

Министерство образования и науки Российской Федерации  
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«Ивановский государственный политехнический университет»

Кафедра иностранных языков

## СБОРНИК ТЕКСТОВ

Методические указания  
по английскому языку для студентов II курса  
направления подготовки *08.03.01 Строительство*  
(профиль «*Водоотведение и водоснабжение*»)

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Целью методических указаний является формирование у студентов навыков говорения по ряду страноведческих тем (на основе текстов, лексико-грамматических упражнений), а также освоение специальной лексики на материале аутентичных текстов по специальности; развитие на основе оригинальных текстов умения говорить (монологическая речь). В данных методических указаниях приводятся тексты для самостоятельной работы, которые призваны способствовать закреплению и усвоению пройденного материала по специальности.

Предназначены для студентов II курса направления подготовки 08.03.01 *Строительство* (профиль «*Водоотведение и водоснабжение*»), изучающих английский язык.

Составители: канд. филол. наук, доц. А.А. Абызов  
ст. преп. Е.А. Евтухова

Рецензент ст. преп. Е.Н. Жукова

Редактор Т.В. Федорова

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ФГБОУ ВО «Ивановский государственный политехнический университет»  
Издательский центр ДИВТ  
153000 г. Иваново, Шереметевский проспект, 21

## Урок 1. **Water Supply**

Упр. 1. Прочитайте и запомните следующие слова из текста:

soil – почва

desert – пустыня

mash – болото

surface – поверхность

amount – объем, количество

depression – депрессия, впадина

maintenance – поддержание, сохранение

settler – поселенец

need – необходимость, потребность

demand – требование

pure – чистый

wholesome – полезный, здоровый

palatable – приятный, вкусный

essential – существенный

prime – основной, главный

evident – очевидный

available – доступный

especially – особенно

various – различный

to surround – окружать

to pass through – просачиваться, проходить

to evaporate – испаряться

to precipitate – выпадать в форме осадков

to fill with – заполнять

to divert – отводить

to require – требовать

to decide – решать

to realize – понимать, осознавать

to convert – преобразовывать

to establish – устанавливать, основывать, возводить

to assure – обеспечивать, гарантировать

to increase – увеличивать

to call for – обязывать, требовать

Упр. 2. Какие русские слова имеют те же корни, что и следующие английские слова? Запомните их произношение в английском языке:

nature, mineral, steppe, taiga, cycle, atmosphere, proportion, phenomenon, contain, temperature, depression, reservoir, domestic, sanitary, system, geographical, location, standard, engineering, modern, factor, colony, method, protection, progress, civilization.

Упр. 3. Прочитайте и переведите текст на русский язык.

### Water Supply

Water is an important part of nature which surrounds us and of those natural conditions we are changing constantly and ever more intensively: the flora, the soil, the mountains, mineral resources, the deserts, the marshes, the steppes and the taiga.

Water passes through a very interesting natural cycle. The atmosphere which surrounds the earth's surface contains water which varies in amount in direct proportion to the temperature of its gases. Water is also evaporated into atmosphere. Atmosphere which has become saturated with water precipitates its moisture when the temperature lowers. This phenomenon is termed rainfall. The moisture falls to the earth and finds its way into a number of reservoirs provided by nature.

Vast depressions in the earth are filled with water through the medium of natural water sources such as rivers, lakes, etc. over the earth's surface. These bodies of water are classified as inland lakes and are excellent sources of water. Man uses water for domestic and sanitary purposes and returns it to the source through sewage disposal system. Industry likewise replaces water diverted to its use. Hence the cycle is completed but it is of prime importance that the supply be protected against pollution.

An adequate supply of pure, wholesome and palatable water is essential to the maintenance of high standards of health and to provide the convenience modern society demands. In some localities water is available in unlimited quantities and converting it to use is not a difficult problem. This is especially true of towns situated on large inland lakes or rivers. On the other hand there are cities where geographical location requires elaborate systems of water supply, and to provide a satisfactory supply of water in these localities becomes a large engineering task.

The importance of a sufficient supply of water for domestic and industrial purpose has long been a deciding factor in the location of cities. The earliest settlers realized this need and took advantage of natural water sources by establishing colonies in close proximity to them.

Water may be taken from any sources of water for human consumption after it has undergone a preliminary treatment to assure its purity. As man's communities grew in population, the demand for water increased and the need for protection of the source of water supply against the possibility of contamination became evident. Progress and civilization have called for elaborate and various systems and methods of water treatment.

Упр. 4. Подберите соответствующий перевод из правого столбца к английским словам:

Natural water sources

потребление человеком

Body of water

заражение

Human consumption

обработка воды

Inland lake

при помощи, посредством

Man's community	сложные системы
Water supply	сообщество людей
Water treatment	подвергаться предварительной обработке
Purity	неограниченные количества
Undergo a preliminary treatment	естественный источник воды
Contamination	водоснабжение
Sewage disposal system	непосредственная близость
Pollution	воспользоваться
Through the medium	влага
Close proximity	насыщенный
Consumption	загрязнение
Moisture	обеспечивать хорошее водоснабжение
Saturated	беспримесность
Unlimited quantities	достаточный запас
Elaborate systems	материковые озера
Sufficient supply	водный массив
Take advantage	потребление
Provide satisfactory water supply	система удаления сточных вод

Упр. 5. Какое из данных предложений выражает главную мысль текста?

1. On the earth water can be obtained from different natural sources. 2. At present the problems of water supply and treatment are the most essential for mankind. 3. Water taken from natural sources such as rivers and lakes often requires aeration.

Упр. 6. Расположите предложения согласно последовательности изложения.

1. An adequate supply of water is one of the main requirements for maintaining high standards of health. 2. Vast depressions in the earth filled with water and known as inland lakes are excellent sources of water. 3. The rivers and lakes contain a great amount of chemical and biological pollution. 4. Nowadays the problem of water treatment has become very urgent. 5. On the earth water passes through a very interesting physical cycle. 6. Man after using water returns it to the source by means of sewerage systems; thus the cycle is completed. 7. Water is an important part of nature. 8. Man's earliest settlements were always close to natural water sources.

Упр. 7. Составьте план к тексту.

Упр. 8. Ответьте на вопросы не менее чем тремя высказываниями.

1. Why were man's earliest communities established close to natural water sources?  
2. Why must natural water undergo treatment before consumption?

Упр. 9. Перескажите текст по-английски.

## **Тексты для письменного перевода**

### **Text A. Elements of water supply system**

A water supply system consists essentially of a source of supply, which may be a lake, stream, spring or well; a reservoir for the storage of water for use during periods when daily demand is greater than the daily flow of the water; a pipe line or a conduit to convey the water from the source of supply to the community; a treatment plant in case impurities must be removed from the water before it is suitable for use; and a distribution system of pipes to deliver the water throughout the various streets in the community. Some systems are simpler and consist only of a source of supply, a main pipe line, and a small amount of distribution piping; others are more complicated and include, in addition to the elements previously listed, distribution reservoirs, pumping plants, and other accessories.

### **Text B. Choice of water supply source**

There are three important factors in selecting a source of water supply: quantity or volume available, quality and cost. Although only small amounts of water are actually used for essential purposes, such as for drinking, cooking, and sanitary purposes, experience has shown that the use of quantities of water greatly in excess for the necessary minimum amounts cannot be curtailed. An insufficient supply results in very low water pressure, a lack of water in many homes during hours of heavy water use, and many other unsatisfactory conditions. An ample supply of water is therefore necessary. Moreover, the water must be of good quality. Above all it must be safe from the viewpoint of health. Since practically the entire community uses water, widespread epidemics would result if it carried germs of disease. If it discolored or has an unpleasant taste, it will not be used freely and the purpose for which it was intended, that is, to serve the community could be defeated.

### **Text C. Consideration in planning water works system**

Usually, the first step in the design of a water works system is to determine the probable quantity of water required both for the present and for a number of years in the future. The second step is to select the source of supply that is most advantageous. For this purpose, the available sources of supply must be investigated and an estimate must be made of the quantity of water that can be derived annually from each source. From the various data gathered in the field, it is possible to determine the approximate cost of bringing the water from each source to the particular community, and a tentative selection of the better sources can thus be made. Sometimes fairly complete design of two or more systems is required before a final choice can be made.

Where a supply may be inadequate during the summer months, provision can be made for storage reservoirs of sufficient capacities. If pumping is necessary, the

design of the pumping stations, the pump and power units must be considered. Also, if distribution reservoirs are required in addition to storage reservoirs, the proper location and sizes must be determined.

The distribution system for carrying water directly to the individual consumers must be carefully considered, and the proper layout designed. Finally if the water requires treatment to render it safe for consumption, or remove hardness, odor, or color, the necessary treatment plant must be designed.

#### **Text D. From the History of Water Supply**

The history of conduits or public fountains as communal water supplies starts at least as far back as the 13<sup>th</sup> century and continues into the nineteenth, though their heyday was in the 16<sup>th</sup> and 17<sup>th</sup> centuries. A good deal of information as to their provision and use is to be found in the story of London's public water supplies.

In the "conduit age" – the centuries immediately succeeding the Middle Ages – the water carrier was a common sight. The professional water carriers of London – rough sturdy fellows hired to supply the houses of rich merchants called "Cobs" from their headquarters in the Cob court – formed themselves into the Company of Water Tankard Bearers, with a membership of 4000 by the end of the 15<sup>th</sup> century, and tried to exact a toll from all persons going to the river to fetch water for themselves; it appears, in any case, to have been a lucrative calling, as the Water Bearers made strenuous efforts to stop Morris's project for improved supply in 1582, until the Lord Major assured them that it would mean more work for them rather than less.

All through London's history until modern times, the question of water supply continued to be a problem; with the growth of the metropolitan area and the drawing off from the conduits proving sometimes greater than the capacity of the springs, quarrels, amounting at times to minor riots, took place as to the precedence and rights at the public outlets.

#### **Урок 2. Sewerage**

Упр. 1. Прочитайте и запомните следующие слова из текста:

sewage – сточные воды, нечистоты, канализация

ground – почва, почвенный

waste, refuse – отходы, отбросы

plant – зд. завод, сооружение

run-off – сток

sludge – отстой, осадок, ил

sewer – коллектор, канализационная труба

stream – поток, ручей, течение

treatment – обработка

sewerage – канализация

liquid – жидкий

solid – твердый

slimy – вязкий, грязный, илистый  
raw – грубый, сырой, необработанный  
to discharge – выбрасывать, сливать  
to result – иметь результатом, приводить к  
to remove – удалять, убирать, устранять  
to avoid – избегать  
to settle out – выпадать в осадок  
to clarify – зд. осветлять

Упр. 2. Какие русские слова имеют те же корни, что и следующие английские слова? Запомните их произношение в английском языке:

technical, progress, result, composition, resource, product, mechanical, chemical, general, biological, residence, institution, business, manufacture, industrial, decomposition, material, production, local, paste, activity, storm.

Упр. 3. Найдите в словаре значение следующих слов:

considerable, sink, laundry, lavatory, flush, origin, nuisance, odor, stream, particle, certain, subsequent, entire, namely, therefore, promptly, by means of, both...and, to prevent, to accompany, to designate, to endanger, to adopt, particular, to press for.

Упр. 4. Переведите предложения с «цепочками» определений.

1. Sewage disposal systems serve to return the used water to the natural source.  
2. In some localities an elaborate natural water treatment method is required for preparing drinking water.  
3. At present time modern water distribution system design has become a large engineering task.  
4. Natural water resources protection is of primary importance nowadays.

Упр. 5. Прочитайте и переведите текст на русский язык.

### **Sewerage**

The problem of protecting natural water resources has grown very pressing for many countries since the beginning of the second half of the 20<sup>th</sup> century. The development of human society, the growth of civilization and social and technical progress has resulted in the changing of the composition of natural water resources. The rivers, lakes and ground waters contain today a considerable amount of the products of mechanical, chemical and biological pollution. The waste products that result from the daily activities in a community are of two general types: namely, the liquid waste, known as sewage and the solid wastes, known as refuse. The different wastes of which sewage is composed are the following: the wastes from lavatories, baths, sinks, and laundry tanks in residences, institutions, and business buildings; certain liquid wastes from various types of manufacturing or industrial plants, and, in



many communities, the surface run-off that results from storms or street-flushing operations.

Sewage may also be divided according to its source into the following three classes. The sewage from residences, institutions and business buildings is called domestic sewage, sanitary sewage or house sewage; that resulting from manufacturing or industrial processes is known as industrial waste; and that from run-off during or immediately following storms is called storm sewage. A combination of domestic sewage, industrial waste and storm water is called combined sewage.

Both sewage and refuse must be removed promptly in order to avoid endangering the health of the community and also prevent decomposition of the materials of animal or vegetable origin and the subsequent production of nuisances and odors.

The removal of all kinds of sewage is usually accompanied by means of sewers. The sewers are placed in the streets at several feet below the ground surface. The general process of removing sewage is designated as sewerage and the entire system of sewers including a sewage treatment plant is known as a sewerage system.

The method of sewage treatment to be adopted in a particular case will depend on local conditions. It may consist only of the discharge of the raw sewage into a stream or a large body of water. The usual methods of sewage treatment consist either of preliminary treatment alone or of primary treatment followed by secondary treatment.

During primary treatment the larger and heavier solid particles settle out from the liquid. These solid particles that settle out from a slimy paste are known as sludge.

The partly clarified sewage that has been given primary treatment generally contains many decomposable materials. Therefore, further treatment which is known as secondary treatment is usually required.

Упр. 6. Подберите соответствующий перевод из правого столбца к английским словам:

Waste products	осветленный
Refuse	коллектор, канализационная труба
Domestic sewage	первичная обработка
Industrial waste	промышленные отходы
Sewer	химикалии
Sewerage	водоочистное сооружение
Treatment plant	выбрасывать, сливать
Discharge	твердые отбросы
Sludge	водоем
Decomposable	отстой, осадок, ил
Primary treatment	канализация
Chemicals	загрязнение
Pollution	сток

Water body	бытовые сточные воды
Clarified	способный к разложению
Solid waste	продукты отхода
Run off	отходы

Упр. 7. Расположите предложения согласно последовательности изложения.

Какое из них выражает основное содержание текста?

1. Both sewage and refuse must be removed promptly in order to avoid endangering the health of the people. 2. The sewage may pass through some type of a settling tank with or without the application of different chemicals. 3. The methods of sewage treatment are different and depend wholly on local conditions. 4. Secondary treatment is required to remove decomposable materials from the sewage. 5. Sewage is composed of different types of wastes which result from the daily activities of a community. 6. Sewage may also be classified according to its source. 7. The removal of sewage is done by sewers which are part of a sewerage system. 8. The killing of bacteria is accomplished by means of chemicals. 9. Heavier particles settle out from the liquid during primary treatment.

Упр. 8. Укажите предложение, являющееся ответом на заданный вопрос.

Why must sewage undergo secondary treatment?

- a) ... because sewage and refuse products result from daily activities of a community.
- b) ... because primary treatment is not sufficient as the sewage still contains much decomposable material.
- c) ... because chemicals help to kill the bacteria in the sewage.
- d) ... because the health of the community is in great danger.

Упр. 9. Составьте план к тексту из четырех пунктов.

Упр. 10. Перескажите текст по-английски.

### Тексты для письменного перевода

#### Text A. How are bacteria eliminated from water?

Water taken from its natural source – the ground lakes or rivers – contains many objectionable elements. It may possess gases of an obnoxious nature, bacteria, mineral elements, mud, and suspended vegetable growth which render it unpalatable. Some of these objectionable materials may be eliminated readily, others require complex treatment. The obnoxious gases are removed by aerating the water. Some of the mineral elements, such as certain forms of iron, also are removed by this means. The suspended materials require coagulation and settling process, and bacteria are eliminated with the addition of chemicals and sand filtration. The mineral elements which render the water hard must be separated by a chemical process in which the

objectionable element is replaced by one that is favorable. A filtration plant may use one or a combination of all these processes, the water undergoing a complete change as it passes through the plant.

#### Text B

Primary treatment may consist of one or all of the following processes: passing the sewage through a grit chamber, in which the sand or grit is settled out; screening or the removal of a portion of the coarse solids by passing the sewage through specially constructed screens or racks; and sedimentation, or the passing of the sewage through some type of settling tank, either with or without the application of chemicals, so that the larger and heavier solid particles settle out from the liquid. These solid particles that settle out form a slimy paste which is known as sludge.

#### Text C. **From the history of sewage**

Man's sewage practice has been known from ancient times. Explorations revealed sewers in Babylon, dating from 7<sup>th</sup> century before our era. Considerable information is available about the sewers of Jerusalem, works of this class in ancient Greek cities are well known and the great underground drains of Rome have repeatedly been described.

The first engineer who made a comprehensive study of metropolitan sewerage needs, thus described the conditions of London basements and cellars in 1847: "There are hundreds, I may say thousands of houses in this metropolis which have no drainage whatever and the greater part of them have stinking overflowing cesspools". After 2 outbreaks of cholera a royal commission was appointed to inquire into sanitary improvements of London.

In the continent a marked progress in sewerage began in 1842 when a severe fire destroyed the old part of the city of Hamburg. The portion ruined was the oldest and it was decided to rebuild it according to the modern ideas of convenience. As a result Hamburg was the first city which had a complete systematic sewerage system throughout built according to modern ideas. The system proved so well designed and maintained that 25 years after the sewers were completed they were found by a committee of experts to be clean and almost without odor.

At the present time the problem of good sanitation is closely connected with that of protecting the purity of natural water reservoirs, since often the same body of water must serve both as a source of water and a recipient of sewage and storm drainage. And it is this dual use of water in nature and within communities and industrial premises that establishes the most impelling reasons for water sanitation.

### Урок 3. **The United Kingdom**

Упр. 1. Прочитайте и запомните следующие слова и выражения из текста:

The United Kingdom – Соединенное Королевство

island nation – островное государство

constitutional monarchy – конституционная монархия

the English Channel – пролив Ла-Манш

European Union – Европейский союз

isle, island – остров

North Sea – Северное море

gross national product (GNP) – валовой национальный продукт

ocean – океан

area – площадь

coastline – береговая часть

latitude – географическая широта

current – течение

depression – зд. циклоны

moisture – влажность

rainfall – количество осадков

average annual precipitation – среднегодовое количество осадков

Highlands – возвышенности

population – население

mainland – континент(альный), материк

commercial – торговый

main – главный

prevailing – преобладающий

moderate – умеренный, делать умеренным

indented – зд. изрезанная

total – целый, весь

numerous – многочисленные

latter – последний

mild – мягкий, умеренный

mean – зд. средний

annual – годовой

throughout – на всем протяжении

seldom, rarely – редко

relative to – зд. относительно

highly – очень

in terms of – говоря (о чем-либо)

to comprise – включать

to occupy – занимать

to border – граничить

to separate – разделять

to mean – подразумевать

influence – влияние  
to tend to – стремиться, иметь тенденцию  
to vary – различаться, варьировать  
to rank – равняться

Упр. 2. Прочитайте и переведите текст на русский язык.

### **The United Kingdom**

The United Kingdom or simply the UK (officially the United Kingdom of Great Britain and Northern Ireland) is an island nation and constitutional monarchy. It is situated in north-western Europe. The United Kingdom is a member of the European Union (EU).

Great Britain is the largest of the British Isles. It comprises England, Scotland, Wales and numerous smaller islands. Northern Ireland (also known as Ulster) occupies the north-eastern part of the isle of Ireland.

The United Kingdom is washed by the English Channel in the south; the latter separates it from continental Europe, by the North Sea in the east, by the Irish Sea and the Atlantic Ocean in the west. The only land border is between Northern Ireland and the Republic of Ireland. The total area of the United Kingdom is 242 sq km. The capital and the largest city is London.

The mainland of the island of Great Britain is 947 km at its longest and 531 km at its widest; however, the highly indented nature of the island's coastline means that nowhere is more than about 120 km from the sea.

The climate of the United Kingdom is mild relative to its latitude. The mildness is an effect of the warm Gulf Stream. This current brings the prevailing south-west winds that moderate winter temperatures and bring the depressions which have the main day-to-day influence on the weather. The western side of the UK tends to be warmer than the eastern; the south is warmer than the north. The mean annual temperature is 6 °C in the far north of Scotland; 11°C in the south-west of England. Winter temperatures seldom are below –10 °C and summer temperatures are rarely higher than 32 °C. The sea winds bring plenty of moisture; average annual precipitation is more than 1,000 mm.

Rain tends to fall throughout the year, frequently turning to snow in the winter, especially in Scotland, the mountains of Wales, and northern England. The western side of Great Britain is much wetter than the eastern: average rainfall varies from 5,000 mm in the western Highlands of Scotland, to less than 500 mm in parts of East Anglia in England.

The population of the United Kingdom is more than 56 mln people, but it is one of the world's leading commercial and industrialized nations. In terms of gross national product (GNP) it ranks fifth in the world, with Italy, after the United States, Japan, Germany, and France.

Упр. 3. Ответьте на вопросы.

1. What is the United Kingdom?
2. What does Great Britain comprise?
3. What part of the isle of Ireland does Northern Ireland occupy?
4. Speak about the borders of the UK.
5. Name the total area of the United Kingdom.
6. What is the capital of the UK?
7. What is the mainland of the island of Great Britain?
8. What can you say about the climate of the United Kingdom?
9. How does mean annual temperature vary in the UK?
10. Name the average winter and summer temperature in the UK.
11. What can you say about the UK in terms of precipitation?
12. What is the population of United Kingdom?
13. How does the UK rank in terms of GNP?

Упр. 4. Переведите на английский язык следующие предложения:

1. Официальное название Великобритании – Соединенное Королевство Великобритании и Северной Ирландии.
2. Соединенное Королевство является членом Европейского союза и конституционной монархией.
3. Северная Ирландия занимает северо-восточную часть острова Ирландия.
4. Пролив Ла-Манш отделяет Соединенное Королевство от континентальной Европы.

Упр. 5. Составьте план текста.

Упр. 6. Перескажите текст по-английски, используя материал упр. 3, 4, 5 и следующие связующие элементы дискурса:

1. As I understood from the text...
2. According to the text...
3. According to the author...
4. As it is described in the text...
5. As it is said in the text...
6. As the author puts it...
7. According to the figures (data, information, opinions) from the text...

Упр. 7. Обсудите следующие утверждения, используя нижеприведенные фразы для выражения Вашего мнения:

1. It seems to me (that)...
2. I would like to say that...
3. As I see it...
4. I think that...
5. I guess...
6. I suppose...
7. I (strongly) believe that...
8. I am (absolutely) sure that...

**Statement A.** The United Kingdom is a small country. It is one of the leading countries now because it had many rich colonies in the past.

**Statement B.** The UK will lose Northern Ireland soon and Wales and Scotland later, like it lost Hong Kong in 1997, because of the differences in languages, culture and history.

**Statement C.** British people don't travel much because they live far from the sea (ocean).

Упр. 8. Подготовьте доклад на английском языке про Соединенное Королевство (территория, климат, население, этнический состав населения, экономика и др.), используя материал текста, а также иные источники.

#### Урок 4. **Available Sources of Supply**

Упр. 1. Прочитайте и запомните следующие слова из текста:

well – колодец

spring – источник

hail – град

level – уровень

pipe – труба

concrete – бетонный

wood – деревянный

to flow over – зд. переливаться, просачиваться через

to sink into – проникать

to reappear – появляться снова

to dig – копать

to drive into – зд. вколачивать, вбивать в

to fix – устанавливать, закреплять

to deliver – доставлять

Упр. 2. Какие русские слова имеют те же корни, что и следующие английские слова? Запомните их произношение в английском языке:

adequate, portion, community, distance, underground, distribution, steel, local, pressure, design, principle, economics.

Упр. 3. Найдите в словаре значение следующих слов:

to determine, dependent, commonly, however, considerable, locality, to reach, upper, to obtain, extremely, rare, kind, even, extent, cost, similarly, to govern, engineering, perhaps.

Упр. 4. Прочитайте и переведите текст на русский язык.

### **Available Sources of Supply**

After the amount of water required by the community has been determined , the next step is to locate an adequate source of supply. In general, the two available sources of supply are surface water, or the water in rivers, lakes, and creeks; and the ground water in wells and springs. All sources of water supply are dependent on precipitation, which includes rain, snow and hail. The entire precipitation is generally called rainfall. A portion of the rainfall flows over the ground surface and becomes available for water supply as surface water. Another portion sinks into the ground and becomes available as ground water. However, not all the rainfall is available as water supply, because some of it evaporates from the ground or from the surface of a body of water, and some is used by plants and animals.

The portion of the rainfall that flows over the ground surface is commonly called the run-off. This is the important source of water supply for the most communities. Ground water flows under ground, sometimes for a considerable distance, and may reappear as a flowing well or spring far from the locality in which the water fell as precipitation. Also, a well may be dug or driven into the ground in order to reach an underground supply. The level of the upper surface of the ground water at a given point is known as the water table.

The amount of water that can be obtained from a lake, river, well, or spring is known as the yield of the source.

Except under extremely rare conditions, a pipe line must be used to deliver the water from the source to the treatment plant or the distribution system. The kind of pipe to be used: cast-iron, steel, concrete, or even wood – will depend to some extent on local conditions and local costs, which should be determined. Similarly, the size of the pipe is fixed by the volume of water to be delivered and the pressure of the water. In general, the design of the pipe line will be governed by the principles of engineering economics, perhaps to a greater extent than any other part of the water system.

Упр. 5. Подберите соответствующий перевод из правого столбца к английским словам:

Sources of supply	доставка
Available	меняться
Creek	выпадение осадков
Precipitation	поверхность
Rainfall	испаряться
Surface	количество осадков
To evaporate	уровень воды
Water table	источник стока
Yield of source	ручей, залив
To vary	источники снабжения



Delivery	доступный
Distribution system	чугун
Cast-iron	распределительная система

Упр.6. Ответьте на вопросы.

1. What are the two available sources of supply? 2. What are all sources of supply dependent? 3. What does precipitation include? 4. What is called rainfall? 5. Why is not all the rainfall available as water supply? 6. What is called the run-off? 7. What is called a water table? 8. What is known as the yield of the source? 9. What must be used to deliver water from the source to the treatment plant? 10. What does the kind of pipe to be used depend on?

Упр. 7. Закончите следующие предложения:

1. The two available sources of supply are ... 2. The precipitation is generally called...3. Not all the rainfall is available as water supply, because...4. The portion of the rainfall that flows over the ground surface is called... 5. A well may be dug into a ground in order ... 6. The kind of pipe to be used will depend on...7. The design of the pipe line will be governed by ...

Упр. 8. Составьте план текста.

Упр. 9. Перескажите текст по-английски.

### **Тексты для письменного перевода**

#### **Text A**

There are 336 big and small rivers flowing into the gem of Siberia, lake Baikal, the largest reservoir of fresh water in the world. The biggest of them had been used for a long time for timber drifting which inflicted serious wounds on nature. For years the river banks on which numerous timber enterprises had sprung up were littered with waste. The rivers grew shallow and silted. That is why the government of Russia decided to take urgent measures: timber drifting was stopped and by the end of 1975 all rivers that had been used as drifting routs were thoroughly purified.

Special teams set up at all timber enterprises were provided with the latest techniques. They dredged rivers and cleaned their banks. The territory of the old timber-yards in the lower reaches of the rivers was first cleaned of waste and then the land was ploughed and swan to grass. Thus, thousands of acres of land were recultivated.

In late 1972 the cleaning of the first of the former timber-drifting routs, the river Ona, was accomplished. A year later local inhabitants could see the practical results of the work. For the first time in several years fish from the Baikal came to the upper reaches of the river Ona for spawning.

The number of rivers saved from pollution increases every year. In three and a half years almost 1500 miles of river banks have been cleaned. The area of Baikal water supply is now under strict protection and laws for the utilization of natural resources have been introduced.

## Text B

People used to get water mostly from streams, lakes and rivers. Then cities started growing. This brought many people to one place. They needed more water for their homes and factories. Sometimes it didn't rain for a long time. Then the rivers had very little water left. People learned to save water for these dry times. They built places in which to store water. They called these places reservoirs. Reservoirs hold water until people in cities need it. Large pipes carry water from reservoirs to the city. People also get water from wells. Years ago people lifted water out of wells in buckets. This was hard work and took a long time. Now they pump the water up. The pump makes it easier for people to get water where they want it.

## Урок 5. **Treatment of Water**

Упр. 1. Прочитайте и запомните следующие слова из текста:

taste – вкус

muddiness – грязь

hardness – твердость, жесткость

palatable – приятный, аппетитный, вкусный

attractive – привлекательный

to cause – вызывать, служить причиной

to utilize – использовать (ся)

to destroy – разрушать

to eliminate – устранять

to reduce – сокращать

to interfere – вмешиваться

to dissolve – растворять

to investigate – расследовать

Упр. 2. Какие русские слова имеют те же корни, что и следующие английские слова? Запомните их произношение в английском языке:

organism, characteristics, selection, procedure, function, to neutralize, content, provision, type, bacteria, virus, commercial, industrial, gas.

Упр. 3. Найдите в словаре значение следующих слов:

carefully, to subject, objectionable, in advance, to estimate, consumer, to render, safe, satisfactory, chief, purpose, secondary, indirectly, viewpoint, to tend to, certain, capable, merely, turbidity, cysts, scale.

Упр. 4. Прочитайте и переведите текст на русский язык.

### Treatment of Water

Since water may contain the organisms that cause diseases, the source of supply should be investigated carefully to determine the pollution to which it may be subject. Other possible objectionable characteristics of the water should also be determined in advance of selection of a source in order that the methods and cost of treatment can be estimated.

Since natural water usually contains impurities that affect health or cause annoyance to consumer, purification procedures must be utilized to render it safe and satisfactory for use. While the chief purpose in treating or purifying water is to destroy or eliminate impurities that may cause diseases, a secondary – but very important function is to eliminate or neutralize undesirable tastes and odors, color, turbidity, and mineral content. Indirectly, the removal of impurities that do not cause diseases but may be important from the health viewpoint, because the provision of a palatable and attractive water tends to reduce or eliminate the use of local wells and springs, which are usually unsafe. The impurities in water that may affect health include certain types of bacteria, cysts, and perhaps viruses capable of causing diseases. Impurities that are merely annoying or that interfere with industrial or commercial uses of water include color, taste, and odor, turbidity or muddiness, minerals causing hardness or scale in pipes, and certain dissolved gases.

Упр. 5. Подберите соответствующий перевод из правого столбца к английским словам:

Contain	окалина, накипь
Disease	пузыри
To be subjected	запах
To determine	мутность
Selection	нежелательный
Treatment	безопасный
To estimate	очищение
Impurities	потребитель
To affect	примеси
Consumer	влиять
Purification	оценивать
Safe	обработка
Undesirable	выбор
Odor	определять
Turbidity	быть подверженным
Cysts	болезнь
Scale	содержать

Упр.6. Ответьте на вопросы.

1. What may water contain? 2. Why should possible objectionable characteristics of the water be determined in advance of selection a source? 3. Why must purification procedures be utilized? 4. What is the chief purpose in treating water? 5. What is the secondary function of the water purification? 6. What do the impurities in water that may affect health include? 7. Impurities that interfere with industrial or commercial uses of water include color, taste, odor, turbidity, don't they?

Упр. 7. Переведите следующие предложения, обращая внимание на разные типы условных предложений:

1. If water contains organisms that cause diseases, the source of supply must be carefully investigated. 2. If we wanted to estimate the cost of treatment, we should determine the characteristics of the water. 3. In case the local wells contained impurities, they would be unsafe. 4. In case impurities had interfered with industrial uses, it had caused scale in pipes. 5. If natural water contains impurities, purification procedures will be utilized.

Упр. 8. Составьте план текста.

Упр. 9. Перескажите текст по-английски.

### **Тексты для письменного перевода**

#### **Text A. Classification of Reservoirs**

Reservoirs for water supply may be divided into two main classes: namely, storage reservoirs and distributing reservoirs. A storage reservoir is required when the average of the stream from which a supply is to be taken is greater than the average consumption. A distributing reservoir is required when it is not possible or desirable for the water to flow directly from the source of supply to the distribution pipes. The water is supplied to the distributing reservoir either by gravity or by pumping, and it flows by gravity from that reservoir to the distribution pipes. The use of distributing reservoir makes it possible to draw water from the storage reservoir at a comparatively uniform rate, even though the rate of consumption is variable.

#### **Text B. Iceberg – a Source of Fresh Water**

Icebergs towed from Antarctica to the Red Sea could provide an economic source of fresh water for Saudi Arabia. There are no technical problems to which we cannot find a solution.

In France a detailed plan for towing the icebergs, each weighing 100 Mt, across the Indian Ocean, and through the Gulf of Aden to the mouth of the Red Sea was developed. There they would be chopped into manageable pieces, using heated cables and towed through the shallow Bab el Mandeb straits to the Saudi coast.

The giant icebergs must be wrapped in insulating jackets to cut down melting losses on their 8,000 km journey. At an estimated towing speed of 1 knot, it will take 6–8 months for five tugs to pull the icebergs along a computer plotted route, taking advantage of prevailing currents and winds.

Once the bergs reach the Gulf of Aden, the jackets will be removed and heated cables will slice them into about 100 individual pieces, each no thicker than 15 m. These slices will then be floated through the Bab el Mandeb straits. Inside the Red Sea, another skirt will be fixed to each berg to separate the fresh water from the salt sea water, and a pipeline will connect the offshore reservoirs to the mainland. The idea of using icebergs as a source of fresh water is not new. After all, 99 per cent of the fresh water in the world is in the form of ice, and 90 per cent of it is in the Antarctic. It seems natural that we should look at ways of using it.

For Saudi Arabia the cost of the iceberg water is well below the cost of desalination. A side benefit for the Saudi Arabia is that a line of melting icebergs 1.5 km offshore would be a giant air-conditioning system, dropping local temperatures by as much as 5 degrees C.

## **Урок 6. Higher Education in the UK**

Упр. 1. Прочитайте и запомните следующие слова и выражения:

funding – финансирование

funding councils – советы по финансированию

research – научное исследование

independence – независимость

the number of – количество

polytechnics – политехнические институты

education establishments – образовательные учреждения

right – зд. право

decade – десятилетие

expansion – рост

quarter – четверть

graduate – выпускник высшего учебного заведения

government – правительство

extension techniques – технологии дистанционного образования

correspondence courses – курсы заочного обучения

state grants – государственные гарантии (гранты)

tuition fee – плата за обучение

parents income – доход родителей

student loan – студенческий заем

local study centres – местные образовательные центры

opportunity – возможность

variety – разнообразие

significant – значительный

particular – особый, специфический

privileged – привилегированный  
former – прежний, бывший  
self-governing – самоуправляемый  
voluntary – добровольное  
to attend – посещать  
to choose – выбирать  
to set up – основывать  
to aim – нацеливать  
to reflect – отражать  
to compare – сравнивать  
to apply for – обращаться с просьбой  
to cover – покрывать, охватывать  
to determine – определять

Упр. 2. Прочитайте и переведите текст на русский язык.

### **Higher Education in the UK**

Education after 16 is voluntary in the United Kingdom. Students, who live in England, Wales, and Northern Ireland must take the exam for General Certificate of Secondary Education (GCSE) at the age of 16. In Scotland students receive the Scottish Certificate of Education. After this exam students can choose either to stay on in school or attend colleges of further education.

British universities are self-governing and guaranteed academic independence. Funding for education and research is provided by funding councils set up by Parliament. The number of universities jumped in 1992 when polytechnics and some other higher education establishments were given the right to become universities. By the end of 1994, there were some 90 universities, almost half of them former polytechnics, including the Open University.

Many of the colleges of Oxford and Cambridge universities were founded in the 12<sup>th</sup> and 13<sup>th</sup> centuries. Thus Oxford and Cambridge universities, or simply Oxbridge are the oldest and the most privileged establishments of higher learning in the UK. Graduates of Oxford and Cambridge often become members of the government and even Prime Ministers. All other universities in Britain were founded in the 19<sup>th</sup> and 20<sup>th</sup> centuries. Among them are Redbrick universities (aimed for particular field of production), London university (large association of schools, colleges and institutes) and others. The Open University, based in Milton Keynes, England, was founded in 1969. It uses extension techniques of correspondence courses, television and radio programmes, and video cassettes, supported by local study centres and summer schools, to provide higher education opportunities to a wide variety of people.

During the 1960s there was a significant increase in the number of new universities, reflecting a fast growth in student numbers. During the 1980s, an expansion in higher education places led to another large jump in student numbers.

In the 1992–1993 academic year there were more than 1.4 million students in full or part-time higher education in Great Britain, compared with just under 850,000 a decade earlier. About one quarter of young people are in higher education in England, Wales, and Scotland; one third in Northern Ireland. About 90 per cent of students get state grants to cover tuition fees and living costs.

The size of the grant is determined by parents' income. Since the late 1980s, however, grants have been frozen; students can apply for a student loan.

Упр. 3. Ответьте на вопросы.

1. Characterize education after 16 in the UK.
2. What choice do the students have after GCSE exam?
3. What privilege do British universities have?
4. Why did the number of British universities jump in 1992?
5. How many universities were there in the UK by the end of 1994?
6. What can you say about the Oxbridge universities?
7. What other universities are there in the UK?
8. What is specific about the Open University?
9. Why was there a significant increase in the number of new universities during the 1960s?
10. When was another jump in student numbers?
11. How many students get state grants? Why?
12. What influences the size of the student grant?

Упр. 4. Переведите на английский язык следующие предложения:

1. В возрасте 16 лет каждый житель Соединенного Королевства обязан сдать экзамены на получение Сертификата о среднем образовании.
2. Британские университеты являются полностью самостоятельными.
3. В 1992 году политехническим институтам было предоставлено право стать университетами.
4. Открытый университет, широко известный своими технологиями дистанционного обучения, был основан в 1969 году.
5. В 60-е годы в Соединенном Королевстве наметился значительный рост количества университетов.
6. Размер гранта на обучение определяется исходя из дохода родителей.

Упр. 5. Составьте план текста.

Упр. 6. Перескажите текст по-английски, используя материал упр. 3, 4, 5.

Упр. 7. Подготовьте доклад на английском языке про систему высшего образования в России, используя следующие слова, материал текста, а также иные источники:

high school diploma – школьный аттестат

graduation ceremony – выпускной экзамен (ЕГЭ)

an applicant for entry – абитуриент  
Bachelor of Science (B.S.) – бакалавр естественных наук  
Bachelor of Art (B.A.) – бакалавр гуманитарных наук  
Master of Science (M.S.) – магистр естественных наук  
Master of Art (M. A.) – магистр искусств  
Doctor of Philosophy (Ph.D.) – доктор философии (кандидат наук)  
undergraduate student – студент вуза  
graduate student – выпускник вуза  
postgraduate course – аспирантура  
room (lodging) and board – проживание и питание  
personal expenses – личные расходы  
books and supplies – книги и материалы  
enrollment – зачисление  
admissions office – приемная комиссия  
student services office – департамент по работе со студентами  
student union – студенческий профком  
university bursar's office – бухгалтерия университета (офис казначея)  
to enroll – зачислять  
to be eligible for admission – быть подходящей кандидатурой для поступления