Non-Commercial Joint-Stock Company «Kazakh National Agrarian Research University»



«6B08602 - Melioration, Recultivation and Land Protection»

Awarded degree: Bachelor of Agriculture under the Educational Programme «6B08602 - Melioration, Recultivation and Land Protection»

Almaty 2022

The educational program was reviewed and approved at the meeting of the Academic Council of KazNARU  $\langle 29 \rangle 2022$ , Protocol  $N_2$ 

Educational and Methodological Council of the University, «<u>*LL*</u>» <u>O</u>8 2022, Protocol № <u>*L*</u> Chairman of the MCU of the University <u>Clark</u> B. Kalykova

Academic Committee of the «Water, land and forest resources» Faculty «\_\_\_\_» \_\_\_\_\_ 2022, Protocol No Chairman of the AC of the faculty \_\_\_\_\_L. Makhmudova

Meeting of the department «Water resources and melioration» «\_\_\_\_» \_\_\_\_\_ 2022, Protocol № Head of the Department \_\_\_\_\_\_\_\_ Y. Zhaparkulova

### Developers: Position

**Employers:** 

Dean of the faculty Head of the department Head of the department «Environmental Engineering» Candidate technical science PhD., assos.professor

Signature

Full name

Y. Sarkynov Y. Zhaparkulova

O. Meshik

K. Anuarbekov

S. Mukataev Zh. Yerikuly

#### Agreed: Position

Head of training division

named after D.Kunaeva

meliorative center"

Head of the Big Almaty Channel

Head RSI "Zonal hydrogeological-

Head of the Department of Educational and Methodological Work and Quality of Educational Programs

Director of the Department of Academic Affairs

Signature **Full** name A. Koyshibayev

Zh. Kussainova

A. Satmurzayev

## **Field of application**

It is intended for realization of preparation of bachelors under the educational program «6B08602 – Melioration, recultivation and land protection» in NCJSC «Kazakh National Agrarian University».

## Regulations

«On Education» The Law of the Republic of Kazakhstan dated 27 July, 2007 No. 319-III;

State obligatory standard for higher education. Order of the Minister of Education and Science of the Republic of Kazakhstan dated October 31, 2018 № 604;

Classifier of training programs for personnel with higher and post-graduate education. Order of the Minister of Education and Science of the Republic of Kazakhstan of October 13, 2018 No. 569;

Standard Rules for the activities of educational organizations implementing educational programs of higher and (or) postgraduate education. Order of the Minister of Education and Science of the Republic of Kazakhstan of October 30, 2018 No. 595;

Rules of the organization of the educational process on credit technology of training. Order of the Minister of Education and Science of the Republic of Kazakhstan dated October 12, 2018 No. 563;

Algorithm of inclusion and exclusion of educational programs in the Register of educational programs of higher and postgraduate education. Order of the Minister of Education and Science of the Republic of Kazakhstan No. 665 dated December 4, 2018;

Professional standard. Appendix No. 73 to the order of the Deputy Chairman of the Board of the National chamber of entrepreneurs of the Republic of Kazakhstan "Atameken" dated 11.12.2018 No. 339

## 1. Passport of educational program

Code and classification of the field of	6B08 Agriculture and bioresources
education	
Code and classification of training areas	6B086 Water resources and water use
Code and name of the educational program	6B08602 – Melioration, recultivation and land protection
Type of educational program	Acting
The purpose of the educational program	Training of highly qualified specialists in design,
	construction and operation of meliorative and water
	management facilities, recultivation and land protection
	for agro-industrial complex.
Level according to (ISCE)	6
Level according to NOF	6
Level according to SOF	6
The number of applications for licenses for the	K742L A A00006720 March 27, 2019 M000
training	KZA2LAA00000720 March 27, 2017 J№007
Accreditation of EP	Certificate No. AB0763
The name of the accreditation body	Independent accreditation and rating agency 24 12 2015 -
The period of validity of accreditation	23 12 2020
	Cortificate No. DSB & 505/2018 NKAOKA KZ
Awardad dagraa	Dechalor of agriculture on the advantional program
Awarded degree	Malionation monthly and land
	«OB08002 – Menoration, recultivation and land
<b>.</b>	protection
Learning outcomes	Table 2
List of qualifications and positions	1. Inspector of hydraulic structures
	2. Technician-hydromeliorator
	3. Melioration engineer
Professional field of activity	Development of a plan for the rational use of land
	melioration, maintenance of the state monitoring of
	surface and water bodies and underground water
	resources, the protection and recultivation of lands
	disturbed or contaminated in the process of environmental
	management, environmental planning, maintenance and
	operation of water management systems and structures,
	construction and reconstruction of irrigation and watering
	systems security water facilities, organization of repair
	and restoration of especially emergency sections of inter-
	farm channels and hydro-melioration structures control
	of operation of melioration machines and watering
	technique
Field and object of professional activity	natural and technogonic complexes:
There and object of professional activity	• natural and technogenic complexes;
	• disturbed land;
	• surface and underground water resources;
	• irrigation and drainage systems of irrigated lands;
	hydrotechnic structures;
	• design, survey, research and development
	organizations;
Functions of professional activity	• design, construction and operation of water
	management systems and structures;
	• maintenance of the state monitoring of surface water
	objects, state account of water and their use:
	• design of irrigation and drainage systems
	monitoring and assessment of the hydro-melioration
	<ul> <li>objects, state account of water and their use;</li> <li>design of irrigation and drainage systems, monitoring and assessment of the hydro-melioration</li> </ul>

	condition of irrigated lands:
	• rational use of natural resources on reclaimed lands:
	• organization and management of project water
	• organization and management of project, water,
	inverteente, agricultural, municipal organizations and
	enterprises,
	• performing research work in educational
	and energy sector:
	and energy sector,
	• expertise, supervision and control over the use of
	water resources, audit and monitoring of water
	management facilities, etc.
Types of professional activity	1. Evaluative:
	1. Conducting state monitoring of surface water bodies,
	state accounting of water and its use;
	2. Calculation of irrigation and watering rates, irrigation
	regimes and watering techniques for agricultural crops.
	2. Constructive:
	1. Design, construction and operation of melioration
	systems and structures;
	2. Recultivation and land protection.
	3. Information-technological:
	1. Development of measures for water users to preserve
	and improve the state of water and land resources;
	2. Drawing up a plan for the rational use of reclaimed
	land and water bodies.
Be competent	- in monitoring and cadastre of water and land resources,
	supervision and control over rational use of melioration
	systems;
	- in questions of search of optimum constructive
	decisions at designing of hydraulic engineering
	constructions and their elements;
	- in application of methods of calculation of constructions
	on safety and reliability;
	- in the operation of irrigation machines and mechanisms
	used in water management construction;
	- in observing environmental principles of nature
	protection and environmental management.

# 2. Learning outcomes on EP

Codes	Learning outcomes
LO1	Determine the main principles of academic integrity, ethical and legal norms in the field of
	natural science disciplines
LO2	Collect and collect information for the formation processes and phenomena of the
	environment, the basics of physical self-improvement, the characteristic genres of academic
	writing and scientific considerations
LO3	Demonstrate basic knowledge and concepts of mathematical analysis, methods of
	experimental research of hydrochemistry and technical mechanics using computers and
	software
LO4	Give examples of topographic surveys, information processing of design work and tasks on
	descriptive geometry and engineering graphics
LO5	Apply knowledge and understanding of the facts of hydraulic calculations for the search and
	exploration of underground water using modern computer programs (AutoCAD, GIS, etc.) in
	the field of study
LO6	Know the methods of scientific research and production technology in agriculture and
	irrigation works using land reclamation construction machines and structures
LO7	Assess soil-climatic factors, basics of geology and hydrogeology, hydrologic-melioration
	regularities and hydrometric works
LO8	Characterize special types of melioration, environmental safety of melioration and
	recultivation works for the protection of land for various purposes
LO9	Conduct an experiment using theoretical and practical knowledge of the design and operation
	of pumping stations, melioration pumping units, water supply and wastewater treatment
	facilities
LO10	Justify calculations of design of hydraulic structures, agricultural water supply systems and
	pasture irrigation and irrigation systems
LO11	Recommend a plan for automation of melioration systems, management of the natural and
	technical complex, quality control of construction and repair work
LO12	Develop systems for solving the main problems and tasks of complex melioration, natural
	water pollution, operation and automation of melioration systems
LO13	Plan the rational use of land resources, nature management and environmental management,
	as well as flow regulation and regulation of river beds
LO14	Release the acquired knowledge and skills in management activities

# **3.** Content of the educational program

N⁰						Volume in hours Distribution of credits by course and semester									nd						
	( ۲			edits	s.		Audit	orium		anq	Out- litorium		rse	2	2 Irse	COU	3 Irse	4 cou	ırse	ť1	rol
	00/00	Code of discipline	Name of the discipline that forms the competence	in academic cr	in academic hour	Lectures	Practical classes	Lab classes	Other (practice	TSWI	SWI	1	2	3	4	5	6	7	8	Departmen	Form of cont
1	GES	General	education subject cycle	56	1680	84	636			240	720										
Module	e. Humai	nities and langu	lage	30	900	30	270			150	450	10	15		5						
1.1	CC	HK 1101	History of Kazakhstan (SE)	5	150	15	35			25	75		5							29	State exam
1.2	CC	Fil 2102	Philosophy	5	150	15	35			25	75				5					29	exam
1.3	CC	FL 1103	Foreign language	10	300		100			50	150	5	5							14	exam
1.4	CC	K(R)L 1104	Kazakh (Russian) language	10	300		100			50	150	5	5							15	exam
Module. Professional and communicative				10	300	30	70			50	150	5			5						
1.5	CC	ICT 2105	Information and Communication Technologies	5	150	15	35			25	75				5					9	exam
1.6	CC	LACC 1108 Econ 1108 Ecol 1108 VSEP 1108	Law and anti-corruption culture Economy Ecology Vital Security and Environment Protection	5	150	15	35			25	75	5								2 3 17 8	exam
Module	e. Socio-j	political knowle	edge and a healthy lifestyle	16	480	24	296			40	120	10	2	2	2						
1.7	CC	SPKM (SPCP) 1106	Social and political knowledge module (Social Studies,Political Studies, Cultural Studies, Psychology)	8	240	24	56			40	120	8								29 1	exam
1.8	CC	PT 1107 2107	Physical Training	8	240		240					2	2	2	2					30	exam
2	CS	C	Core subjects cycle	113	3390	306	534	180	110	510	1750										
Module	e 1 – Ger	1 – General technical basis of the specialist				45	85	20		75	225										
2.1	UC	Mat 1202	Mathematics	5	150	15	35			25	75		5							9	exam
2.2	OC	Che 2205	Chemistry	5	150	15	15	20		25	75			5						19	exam
		Hyd 2205	Hydrochemistry																		

2.3	UC	EG 1201	The engineering geodesy	5	150	15	35			25	75	5								11	exam
Module	e 2 - Wo	rk organization	and management	20	600	60	120	20		100	300										
2.4	OC	DGEG 2206	Descriptive geometry and	5	150	15	35			25	75			5						7	exam
			engineering graphics																		
		DDG 2206	Drawing and descriptive																		
			geometry																		
2.5	OC	BE 4221	Business ethics	5	150	15	35			25	75								5	2	exam
		BC 4221	Business correspondence																		
2.6	OC	FCADRS	Fundamentals of computer-aided	5	150	15	35			25	75					5				4	exam
		3212	design of reclamation systems																		
		DPI 3212	Digital processing of																		
			information																		
2.7	OC	TM 3213	Technical mechanics	5	150	15	15	20		25	75					5				7	exam
		ME 3213	Mechanical engineering																		
Module	e 3 - Wat	ter use		35	1110	72	92	76	110	120	580										
2.8	UC	EH 1203	The engineering hydrometry	5	150	15	15	20		25	75		5							4	exam
2.9	OC	FGH 2209	Fundamentals of geology and	5	150	15	35			25	75				5					4	exam
			hydrogeology																		
		GPE 2209	Groundwater prospecting and																		
			exploration																		
2.10	UC	LR 3214	Land reclamation	6	180	18	18	24		30	90					6				4	exam
2.11	UC	Hyd 3215	Hydraulics	8	240	24	24	32		40	120					8				4	exam
2.12	UC	TP 1204	Traning practice	3	90				30		60		4								dif.credit
2.13	UC	PP 2211	Production practice	8	240				80		160				8						dif.credit
Module	e 4 - Use	of natural reso	urces	21	630	63	83	64		105	315										
2.14	OC	CM 2207	Climatology and meteorology	5	150	15	15	20		25	75			5						4	exam
		Hyd 2207	Hydrometeorology																		
2.15	UC	MSS 2208	Meliorative soil science	6	180	18	18	24		30	90			6						4	exam
2.16	OC	MPU 4219	Meliorative pumping units	5	150	15	35			25	75							5		4	exam
		MPS 4219	Meliorative pumping stations																		
2.17	UC	MF 2210	Meliorative farming	5	150	15	15	20		25	75				5					4	exam
Module	e 5 - Pro	viding quality v	vater for agriculture	22	660	66	154			110	330										
2.18	OC	TLRW	Technology of land reclamation	7	210	21	49			35	105							7		4	exam
		4220	works																		
		LRCW 4220	Land reclamation and																		
			construction works																		
2.19	OC	HFR 3216	Hydrology and flow regulation	5	150	15	35			25	75						5			4	exam
		RRB 3216	Regulation of river beds																		
2.20	UC	STM 3217	Special types of melioration	5	150	15	35			25	75						5			4	exam

2.21	OC	BC 3218	Basics of construction	5	150	15	35			25	75						5			4	exam
		BMC 3218	Bilding materials and																		
			constructions																		
3	MS	Μ	lajor subjects cycle	60	1800	138	282	40	140	230	970										
Module	e 6 - Hyd	rotechnics		12	360	36	64	20		60	180										
3.1	UC	HS 4306	Hydrotechnical structures	5	150	15	15	20		25	75							5		4	exam
3.2	UC	CUWR 2301	Complex use of water resources	7	210	21	49			35	105			7						4	exam
Module	e 7 - Mai	nagement of hy	dromelioration systems	11	330	33	77			55	165										
3.3	OC	AWSIP	Agricultural water supply and	5	150	15	35			25	75						5			4	exam
		3303	irrigation of pastures																		
	OC	MWSSS	Management of water supply																		
		3303	and sanitation systems																		
3.4	UC	OARS	Operation and automation of	6	180	18	42			30	90							6		4	exam
		4307	reclamation systems																		
Module	e 8 - Rec	ultivation and l	and protection	10	300	30	50	20		50	150										
3.5	UC	RLP 3304	Reclamation and land protection	5	150	15	35			25	75						5			4	exam
3.6	OC	CLR 4309	Complex land reclamation	5	150	15	15	20		25	75								5	4	exam
		MNTC 4309	Management natural and																		
			technical complex																		
Module	e 9 - Org	anization and 1	nanagement	27	810	39	91		140	65	475										
3.7	OC	DMS 4308	Design of melioration systems	7	210	21	49			35	105							7		4	exam
		AMS 4308	Automation of melioration																		
			systems																		
3.8	OC	BEE 3302	Basics of environmental	6	180	18	42			30	90					6				4	exam
			engineering																		
		BNM 3302	Basics of nature management																		
3.9	UC	PP 3305	Production practice	6	180				60		120						6			4	dif.credit
3.10		PP 4310	Production practice	4	120				40		80							4		4	dif.credit
3.11		PP 4311	Pregraduation practice	4	120				40		80								4	4	dif.credit
4	Final examination				360				120		240										
4.1	1 Writing and defending a diploma thesis, diploma project				360				120		240								12	4	
	or preparing and passing a comprehensive exam																				
						40.0						-				•		• •			
	Total:			241	7230	498	1452	220	370	980	3680	30	30	30	30	30	31	30	30		

Department	ABBR	The name of the department
1		Accounting audit and finance
1		Accounting, audit and inflance
2	MaOA	Management and organization of agriousiness named after Kn.D.
2	Dight	Dight
3	WD1D	Kight Water recourses and land realemation
		Machine usege
6	PT	Professional training
7	MaCAM	Mechanics and construction of agricultural machinery"
8	ATT	Agrarian technology and technology
9		IT-tehnologiyalar zhane avtomtandyru
10	ESaA	Energy Saving and Automation
11	LRaC	Land Resources and Cadastre
12	FRaH	Forest resources and hunting
13	PPaQ	Plant Protection and Quarantine
14	FL	Foreign languages
15	KaRL	Kazakh and Russian languages
16	SsaA	Soil science and agrochemistry
17	EC	Ecology
18	HaWG	Fruit and vegetable growing and nut growing
19	AG	Agronomy
20	BS	Biological safety
21	CVM	Clinical Veterinary Medicine
22	OSaBR	Obstetrics, surgery and animal reproduction biotechnology
23	MVaI	Microbiology, Virology and Immunology
24	VsEaH	Veterinary and sanitary examination and hygiene
25	FTaS	Technology and food safety
26	BPfaF	Beekeeping, poultry farming and fisheries
27	IAAR	Technology of production of livestock products
28	PMaBnAB	"Physiology, morphology and biochemistry" named after N.O.
		Bazanova
29	HKaCNK	History of Kazakhstan and culture of the peoples of Kazakhstan
30	PEaS	Physical education and sport
31	MD	Military Department
32	GBaB	Genetics, breeding and biotechnology

# 4. Competence Map

Gen	eral educational competencies	Learning outcomes
MC1	They are aimed at forming the	- evaluate the surrounding reality based on
	worldview, civil and moral positions	worldview positions formed by knowledge of the
	of a future specialist who is	basics of philosophy,
	competitive on the basis of	which provide scientific understanding and study of
	knowledge of information and	natural and
	communication technologies,	social world by methods of scientific and
	building communication programs in	philosophical knowledge;
	the state, Russian and foreign	- interpret the content and specific features of the
	languages, focusing on a healthy	mythological, religious and scientific worldview;
	lifestyle, self-improvement and	- to justify their own assessment of everything that
	professional success;	is happening in the social and industrial spheres;
MC2	Form a system of general	- to snow a civil position based on a deep
	competencies that ensure the socio-	understanding and scientific analysis of the historical
	cultural development of the future	stages, patterns and peculiarities of the historical
	specialist's personality based on the	use methods and techniques of historical
	moral positions:	- use methods and teeningues of mistorical description to analyze the causes and consequences
MC2	Develop the shility to intermensional	of events in the modern history of Kazakhstan.
MC3	Develop the ability to interpersonal	- evaluate situations in various areas of
	social and professional	interpersonal, social and professional
	and foreign languages:	communication. taking into account basic
	and foreign languages,	knowledge of sociology, political science, cultural
MC4	Contribute to the development of	studies and psychology;
	information literacy through	- synthesize knowledge of these sciences as a
	mastering and the use of modern	modern product of integrative processes;
	information and communication	- use scientific methods and techniques for research
	technologies in all areas of their lives	of a specific science, as well as the entire socio-
	and activities;	political cluster;
		- develop your own moral and civil position;
MC5	Form skills of self-development and	- operate with social, business, cultural, legal and
	education throughout life;	ethical standards of Kazakhstan society;
		- demonstrate personal and professional
MC6	Form a person capable of mobility in	competitiveness;
	the modern world, critical thinking	and humanitarian sciences, which is internationally
	and physical self-improvement.	recognized:
		- make a choice of methodology and analysis:
		- to generalize the results of the study:
		- synthesize new knowledge and present it in the
		form of humanitarian socially significant products;
		- to enter into communication in oral and written
		forms in Kazakh, Russian and foreign languages to
		solve the problems of interpersonal, intercultural
		and industrial (professional) communication;
		- use language and speech tools based on the system
		of grammatical knowledge; analyze information in
		accordance with the communication situation;
		- evaluate the actions and actions of communication
		participants.
		- use various types of information and

		communication technologies in personal activities:
		Internet resources, cloud and mobile services for
		searching, storing, processing, protecting and
		- build a personal educational trajectory throughout
		life for self-development and career growth, focus
		on a healthy lifestyle to ensure full-fledged social
		and professional activities through methods and
		means of physical culture.
	Basic competencies	Learning outcomes
MC7	Module 1 - General technical basis	- Calculate the solution of practical problems on the
	of a specialist	basics of hydro mechanics and hydraulics.
	Forms fundamental knowledge of	- Choose the fundamental laws of mechanical
	natural Sciences	motion and equilibrium of material bodies, their application in solving specific problems of modern
		technology
		- Identify the necessary knowledge on the
		composition of natural waters and its determining
		factors. Classification of the composition of natural
		waters. General patterns of formation of the
		chemical composition of natural waters. Processes
		organic matter biogenic and microelements in
		natural waters. Control of natural water pollution
		Determination of the main components of natural
		water pollution.
		- Discuss, use the geological and hydrological data
		of the area to assess and determine the necessary
MC9	Madala 2. Wash sussessing the said	amount of survey work on the construction site.
MC8	Module 2 - Work organization and	- Solve problems using images obtained by parallel projection: apply the rules of the unified system of
	Forms the engineering and legal	design documentation: read and detail the General
	literacy of a specialist	drawing.
		- To repeat the rules of law and normative-legal
		acts. The main legal systems of our time.
		International law as a special system of law. Law
		and regulations. Area of law.
		- Define an Academic text: the main genres, techniques and structure Features of official
		business and journalistic speech styles. Scientific
		discourse.
		- Make an overview of the latest achievements of
		science and technology in the field of automation of
		design of elements of hydraulic structures, the main
MC9	Modulo 3 - Water use	Ideas and principles of their use.
IVICY	Use the geological and hydrological	- Describe the substitute, state of the Earth and the Earth's crust the material mineral and petrographic
	data of the area to assess and	composition and properties of the earth's crust.
	determine the required amount of	endogenous geological processes.
	survey work	- Select organization of works on irrigation

		(during an) of a grievity and fields using melionstica
		(drainage) of agricultural fields using menoration
		systems.
		- Allocate Land Resources and Farming.
		Meliorative farming. Agricultural melioration in
		various zones of Kazakhstan. Farming systems on
		reclaimed land.
MC10	Module 4 - Use of natural	- To tell the general concept of climate, climatic
	resources	zoning of Eurasia, characteristics of Kazakhstan's
	Monitoring of water bodies and	climate, water vapor intake in the atmosphere,
	organization of technical and	evaporation from the surface of water and soil.
	material support for the operation of	- Explain the operation management of the water
	water treatment plants water	treatment plant water pumping station of the
	numping stations and wastewater	wastewater treatment equipment
	treatment facilities	- Perform the calculations I aws of equilibrium and
	treatment raemties	fluid movement features of filtration processes
		mathods of hydraulia processes
		Identify plan and organize scientific research in
		- Identify, plan and organize scientific research in
		soll genesis and evolution, biology, chemistry, soll
		physics, plant nutrition physiology, agrochemistry
		and rational application of fertilizers, soil and plant
1.614		diagnostics, etc.
MCII	Module 5-Providing quality water	- Explain the importance of hydrology for the
	for agriculture	development of the national economy, integrated
	Managing the operation of a water	use of water resources and their protection.
	treatment plant, water pumping	Organization and methods of hydrological
	station, and wastewater treatment	observations and research.
	equipment.	- However, the distribution of existing equipment to
		production facilities is not effective, which means
		that the production of work does not meet the
		planned deadlines, the volume of work is not fully
		performed and with increased energy consumption.
		- To define the properties of minerals, the
		composition and nature of origin, igneous,
		sedimentary and metomorphic types of rocks.
		geochronology the origin of groundwater their
		physical and chemical properties
Profession	al competencies	Learning outcomes
MC12	Modulo 6 Hydrotochnics	Determine water filtration in the area of
IVIC12	Dianning propagation and material	- Determine water initiation in the area of
	Planning, preparation and material	nydrotechnical instantations. Sustainability and
	and technical support of construction	strength of water retaining structures. Danis: earth,
	and repair work on water supply,	concrete, reinforced concrete, wooden. water
	drainage and treatment facilities	overnow structures at dams: spillways, outnows,
		culverts.
		- Describe water management areas in Kazakhstan.
		General information on water supply; agricultural
		water supply systems and schemes; norms and
		methods of its improvement; water lifting
		equipment, structures and external water supply
		networks, pasture and field water supply, pasture
		watering.
		- Reveal the topic of water resources and their
		possible use. Renewable water resources. Problems
		of modern water supply and compensation of

MC13	Module 7 - Management of hydromelioration systems Organization of works on assessment of meliorative condition of lands and rational use of water resources.	<ul> <li>harmful effects of water.</li> <li>Use methods and techniques of economic analysis in water. Types of economic analysis. Management and financial analysis. Analysis of capital return, material intensity and labor productivity in water resources.</li> <li>Formulate the organization of works on irrigation (drainage) of agricultural fields using melioration systems.</li> <li>To reveal the causes of imbalance and destruction of the natural system in the conditions of human anthropogenic activity, to fix in the minds of</li> </ul>
MC14	Module 8 – Recultivation and land protection Organization of agrotechnical and reclamation norms and requirements aimed at protecting and reclaiming land	<ul> <li>students about the primary laws of nature.</li> <li>implementation in practice of agrotechnical and land reclamation norms and requirements aimed at protecting and reclaiming land;</li> <li>To highlight the methods of compiling water management balances, water management and water-energy calculations. Pay attention to the creation of water management systems, their economic justification and management. Consider the issues of protecting water resources from pollution and depletion;</li> <li>a theoretical review of modern ideas about formations that are formed during the interaction of natural objects with artificial, natural and technical systems</li> </ul>
MC15	Module 9 - Organization and management Organization of work to ensure the safety of land melioration systems and implementation of environmental measures	<ul> <li>To tell about legal regulation of relations in the field of all types of land reclamation, improvement of meliorative state of irrigated lands.</li> <li>Compile general information and features of building materials and construction. Raw materials and manufacturing. Application of obtained materials and structures in construction of water management systems depending on their properties.</li> <li>Define the concept of methodology for research of the water sector, melioration and land protection. Problems of science in the development of methods of research to preserve the fertility of agricultural land.</li> </ul>

dy		Nun	nber of stu disciplines	died			Number	of credits			ş	ing	Numbe r	Diff.off set
Course of stu	Semester	CC	UC	OC	Theoretical training	Physical Training	<b>Productional</b> <b>Practice</b>	Pregraduation practice	Final attestation	Total	Total in hour	Military train	Exam	
1	1	4	1	1	30					30	900		6	
	2	4	2	-	27	3				30	900		6	1
2	3	1	2	3	30					30	900		6	
	4	3	1	1	22		8			30	900		5	1
3	5	-	2	3	30					30	900		5	
	6	-	2	3	25		6			31	930		5	1
4	7	-	2	3	26		4			30	900		5	1
	8	-	-	2	14			4	12	30	900		2	1
Tot	al	12	12	16	204	3	18	4	12	241	7230	588	40	5

## 5. Summary table showing the volume of loans disbursed by modules of the educational program: Number of modules-5

## Annex 1

# Annex to EP

# **Discipline information**

N⁰	Name of the	Brief description of the discipline	Number	Formed
	discipline	( <b>30-50</b> words)	of credits	competencies
				(codes)
	Cener	al education subjects cycle /Core con	nponent	
1	History of Kazakhstan	The main stages of the history of modern Kazakhstan; problems of formation and development of independent statehood in Kazakhstan, spiritual culture; contribute to the formation of a civil position of students, the ability to navigate the events of the internal life of the state and international	5	MC 1
2	Philosophy	The nature of philosophical5knowledge, its role in the formation5of spiritual and moral valueorientations in social andprofessional activities; to form theideological and theoretical andmethodological foundations of thestudent's thinking culture; the basicprinciples, categories and laws of		MC 1
3	Foreign language	prinosophy.Introduction to the subject area of the specialty in a foreign language. Requirements for the level of foreign language proficiency. Foreign language as a disciplinary phenomenon in the theory of language teaching. Fundamentals of the formation of mastering special subject-language material in water and agriculture. Training in oral and written foreign-language professional and technical communication in the water sector. Means of implementing speech		MC 1
4	Kazakh (Russian) language	Expanding the lexical minimum of common words and phrases, mastering grammatical forms and constructions at the level of their use in speech. Mastering the lexical and terminological minimum in the specialty.	10	MC 1
5	Information and Communication Technologies (in	The role of information and communication technologies in key sectors of society's development.	5	MC 1

	English)	Standards in the field of information		
	2	and communication technologies		
		Introduction to computer systems		
		Architecture of computer systems		
		Software Operating systems.		
		Database system Data analysis		
		Data management Networks and		
		telecommunications Cybersecurity		
		Internet technology		
6		Social and political knowledge modul	e(Social	
0	Stud	lies.Political Studies. Cultural Studies	(Bochal (Bychology)	
	Social	Object and subject of sociology.	2	MC 1
	Studies	The main stages and directions of	_	
		development of sociological		
		thought The social structure of		
		society Stratification models of		
		social inequality Personality as an		
		object and subject of social		
		development Sociology of work		
		Sociology of religion Problems of		
		employment and its regulation		
		Sociology of family and marriage		
		Methodology methods and		
		techniques of sociological research		
	Political Studios	Political science as a science of	2	
	1 ontical Studies	political science as a science of	2	
		formation Power domination		
		logality Political alitas and political		
		leganty. Fontical effets and pointical		
		readership. The pointcar system of		
		society. Fontical regime. Civil soci-		
		Political development in the context.		
		of modernization theory. Political		
		ideologica Dolitical problems of		
		acuarcian Kazalihatan World		
		sovereight Razaklistan. wond		
	Culturel Studies	Theoretical and concentual founda	2	
	Cultural Studies	tions of cultural studies. Object and	Ĺ	
		tions of cultural studies. Object and		
		subject of cultural studies. The main		
		stages of cultural development.		
		Primitive culture is the cradie of		
		culture. Ancient culture-the		
		beginning of classical culture. The		
		middle ages-features of Western		
		European culture and the culture of		
		the Arab Caliphate. The Era Of The		
		Italian Renaissance. Humanism and		
	D11	the age of Enlightenment.	2	
	Psychology	History of origin and development	2	
		or psychological science. Branches		
		of psychology. The general concept		
		ot the psyche. Methods of		
		psychology research. Personality		

7	Physical Training	and activity. Informative psychic processes. Individual-psychological and emotional-volunteer features of personality. Temperament. Character. Ability. Emotions and feelings. Desire. Physical culture as a part of	8	MC 1
		universal culture, healthy lifestyle, its main components, social and biological basis of adaptation of human organism to physical and		
		mental activity, preparation for independent physical culture and sport, age physiology, self-control of physical condition,		
		culture and sport, hygiene.		
	Ceneral	education subjects cycle/ Optional co	omponent	
8	Law and anti- corruption culture	The concept of theories of state and law, their features. Basic theories about the origin of state and law	5	MC 1 LO-1,2
		Objective law and subjective law. Connection of law with politics, morality and Economics. Functions		
		concepts of the legal system, the system of norms and law. The		
		characteristics and types.		
9	Economy	Economics examines and explores	5	MC 1
		the fundamental problems of the		LO-1,14
		functioning of the economy, the		
		development patterns of individual		
		reproduction (microeconomics),		
		reproduction at the national		
		economy level (macroeconomics),		
		mesoeconomic and the world		
10	Ecology	It gives theoretical knowledge in the	5	MC 1
		field of ecology, promotes		LO-2,14
		environmental literacy of students,		
		forms ecological thinking, as well as		
		in professional and other activities.		
11	Vital Security and	Provides theoretical knowledge in	5	MC 1
	Environment	the field of ecology, promotes		LO-2
	Protection	environmental awareness of		
		thinking as well as the ability to		
		apply this knowledge in professional		
		and other activities.		
	Core subjects cycle / University component			

12	Mathematics	The mathematics course is the basic foundation of mathematical education of a specialist. Sections (linear algebra, vector algebra, analytic geometry, elements of mathematical analysis, probability theory and elements of mathematical statistics) contain modern methods of analysis and are	5	MC 7 LO-3
		tocused on application of mathematical methods in applied tasks.		
13	The engineering geodesy	A science that studies the shape and dimensions of the surface of the Earth or its individual areas by means of measurements and their computational processing, building plans, maps and profiles, which are used in solving engineering, economic and other problems. Geodesy is of great importance in conducting the state land cadastre, to provide information about the land in order to organize its rational use and protection, regulate land relations, land management, substantiate the amount of payment for land, and evaluate economic activities.	5	MC 7 LO-4
14	The engineering hydrometry	Modern instruments and hydrometric units are described. New aspects of river hydrometry and hydrology related to the current system of state water accounting and water cadastre maintenance are described. Various options for regulating flow and its economic efficiency are highlighted. The complex of scientific, methodical and technical measures on metrological support of the hydrological network is considered.	5	MC 11 LO-7,13
15	Land reclamation	Various types and methods of irrigation and methods of impact on natural processes, methods and technical means of regulation of land melioration regimes are considered. The meliorative condition of lands shall be analyzed and assessed, and the causes and degree of its non-compliance with the requirements of land use shall be established. Attention is paid to	6	MC 14 LO-8,11,12

				1
		irrigation systems and networks,		
		their constructions and calculation.		
16	Hydraulics	Issues of hydrostatics and	8	MC 10
		hydrodynamics, practical		LO-5,14
		application of the laws of		
		hydraulics, in addition, for the		
		successful study of the course there		
		are laboratory classes, in which the		
		student has the opportunity to		
		observe all the phenomena		
		occurring.		
17	Meleorative soil	Origin, development, structure,	6	MC 10
	science	composition, properties,		LO-7
		geographical distribution and soil		
		management. Explores the role of		
		soil in biosphere processes, factors		
		and conditions of soil formation,		
		main soil processes, lithosphere,		
		biosphere environment, zoning law,		
		main types and properties of soils		
		and geographical zones.		
18	Meliorative farming	Requirements of plants to factors	5	MC 9
		and living conditions of plants, laws		LO-8,12
		of agriculture and farming system of		
		reclaimed lands. Fertilizers of		
		reclaimed lands, their values and		
		species are analyzed and assessed.		
		Attention is given to weeds, pests,		
		diseases and their control, biological		
		bases of agricultural crops irrigation.		
19	Special types of	Special types of melioration used in	5	MC 11
	melioration	the agro-industrial complex and in		LO-8
		the development of environmental		
		measures to prevent, reduce or		
		eliminate the negative effects of		
		anthropogenic impacts are		
		considered. The attention is given to		
		liman irrigation, irrigation of		
		cultural pastures. The peculiarities		
		of irrigation by waste water are		
		highlighted.		
	C	ore subjects cycle / Optional compon	ent	
20	Chemistry	The basic concepts and laws of	5	MC 7
		chemistry. The basic classes of		LO-3
		inorganic compounds. Periodic Law,		
		D.I. Mendeleev's Periodic System.		
		State of chemical equilibrium, Le		
		Chatelier-Brown principle. Liquid		
		state of the substance. Ways of		
		expression of concentrations of		
		solutions.		
21	Hydrochemistry	Formation of ideas about	5	MC 7
	_	regularities of changing chemical		LO-3

		composition of natural waters in		
		space and time, methods of studying		
		these regularities.		
22	Descriptive geometry	Solve problems by means of the	5	MC 8
	and engineering	images received by a method of		LO-3,14
	graphics	parallel projection; apply rules of		
		uniform system of the design		
		documentation; read and detail the		
		drawing of a general view.		
23	Drawing and	The method of projection and	5	MC 8
	descriptive geometry	projection with numerical marks.		LO-3,14
		Point, line, plane and surface		
		projections with numerical marks.		
		Epture of a point, line, plane.		
		Methods of projection		
		transformation. Epurus of the		
		surface. Deployment of the surface.		
		The general rules of drawing		
		execution. Geometrical drawings.		
24	Business ethics	Studying the discipline will allow	5	MC 8
		the student to:		LO-1,14
		- master the basic knowledge of		
		ethical standards in the field of		
		business relations;		
		- to form the students ' concepts of		
		ethics of official behavior and		
		actions of the manager;		
		- implement knowledge about the		
		values and norms of business ethics		
		in specific practical activities;		
		- solve ethical problems of business		
		life and bear moral responsibility for		
		them		
25	Business	The discipline "Business	5	MC 8
	correspondence	correspondence" is designed to		LO-1,14
		teach students the basics of official		
		correspondence. The course		
		program contributes to the		
		formation of students ' skills to		
		translate and compose various types		
		of correspondence in the field of		
		Economics, foreign trade and		
		financial activities, as well as the		
		skills to create written and oral		
		academic texts		
26	Fundamentals of	Study of bases of the automated	5	MC 8
	computer-aided design	preparation of a graphic part of		LO-5,12
	of reclamation systems	design documents in the		
		environment of AutoCAD, will		
		learn to carry out a vectoring.		
27	Digital processing of	Modern technologies of	5	MC 8
	information	development and analysis of		LO-4,12

		information and offective matheda		
		information and effective methods		
		of information processing using		
		modern computers; as well as the		
		formation of information systems in		
		the field of production, processing.		
28	Technical mechanics	Basic concepts and axioms of	5	MC 7
		mechanics; methods of		LO-3
		transformation of systems of forces;		
		conditions of equilibrium of solid		
		bodies under the action of forces;		
		methods of point motion setting.		
		determination of its speed and		
		acceleration: progressive rotational		
		and flat motion of the body.		
		complex motion of the point		
20	Mechanical	Engineering mechanics is a branch	5	MC 7
2)	anginaaring	of mechanics that is the science of	5	
	cligineering	machanical motion and machanical		LO-3
		international of material hadias		
		Encircular and the second seco		
		Engineering mechanics describes		
		the basic laws and principles of		
		mechanics and studies the general		
		properties of motion of mechanical		
		systems.		
30	Fundamentals of	Formation of future specialists '	5	MC 9
	geology and	knowledge and practical skills about		LO-7
	hydrogeology	geology and hydrogeology. Study of		
		the structure and properties of the		
		Earth and the earth's crust, rock-		
		forming minerals and rocks.		
31	Groundwater	Familiarization with the complex of	5	MC 9
	prospecting and	techniques and methods by which		PO-5
	exploration	underground water exploration is		
	<u>F</u>	carried out their reserves are		
		identified as well as quantitative		
		and qualitative assessment of		
		underground water for solving		
		various economic problems		
27	Climatology and	The discipline studios the	5	MC 10
52	meteorology	composition structure and processes	5	
	meteorology	composition, structure and processes		LO-7
		occurring in the atmosphere, factors		
		and processes of climate formation,		
		causes of chinate change, principles		
		and classifications of climate,		
		Earth's climate.	~	10 10
33	Hydrometeorology	The discipline studies climate as the	5	MC 10
		most important environmental		LO-7
		factor. Ecological features of the		
		atmosphere as a habitat. The role of		
		the climate regime in the formation		
		of the ecological state, monitoring		
		of changes in the ecological and		
		climatic condition, anthropogenic		

		• • •		
		impact and ways to overcome		
		environmental crises associated with		
		climate change and air pollution.		
34	Meliorative pumping	General information about pumps,	5	MC 10
	units	pumping units and pumping		LO-9
		stations; especially to consider in		
		detail vane pumps; to reveal for the		
		future specialist the concept of		
		"pump station hydrosystem", to		
		disassemble elements included in it,		
		schemes of pump stations		
		hydrosystems on irrigation, drainage		
		systems with different water intake		
		and water supply methods.		
35	Meliorative pumping	Teaching about pumps, pumping	5	MC 10
	stations	units, pumping units and pumping		LO-9
		stations used to supply water for		
		domestic and drinking water supply		
		and in the irrigation system for		
		irrigating crops on irrigated lands.		
36	Technology of land	Methods of conducting, safety and	7	MC 11
	reclamation works	rules for handling devices when		LO-6
		conducting hydrometric works on		
		rivers. The distribution of available		
		equipment to production facilities is		
		not efficient which means that the		
		production of works does not meet		
		the planned deadlines the volume of		
		work is not fully performed and		
		with increased energy consumption		
37	Land reclamation and	Technical and operational	7	MC 11
51	construction works	characteristics of modern tracked	,	LO-6
	construction works	and wheeled tractors are considered		LO 0
		Machines for processing reclaimed		
		land Machines for cultural and		
		technical works Farthmoving and		
		transporting machines Gutters and		
		canal diggers Machines for field		
		irrigation		
38	Hydrology and flow	Hydrology knowledge about the	5	MC 12
50	regulation	factors and patterns of river flow	5	I O 13
	regulation	formation: ragimas of rivers lakes		LO-15
		swamps: methods and technical		
		means of measuring and		
		determining the main hydrological		
		abaracteristics of streams and		
		characteristics of streams and		
		and methods of angingering		
		and methods of engineering		
		alculations		
20	Deculation of sizes	The main tools of received rises	5	MC 12
39	kegulation of river	the main task of regulating river	5	MC 12
	Deas	channels is to change channel		LO-13
1		processes with the help of various	1	

		F		
		structures and devices in such a way		
		that as a result a more stable channel		
		is formed, which retains its shape		
		and dimensions for a long time with		
		minimal operating costs.		
40	Basics of construction	Considers construction materials	5	MC 14
10		and publications recommended for	5	I O-6 11
		hydromaliorative construction row		LO-0,11
		mydromenorative construction, raw		
		materials for their production, the		
		main construction and technical		
		properties of materials, the scope of		
		application, methods of		
		transportation and storage. General		
		information about buildings and		
		structures of hydromeliorative		
		purpose, their construction is given.		
41	Bilding materials and	The article deals with the materials	5	MC 14
	constructions	of the product recommended for the	5	I O-6 11
		construction of buildings and		LO-0,11
		structures for hudrotechnical		
		structures for hydrotecnnical		
		purposes, raw materials for their		
		production, basic physical,		
		mechanical and chemical properties,		
		application, methods of		
		transportation and storage. Features		
		of structural solutions of buildings		
		and structures of hydro-reclamation		
		purpose, load and impact on them.		
		as well as the concept of economic		
		efficiency of structures are given		
		pior subjects evelo / University compo	nont	
42	Iludrotochnicol	Example is a second shift of the second shift	5	MC 12
42	Hydrotechnical	Formation of professional skills for	5	MC 12
	structures	design and calculation of hydraulic		LO-10,14
		structures on the land reclamation		
		network, give skills for modeling		
		and construction and operation of		
		water intake facilities and reservoir		
		hydrosystems.		
43	Complex use of water	The main water consumers, their	7	MC 12
	resources	features, requirements for water		LO-13.14
		sources and influence on other water		7
		consumers are considered Methods		
		of drawing up water management		
		balances water management and		
		balances, water management and		
		water-energy calculations are		
		highlighted. Attention is paid to the		
		creation of water management		
		complexes, their economic		
		justification and management.		
		Issues of protection of water		
		resources from pollution and		
		depletion are considered.		
44	Operation and	Studies the skills of effective use of	6	MC 13

	automation of	water and land recovered an exciting		10.12
	automation of	water and land resources, operation		LO-12
	reclamation systems	of hydro-melloration systems and		
		structures on them, solve the main		
		problems of water production from a		
		scientific and creative point of view,		
		correctly operate water facilities,		
		plan and correctly evaluate water		
		resources, implement water-saving		
		irrigation technologies		
15	Reclamation and land	It is of applied importance for	5	MC 13
-15	protection	implementation in practice of	5	I O 8 14
	protection	agricultural and malioration norms		LO-0,14
		agricultural and menoration norms		
		and requirements anned at		
		protection and renabilitation of		
		lands. Mastering the discipline will		
		help students to form the necessary		
		knowledge and practical skills,		
		sufficient for their future activities,		
		and allow them to independently		
		master new knowledge in the field		
		of agronomic science.		
		Major subjects cycle/ Optional com	ponent	
46	Agricultural water	Systems and schemes for	5	MC 12
	supply and irrigation of	agricultural water supply, water		LO-10,14
	pastures	lifting equipment, structures and		
	I man and	external water supply networks, the		
		most effective systems for watering		
		pastures measures to prevent water		
		shortages and the current state of		
		water resources use		
17	Management of water	Pules for the use of water supply	5	MC 12
47	supply and conitation	and sources of water supply	5	I O 10 14
	supply and samation	and sewerage systems, licensing of		LO-10,14
	systems	activities for the operation of		
		engineering systems, organization of		
		dispatching service, reliability of		
- 10		water supply and sewerage systems.		
48	Complex land	Complex meliorations are	5	MC 13
	reclamation	considered - the basis of nature		LO-12
		management. Problems of nature		
		management and environmental		
		management in the system of		
		agricultural land melioration.		
		Theoretical foundations of		
		agricultural land melioration.		
		Ecological principles of agricultural		
		land melioration.		
49	Management natural	It is considered in theoretical	5	MC 13
	and technical complex	knowledge of methodology of	-	LO-11.14
		management of objects of the nature		·,• ·
		management and water use with		
		application of the system approach		
		and mathematical modeling: applied		
		knowledge in the field of		
1		interse in the new Of		

		development of forms and methods of management of natural- technogenic complexes.		
50	Design of melioration systems	Effectively design meliorative systems, solve the main problems of water-cooling design from a scientific and creative point of view, correctly design water facilities, be able to plan and assess the water resources of the Republic of Kazakhstan, to preserve the ameliorative resources of irrigated areas, determine the economic efficiency of meliorative measures.	7	MC 14 LO-12,14
51	Automation of melioration systems	Studies automation of water accounting and distribution, principles of hydroautomatics, use of reserves of hydraulic energy of water flow for automation and process control of elements of hydraulic structures.	7	MC 14 LO-12,14
52	Basics of environmental engineering	Covers the issues of forecasting and modeling of natural processes. The methods of types of environmental engineering systems and their stages of creation and operation of business assessment of environmental engineering projects are described. This discipline covers issues of forecasting and modeling of natural processes. Methods of types of engineering systems of ecological engineering and their stages of creation and functioning of business assessment of ecological engineering projects are described.	6	MC 14 LO-13
53	Basics of nature management	Mastering the basics of nature management. Learn to predict the activities necessary for the arrangement of nature. The discipline is closely connected with land management, ecology of land use, geography, monitoring of agrarian nature use, etc.	6	MC 14 LO-13

## **Practice bases**

N⁰	Name of companies, enterprises,	Contacts
	organizations	Tel, e-mail
1	LLP "Institute of Geography"	Almaty, Kabanbai Batyr/Pushkina 67/99
2	GU "Kazselezashchita" of the	Almaty, Kaldayakov str., 70, +7(727) 2912755
	Ministry of Emergency Situations of	
	the Republic of Kazakhstan	
3	D. Kunaev TANK RSE	Almaty region, ul. Melioratornaya, 1A 8 (72737)
	"Kazvodkhoz"	1 80 00
4	Design Institute of PC	Almaty, 434 Seifullin Ave., 8 (727) 2793522
	"Kazgiprovodkhoz"	
5	GKP "Almaty Su"	Almaty, 196 Zharokov str., 8 (727)2276001
6	Branch of RSE on PVC	Almaty, 32 Abay Ave. 8 (727)2676464
	"Kazhydromet" Ministry of Energy of	
	the Republic of Kazakhstan	
7	East Kazakhstan branch of RSE	Ust-Kamenogorsk, Kazakhstan str., 99/1
	"Kazvodkhoz"	
8	Kyzylorda branch of RSE	Kyzylorda, Tole bi str., 66, 8 (7242) 233250
	"Kazvodkhoz" KVR MAGiPR RK	
9	Zhambyl branch of RSE	Zhambyl region, Taraz, Zhaugash Batyr str., 1a,
	"Kazvodkhoz" KVR of the Ministry	8 (7262) 425490
	of Agriculture of the Republic of	
	Kazakhstan	
10	Turkestan branch of RSE	Shymkent, Mukhamed Haidar Dulati str., 5
	"Kazvodkhoz" KVR MAGiPR RK	8 (7252) 54 87 37
11	RSU Aralo-Syrdarya BVI KVR	Kyzylorda, Amangeldy str., 107, 8
	MAGiPR RK	(7242)235607
12	Balkhash-Alakol BVI KVR MAGiPR	Almaty, Abylai Khan Ave., 2, 8 (7272)453253
	RK	
13	MAEKKazatomprom LLP	West Kazakhstan region, Mangystau region,
		Aktau
		8 (7292)564208
14	" Zonal hydrogeological and	Almaty, Zhetysu district, 113 Baisheva Street
	reclamation center»	8 (727) 264 26 29
15	State enterprise "Kostanay Su»	Kostanay region, Kostanay, Abay street 19
1.6		8(7142)222500
16	LLP "Design Institute named after Zh.	Almaty region, Taldykorgan, D. Konaev str., 20
17	R. Dzhanekenov"	
17	LLP "Water resources-Marketing"	Shymkent, G. Ormanov str., 17, 8 (7252) 321
10		
18	Panfilov production site of the Almaty	Almaty region, Zharkent, Golovatskogo str.,
	Dranch of the KSE "Kazvodkhoz"	290, 8 (72831) 9 40 12
10		
19	KSE "Kazvodkhoz»KVR MAGiPR	Nur-Sultan, Pushkin street, 25, 8 $(7172)$ 24 85
20	SCC Taza Su-2014»	Znambyl region, T. Ryskulov district, Kulan
21	CKD II Alakalimis stisuu	Village, K. Asylov str., 54
21	GKP Alakolirrigation»	Almaty region, Alakol district, Usharal, V.
		10sncnenko str., 19, 8 (/2833) 3 52 /1

22	GKP "Turkestan-Su"	Turkestan region, Turkestan, S. Erubayev str.,
		255, 8 (72533) 4 21 92
23	Kegens district " Department of	Almaty region, Kegen region, Kegen village, B.
	Housing and Communal Services and	Momyshuly str., 9, 8 (7277) 721475
	housing Inspection»	
24	KGP "Ayagoz Su"	East Kazakhstan region, Ayagoz, 61 Barak batyr
		str., 8(7223)730301
25	«Uralvodproekt» LLP	WKO, Uralsk, ul. Hamid Churin, 119, 8 (7252)
		535057
26	Kyzylorda branch of RSE	Kyzylorda region, Kazalinsky district, Aiteke bi
	"Kazalysushar»	str., 1, 8 (724) 3851687
27	GKP " Kapshagai Su Arnasy»	Almaty region, Kapchagai, Koichumanov street,
		4, 8 (72772) 4 19 48
28	KGP "Balkhash Su»	Karaganda region, Balkhash, Sabitova MKR,
		18b, 8 (71036) 65490