil you must _____ first. (drill wells)
2. They have oil wells everywhere. There are _____ wells. (inland, offshore, onshore)
3. Why are you _____? -- We must thoroughly check the way the well works. (conducting extended well testing)
4. They built a _____ to transport oil from Iraq to Afghanistan. (pipeline)
5. If you want good crops, put _____ into the soil. (fertilizers)
6. _____ is stored in gasholder because it has smaller volume. (liquefied natural gas)

B. AFTER-READING QUESTIONS

1. What kind of oil does Mozambique have?
2. What oil fields are there?
3. Are they planning any new wells? What output do they expect?
4. What is their outlook for future investment?
5. What is expected in 2018?
6. What did Sasol do in March, 2013?
7. What kind of company is Sasol? What are its aims?
8. What further plan does the company have? What might deteriorate the situation?

C. OVER TO YOU

An essay on the future of oil and gas industry in your region

Use the following approximate **Model** inserting what you need instead of the underlined items. Use **For and Against arguments** given below

For arguments	Against arguments
1) profitable	1) blotted by corruption
2) trigger billions of dollars in investment	2) raw-materials-oriented export
3) take advantage of	3) not profitable enough
4) a good funnel of opportunities	4) quick decline of output after peaking
5) poised to launch oil and gas bidding rounds	5) negative environmental effect
6) other	6) other

Model

Oil and gas industries are the main source of revenue from foreign trade for Russia. Our future is connected mostly with it. The main one is For argument 1. The more so, For argument 2. Such type of making money is worthwhile because For argument 3. However the following disadvantages should be taken into account. Unfortunately Against argument 1. To make things still worth, Against argument 2. Finally, we should not forget about Against argument 3.

To sum up, I consider that the advantages mentioned outweigh the disadvantages / the disadvantages mentioned outweigh the advantages. Therefore certain steps should be taken to make Russian economy successful and safe: step 1 is....., step 2 is....., the final step would be.....

In conclusion I'd like to point out that _____.

Список использованной литературы

Словари

1. Cambridge Dictionary of American English / [ed. by S. I. Landau]. – [S. l.] : Cambridge Univ. Press, 2000. – 1069 p.
2. Longman Dictionary of American English. – 2nd ed. – [S. l.] : Longman. – 1997. – 935 p.
3. Longman Pronunciation Dictionary / [ed. by J.C. Wells]. – UK : [S. n.], 2008. – 992 p.

Электронные ресурсы

4. Академик. Словари и энциклопедии на Академике. Режим доступа: <http://dic.academic.ru>
5. Macmillan Dictionary. Режим доступа: <http://www.macmillandictionary.com/>
6. Oxford Dictionaries. Режим доступа: <http://www.oxforddictionaries.com>
7. Thesaurus.com. Режим доступа: <http://thesaurus.com>
8. Voice of America. -- Режим доступа: <http://www.voanews.com>

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Mining: *Методические указания для самостоятельной работы : издание для преподавателя (с ключами к упражнениям)*