

# Environmental Monitoring Report

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Project Number: 48424-002  
December 2018

## KAZ: CAREC Corridors 1 and 6 Connector Road (Aktobe–Makat) Reconstruction Project

Prepared by the Dongsung Engineering Co., Ltd in association with subconsultant Zhol-Sapa LLP for the Ministry of Investments and Development, Republic of Kazakhstan and the Asian Development Bank.

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# Semi-Annual Environmental Monitoring Report

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Project No.: 3416-KAZ  
Reporting Period: July-December 2018

**REPUBLIC OF KAZAKHSTAN: CAREC Corridors 1 and 6 Connector “Aktobe-Makat” Road  
Reconstruction project (section 160-330)**

Funded by ASIAN DEVELOPMENT BANK

Prepared by DONGSUNG ENGINEERING CJ., LTD / ZS ENGINEERING Construction Supervision  
Consultant

Seoul, Korea / Astana, Kazakhstan

For the Committee of Roads of the Ministry of Industry and Infrastructure Development of the  
Republic of Kazakhstan

Approved by: PMC JSC “NC “KazAvtoZho” – Zeinullina A.A.  
(PMC employee name) and signature, report submission date

## CONTENT

1	INTRODUCTION.....	4
1.1	Preamble.....	4
1.2	Key information.....	4
2	PROJECT DESCRIPTION AND CURRENT ACTIVITIES.....	5
2.1	Project description .....	5
2.2	Contracts for project implementation and management .....	7
2.3	Project Activities During the Current Reporting Period .....	9
2.4	Description of Any Design Changes.....	12
2.5	<b>Description of Any Changes in Agreed Construction Methods .....</b>	<b>12</b>
3	ENVIRONMENTAL PROTECTION ACTIVITY (PROTECTIVE ENVIRONMENTAL MEASURES) .....	13
3.1	General Description of Environmental Protection Activities .....	13
3.2	On-site audit (site visit) .....	13
3.3	Problem Tracking (Based on Non-Compliance Notifications) .....	14
3.4	Tendencies (general directions) .....	16
3.5	Unforeseen environmental impacts or risks .....	16
4	RESULTS OF ENVIRONMENTAL MONITORING .....	18
4.1	<b>Overview of monitoring conducted during the current period .....</b>	<b>18</b>
4.1.1	Environmental measurements on Lot 1 site.....	18
4.1.1.1	Noise and vibration .....	18
4.1.1.2	Soil.....	19
4.1.1.3	Water quality.....	23
4.1.1.4	Air quality.....	24
4.1.2	Environmental measurements on Lot 2 site .....	25
4.1.2.1	Noise and vibration .....	25
4.1.2.2	Soil .....	26
4.1.2.3	Water quality .....	29
4.1.2.4	Air quality .....	30
4.1.3	Environmental measurements on Lot 3 site .....	33
4.1.3.1	Noise and vibration .....	33
4.1.3.2	Soil .....	33
4.1.3.3	Water quality .....	35
4.1.3.4	Air quality .....	35
4.2	Tendencies (general directions).....	42
4.3	Summary of monitoring results .....	43
4.4	Use of Material Resources .....	43

4.4.1	Current period.....	43
4.4.2	Cumulative use of resources.....	43
4.5	Waste management .....	44
4.5.1	Current period .....	44
4.5.2	Cumulative waste generation .....	45
4.6	Health and safety .....	<b>45</b>
4.6.1	Public health and safety .....	<b>45</b>
4.6.2	Workers health and safety.....	<b>45</b>
4.7	Education (training).....	<b>46</b>
5	FUNCTIONING OF THE SEMP (SEMP (SITE-SPECIFIC ENVIRONMENTAL MANAGEMENT PLAN).....	47
5.1	SEMP review .....	<b>47</b>
6	ADVANCED METHODS AND OPPORTUNITIES FOR THEIR IMPROVEMENT .....	48
6.1	Advanced methods (good practices) .....	<b>48</b>
6.2	Opportunity for improvement .....	<b>49</b>
7	BRIEF SUMMARY AND RECOMMENDATIONS .....	50
7.1	Summary .....	<b>50</b>
7.2	RECOMENDATIONS.....	52
	Attachments .....	53
	Photos (with printed dates)	
	Monitoring data	

#### ABBREVIATIONS

RK - Republic of Kazakhstan

MIID - Ministry of Industry and Infrastructure Development

COR- Committee of Roads

KAZH- JSC “National Company “KazAvtoZhol”

ADB - Asian Development Bank

CAREC - Central Asian Regional Economic Cooperation

PMC - Project Management Consultant

CSC- Construction Supervision Consultant

ECP- Environmental Control Program

EMP- Environmental Monitoring Plan

EMP - Environmental Management Plan

SEMP –Site-specific Environmental Management Plan

MPC - Maximum Permissible Concentration

MPL - Maximum Permissible Level

HS - Hygienic standard

SPZ- Sanitary Protection Zone

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■ **INTRODUCTION**

■ ■ **Preamble**

- This report is a semi-annual review of environmental monitoring under CAREC corridors 1 and 6 connector “Aktobe-Makat” road reconstruction project (section 160-330, Lot 1-3) and the second semi-annual report of the project.

■ **Key information**

- On the Lot 3 site, Km 300 , a new Asphalt-concrete plant with a capacity of 240 tons per hour, as well as a new Concrete plant, were installed. A railway dead end, km 300, was also constructed for delivery of aggregate materials. Crushed stone for road pavement layers was delivered from Karaulkeldy village, which is located 60 km from the site. Laying of asphalt concrete (top layer of the base, highly porous asphalt concrete with thickness of 12 cm) was began only from the 1st of November due to the interruption of crushed stone supply. The reasons for the interruption are absence of a dead end in Nogaity village, as well as lack of readiness of the planned period of the dead end which was constructed by the Contractor.

## PROJECT DESCRIPTION AND CURRENT ACTIVITIES

### Project Description

- Aktobe-Makat road is a two-lane road of republican significance and was built in 1970-1980. The length of the section is 459 km, basically road has category III/IV, and passes through the territory of Aktobe and Atyrau regions. A complete reconstruction of the pavement with the strengthening of its structure will reduce travel time on the road, fuel consumption of vehicles and cost of vehicles operation on the road, and also increases transport links and economic development of the region. The road will be reconstructed according to the standards for category II in accordance with the national standard of the Republic of Kazakhstan.



Figure 1. Location of project road

- The project is financed by the Asian Development Bank (ADB) in the framework of loan 3416. ADB and the Government of the Republic of Kazakhstan jointly finance this project in the ratio of 88% to 12%.
- The proposed project includes reconstruction of the Aktobe-Makat road section km 160 - km 468, including: (i) km 160 - km 330 in Aktobe region; and (ii) km 330 - km 468 in Atyrau region.
- The length of this project road subject to upgrade and reconstruction is about 299 km of II technical category with an increased level of safety.
- The entire Aktobe-Makat section, 299 km long, was divided into 7 lots, each of which implies a separate contract for construction work. The road section is divided into the following lots: Lot 1 (Km 160- Km 220), Lot 2 (Km 236- Km 275), Lot 3 (Km 275-Km 330), Lot 4 (Km 330-Km 370), Lot 5 ( Km 370-Km 418), Lot 6 (Km 418 –Km 458) and Lot 7 (Km 487 - Km 504).
- Lot 1: Km160 - km220 (Shubarkuduk village - Karaulykeldy village): This section includes reconstruction of road from category III to category II with a total length of 60, 833 km and construction of one bypass. A bypass of Shubarkuduk village (km 172+600 to km 181+100) will be on a new road. The Figure 2 below shows section scheme of Lot 1.



Figure. 2 Lot 1 section scheme

- Lot 2: km 236 - km 275 (Karaulkeldy village): This section includes reconstruction of road from category III to category II with a total length of 39 km and construction of one bypass. The bypass of Karaulkeldy (km 236 to km 247) (11.8 km) will pass along a new road. Other parts of this section, the direction of traffic flow coincide with existing pavement with partial slopes from the embankment in straight and curve area. In this section, the project envisages construction of 1 bridge and 1 overpass. The following Figure 3 shows the scheme of the lot 2.

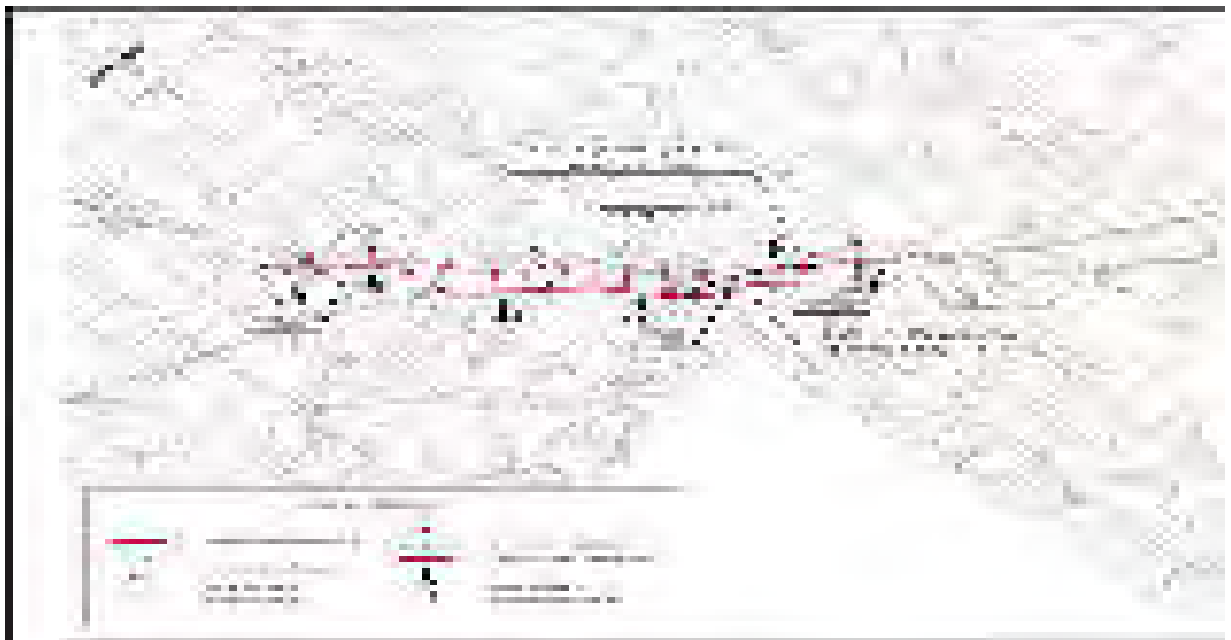


Figure.3 Lot 2 section scheme.

- Lot 3: km 275 - km 330 (Zharly v.– Nogaity v.): This section includes reconstruction of road from category III to category II with a total length of 55 km. Other parts of this section, the direction of traffic flow coincide with existing pavement with partial slopes from the embankment in straight and curve area. Figure 4 below shows Lot 3 section scheme.



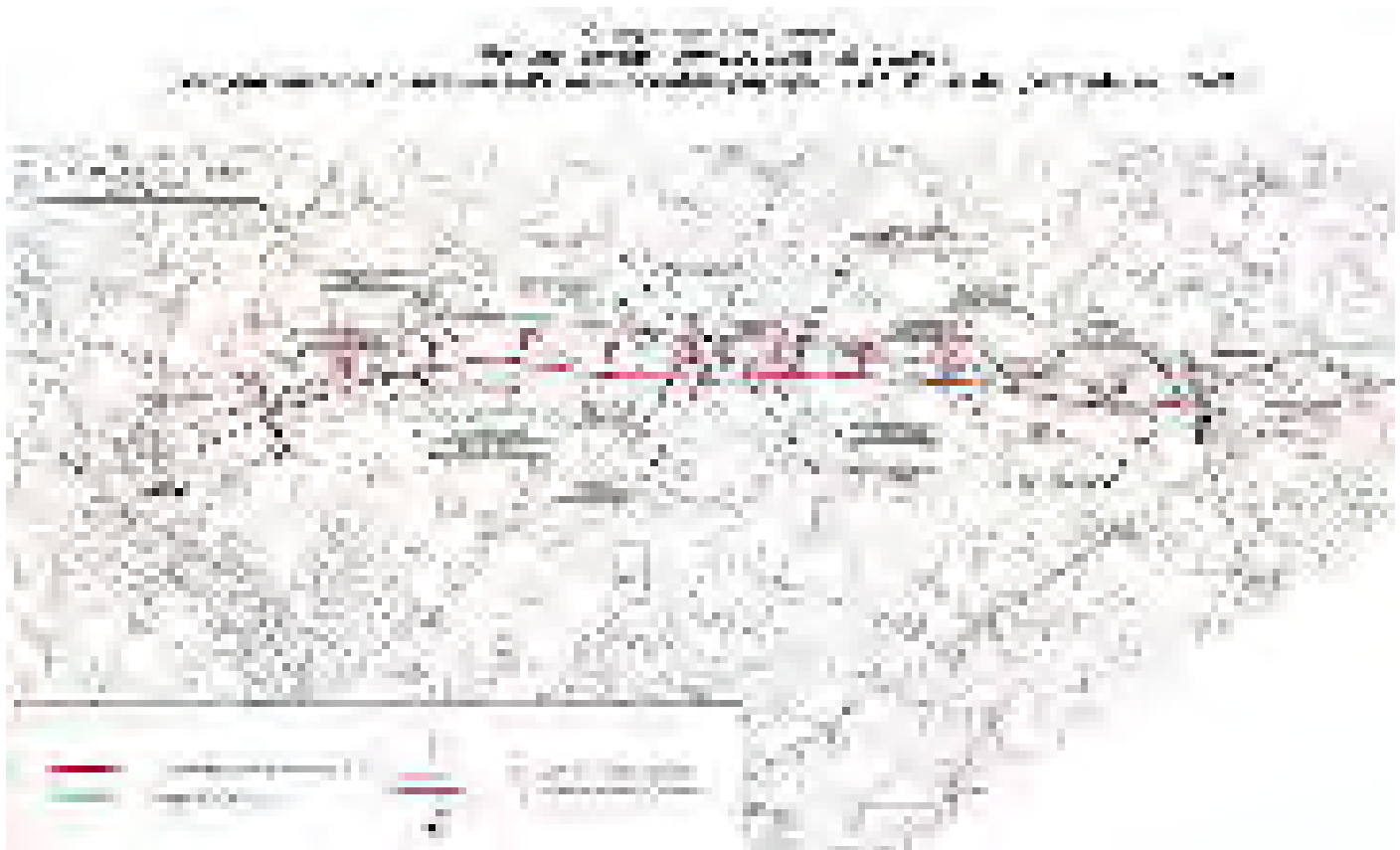


Figure.4 Lot 3 section scheme.

- **Agreements (contracts) for project implementation and management**
- COR MID entered into an agreement for services with KazAvtoZhol JSC (KAZH) for the provision of Consulting services for project management in accordance with the terms of reference acceptable to ADB and applicable under the laws of the Republic of Kazakhstan. KAZH remains fully staffed throughout Project. The responsible officer for environmental protection and protective measures conducts audits, inspections of the site, interacts with protective measures specialist of the CSC for effective project management in terms of environmental management plans implementation.
- ■ By the Decree of the President of the Republic of Kazakhstan dated December 26, 2018 No. 806 “On measures of further improvement of public administration system of the Republic of Kazakhstan” in order to increase the efficiency of the public administration system, the Ministry of Investment and Development of the Republic of Kazakhstan was reorganized by transforming it into the Ministry of Industry and Infrastructure Development of the Republic Kazakhstan with the transfer of functions and powers: to the Ministry of National Economy of the Republic of Kazakhstan in the field of formation of the state policy for investment incentives and the Ministry of Foreign Affairs of the Republic of Kazakhstan in the implementation of state policy on investment attraction.
- ■ Regional representative from the Employer on the site is the Branch of RSE “AktobeZholLaboratory”. A list of the main organizations included in the project and related to protective measures for environmental protection (Environmental Safeguards) is presented below in Table 1.

**Table 1. List of organizations and contacts of experts related to the project Environmental Management**

Organization	Representative	Contact daya
ADB Project department/group	Nurlan Dzhenchuraev	
Committee of Roads	Ruslan Kusainov	Astana 010000/ Transport tower/ Kabanbai Batyr st. 32/1 8 778 668 70 06 r.kusainov@mid.gov.kz
RSE “AktobeZholLaboratory”	Malaev Telman	+ 7 701 37519 71 aktjollab@mail.ru
PMC JSC “NC” KazAvtoZhol”	Zeinullina Aliya Amantaevna Social and safeguards measures specialist	+ 7 701 982 66 57 a.zeinullina@kazautozhol.kz
CSC DONGSUNG ENGINEERING CJ., LTD/ LLP “ZS ENGINEERING ”	Imbarova Sara Environmental and safeguards measures specialist	+ 7 771 754 13 55 + 7 701 362 36 12 aktobe_kns1@mail.ru
JSC “Todini Kostruksioni Generali S. p. A.” (Italy) for lot 1 and lot 3	Urais Hasan Environmental specialist	8 701 956 59 86 todini_aktobe@todini.it
OJSC “ICIC Akkord” (Azerbaijan) for lot 2	Anuar Embergenov Environmental engineer	Aktobe region Bayganin district Karaulkeldy village, Kozhabay Zhazykov St., 2 A+7 701 484 08 68

- The project is divided into 3 sections. Lot 1 (Km 160-220) and Lot 3 (Km 275 - 330) were awarded to the Contractor JSC “Todini Costruzioni Generali S.p.A.” (Italy). Lot 2 (Km 236-275) OJSC “ICIC Akkord” (Azerbaijan).

**Table 2. Information about Contractors contracts**

Contractors name	Contract No.	Section (km)	Length (km)	Contract Signing Date	Work commencement date
JSC “Todini Costruzioni Generali S.p.A.” (Italy)	№ 001- ADB/CW-2017	160-220	60	07.09.2017	28.11.2018
OJSC “ICIC Akkord” (Azerbaijan)	№ 002- ADB/CW-2017	236 -275	39	16.08.2017	28.11.2017
JSC “Todini Costruzioni Generali S.p.A.” (Italy)	№ 003- ADB/CW-2017	275-330	55	07.09.2017	28.11.2018

- The Figure 5 below shows the organization chart of interaction between the structures of the Project

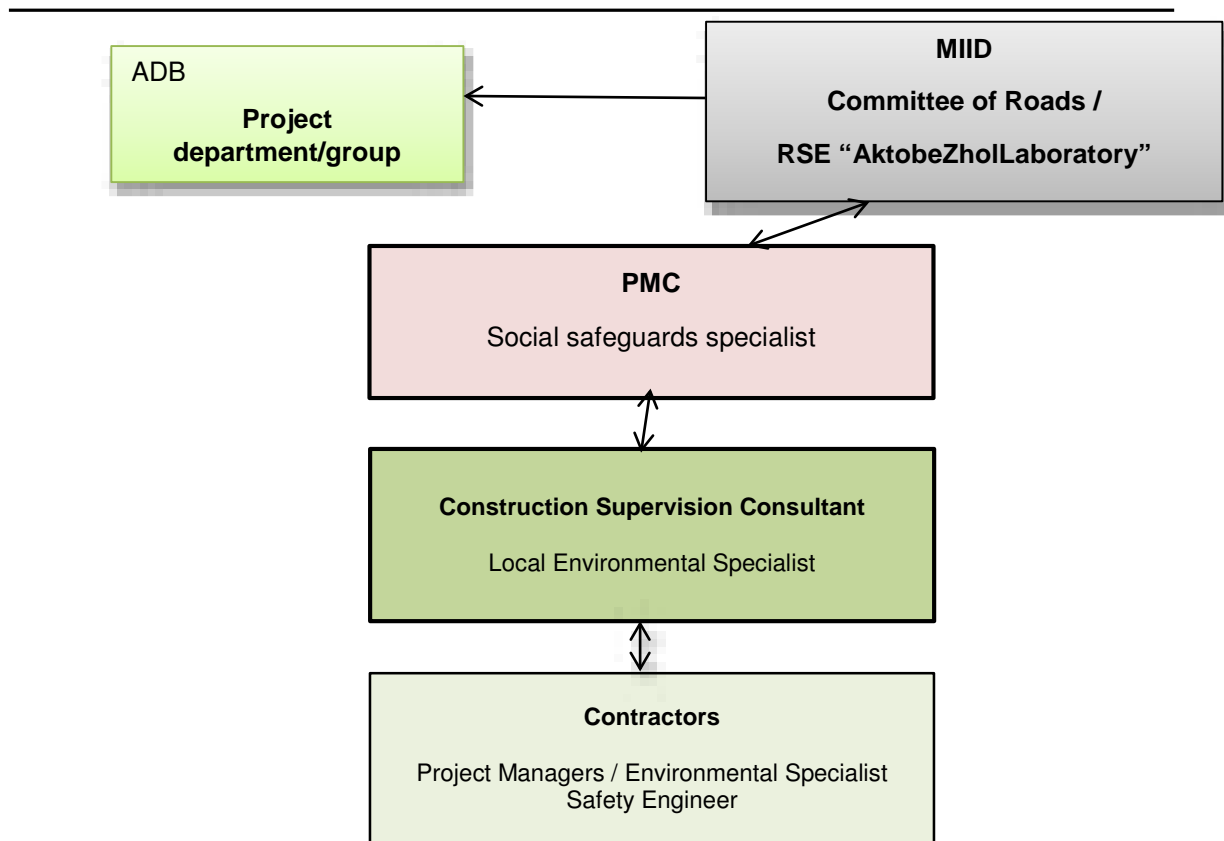


Figure 5. Organization chart of project coordination

### Project Activities During Current Reporting Period

The following types of work were performed on Lot 1 during the reporting period

- Relocation of high-voltage lines on 3 locations: Km 164,7; km 168,9; km 173,9;
- Relocation of communication lines on 6 locations: km 168,9; km 172,9; km 180,8; km 180,9; km 182,9; km 183,7;
- Dismantling of existing bridges on km 165,4; km 182,3 and on km 204,5. and two bus shelters;
- Removal of top soil, quantity 116,798 m<sup>3</sup>, Preparation of the roadbed subbase on widening road sections and the existing pavement of 652,825 m<sup>3</sup>, subgrade formation level - 455,084 m<sup>3</sup>;
- Construction of the road bed of the main road Km 160 Km 190, speed change lanes, berms, intersections and junctions, bus stops, rest areas from borrow pits 1 029 283 m<sup>3</sup>;
- Construction of bypass road and its maintenance on the section Km 160-190;
- Construction of 16 culverts on the following road sections: km 160,8; km 162,15; km 163,3; km 167,4; km 169,8; km 174; km 176,2; km 177,9; km 178,3; km 180,3; km 183,3; 185,5; km 186,2; 187,4; km 188,6; km 190,2.
- RMD Works: external water supply, sewerage, gas pipeline networks. Bricklaying work was carried out on the administrative building, the material and technical warehouse and the checkpoint.

Table 3. Status of construction work for the reporting period for Lot 1

Contractor's name and section	Work item	Unit	Total in Contract	Execution in 2018	Execution in I half year	Execution in II half year	Execution %	Balance
Todini Lot 1 (km 160 -220)	Cost	Mln. tg.	11 396,3	2 648,69	345,53	2 303,2	23,22	8 747,60
	Binder course	km	60	7,58		7,58	12,63	52,42
	Base course	km	60	8,03		8,03	13,38	51,98
	Subbase	km	60	9,96		9,96	16,60	50,04
	Additional layer (Geotextile)	km	60	12,62		12,62	21,03	47,38
	Embankment construction	th.m3	1 788	706,14	88,71	617,43	39,49	1 081,86
	Culverts construction	pcs	34	16		16	47,06	18,00
	Bridges and overpasses	pcs	3	0,85		0,85	28,33	2,15
	RMD	pcs	1	0,26		0,26	26,00	0,74
	% "of executed construction works in 2018	%	100	23,22	3,03	20,19	23,22	76,78

■ On this Lot 1, for the reporting period, the maximum number of involved people is 216, minimum 116 people. In subsequent periods, it is planned to use the same number of employees.

■ The following types of work were performed on Lot 2 during the reporting period:

- The commissioning of gas supply was completed at the base camp in Karaulkeldy Km 245.6;
- Organizational work of base camp was completed: residential buildings, canteen, clinic, temporary storage facilities for solid waste, places for repair shops and storage facilities were organized, site for production needs was expanded;
- The Engineer approved 2 subcontractors for power lines relocation and construction of road bed;
- According to the Engineer's Instructions, the Contractor submitted modified cross sections of the road for the following sections: Km 236-Km 241.3; Km 241.3- km 252.8; Km 252.8 - Km 265; Km 265 - Km 276.1
- Bitumen pit construction on the territory of the base Km 245.6;
- Works on delivery of precast concrete products for the installation of culverts and bridge structures;
- 11.28 km of bypass road are completed on the road section between Km 247.3 - Km 260.24;
- Top soil was removed with a length with 19.1 km. 11.8 km of milling completed. 577,427 m2 of subgrade were constructed, 2.8 km of formation level on the section km 256.3 to km 258.5. Construction of additional layer and geotextile with length of 2.18 km on section from km 256.3 to km 258.5;
- On Km 239, 70 piles were driven for supports 1,2 and 4. Dismantling of the existing bridge across the Karaulkeldy river continues on Km 246.7

**Table 4. Status of construction work for the reporting period for Lot 2**

Contractor's name and section	Work item	Unit	Total in Contract	Execution in 2018	Execution in I half year	Execution in II half year	Execution %	Balance
Akkord Lot 2 ( km 236 - 275)	Cost	Mln. tg.	8 012,3	1 176,0	234,41	941,6	14,68	6 836,27
	Binder course	km	40,1	1,14	0	1,14	1,14	38,96
	Base course	km	40,1	1,17	0	1,17	1,17	38,93
	Subbase	km	40,1	2,14	0	2,14	2,14	37,96
	Additional layer (Geotextile)	km	40,1	2,18	0	2,18	2,18	37,92
	Embankment construction	th.m3	1 699	685,32	7,39	677,93	685,32	1013,68
	Culverts construction	pcs	32	10	0	10	10	22,00
	Bridges and overpasses	pcs	2	0,24	0	0,24	0,24	1,76
	RMD	pcs	1	0	0	0	0	1,00
	% "of executed construction works in 2018	%	100	14,68	2,93	11,75	14,68	85,32

■ During the reporting period, Lot 2 mobilized 222 employees on a monthly basis, and in December, due to reduction of work quantities for the winter period, 88 employees were mobilized. In the upcoming period, it is planned to mobilize 33 people in winter, and about 222 people during the active construction phase.

■ Following types of construction work were carried out on Lot 3:

- Relocation of 10 kV overhead line at km 306 and 0.4 kV on Km 275,1
- Relocation of the communication line at Km 275,1 and Km 306
- Construction of temporary bypass road and its maintenance;
- Dismantling of the existing kilometer precast concrete poles and signal posts in the amount of 52 pieces;
- Milling, scarifying and removal of existing pavement and base layers 197560 m<sup>2</sup>;
- Dismantling of 10 existing culverts and their elements; Disassembly of 2 existing bridges;
- Removal of topsoil 109967,24m<sup>3</sup>. Preparation of the subgrade base at the places of road widening and existing pavement 418081 m<sup>2</sup>
- Construction of the road bed of the main road, speed change lanes, berms, intersections and junctions, bus stops, rest areas, fencing dams from borrow pits 900,418.0 m<sup>3</sup>;
- Formation level of subgrade, slopes of the embankment and excavations, bottom and slopes of road-side reserves by mechanized method of the main road, intersections and junctions, bus stops, rest areas, enclosing dams 294448.40 m<sup>2</sup>;
- Construction of 13 reinforced concrete culverts Km 275,7; 276,3; 279,4; 281,2; 283,5; 289,8; 293,6; 298,3; 298,8; 302,1; 304,9; 305,9; 309,8. Pile driving and pillar foundations on bridges;
- Work on the RMD: on-site and off-site engineering networks and construction of buildings;
- Intersection with the main oil pipeline "UPN m/r Ashikol-ZPPN m/r Taskuduk";

**Table 5. Status of construction work for the reporting period for Lot 3**

Contractor's name and section	Work item	Unit	Total in Contract	Execution in 2018	Execution in I half year	Execution in II half year	Execution %	Balance
Todini Lot 3 (km 275-330)	Cost	Mln. tg.	9 878,0	408,27 <sup>1</sup>	327,08	1 081,2	14,25	8 469,8
	Binder course	km	55					
	Base course	km	55	3,40		3,40	6,18	51,60
	Subbase	km	55	3,80		3,40	6,91	51,20
	Additional layer (Geotextile)	km	55	3,80		3,80	6,91	51,20
	Embankment construction	th.m3	1 293	604,00	113,95	490,05	46,71	689,00
	Culverts construction	pcs	22	11		11	50,00	11,00
	Bridges and overpasses	pcs	3	0,33		0,33	11,00	2,67
	RMD	pcs	1	0,17		0,17	17,00	0,83
	% "of executed construction works in 2018	%	100	14,25	3,31	10,94	14,25	85,75

- During the reporting period, maximum 218 people were mobilized for work on Lot 3, and 62 people were mobilized during periods of job cuts. Next year the same amount is expected.
- At the work sites for all Lots, there is some delay from the scheduled calendar works. But Contractor's management and CSC engineers are taking measures to reduce delays from plans.

■ **Description of Any Design Changes**

- During the reporting period, Lot 1, Lot 2 and Lot 3 did not propose changes to the project design. All EMP work is carried out in accordance with the developed SEMP based on the environmental impact assessment set out in the project EIA.

■ **Description of Any Changes in Agreed Construction Methods**

- During the reporting period, there were no significant changes in construction methods. All works are carried out according to the Work Plans.
- Changes are noted on Lot 1: replacement of the base layer with crushed stone. On Lot 2, the Engineer agreed with Contractor's proposal to change bridge design due to the inconsistency of the design size with the actual work during installation of the structures.

## ENVIRONMENTAL PROTECTION ACTIVITIES

### ■ ■ General Description of the Environmental Protection Activity (protective environmental measures)

- ■ During the reporting period, there is no change in the organizational structure of the Contractor for Lot 1 and Lot 3. Environmental specialist of the general contractor, Hasan Kurais, and environmental specialist from SMS, Kozhanov Turar, are constantly on the site. The organizational structure of the contractor for Lot 2 is also has no change. Anuar Embergenov, environmental specialist on the site.
- ■ Environmental specialists of contractors provide continuous monitoring of ongoing construction work for compliance with the environmental policies of their companies, as well as all measures provided for in the EMP. Work of these specialists is focused on the continuous monitoring and recording of the impact of certain works on the state of the environment. Continuous monitoring work ensures that deviations from the EMP are avoided or that any unforeseen negative consequences are corrected or quickly detected and eliminated. All activities specified in the EMP are included in the monitoring plans. On a monthly basis, Contractor's environmental specialists of lot 1, lot 2 and lot 3 prepare their reports on monitoring the implementation of the EMP and include them in Contractor's monthly reports since October this year.
- ■ Contractor's environmental specialists organize work for the Production Environmental Monitoring, procedure of soil and water sampling, measuring the pollution of air according to the SEMP through the involvement of specialists from certified research laboratories and inform CSC. Reports on these works are submitted to the CSC. Lot 1 and lot 3, the Engineer has approved the laboratory "Gidroresurs" LLP. Lot 2, the laboratory LLP "HydroEcoResource-L" has been approved.
- ■ Both laboratories have appropriate licenses and certificates, accreditation terms in accordance with the law. The contracts were signed for instrumental measurements according to the ECP and the subsequent preparation of EMP reports;
- ■ According to the contractual obligations, Contractor's environmental specialists of all three sites adhere to all the requirements of the environmental aspects of the contract, in particular, requirements of the General Contract Conditions, such as 4.7. Setting out, 4.8. Safety procedures, 4.13. Rights of way and facilities, 4.18. Environmental Protection, 6.7. Health and safety. Compliance with these clauses of the contract is expressed in the constant observations, consultation of environmental specialists on construction sites and documentation of the performed work.
- ■ Imbarova Sara was mobilized to the project as CSC's environmental specialist. During the reporting period, inspections were conducted for Lot 1, Lot 2 and Lot 3, and an environmental audit was conducted to eliminate noncompliances previously issued for Lot 1 and Lot 3. Also, construction process was monitored at all three sites. Contractor's environmental specialists reports were reviewed, EAP reports. Lot 1 and Lot 3, 5 EAP reports are submitted, and Lot 2, 4 reports are submitted. Site audit (visit to the site) of the implementation of site-specific environmental management plan.

### ■ On-site audit (site visit)

- ■ During the reporting period, a series of monitoring and evaluation visits were conducted. Implementation of the EMP measures, according to the analysis of potential risks in the field of environmental safety of the project

**Table 6. Site visits information**

Visit date	Name and Last Name of the Auditor	Audit purpose	Summary of visit
8.07.2018	CSC DONGSUNG ENGINEERING CJ., LTD/LLP "ZS ENGINEERING" Imbarova Sara	Verification of elimination of nonconformities identified during the audit on 11.06.2018 on Lot 1	Production base - 8, ACP and CBP - 2, in the base camp - 3, all nonconformities were eliminated. 3 nonconformities in the Engineer's office are not

			resolved.
07.08.2018	CSC DONGSUNG ENGINEERING CJ., LTD/LLP “ZS ENGINEERING” Imbarova Sara	Working meeting regarding Lot 1 workers complaint	The parties expressed their claims. Options for resolving the situation were discussed. Attached to this report is the minutes of this meeting.
9.08.2018	CSC DONGSUNG ENGINEERING CJ., LTD/LLP “ZS ENGINEERING” Imbarova Sara	Monitoring of EMP activities on Lot 3	On the site of the production base – 3, in the base camp – 3, eliminated. Nonconformities in the canteen and Engineer's office are not eliminated..
13.08.2018	PMC JSC “NC” KazAvtoZhol” Zeinullina Aliya	Monitoring of safeguards observance on lot 1 on the basis of Engineer's letter No. ATB1-713 dated July 26, 2018, as well as carrying out similar activities in neighboring areas (lot 2 and 3)	Audit of nonconformities revealed by the CSC specialist regarding Contractor's employees complaint
12.09.2018	Asian Development Bank List in attachment No. 18	Survey visit for implementation of environmental and social safeguards	Report of the visit and sites visit in the attachment to this report.
12.10.2018	CSC DONGSUNG ENGINEERING CJ., LTD/LLP “ZS ENGINEERING” Imbarova Sara	Verification of nonconformities elimination revealed during previous visits to Lot 2	Identified non-conformances eliminated

- In general, contractor's environmental specialists have demonstrated their commitment to comply with the environmental and social safeguards of the project and the external environment. If in the first half of the year, the CSC sent most of the identified nonconformities in writing to eliminate them, in the second half of the year, local environmental specialists routinely eliminated many issues regarding negative impact on the environment. In particular, all comments were on the category of non-significant impacts.

- During site visits CSC clearly saw how environmental specialists carry out their work on site, keep records, advice managers and workers on environmental and social security issues. In the previous period, environmental specialists did not prepare their reports on the implementation of the EMP, preparing only ECP report. During the reporting period, environmental specialist of Lot 2 in the Contractor's monthly report since October submits and presents his report in a separate section indicating all measures carried out during the reporting period. Environmental specialists of Lot 1 and Lot 3 are still in the process of mastering monthly reports in the format of the EMP implementation analysis.

#### ■ Problem Tracking (Based on Non-Compliance Notifications)

- During the reporting period, no written notifications were issued. During the site visits, together with the environmental specialists of the contractors, were revealed insignificant non-conformances. Thus, on Lot 1, it was noted the importance of strengthening control over ensuring environmental safety at the Zhaksimay production base at km 160 in terms of preventing spills of fuel and lubricants at the sites, observance of removal schedule for the subsequent disposal of solid waste and industrial waste on the sites and in the CSC office.



- Lot 2, verbal order was given to install a septic tank cover and to bring it into proper condition in accordance with the rules and regulations of the SanPIN place for temporary storage of solid waste.
- Lot 3, verbal instructions are given to eliminate nonconformities in the organization of clinic, to bring food distribution area and receiving dirty dishes in the canteen for workers in proper condition. Also, on all sites, the attention of environment specialists was drawn to the observance of the dust suppression schedule in areas where intensive construction work is being carried out.
- According to the register of complaints and appeals on Lot 1, Lot 2 and Lot 3, during the reporting period were no appeals and complaints about non-compliance with environmental safeguards. From the beginning of the project implementation, 1 appeal was received regarding dustiness on the bypass road on Lot 3. According to this request, procedures were worked out during the first half of the year, and the data are reflected in the first semi-annual report.
- Table 7 provides information on tracking environmental problems during the reporting period, and Figure. 6-8 - information on Lots 1,2 and 3.

**Table 7. Environmental Tracking Summary Report for Current Period July-December Lot 1, Lot 2 and Lot 3**

Total number of problems on the project	9
Number of Open Issues	1
Number of Closed Issues	8
Closing percentage	89%
Open Issues for the Reporting Period	1
Closed Issues for the Reporting Period	8

- Below in Figure 6, 7 and 8, presented information on the identified nonconformities elimination status for each lot. Monitoring of the sites showed that on Lot 1 of 3 identified nonconformities for the reporting period, two were eliminated. The nonconformity in the Engineer's office regarding the organization of places for temporary storage of solid waste and compliance with the schedule for removal of solid waste to landfill sites has not been eliminated This nonconformity was issued in May 2018 and subsequent audit visits showed that this minor nonconformity due to ignoring comes to the status of a significant nonconformity.

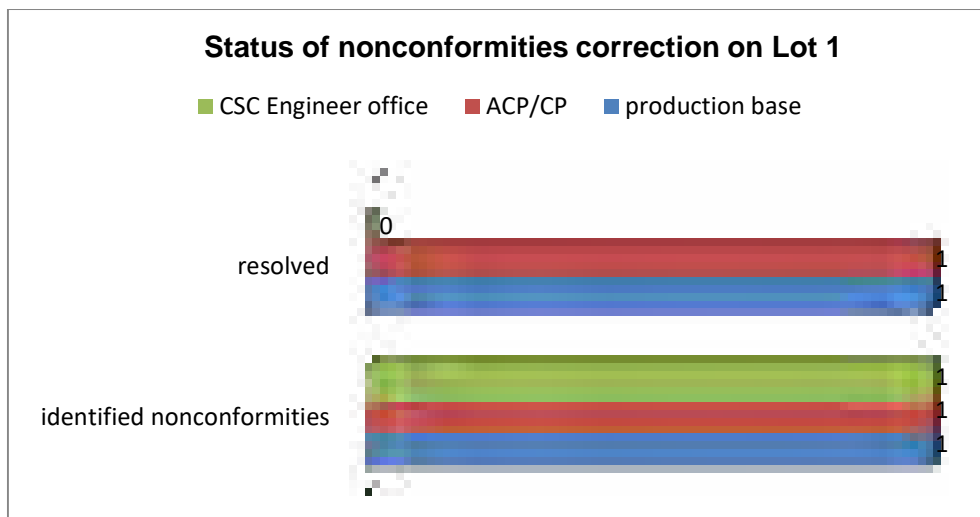


Figure 6. Status of nonconformities elimination on lot 1

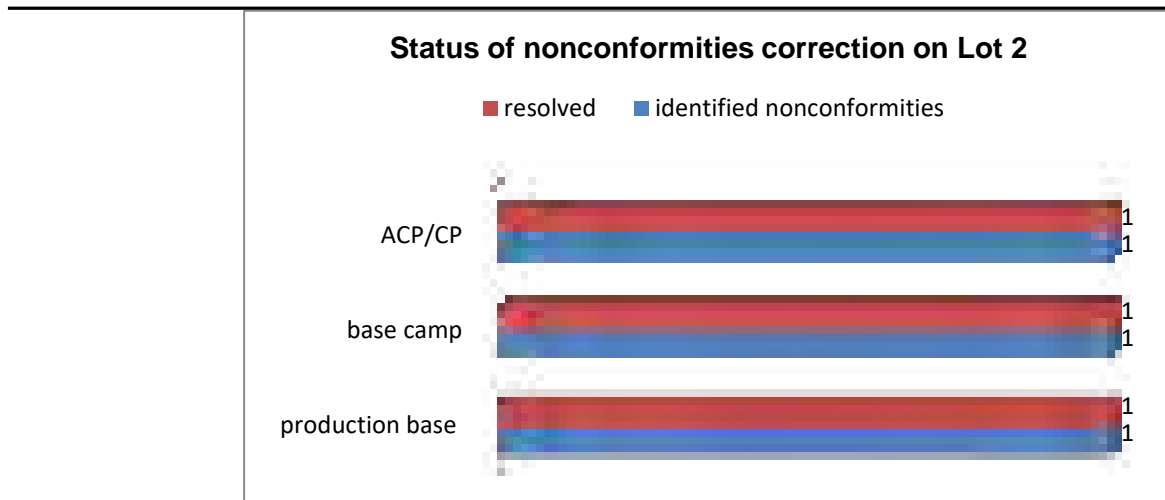


Figure 7. Status of nonconformities elimination on lot 2

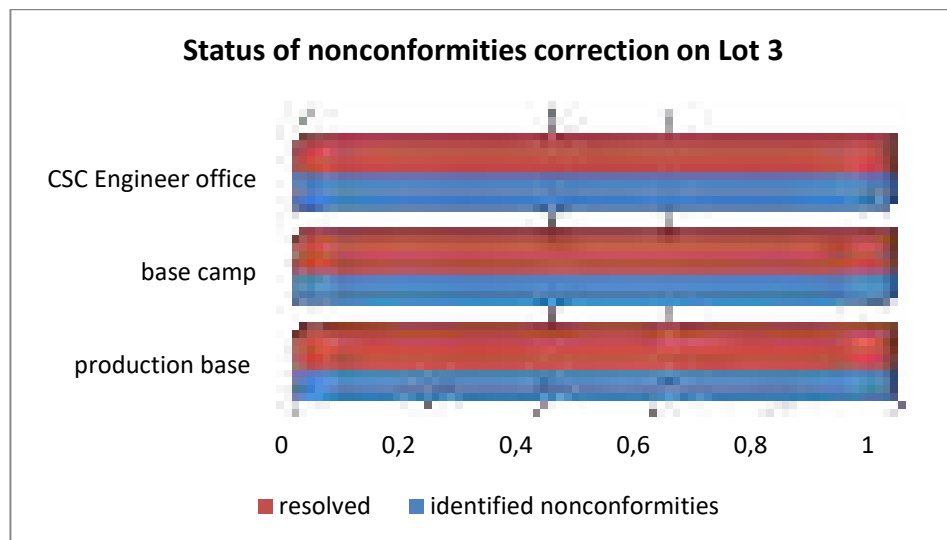


Figure 8. Status of nonconformities elimination on lot 3

#### ■ **Tendency (general directions)**

- During the reporting period, site monitoring, audits of construction sites did not reveal any complaints from the public about non-compliance with environmental protection measures. In the previous period 1 appeal from a local resident was registered on lot 3 regarding measures for dust suppression. Corrective actions were taken immediately by environmental specialist of Lot 3.

#### ■ ■ **Unforeseen environmental impacts or risks**

- During the monitoring periods of construction sites, no unforeseen environmental impacts were identified. Possible risks described in the pre-project assessment process were not implemented, since all construction work was carried out under the supervision of environmental specialists on the site. The results of environmental monitoring confirm this statement.
- As part of the monitoring of environmental protection, environmental specialist of CSC in view of short period of involvement (6 months for the entire project period), built all the work according to the

principle: field work on the site during visit, and studying documentation online. Communication between the CSC environmental specialist and Contractors environmental specialists is built and allows for the exchange of information and data.

- ■ Control and management focused on the following activities:
  - site supervision: visit together with Contractors environmental specialists and joint audit of work;
  - photo of works: with a specified date and time of photo shooting;
  - interviewing people on the sites: issues of impacts to workers, to the environment, safety issues, health and safety, and safety during works;
  - meetings and consultations on issues and identified nonconformities,
  - verification of documentation: protocols of the results of instrumental measurements, study of environmental reports: monthly, semi-annual;
  - verification of legal documents: permits and all legal documents related to environmental aspects.

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## RESULTS OF ENVIRONMENTAL MONITORING

### ■ Overview of monitoring conducted during the current period

- Works on production monitoring of environmental protection, at construction sites for Lot 1, Lot 2 and Lot 3, were performed by the testing laboratory of "HydroEcoResource L" LLP on the basis of Contract No. 76 of April 17, 2018 (for Lot 1 and Lot 3) and Contract no.64 L dated April 5, 2018 (for Lot 2) for the provision of services for environmental monitoring. The laboratory has a certificate of accreditation KZ. T.05.1400, dated August 14, 2018, confirming the presence of the conditions necessary for carrying out measurements in the field of activity assigned to the laboratory: conducting analytical monitoring of pollutant indicators of the working area, atmospheric air and sources of air emissions, surface, natural waters, as well as analysis of soil and physical factors.
- The laboratory's activities are regulated by environmental guidelines and regulations, sanitary and hygienic standards, requirements, lists of maximum allowable concentrations, estimated safe exposure levels, maximum allowable discharges and emissions of harmful substances operating in the Republic of Kazakhstan. Works on production monitoring were performed in accordance with the Environmental Code of the Republic of Kazakhstan dated January 9, 2007 No. 212-III. Contracting organizations carried out primary monitoring in accordance with the sampling and measurement points approved by the CSC Engineer. According to Lot 1 and Lot 3, measurements were carried out on April 24-25, 2018, According to Lot 2: May 23-24, 2018. Data on measurements and laboratory tests are presented in the first semi-annual report and recorded as indicators, obtained prior to construction.
- At each Lot, measurements and laboratory tests were carried out (at the same points where prior construction measurements were made) in the context of monthly indicators. The data are presented for Lot 1 in Appendices 3.1, 4.1, 5.1, 6.1, For Lot 2 in Appendices No. 8.1, 9.1, 10.1, 11.2, For Lot 3 in Appendices 13.1, 14.1, 15.1, to this report.
- Reconstruction of the road (construction work) according to the sanitary rules No. 237 of 03/20/2015 is not classified. Unclassified objects in accordance with the Environmental Code of the Republic of Kazakhstan belongs to the IV category. The production base for the period of construction works belongs to the III class of danger according to sanitary rules, and to the II category under the Environmental Code of the Republic of Kazakhstan.
- The nature user (in this case means Contractors Lot 1, Lot 2 and Lot 3) keeps internal records, generates and provides periodic reports on the results of industrial environmental monitoring in accordance with the requirements established by related authorities in the field of environmental protection on the basis of the Environmental Code of the Republic of Kazakhstan (Section 133. Logging and reporting on industrial environmental monitoring).
- To assess the actual (existing) state of the environment at production facilities, the following regulatory documents, measurement procedures and test methods were used:
  1. ST RK 51592-2003 Water. General requirements for sampling;
  2. GOST 31319-2006 (EN-14253: 2003) Vibration. Measurement of the overall vibration and assessment of its effects on humans;
  3. GOST 26449.1-85 Distillation desalination stationary installations. Methods for the chemical analysis of saline waters;
  4. ST RK ISO 7890-3-2006 Water quality. Determination of nitrate. Part 3. Spectrometric method using sulfosalicylic acid;
  5. ST RK 1957-2010 The Nature Conservancy. Atmosphere. Method for the determination of inorganic dust;
  6. ST RK 2036-2010 Environmental Protection Emissions Guidelines for the Control of Atmospheric Pollution;
  7. ST RK 2.297-2014 Methods for measuring mass concentration and determining the mass emission of pollutants in exhaust gases from fuel combustion plants using various types of gas analyzers;
  8. GOST 17.2.4.06-90 Nature Conservation. Atmosphere. Methods for determining the speed and consumption of gas and dust flows from stationary sources of pollution;

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9. GOST 17.2.3.01-86 Nature Conservation. Atmosphere. Rules of air quality control of populated areas;
  10. GOST 17.2.4.08-90 Nature Conservation. Atmosphere. Methods for determining the moisture content of gas and dust flows from stationary sources of pollution;
  11. GOST 17.2.4.07-90 Nature Conservation. Atmosphere. Methods for determining the pressure and temperature of gas and dust flows from stationary sources of pollution;
  12. GOST 12.1.036-81 Occupational safety standards system. Noise. Permissible levels in residential and public buildings;
  13. GOST 12.1.050.-86 Occupational safety standards system. Methods for measuring noise in the workplace;
  14. GOST 12071-2014 Soils. Selection, packaging, transportation and storage of samples;
  15. GOST 28168-89 Soils. Sample selection;
  16. GOST 26423-85 Soils. Methods for determining the electrical conductivity, pH and the dense residue of the aqueous extract;
  17. GOST 28268-89 Soils. Methods for the determination of moisture, maximum hygroscopic moisture and moisture resistant wilting of plants;
  18. GOST 5180-2015 Soils. Methods for laboratory determination of physical characteristics;
  19. GOST 26426-85 Soils. Methods for the determination of sulfate ion in aqueous extract;
  20. GOST 26424-85 Soils. Methods for the determination of carbonate and bicarbonate ions in aqueous extract;
  21. GOST 26428-85 Soils. Methods for the determination of calcium and magnesium in the aqueous extract;
  22. GOST 26488-85 Soils. Determination of nitrates according to the CRIAO method;
  23. GOST 26425-85 Soils. Methods for the determination of chloride ion in a water extract;
  24. GN Order No. 155 dated February 27, 2015, Sanitary and Epidemiological Requirements for Radiation Safety;
  25. GN Order No. 168 of 02/28/2015 Hygienic standards for atmospheric air in urban and rural settlements;
  26. GN Order No. 169 of 02/28/2015 Hygienic standards for physical factors that affect the person;
  27. GN Order No. 452 of 06/25/2015 Hygienic standards to the safety of the environment (soil);
  28. MVI-4215-002-56591409-2009.FR.1.31.2009.06144MVI-4215-002-56591409-2009 FR.1.31.2009.06144 Methods for measuring the mass concentration of harmful substances in the atmospheric air by the gas analyzer GANK-4;
  29. MVI-4215-006-56591409-2009 FR.1.31.2010.06966 Methods for measuring the mass concentration of dust in the atmospheric air with the GANK-4 gas analyzer;
  30. MVI-4215-005-56591409-2009 FR.1.31.2010.06965 Methods for measuring the mass concentration of unsaturated and aromatic hydrocarbons, oxides and acetates of some organic substances in atmospheric air with a GANK gas analyzer
- ■ In addition, the following sections are also monitored by the Contractor to identify any impacts from construction activities: borrow pits, bypass roads, bridge sections, the Contractor's base camp and Sub Contractors' temporary camps, concrete plant, crusher, asphalt plant, villages (along a detour) and crossing roads.
  - ■ The impact is recorded in the logging books of environmental specialists and monitored by the activities described in the SEMP. In accordance with the SEMP and with the Environmental Monitoring Plan, Contractors performed measurements and monitoring of air quality, soil, noise, vibration and socio-cultural resources. The results of the monitoring are presented in the Appendix № № 3-15.1.

## ■ ■ Environmental measurements on Lot № 1

### 4.1.1.1 Noise and vibration

- ■ On lot 1, measurements of vibration and noise level, soil sampling was carried out in accordance with the approved scheme of sampling points. Figure 9 below shows a diagram with sampling points and measurements of vibration and noise levels.



Figure.9: Situation diagram with water sampling points, noise and vibration measurements, soil sampling

The dynamics of changes in vibration acceleration and noise in the Lot 1 areas during the reporting period are represented by instrumental measurements for the period July, October, November and December. The main regulatory and procedural document that guided the work on monitoring noise and vibration is Order No. 169 of 02/28/2015 Hygienic standards for physical factors that affect humans.

- ■ Measurement points: NW of Zhaksymai village, NW of Kopa village, NW of Kenzhaly village and NW of Shubarkudyk village, as well as Km 160 and Km 170. According to the Guidelines of the International Financial Corporation "Guidelines for the Protection of the Environment, Health and Labor", the noise remote control for construction areas is determined to be 85 dBA, and peak (instantaneous) noise loads are not higher than 140 dBA, and for the residential area, the remote control is 70 dBA. The national standard (Hygienic Standard No. 169 dated 28.02.2015) defines the remote control for the construction zone within 80 dBA and for camera work in laboratories, ACP - 90 dBA, and the remote control in residential areas - 60 dBA. This report adopts a national standard because it is more exacting in terms of remote control values.
- ■ According to the protocols for measuring the noise level on Lot 1, the measurement points were chosen in the same way as when measuring the vibration level. With an acceptable level of 80 dBA for workplaces of drivers of road construction equipment (this remote control is taken from Appendix 2 to the order of the Minister of National Economy of the Republic of Kazakhstan "On approval of hygienic standards for physical factors affecting a person" dated February 28, 2015 No. 169 "Remote control sound pressure, sound levels equivalent sound levels for the most typical types of workplaces in workplaces ") marked the highest value equal to 57.2 dBA. That shows that the level of noise from working building machinery does not exceed the remote control at all measurement points. Consequently, do not have a negative impact on the health of working personnel. The analysis of the

reports of the Laboratory that conducted the measurements shows that there are no protocols for the month of August, although the text of the report on the production environmental monitoring of the laboratory refers to them.

- ■ According to the results of vibration acceleration measurement in these areas, measurements showed the same level as when measuring before the start of construction work. Measurement results are defined within 52.8 - 57, 2 dB. Vibration levels in the operation of special equipment (within the limits not exceeding the norms in accordance with Order No. 169 of 02/28/2015 Hygienic standards for physical factors that affect humans) at facilities, while fulfilling the requirements for quality of work and the observance by the operating personnel of safety requirements, can not cause harm to human health and adversely affect the state of the fauna. The Appendix 3 presents the indicators of measurements in comparison with the values determined before the start of construction works. Protocols of measurement results are presented in Appendix 3.1. Since the active construction phases began in the second half of the year, it became necessary to measure the vibration level from the Kenzaly and Shubarkudyk SPZ, which were not covered in the previous reporting periods.
- ■ Reviewing of the reports of the Laboratory that conducted the experimental measurements showed that the contractor did not organize measurements at the site at points Km 180-Km 220. The rationale for the measurements deficiency was not given to the CSC Engineer. Measurement protocols for August and September are not presented in environmental production control reports.
- ■ According to the results of measurements of the Noise level on Lot 1, the measurement points were chosen in the same way as when measuring the level of vibration. With an acceptable level of 80 dBa for workplaces of road construction equipment operators (this MPL is taken from Appendix 2 to the order of the Minister of National Economy of the Republic of Kazakhstan "On approval of hygienic standards for physical factors affecting a person" dated February 28, 2015 No. 169 "MPL sound pressure, sound levels equivalent sound levels for the most typical types of workplaces in workplaces") marked the highest value equal to 57.2 dBa. That shows that the level of noise from working building machinery does not exceed the remote control at all measurement points. Consequently, do not have a negative impact on the health of working personnel. Reviewing of the reports of the Laboratory that conducted the measurements shows that there are no protocols for August, although the text of the report on the production environmental monitoring of the laboratory refers to them..

#### **4.1.1.2 Soil**

- ■ During reporting period, a permit KZ73VDD00096355 dated 11.07.2018 for excavation was obtained for borrow pits from 1 to 8 in Temir district.
- ■ Instrumental measurements were carried out according to the following regulatory and methodological documents: GN Order No. 452 of 25.06.2015 Hygienic standards for the safety of the environment (soil) and GOST 12071-2014 Soils. Selection, packaging, transportation and storage of samples. Soil sampling was carried out according to GOST 28168-89 Soils. Sample selection.
- ■ Soil samples were taken from the Zhaksimay Production Base Km 168, road sections Km 160, Km 170, from the villages Kopa Km 164, Shubarkudyk Km 175 and Kenzhaly Km 207. Laboratory data are presented in Appendix No. 5. Soil test results show that the value of the negative impact on the surrounding soil cover at the border of the SPZ is estimated as low, while the area of impact on vegetation corresponds to the local scale, the duration of the impact is constant for the period of construction.
- ■ Analysis of data on points 1 and 2 from the Production Base "Zhaksimay" in Figures 10 and 11 shows that all identified indicators did not exceed measurements, obtained prior construction. At points No. 1 and No. 2 in terms of magnesium contamination, a slight increase was recorded during the periods July-November. This is due, primarily to the period of active construction work, probably waste is not disposed of in time and in the process of accumulation at the waste sites (household waste, industrial, construction waste) soil is contaminated with these elements.
- ■ None of the indicators show the excess of measurements, obtained prior construction in all three villages. A slight excess of the background indicators for the sulfate content is observed in October and November in soil samples taken near Kopa village. This type of pollution is caused by emissions of waste combustion products of construction equipment. There is also a sharp excess of bicarbonate content in October compared with the values measured prior to construction and subsequent measurement periods. There is also a sharp excess, compared with the background and other periods

of measurements, of bicarbonate content in October on all three diagrams. Excess reaches its maximum value due to a long period of soil drying. During this period, concentration of soluble salts  $MgCl_2$ ,  $Na_2SO_4$ ,  $MgSO_4$ , bicarbonates and calcium sulphates are close to saturation point. This period is the phase of the seasonal cycle of the salt regime for the soils of this region, so-called salt accumulation phase. This indicator is not affected in any way by anthropogenic activities (construction work, active work of machinery and vehicles).

- ■ The results of laboratory analyses of soil samples at Km 160 show decrease bicarbonates content from August and then to November, at about the same level. Rather, it is connected to long season of soil drying. And in soil samples from Km 170, it is shown that in this area was an insignificant increase in bicarbonate content in July, with a sharp decrease in September and a subsequent increase in October and November to insignificant previous measurements, obtained prior construction. Such a drop in decline only in one month is possible due to an error in the calculations of laboratory tests of soil samples, since precipitation (as a possible factor) was not recorded in September.
- ■ According to the hygienic standards for environmental safety (in particular to the soil), approved by order of the Minister of National Economy of the Republic of Kazakhstan dated June 25, 2015 No. 452, the soil assessment on Lot 1 for sanitary and chemical indicators is hazardous as "safe" because MPC exceedances were not recorded for all defined pollution indicators. And according to the protocols of instrumental measurement of radiological indicators, the level of contamination by radioactive substances is defined as the natural level.

#### **4.1.1.3 Water quality**

- ■ The main regulatory and procedural documents that guided the monitoring of natural waters in the Karaulkeld River were: ND No. 209 of March 16, 2015. Water sampling was carried out according to GOST RK GOST R 51592-2003 "Water. General requirements for sampling." Analyzes were carried out in accordance with approved standards. As in previous periods, water was sampled from the Shieli, Kenzhaly and Zhaksimay rivers. During the reporting period, water samples were not taken from Zhaksimay due to the lack of water during the monitoring periods. The Figure 16 below shows changes in water parameters in dynamics of monthly changes in second half of the year on the Shieli River
- ■ According to the laboratory data for all indicators no exceeding of permissible norms were found. But compared to the measurement results obtained prior to construction, there is an excess of sulfates, chlorides, dry residue, which do not exceed permissible norms. Excess noted during active construction work period.
- ■ At this object, level of pollution does not exceed measurements, obtained prior to construction and MPC for each of the identified indicators. Laboratory indicators are presented in Attachment № 4. Laboratory protocols are attached to this report in Appendix No. 4.1.

#### **4.1.1.4 Air quality**

- ■ Measurements of the level of air pollution in the Lot 1 area were carried out in accordance with the approved sampling scheme. The measurements were carried out for the following indicators: inorganic dust, nitrogen dioxide, sulfur dioxide, carbon monoxide, formaldehyde, C12-C19 hydrocarbons, hydrogen sulfide. Data of laboratory measurements and protocols of laboratory measurements are attached in Appendix No. 6 and 6.1.
- ■ Obtained laboratory data for the July-November period in samples from Km 160, 170, 180, 190, 220 and base Zhaksimay Km 168 show no excess of air pollution level in all indicators at all points. There is no excess in comparison with indicators, obtained prior to construction and with MPC. At Km 200, a sharp excess of inorganic dust in September. Most likely the reasons are the aridity and lack of measures for dust suppression.

### **■ Environmental measurements on Lot 2**

#### **4.1.2.1 Noise and vibration**



- ■ Instrumental of noise and vibration were conducted at points of the NW of the Karaulkeldy village, NW Zharly village, Production base Karaulkeldy, Km 236, Km 246, Km 250, Km 255, Km 260, Km 265, Km 275, borrow pit No. 2 (Km 242), No. 5 (Km 254), No. 6 (Km 260). Level of vibration and noise does not exceed permissible values at all measuring points. Appendixes 8 and 8.1 to this report are attached laboratory data and measurement protocols.

#### **4.1.2.2 Soils**

- ■ During the reporting period, management for borrow pits on Lot 2 carried out following work: soil excavation in accordance with the calendar schedule of extraction. Excavation works are planned to be made in periods from 2018-2020, from April to December. On Lot 2, excavation was carried out on borrow pit No. 2, 5 and 6 on favorable relatively windless days. The overburden works consisted in the excavation of overburden represented by the soil-vegetative layer (Top soil), with a capacity of 0.3 m, followed by stripping of the useful stratum, with a stripping layer thickness 0.1 m. The design provides for external dumping, i.e. storage of the top soil along the pit contour, in the form of a safety shaft. In the area of borrow pit No. 2 and 5, these types of work were carried out in accordance with the design and the management plan for the borrow pits. On borrow pit number 6 work is in progress.
- ■ Soil samples were taken for laboratory measurements on sections of the Aktobe-Atyrau road, km 236; km 245; km 255; km 265; km 275 and borrow pits number 2; No. 5; No. 6; as well as at the Karaulkeldy production base, in accordance with the approved standards. In appendix No.9 and 9.1 show results of laboratory tests and measurements results. Controlled substances: Dense residue, pH, petroleum products, chlorides, sulfates, calcium, magnesium, carbonates, bicarbonates. Below in Figure. № 25-37. -5 diagrams show changes in values of measurements by months. Instrumental measurements on the Km 238, 240, 246, 250 and 260 road sections will be taken as data obtained prior to construction, since no measurements were taken at these sections in April due to forced downtime on this Lot.
- ■ At Km 236, a significant excess of bicarbonate content was recorded compared with the values obtained prior to construction. Km 265 recorded an excess of sulfate and calcium. The excess of sulphates is due to emissions of waste combustion products of construction equipment, and excess of calcium content is associated with change in soil acidity from 7.9, obtained prior to construction to 8.2. Km 275, there is a gradual excess of calcium, sulphate and bicarbonate on the rise from July to August. Change in this indicator is not affected by construction work; rather, this change is due to natural acidification of precipitation.
- ■ On borrow pit No. 2 (Km 242) a slight increase in content of magnesium, calcium and chlorides was recorded compared with data obtained prior to construction. On borrow pit No. 5 (Km 254) and 6 (Km 260), no excess was recorded in any of the identified indicators. At the Karaulkeldy Production Base, at the points "North", "West" and "Center", no excess of data obtained prior to construction for all the determined indicators. At the point "South" a slight excess of the pH of soil solution. And at the point "East" excess of bicarbonate, calcium and sulfates. The reasons for the excess are not related to the production activities of the contractor

#### **4.1.2.3 Water quality**

- ■ Water resources monitoring was conducted during the reporting period on the Karaulkeldy River, which flows through this section of the road. The results of measurements of water samples from the Karaulkeldy River show that during the reporting period there was no excess of the MPC for all of the identified indicators. In the Appendix No. 10 and 10.1. measurement protocols are attached..

#### **4.1.2.4 Air quality**

- ■ Measurements on air pollution carried out in July at points Km 238, Km 240, Km 250 and Km 260 show that there is no excess of MPC for any of the indicators. The analysis of laboratory data on air pollution (Appendix No. 9) and protocols (Appendix No. 11.2) in quarries No. 2 (Km 242) and No. 6 (km 260) doesn't show the excess of the MPC for all of the determined indicators.
- ■ For borrow pit number 2, carbon monoxide excess content was recorded in measurements taken in July, August, September and October compared with measurements obtained prior to construction. In borrow pit No. 6 in October, an excess of carbohydrate content was recorded compared to data obtained prior to construction and in September excess of carbon monoxide compared to data obtained prior to construction. At the borrow pit No. 5 (km 254), the maximum permissible concentration of xylene in air was recorded in period of measurements carried out in July, August, September and October. The excess of xylene content values (compared to data obtained prior to construction ) in the same measurement periods was also noted. Concentrations of xylene (related to volatile organic substances) ranged from 0.088 to 0.4 mkg / m<sup>3</sup>. Waste pollution is primarily due to vehicle emissions. During August-November, the most active phases of construction work began. It was during this period that the level of air pollution was exceeded in comparison with data obtained prior to construction.

#### ■ ■ **Environmental measurements on Lot No.3**

- ■ On Lot 3, instrumental measurements were carried out by a certified laboratory that carried out these works on Lot 1, since there is one contractor on these lots. All regulatory and methodological manner are the same as those presented in Lot 1. In the Appendix No.13-15 the measurement data from laboratory protocols. Also measurement protocols are included.

##### **4.1.3.1 Noise and vibration**

- ■ Measurements of noise and vibration levels were taken at the following points: NW of Zharly village, NW of Nogaity village, PB Nogaty, in areas Km 275, Km 285, Km 290, Km 300, Km 310, Km 320 and Km 330.5. According to the results of measurements (Appendix No. 13 and 13.1.) for the reporting period, the MPL was not exceeded.

##### **4.1.3.2 Soil**

- ■ Borrow pits on Lot 3, for the reporting period, permission KZ46VDD00096356 from 11.07.2018 for borrow pits No. 9-19 was received for excavation and extraction.  
  
Instrumental measurements for soil pollution were carried out at the following points: Production Base Nogayty Km 301 points South and East, sections of the road Km 275, Km 290, Km 300, Km 330. Appendix 14 and 14.1 contains laboratory data. Below in the diagrams No. 52 - 57 shows the results of laboratory tests
- ■ According to the protocols in Appendix 14.1. it is shown that an increase in the content of bicarbonates was recorded at all measurement points compared with data obtained prior to construction. Since bicarbonates are formed as a result of the decomposition of sulfurous metals under the action of carbon dioxide present in the soil, it was likely that emissions of sulfurous metals occurred during these periods. Most likely, as a result of construction equipment

##### **4.1.3.3 Water quality**

- ■ As part of industrial environmental monitoring, water resources were monitored on Airyk, Zharly and Nogaity rivers flowing on this section of the road. During the monitoring in Nogayty, Airyk and Zharly, there was no water in connection with which no samples were taken

##### **4.1.3.4 Air quality**

- ■ Air pollution monitoring was carried out in areas where construction work was carried out: Km 275; Km 280; Km 290; Km 300; Km 310; Km 320; Km 330; the nearest residential zone Zharly and Nogaity villages, as well as at a distance of 100 m upwind and leeward at the border of the sanitary protection

zone of the Nogaity production base. Below are the values for pollutants for months. Appendix 15 shows laboratory data and protocols.

- Measurements on atmospheric air pollution show that at all measurement points no excess of maximum allowable concentration was recorded for all indicators determined. It should be noted that at the measurement points in the areas: Km 275, Km 300 and Km 310, a slight excess of methylbenzene was recorded compared to data obtained prior to construction. This pollutant is a part of paints, fuels and lubricants, adhesives, which are used in the technology of construction work on the site. According to the results of observations, in general, in all areas of Lot 3, the air condition was assessed as consistently good. Deterioration in air quality is not noted.

**Table 7.1. Environmental Compliance Monitoring for Lot 1**

No	Location	Problems	Recommended measures	Implementations Conformities	Implementation status
	Road section	Use of safety tools (safety glasses, gloves, work clothes, helmet, safety shoes, etc.) by workers /engineers.	Availability of safety tools in the base camp and on the construction site.	Safety tools provided to workers and engineers as needed	done
	Base camp	Water supply	Provide water for drinking and for household needs, the presence of a sink for washing in the washing rooms, toilet, kitchen and canteen. Cross-checking and uninterrupted supply of drinking water	Provided Utilities are connected to the base camp	Done
		Sanitation and hygiene	The provision of toilets and wash water in the washing rooms. Transportation to septic tanks for treatment and disposal	Base camp is supplied and held	CSC office - not performed with household waste
		Kitchen and canteen	Provision of proper ventilation system, cranes and hygiene of places of food preparation and taken, storage of products	Rented a complex of local residents with all conditions	done
		Drainage in the base camp	Ensure drainage of water in the camp. Avoid accumulation of water inside the camp.	The rented complex is equipped with all necessary things	done
		Solid waste and waste	Location of waste bins and urgent	The complex of buildings of a local	Not provided

			modernization of waste disposal pits, cover and control on the base camp territory.	resident, with the provision of removal and disposal. Near Laboratory in base camp there are no fire shields	Done
	Territory of quarry/borrow pit	Collection of material in accordance with the legislation of the Republic of Kazakhstan on environmental protection	Obtain the permission for excavation for three borrow pits on CH 134, CH 40+00 and CH 00.	In progress	done
	The fire-Figurehting equipment in the base camp, office.	Fire-Figurehting equipment should be located in the base camp and in the office.	Locate the fire-Figurehting equipment in a well visible place and so that it can be used in the event of an emergency.	Base camp and production base - not everywhere provided. There are no fire shields in the laboratory	done
	Vehicular and equipment traffic in base camp.	To much dust pollution in base camp area and noise pollution of environmental as result of traffic on base camp area and on site.	Equipment using on site and in the base camp should conform related standards for environmental protection from noise.	In the area of base camp (in complex of local resident) all conditions met, at the production base – not	In base camp - all done In Engineers office there is no zoning
	ACP	PPE provision, MPF and milk provision Dust-suppression on site and at stroge area	Compliance with safety standards and requirements, ensuring compliance with the terms of FIDIC, Contractual obligations	In progress	Done

**Table 7.2 . Environmental Compliance Monitoring for Lot 2**

No	Location	Problems	Recommended measures	Implementations /Compliance	Status of correction
	Road section	Use of safety tools (safety glasses, gloves, work clothes, helmet, safety shoes, etc.) by workers /engineers.	Availability of safety tools in the base camp and on site.	Safety tools provided to workers and engineers as needed	Contractor - done
	Base camp	Water supply	Provide water for drinking and for household needs, the presence of a sink for washing in the washing rooms, toilet, kitchen and canteen. Cross-	Not provided. Utility lines are not connected to the base camp and production base.	Done

			checking and uninterrupted supply of drinking water		
		Sanitation and hygiene	The provision of toilets and wash water in the washing rooms. Transportation to septic tanks for treatment and disposal	Base camp and offices are not ready	Done
		Kitchen and canteen	Provision of proper ventilation system, cranes and hygiene of places of food preparation and taken, storage of products	Modular buildings are not ready and utility lines are not connected	Done The base camp was settled on August 20, 2018.
		Drainage in the base camp	Ensure drainage of water in the camp. Avoid accumulation of water inside the camp.	Utility lines are not connected	done
		Solid waste and waste	Location of waste bins and urgent modernization of waste disposal pits, cover and control on the base camp territory.	Base camp is not ready	done
	Area of quarry/borrow pit	Collection of material in accordance with the legislation of the Republic of Kazakhstan on environmental protection	Obtain the permission for excavation for three borrow pits on CH 134, CH 40+00 and CH 00.	In progress	obtained
	The fire-Figurehting equipment in the base camp, office.	Fire-Figurehting equipment should be located in the base camp and in the office.	Locate the fire-Figurehting equipment in a well visible place and so that it can be used in the event of an emergency.	Base camp and production base are not ready	done
	Vehicular and equipment traffic in base camp.	To much dust pollution in base camp area and noise pollution of environmental as result of traffic on base camp area and on site.	Equipment using on site and in the base camp should conform related standards for environmental protection from noise.	Base camp and production base are not ready	done
	ACP	PPE provision, MPF and milk provision	Compliance with safety standards and	In progress	done

		Dust-suppression on site and at storage area	requirements, ensuring compliance with the terms of FIDIC, Contractual obligations		
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**Table 7.3 . Environmental Compliance Monitoring for Lot 3**

No	Location	Problems	Recommended measures	Implementations Conformities	Implementation status
	Road section	Use of safety tools (safety glasses, gloves, work clothes, helmet, safety shoes, etc.) by workers /engineers.	Availability of safety tools in the base camp and on the construction site.	Safety tools provided to workers and engineers as needed	Contractor - done
	Base camp	Water supply	Provide water for drinking and for household needs, the presence of a sink for washing in the washing rooms, toilet, kitchen and canteen. Cross-checking and uninterrupted supply of drinking water	Provided Utility lines are connected to the base camp and production base.	For Engineers office Contractor didn't make works according to the Technical Specification  For base camp - done
		Sanitation and hygiene	The provision of toilets and wash water in the washing rooms. Transportation to septic tanks for treatment and disposal	Base camp and offices provided	done
		Kitchen and canteen	Provision of proper ventilation system, cranes and hygiene of places of food preparation and taken, storage of products	Modular buildings are ready and utility lines are connected but sanitation and hygiene does not meet the requirements	Done
		Drainage in the base camp	Ensure drainage of water in the camp. Avoid accumulation of water inside the camp.	Utility lines are connected	Done
		Solid waste and waste	Location of waste bins and urgent modernization of waste disposal pits, cover and control on the base camp territory.	Base camp is ready Contracts for removal and disposal are concluded	Done

	Territory of quarry/borrow pit	Collection of material in accordance with the legislation of the Republic of Kazakhstan on environmental protection	Obtain the permission for borrow pit excavation for which it is missing	In progress	Done
	The fire-Figurehting equipment in the base camp, office.	Fire-Figurehting equipment should be located in the base camp and in the office.	Locate the fire-Figurehting equipment in a well visible place and so that it can be used in the event of an emergency.	Base camp and production base are not ready	done
	Vehicular and equipment traffic in base camp.	To much dust pollution in base camp area and noise pollution of environmental as result of traffic on base camp area and on site.	Equipment using on site and in the base camp should conform related standards for environmental protection from noise.	Base camp and the production base are ready	done
	ACP	PPE provision, MPF and milk provision Dust-suppression on site and at stroge area	Compliance with safety standards and requirements, ensuring compliance with the terms of FIDIC, Contractual obligations	In progress	Done

#### ■ Tendency (general direction)

- In the annual course, there is a slight increase in the content in the air, in the soil of specific pollutants recorded in July-October. This is the period of active phase of construction work. In general, negative impact on the environment: air, soil, water resources, vibration and noise, on the health of affected persons, as well as on the flora and fauna is not noted.

#### ■ Summary of monitoring results

- The expediency of conducting additional monitoring activities is absent, since all instrumental measurements, observations and audits indicate absence of negative impact of construction work on the environment. Impacts on the content of pollutants (water, soil, air, health, flora and fauna) do not exceed MAC. The measures taken by the contractors to reduce environmental impact are sufficient. The activities of the Contractors exert an acceptable load on the environment.

#### ■ Use of Material Resources

##### ■ Current period

- Resource consumption for the reporting period on Lot 1,2 and 3.

**Table 8. The number of consumed resources for the 2nd half of 2018**

sites	Lot 1	Lot 2	Lot 3
resources			

Electricity, kW/h	599510,5	86 965	599510,5
Natural gas, thousand m3	-	39	-
Drinking water, m3	Imported (bottled)	59,70	Imported (bottled)
Water for technical needs, m3	13789.74	505	1791.385

#### ■ Cumulative use of resources

- On Lot 1, electricity consumption in second half of the year increased by 7 times, and by use of technical water increased by 3 times compared with first half of the year. All these indicators show increase in volume of construction and production work in this period.
- Lot 2, according to use of resources for second half of the year, the contractor increased electricity consumption by 6 times compared with first half of the year, and 3 times increased in drinking water. This increase is due to active phases of construction work. In first half of the year, the contractor experienced financial difficulties related to problem with bank account and construction part of the work decreased markedly, which caused a significant delay in work schedule. But in second half of the year, problems were resolved, and active phase of work entailed an increase in resource consumption.
- Lot 3 has same tendency to increase resource consumption in second half of the year. There is no data on natural gas consumption. But since ACP and CBP consume this type of resources, most likely there is a consumption of this resource, but data are not specified during the reporting period. The table below shows data on the annual consumption of resources.

**Table 9. Cumulative use of resources in 2018**

sites resources	Lot 1	Lot 2	Lot 3
Electricity, kW / h	680 322,00	101 129	680 322
Natural gas, thousand m3	-	39	-
Drinking water, m3	Imported (bottled)	79,30	Imported (bottled)
Water for technical needs, m3	18 785,18	735	1791,385

- For Lot 2, according to the EIA, consumption is calculated: Domestic-drinking water consumption during production operations - 12.96 m<sup>3</sup>/year. Technical water consumption during work is 126.7 m<sup>3</sup>/year. But cumulative use for 2018 shows that it consumed 62 times more than calculated in the EIA. The reasons for this excess are probably unsustainable use of water resources, lack of accounting, monitoring of water consumption and due to weather conditions, dust suppression was carried out more often than planned.

#### ■ Waste management

- Waste management is organized by Contractors according to the developed Site-specific EMP. On Lot 1 site formation of household waste: production base "Zhaksymay" located on Km 168. Contractor's laboratory, CBP, ACP, railway dead end, and bitumen pit are located on the territory of this base. Waste from this area is stored on a specially organized site for temporary storage with subsequent export to disposal through the involvement of specialized companies. Removal of household waste from this base is carried out by Technology XXI Century LLP on the basis of contract No. 02/05-18 dated May 2, 2018



- Lot 2. According to the conclusion of the state environmental impact assessment Number: KZ29VDC00070747 dated 05.06.2018 for the project "Environmental Impact Assessment (EIA) to the project for the industrial development of clay rocks (sandy loam, loam in areas of borrow pits No. 1-7 in Baiganin district of Aktobe region, used for the reconstruction of the road, as a result of production activities at the enterprise are formed: municipal solid waste, overburden. For the period 2018-2020, formation of solid waste is calculated to be 18.0 t/year. and household waste formations are located at the Karaulkeldy production base: railway dead end, base camp, workshops, laboratory of the contractor. Solid waste is removed by Zelenstroy LLP (Aktobe) according to Contract No. 64 dated August 25, 2018. Below Table 12 presents information by type and number of household waste removed from the site during the reporting period. In Attachment No. 19 an invoice for the removal of household waste
- Lot 3: a base camp with infrastructure of the residential part, offices, canteen, laboratory of the Contractor, CBP, ACP, railroad dead end, workshops are located on the Production Base "Nogayty" According to the camp management plan, places for temporary storage of solid waste are organized with the subsequent removal to the landfill. During the environmental audit on August 11, 2018, the CSC Engineer made verbal notification about bringing the place of temporary storage of solid waste and appearance of the containers to proper condition. Removal of household waste from this base is carried out by Technology XXI Century LLP on the basis of contract No. 02/05-18 dated May 2, 2018. Information on the types and quantity of solid waste removed at the time of this report is not submitted.

#### ■ ■ Current period

- ■ During the reporting period, waste management Contractors followed prescribed clauses in the EMP in terms of infrastructure management. Due to lack of special landfills in the places where the project road is being implemented, contractors for the removal of solid waste disposed solid waste to the Baiganin district.
- ■ Lot 3, waste disposal in the form of liquid household was carried out twice on July 31, and August 31, 2018, with a volume of 1,139.36 m3 and 1,155.58 m3, respectively. For other types of waste data is not reflected in the reports of environmental specialists on Lot 1 and 3.

**Table 10. Information on removal of household waste for second half of the year Lot 2**

No	Waste	Unit	Waste classification	Quantity	method of waste disposal
1	Waste filters	kg	hazardous	30	Removal to the landfill
2	Oily rags	kg	hazardous	55	Removal to the landfill
3	Construction garbage	kg	not hazardous	530	Removal to the landfill

#### ■ Cumulative Waste production

- ■ Composition of waste production on Lot 2 is as follows as shown in Figure 70

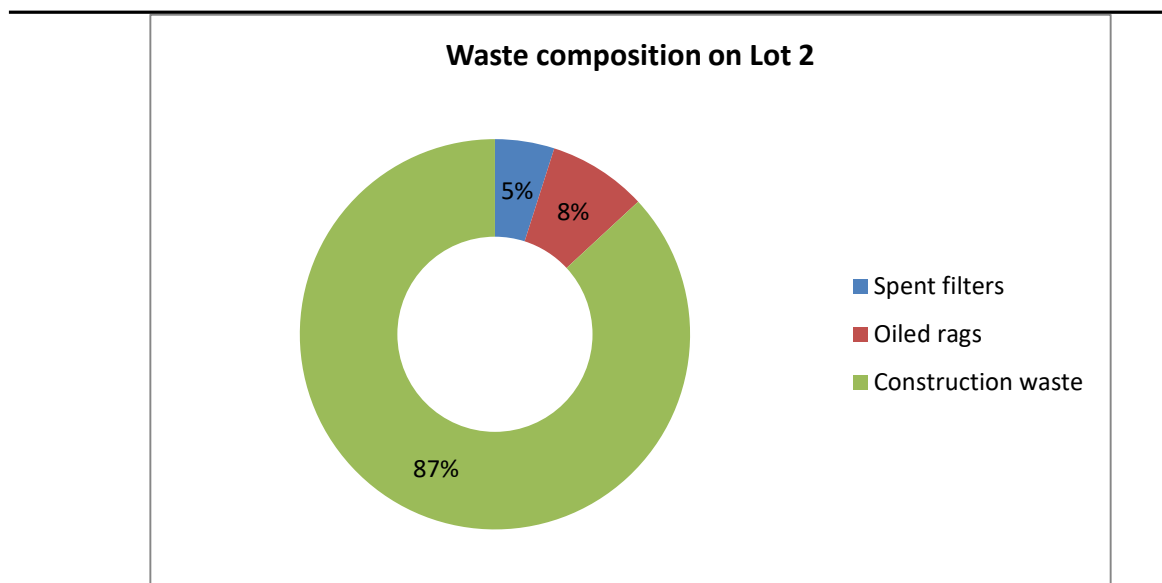


Figure. № 10. Composition of waste production on Lot 2

#### ■ ■ Health and safety

#### ■ ■ ■ Public Health and safety

■ ■ ■ During the reporting period, Contractors conducted activities in accordance with approved road safety management plans. Timely supervision and accompanying advice from the CSC Road Safety Engineer made it possible to ensure safety of road users and Contractor's personnel. During periods of the audit, relevant work was noted by the Contractors for the installation of safety signs, widening of temporary roads, patching, preparation for carrying out activities for the winter maintenance of roads. Hazardous areas are marked with warning signs.

■ ■ ■ ■ On Lot 2, 1 fatal accident occurred in the area. On August 28 of this year, on CH zero (236 km) of the Aktobe-Makat road, an accident occurred in which 2 people died. This accident in the manner prescribed by the law of the Republic of Kazakhstan was investigated by the local department of the District Department of Internal Affairs of the Baiganin District, Karaulykeldy village. Investigation has established that the driver, who is intoxicated, did not cope with driving the vehicle.

#### ■ ■ Personnel Health and safety

■ ■ ■ ■ For incidents that occurred on the project during the reporting period, the information is presented below in Table 11.

**Table 11. Statistics on incidents and accidents on the project**

Type	Lot 1	Lot 2	Lot 3
Traffic accident	3	1	1
Accident	1	1	0
Disability	0	0	0
Downtime due to incident	0	0	0
Total:	4	2	1

■ ■ ■ ■ The first accident on Lot 1: 11.06.2018. on CH 0+00 (160 km) of the bypass road, at about 6:00 pm local time, accident occurred involving Lada-21014 car driven by driver Yakupov B.K. Born in 1969. The

- 
- driver, ignoring all warning road signs and not controlling traffic speed, knocked over road signs, turning over and over the road bed, resulting in his death before ambulance arrived.
- ■ ■ The second accident occurred on 14.06.2018. The employee of the SMS died during the rest on the territory of the residential part of the camp. Doctor of the clinic during first medical aid stated death of the person. Subsequently, the investigation concluded that death was caused by heart disease.
  - ■ ■ The third accident at the site took place on 01.12.2018 at 3:15 am local time on km 160.5 near the Kopa bridge. A subcontractor employee Baglan G. damaged gas pipe while heating a CAT 336 excavator due to low air temperatures. As a result of the incident no one was hurt.
  - ■ ■ The fourth accident occurred on December 10, 2018 at 9:30 local time at the site of the Zhaksimay base with the participation of the Astra truck No. 12.02/04, operated by Aitmagombetov Bolatbay, a traffic accident occurred. The operator transported large crushed stones from the storage area to the warehouse area. The incident occurred during the last seventh cruise. After unloading the transported material, the truck leaned to the right and tipped over. As a result of the incident no one was hurt. The truck is intact.
  - ■ ■ Lot 2 during the reporting period, 2 accidents were recorded. 21.05.2018, at 9:56 am, during loading operations due to a loop breakage from the load, load fell to the ground. When the load fell, the rigger of the contractor - Pusyrmanov E.K. suffered and was seriously injured. The victim is alive. Passed outpatient treatment.
  - ■ ■ The second accident on Lot 2 was registered on August 28, 2018 at 19:30 local time, an accident occurred with the participation of one vehicle, VAZ 2110, state number 004 XO 56 (RF record). In the passenger compartment were 4 people, 2 of them died on the spot. All four came from the regions of the Republic of Kazakhstan (SKR) and worked as hired workers on the construction of School in Karaulykeldy. The accident is related to a speeding violation and has been investigated by law.
  - ■ ■ On Lot 3 during the reporting period, 1 accident was recorded: 20.10.2018 on km 288,3 (Zharly bridge) an incident occurred while driving piles. The lifting/rigging knot of the hammer was broken, which in turn led to the inclination of the equipment and damage to 2 previously driven piles. In this case, no one was injured, there are no injuries to the operator and workers, the crane is not tipped over and there is no damage.
  - ■ ■ It should be noted that the main part of them is related to the non-observance of traffic rules by drivers. In general, for the whole project, road safety issues are monitored in accordance with the approved Road Safety Plans (agreed with the CSC and the traffic police). According to the results of the investigation into the circumstances of the occurrence of road accidents, the local authority recognized that road accidents occurred because of non-compliance with traffic rules.
- Compliance with safety measures at construction sites is also promptly checked by the relevant responsible persons of the contractors. On the facts of the accidents were carried out the appropriate investigations, as well as additional briefing with workers.

## ■ ■ ■ **Trainings**

- ■ ■ During the reporting period, training on issues related to the implementation of the EMP, monitoring of the work on site, CSC conducted in the order of accompanying counseling during environmental audits in August and October. In the course of the audit, the CSC drew the attention of the environmental specialists of the contractor to the fixation of indicators for the implementation of measures to protect the environment and to identify potential risks of a negative impact on the environment.
- ■ ■ Safety Engineers of contractors constantly monitor site over the observance of safety measures and safe work performance, use of personal protective equipment. In the residential part of the base camps in the rest rooms, information boards are placed with information about the main threats and risks at work.
- ■ ■ For the first quarter of 2019, the CSC planned training on the theme: "Environmental, social security on road construction projects". The training program includes issues on preparation of analytical reports on protective measures, on the identification and formulation of risks and development of corrective measures to eliminate negative impacts and nonconformities.

## FUNCTIONING OF THE SSEMP

### ■ ■ Summary of SSEMPs

- ■ The work analysis of the Contractor's environmental specialists shows that they have good potential for implementing the measures prescribed in the EMP. The measures developed within the framework of the EMP, if properly implemented, can prevent the occurrence of a negative impact on the environment. Additional training is needed for forecasting skills and analytical work on production environmental monitoring reports carried out by an external organization. CSC notes the need for careful closely familiarization and subsequent using of laboratory data in their work as a part of evaluating the measures taken.
- ■ In the preparation of this report chapter "Environmental Monitoring Results", the CSC drew attention to inconsistencies in the text of the research laboratory Performance Report with measurement results. The text provides references to measurement results that are not available, as well as duplication of chemical analysis results. During CSC on-site inspections, it was revealed that environmental specialists carry out their work in accordance with their official duties. As a result, the negative effects on the environment are not registered. Environmental specialists routinely seek to eliminate identified nonconformities.
- ■ The EMP for Lot 1 and Lot 3 is necessary in part of object-based plans, such as the Dust Suppression Plan, the Waste Management Plan, the Labor Health and Safety Plan, to make corrective actions. Actions are not related to the content of the EMP, but are connected, first of all, with the process of work on the measures implementation of environmental protection plans. All necessary and justified measures based on the project EIA are registered in the EMP, and in fact on site for some of the taken measures information of performing is not collected and not recorded. This regarding to health protection education program (counteracting the spread of HIV / AIDS), compliance with technical regulations on the organization of waste storage area. It is also necessary to improve the skills for the preparation of analytical reports in terms of environmental protection.
- ■ For the period July-December 2018 for environmental specialists of Lot 1, 2 and 3, the CSC has developed a series of activities. The table 12 below shows the status of this plan implementation.

**Table 12. Implementation status of activities scheduled for the second half of 2018.**

Measures	Time-frame	Responsible	Expected result	Implementation status
Mobilization environmental specialists for Lots of 1,2,3 on a regular basis	July 2018	Contractor's Project Manager	On all Lots environmental specialist presets on regular basis	done
Submission of EMPP by contractor for Lot 2.	July 15, 2018	Contractor's Project Manager, EP Manager	Agreed document	done
Submission of a full set of environmental monitoring and protection plans for Lot 2	July 2018	Project manager The EP manager	Full set of documents for the protection of the environment consisting of 10 items of plans.	done
Submission of reports on production and environmental monitoring	July 2018	CSC	Agreed document	Lot 1 and 3 submitted EAP reports for July-November months. For December is not submitted by the time of this report preparation. Lot 2 submitted reports

				for the periods July-October No November and December report has been submitted at the time of this report preparation.
The provision by the contractor of the package of permits for borrow pits, plants	July 2018	Project manager	Legalization of all types of works and emissions into the environment	done
Carrying out information work on environmental education among the contractor's personnel and local residents	Quarterly	The EP manager	Reports on information work, booklets and memos on environmental issues	Not completed
Weekly environmental specialist reports-notes on monitoring the work on site	Weekly	CSC	Reports and Analytics on monitoring.	Not completed Included in subsequent plans. Weekly and monthly report in the construction report as a separate section
Organization of work to prevent negative impacts on flora and fauna, taking into account regional peculiarities: the periods of bird nesting, migration	September-November	The EP manager	Photo reports, environmental specialist reports	Not completed Included in the subsequent work plan

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■ **ADVANCED METHODS (GOOD PRACTICES) AND OPPORTUNITIES FOR THEIR IMPROVEMENT**

■ ■ **Advanced methods (good practices)**

- ■ In process of site monitoring CSC noted on Lot 2 how good practice is the formation of an interested environment with local authorities. The leading specialists of the Contractor on a weekly basis participate in meetings of the local akimat and in working order solve all the issues raised by the local population. The contractor has formed a good communication with local population, which allows him to remove any problems in a short time, without expecting or ignoring needs and requirements of the local population in obtaining information on impact of the project on life and lifestyle of local population. This practice allowed GRM to work effectively in this area. On this site is not recorded a single appeal. All issues are resolved on the site in working order.
- ■ As a good practice in terms of environmental protection, the fact of construction of a new ACP, CBP is noted. These plants and their components were delivered by the Contractor for this project new. That is, modern, with the operator and control units for emissions of pollutants into the air. Of course, these objects will not have a negative impact on the environment.

**6.2 Opportunity for improvement**

- ■ At the moment, no opportunities for the improvements for this construction period of the project have been identified.

## BRIEF CONCLUSIONS AND RECOMMENDATIONS

### Conclusions

- ■ ■ Effective protective measures for the project include following:
  - during the work on dismantling the existing bridges, environmental specialists supervised this stage of work to eliminate the risks of destruction of river banks, and to protect water resources from pollution by construction waste. When removing the supporting structures of bridges, fish spawning periods were taken into account. Construction waste removal was carried out according to work plans, with the provision of protective measures. All emissions to atmospheric air were within acceptable limits. Instrumental measurements did not show exceeding the permissible norms. In general, environmental specialists of Lot 1, Lot 2 and Lot 3 sections perform ongoing monitoring and ensure an effective system for managing the environmental management plan;
  - competent planning of construction works, which allowed the Contractor not to accumulate a large amount of equipment in small areas, especially in sensitive areas. Constant adjustment of the work schedule of water spreading machinery, taking into account all factors affecting the process of dust generation;
  - an organization structure that allows effective work of the environmental management system. In the organization structure of contractors, vertical and horizontal interactions are included and staff of linear structures (headman, foremen, etc.) are involved in this process.
- ■ According to the results of environmental specialists of Lot 1,2 and 3 work monitoring on the implementation of the EMP, to enhance their potential, eliminate identified non-conformities, take corrective actions according to the plan of the previous period and prevent the risks of negative impact on the environmental, CSC has developed a series of actions that will achieve the stated goals.

**Table 13. Corrective action plan for Lot 1 and Lot 3**

Measures	Time-frame	Responsible	Expected result
Develop and approve a schedule for removal of solid waste from temporary storage areas from all facilities including the engineer's office, construction site, production base, laboratories, etc.	February 2019	Contractor's Environmental specialist	Approved document with a logbook for registration of solid waste and industrial waste removal.  Effective waste management
Include in the monthly environmental report a section on waste management, use of resources	January 2019	Contractor's environmental specialist	Tracking the process and making timely adjustments to waste management plans
Label waste containers and add their locations to the scheme in waste management plan.	January 2019	Contractor's environmental specialist	Compliance with the requirements and rules for the organization of temporary waste storage areas. Accounting by type, hazard class and amount of waste
Give briefings to its employees on environmental safety issues at residential facilities, at the construction site and in close proximity to settlements.	On quarterly basis	Contractor's environmental specialist	Educating workers and the public on environmental safety issues  Formation of the project interested environment

Ensure the implementation of health and safety plans in terms of STD, HIV/AIDS non-spreading	March, August	June, Environmental specialist and OHS specialist	Performance of contractual obligations
Weekly environmental specialist reports-notes on monitoring the work on site	weekly	CSC	Reports and Analytics on monitoring.  Actual information to track the results of the EP activities
Organization of work to prevent negative impacts on flora and fauna, taking into account regional peculiarities:  the periods of bird nesting, migration	February-June 2019	The manager EP	Photo reports, environmental specialist reports
Bringing the Engineer's office according to the specifications in terms of ensuring the improvement, safety, comfort and completeness of the necessary resources.	February 2019	Project manager	Contractor's compliance with contractual obligations

For environmental specialist of Lot 2 the following recommendations are given:

**Table 14. Corrective action plan for Lot 2**

Measures	Time-frame	Responsible	Expected result
Put in proper condition the area for temporary disposal of solid waste	February 2019	Contractor's environmental specialist	Compliance with the rules and requirements, prevention of site pollution, accumulation of waste, as well as improving accounting for the formation and removal of solid waste
Mark containers according to waste types	February 2019	Contractor's Environmental specialist	Accounting by type, hazard class, quantity of waste
Bring the septic tank in proper condition in accordance with the requirements for these facilities.	March 2019	Contractor's environmental specialist	Warning of the presence of wastewater, compliance with the requirements and rules for these facilities
Include in the monthly environmental report a section on waste management, use of resources	January 2019	Contractor's environmental specialist	Tracking the process and making timely adjustments to waste management plans
Ensure the presence of the	According to	Contractor's	Compliance with the sampling



Engineer during the EAP	the schedule of EAP	Environmental specialist	process, sampling point schemes.
Ensure the implementation of health and safety plans in terms of STD, HIV/AIDS non-spreading	March, June, August	Environmental specialist and OHS specialist	Performance of contractual obligations
Weekly environmental specialist reports-notes on monitoring the work on site	Weekly for the period January-June 2019	Contractor's environmental specialist	Reports and Analytics on monitoring.  Actual information to track the results of the EP activities
Organization of work to prevent negative impacts on flora and fauna, taking into account regional peculiarities: bird nesting period, migration	February-June 2019	The EP manager	Photo reports, environmental specialist reports

## ■ Recommendations

- ■ ■ Engineer recommends to CoR review the number of months in which a specialist on protective measures in the CSC structure is involved, since the periodic engagement and intermittent schedule of the specialist's work does not contribute to effective on-site work with local environmental specialists. Remote work partly leads to the fact that not all plans (site-specific) can be traced in terms of implementation and analysis of this work.

## Appendixes

### Appendix 1

#### Permit documents for Lot 1

Document title	Document information and status
Road " Aktobe-Makat-km 275-330	The permit for emissions into the environment № KZ 10VD00092475 dated 20.04.2018
"Environmental impact assessment (EIA)" of the project	Received 30.05.2018 registration Number KZ65VDC00070584
The act on the right of permanent land use on the land plot of 62.24 hectares for reconstruction of the road "Aktobe – Atyrau – border of the Russian Federation (Astrakhan) km 487 -504".	Documentation submitted by the Customer as part of the tender documentation
Borrow pits and the status of work on them	Production permit obtained on 28.04.2018 Permit KZ65VDC00070584 dated 30.05.2018 on a borrow pits in Temir district from 1 to 8 borrow pits. Permit KZ73VDD00096355 dated 11.07.2018 Permission for development and production obtained 30.05.2018 for a period of up to 30.07.2020
Environmental production monitoring	A contract with "HydroEcoResource –L" LLP on April 17, 2018. The laboratory has certificate of accreditation KZ.I. 05. dated 17.04.2013 The Data, obtained prior to construction report submitted 18.05.2018
Services for the removal of solid waste and industrial waste	The contract with "Environmental technologies XXI" LLP dated 2.05.2018
The EMP with 10 Activities Plans for environmental protection	Detailed EMP approved on 19.07.2018

**Geographical coordinates of the corner points of the Borrow pits of Lot 1**

Corner point numbers	Geographic coordinates	
	Northern latitude	East longitude east longitude
<b>Borrow pit №1</b>		
1	49°12'06.43"	56°38'51.27"
2	49°12 ' 05.17"	56°39'00.96"
3	49°11'58.82"	56°38'59.04"
4	49°12'00.08"	56°38'49.34"
<i>Land plot area - 0,0399 sq.km (3.99 ha)</i>		
<b>Borrow pit №2</b>		
1	49°11'32.44"	56°37'08.01"
2	49°11'32.29"	56°37'20.36"
3	49°11'25.98"	56°37'20.38"
4	49°11'25.97"	56°37'08.04"
<i>Land plot area - 0,0499 sq.km (4.99 ha)</i>		
<b>Borrow pit №3</b>		
1	49°12'24.02"	56°35'17.68"
2	49°12'17.89"	56°35'20.87"
3	49°12'15.80"	56°35'11.52"
4	49°12'21.93"	56°35'08.33"
<i>Land plot area - 0,0399 sq.km (3.99 ha)</i>		
<b>Borrow pit №4</b>		
1	49°10'56.89"	56°30'23.09"
2	49°10'54.59"	56°30'32.32"
3	49°10'48.54"	56°30'28.81"
4	49°10'50.84"	56°30'19.58"
<i>Land plot area - 0,0399 sq.km (3.99 ha)</i>		

Appendix 3

Results of measurements of Noise and Vibration Lot 1

Place / points of measurements	Data, obtained prior to construction 24.04.18	July 27.07.18	October	November
Residential area of Zhaksymai village, km 160	37.9	38.4	No data	No data
Residential area of Kopa village, km 164	37.8	38.0	38.2	39.6
Residential area Kenzhaly	-	38.6	38.1	38.1
Residential Area Shubarkudyk		38.4	38.5	38.5
km 160	38.1	38.6	38.6	36.4
km 170	38.0	38.4	38.2	35.7
km 180	38.2	No data	No data	No data
km 190	37.3	No data	No data	No data
km 200	37.6	No data	No data	No data
km 210	37.9	No data	No data	No data
km 220	38.9	No data	No data	No data

*Equivalent vibration*

*acceleration level dB (permissible-95 dB)*

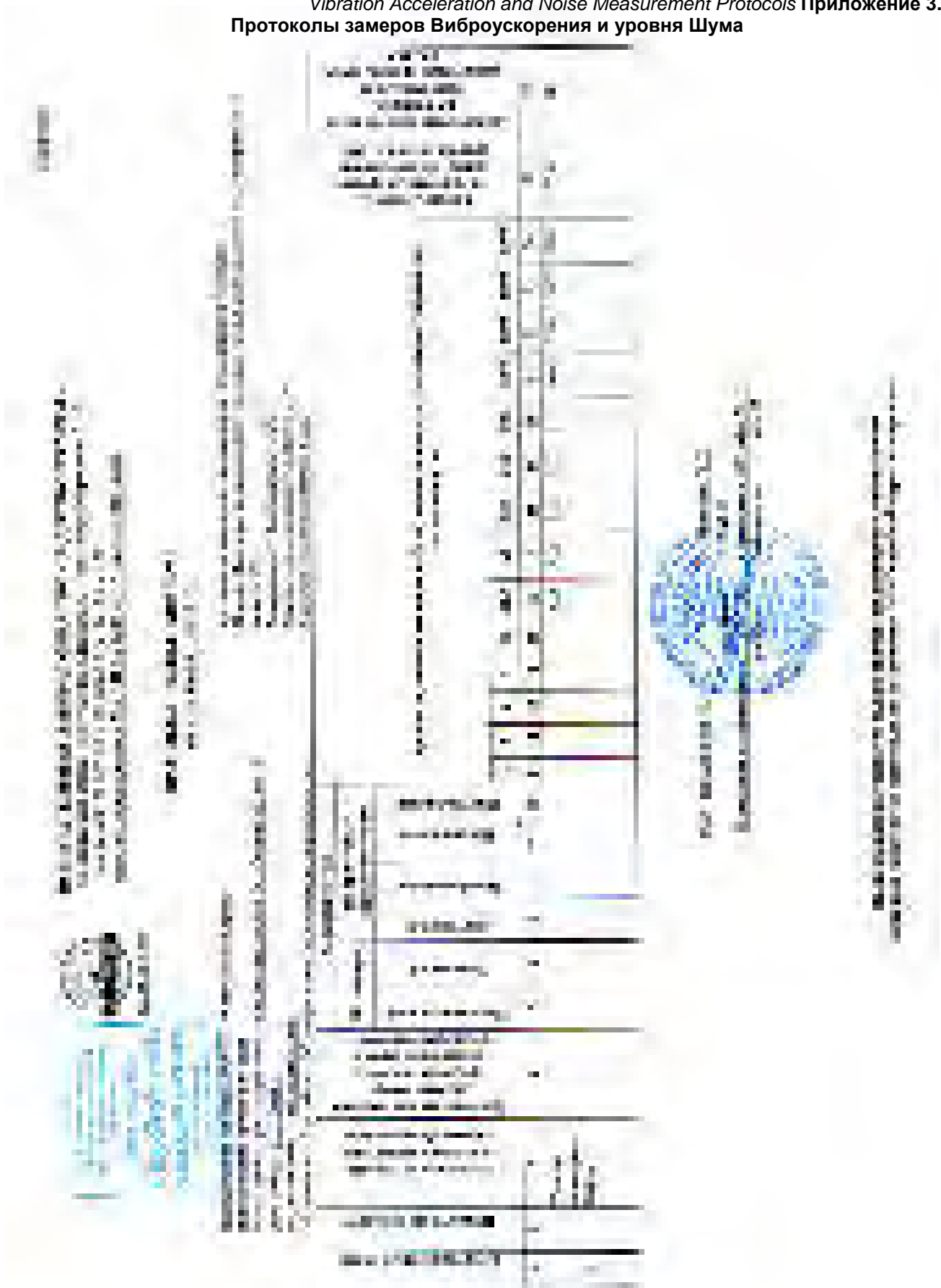
Dynamics of changes of indicators of the Noise level on Lot 1

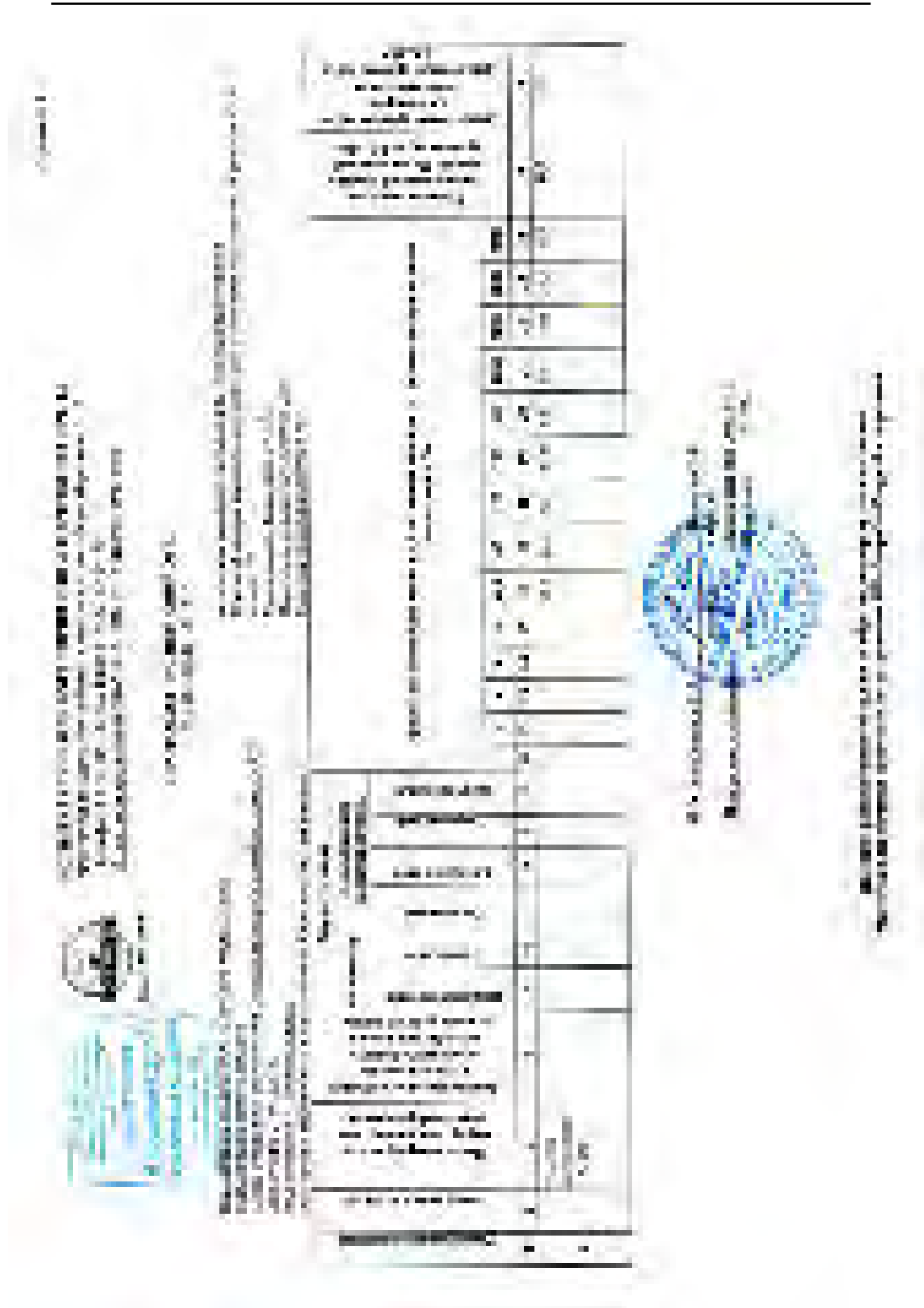
Place / points of measurements	Data, obtained prior to construction 24.04.18	July 27.07.18	August	September 27.09.18	October 25.10.2018	November 26.11.2018
Residential area of Zhaksymai village, km 160	56.3	56.4				
Residential area of Kopa village, km 164	53.4	56.4		57.2	56.8	55.2
Residential Area Shubarkudyk	-	56.7		57.0	56.4	52.8
Residential area Kenzhaly	-	55.4		57.3	56.5	56.5
km 160	52.4	53.6		54.3	54.2	52.1
km 170	52.6	53.5		54.5	54.8	54.6
km 180	52.5					
km 190	52.7					
km 200	53.2					
km 210	53.6					
km 220	53.6					

Equivalent sound level  $L_{eq}$ , dBA (Permissible-80 dBA)

Appendix 3.1

Vibration Acceleration and Noise Measurement Protocols Приложение 3.1.  
Протоколы замеров Виброускорения и уровня Шума



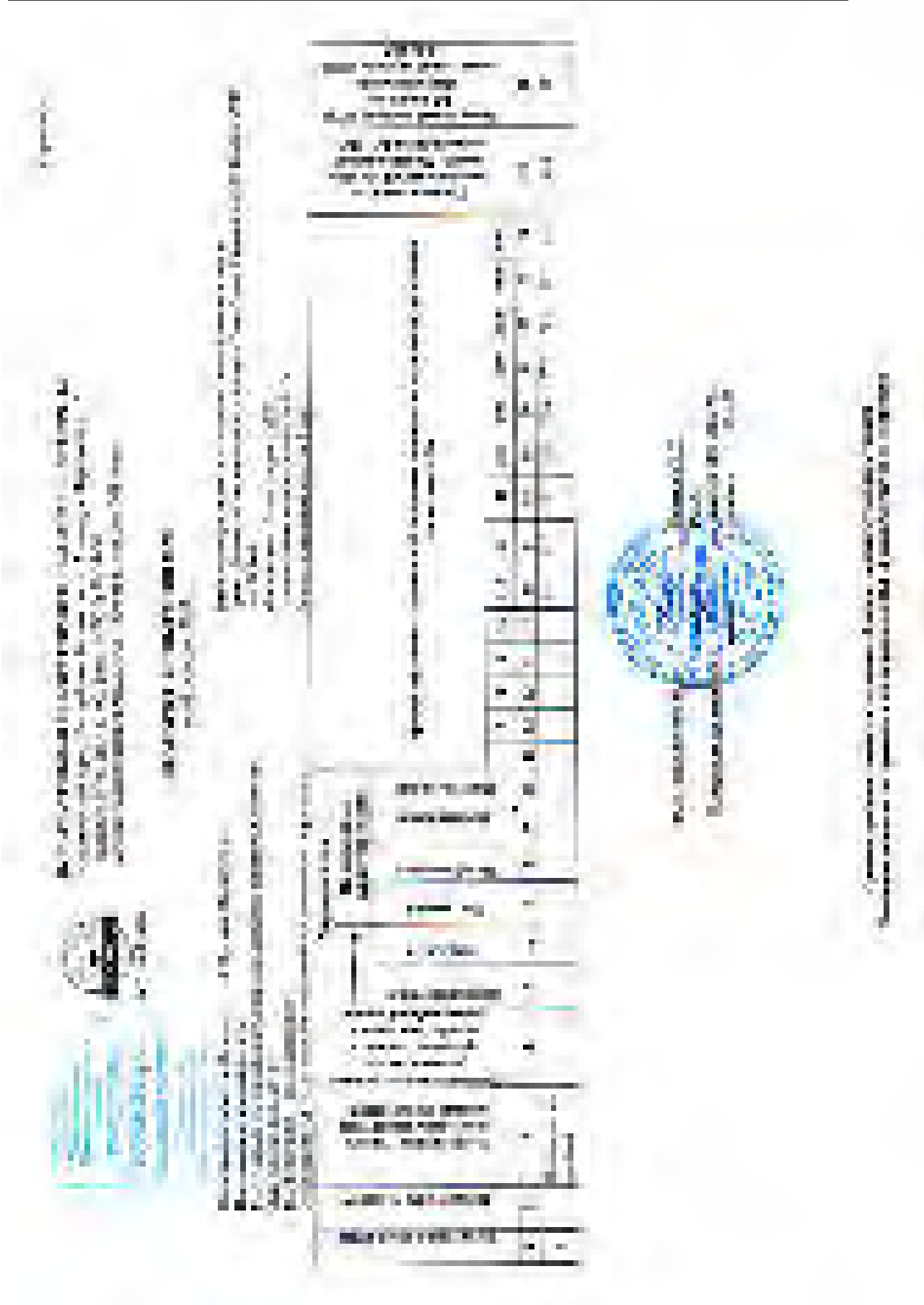


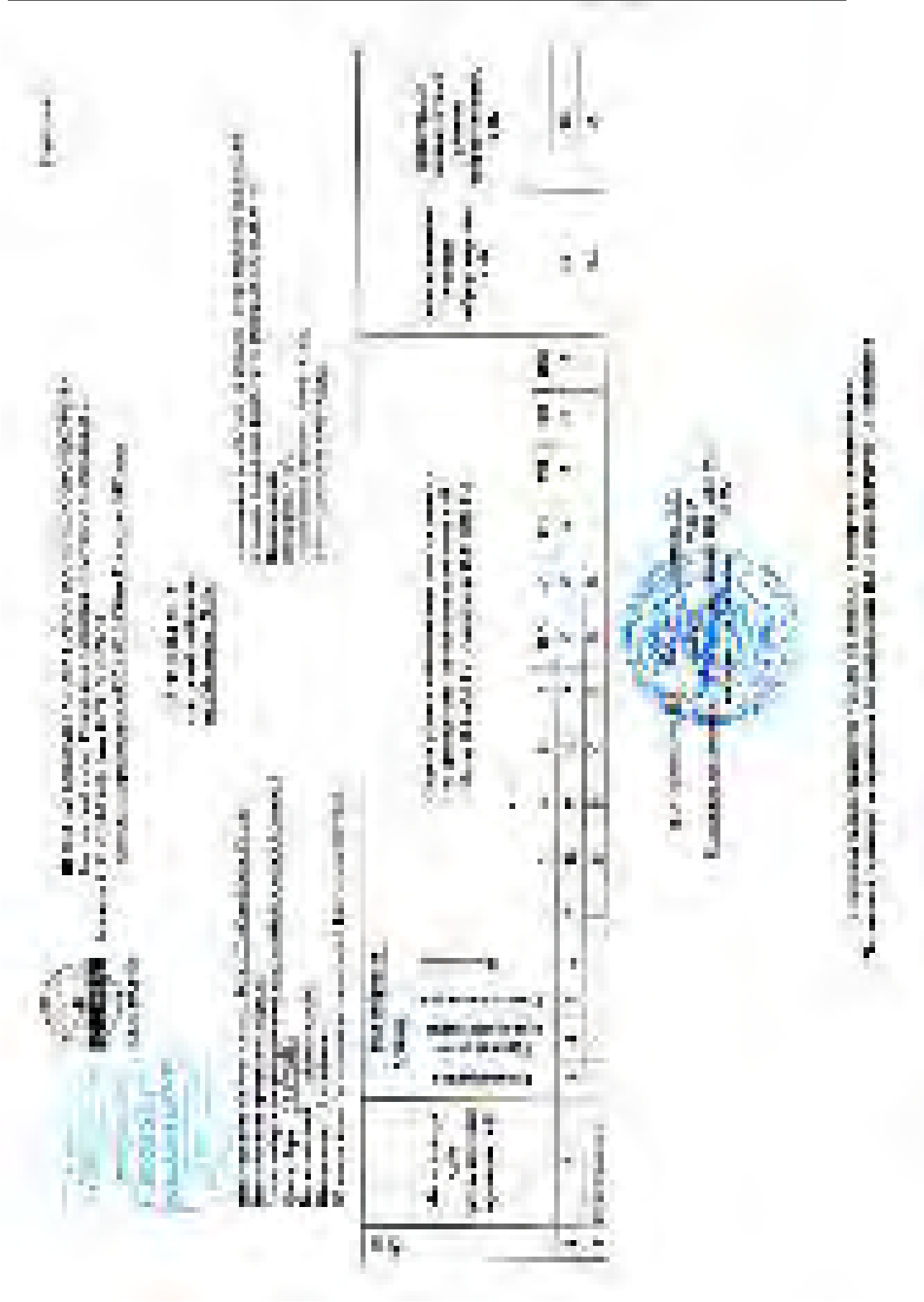




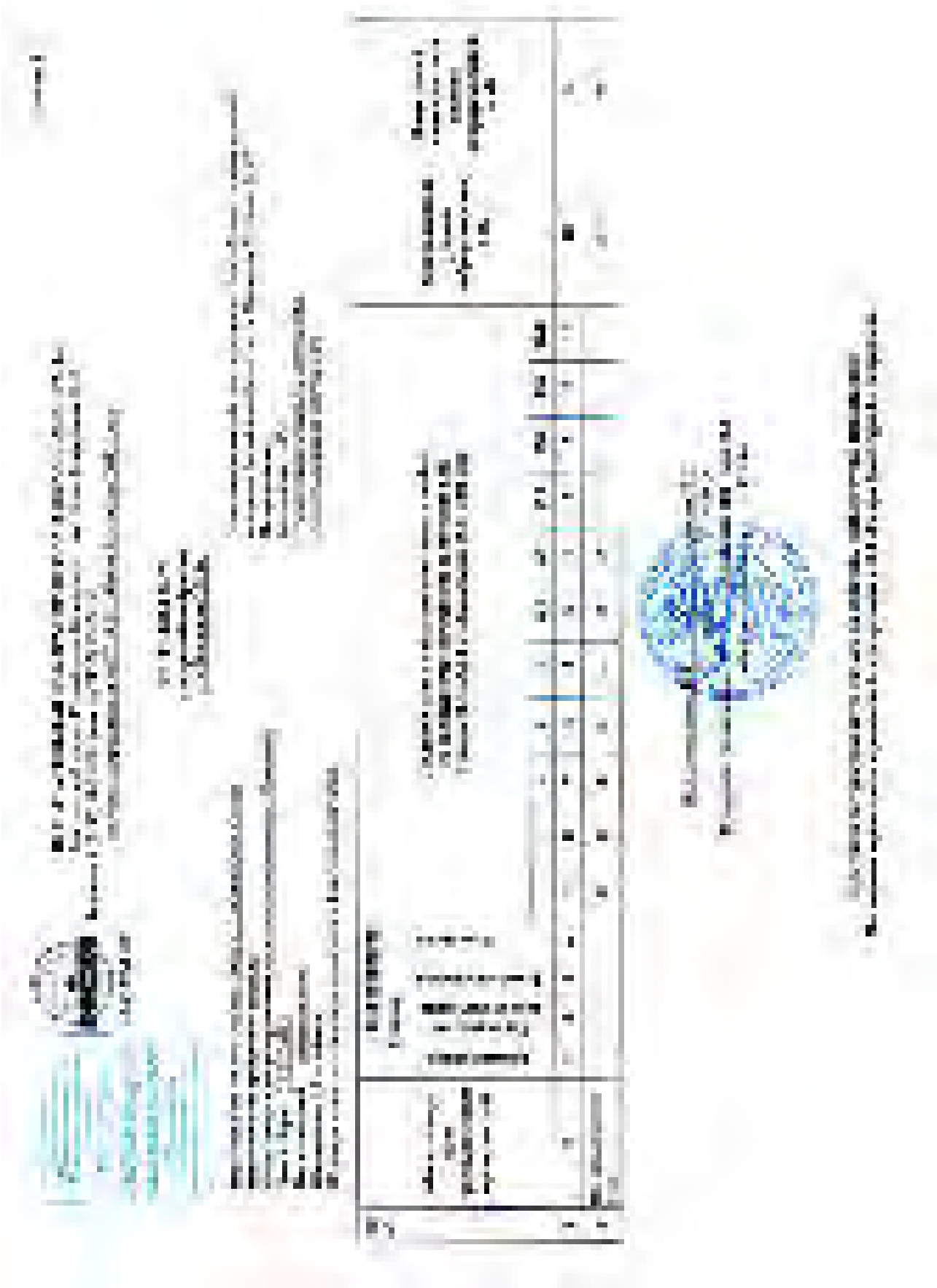


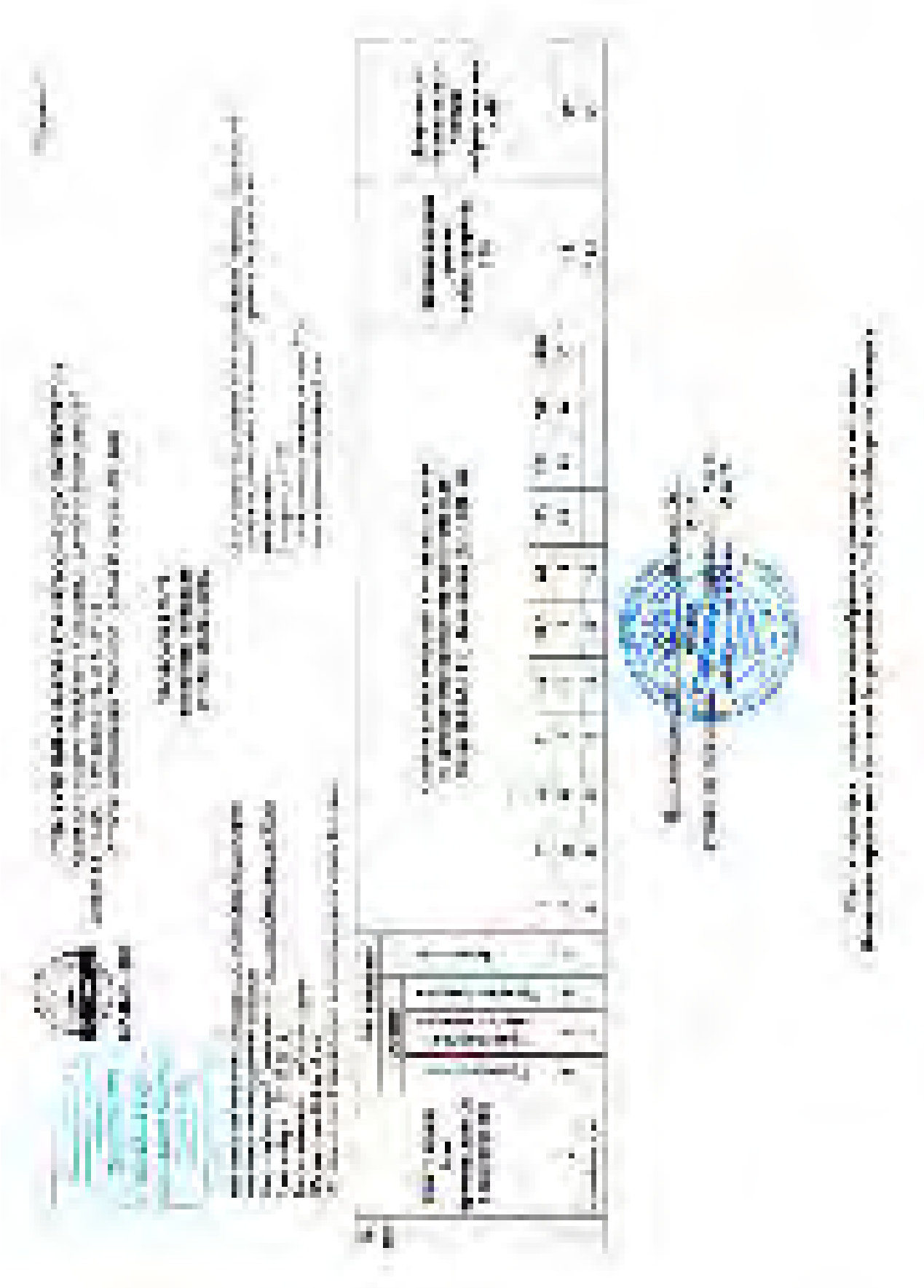


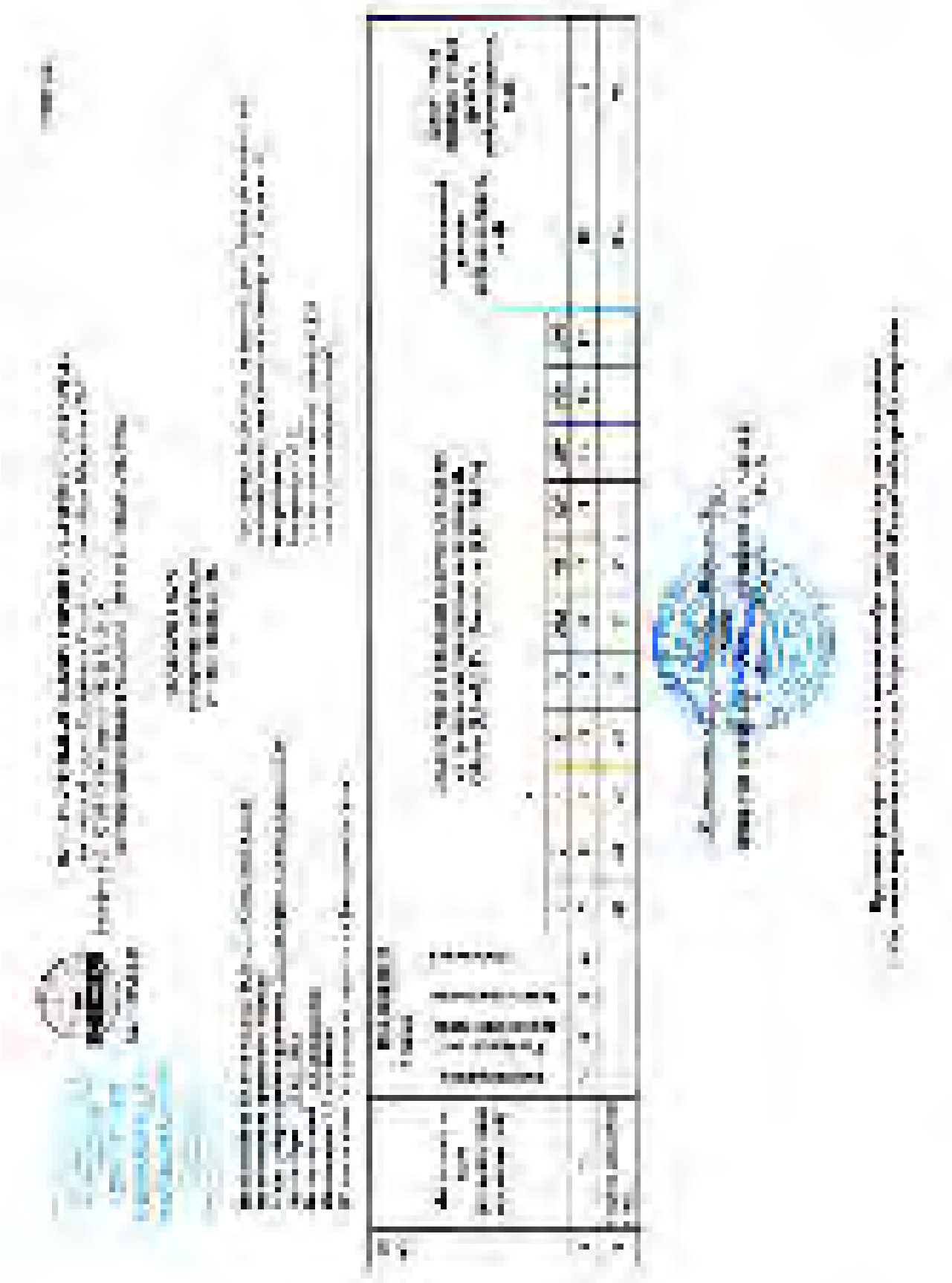






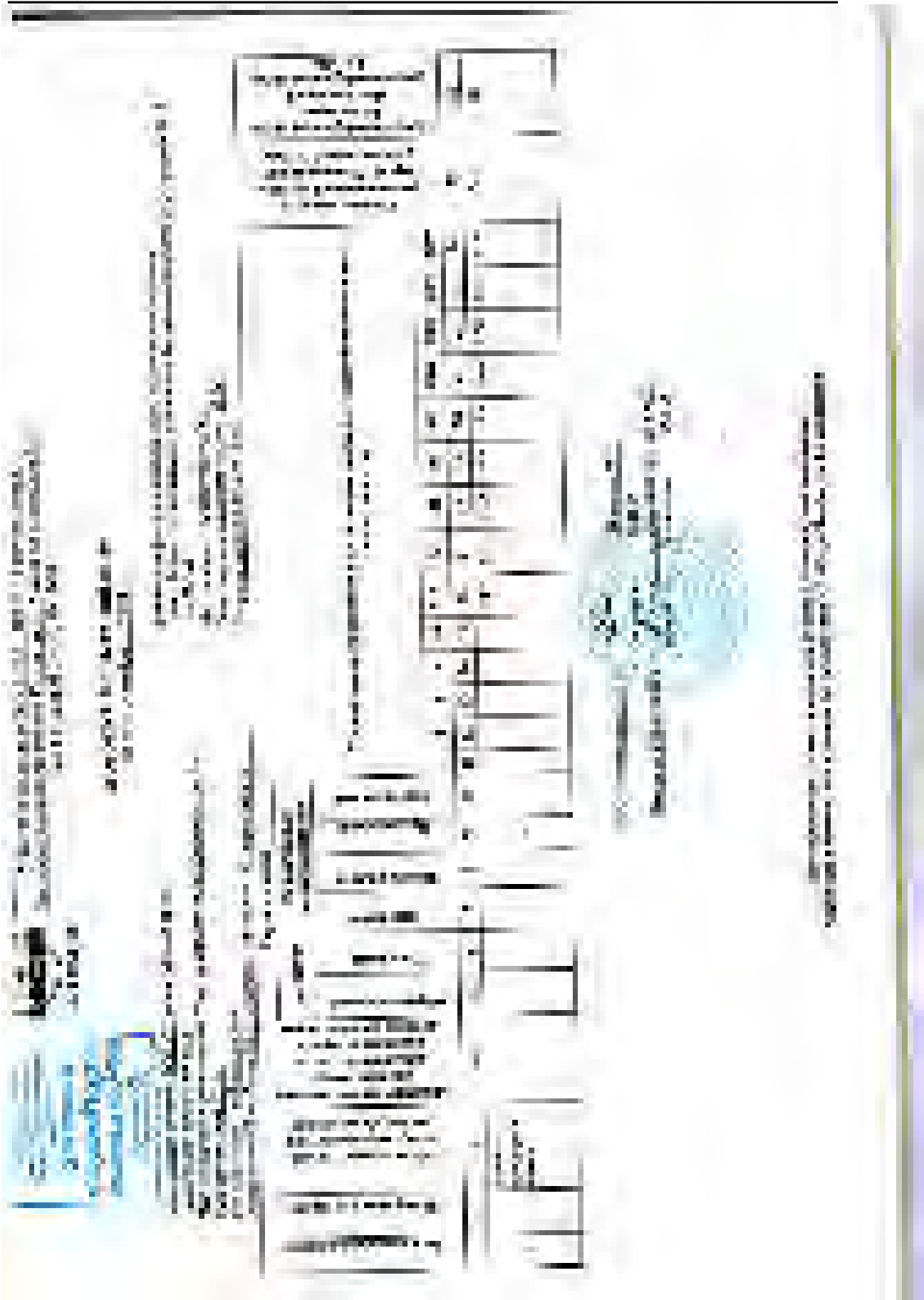






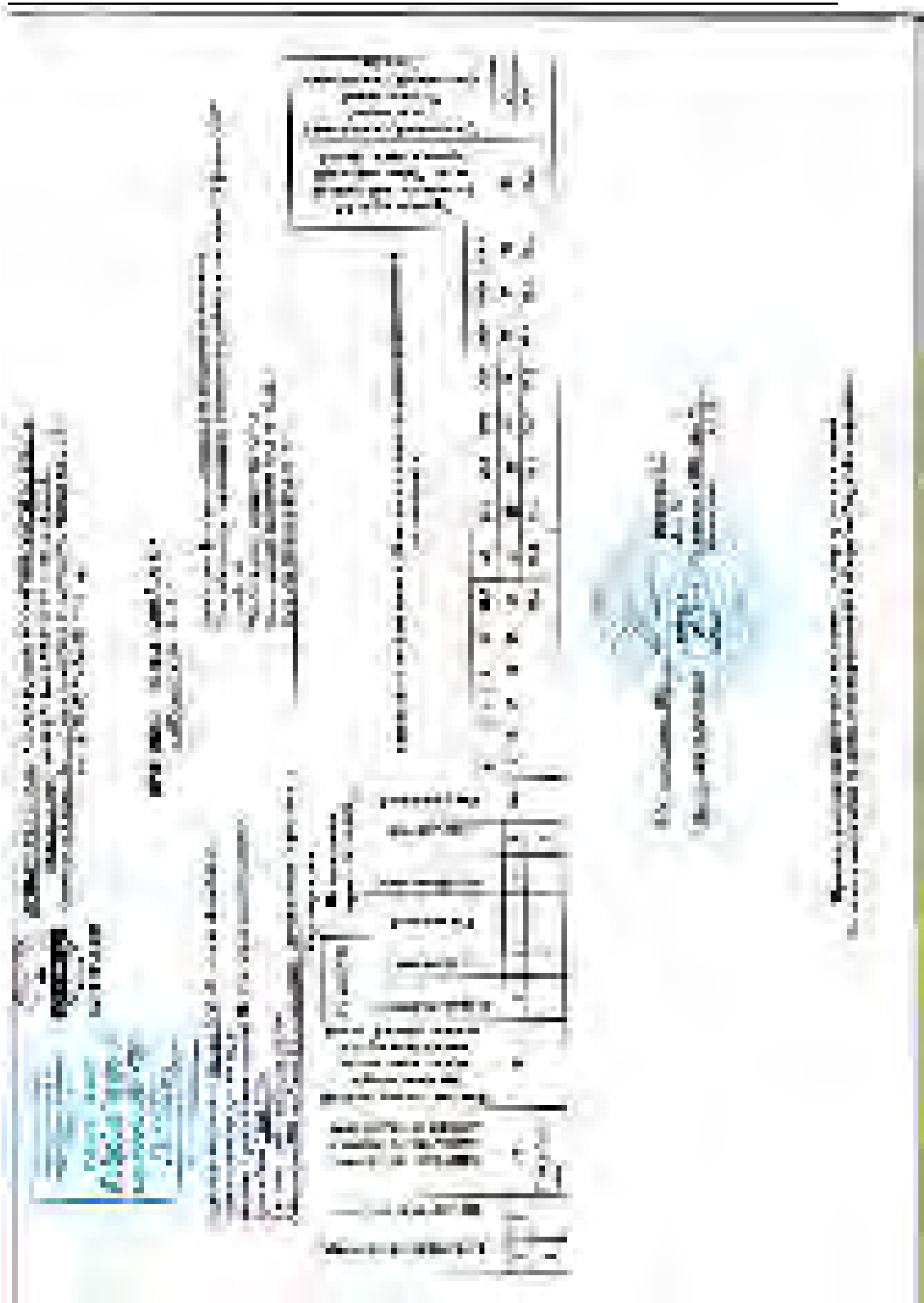




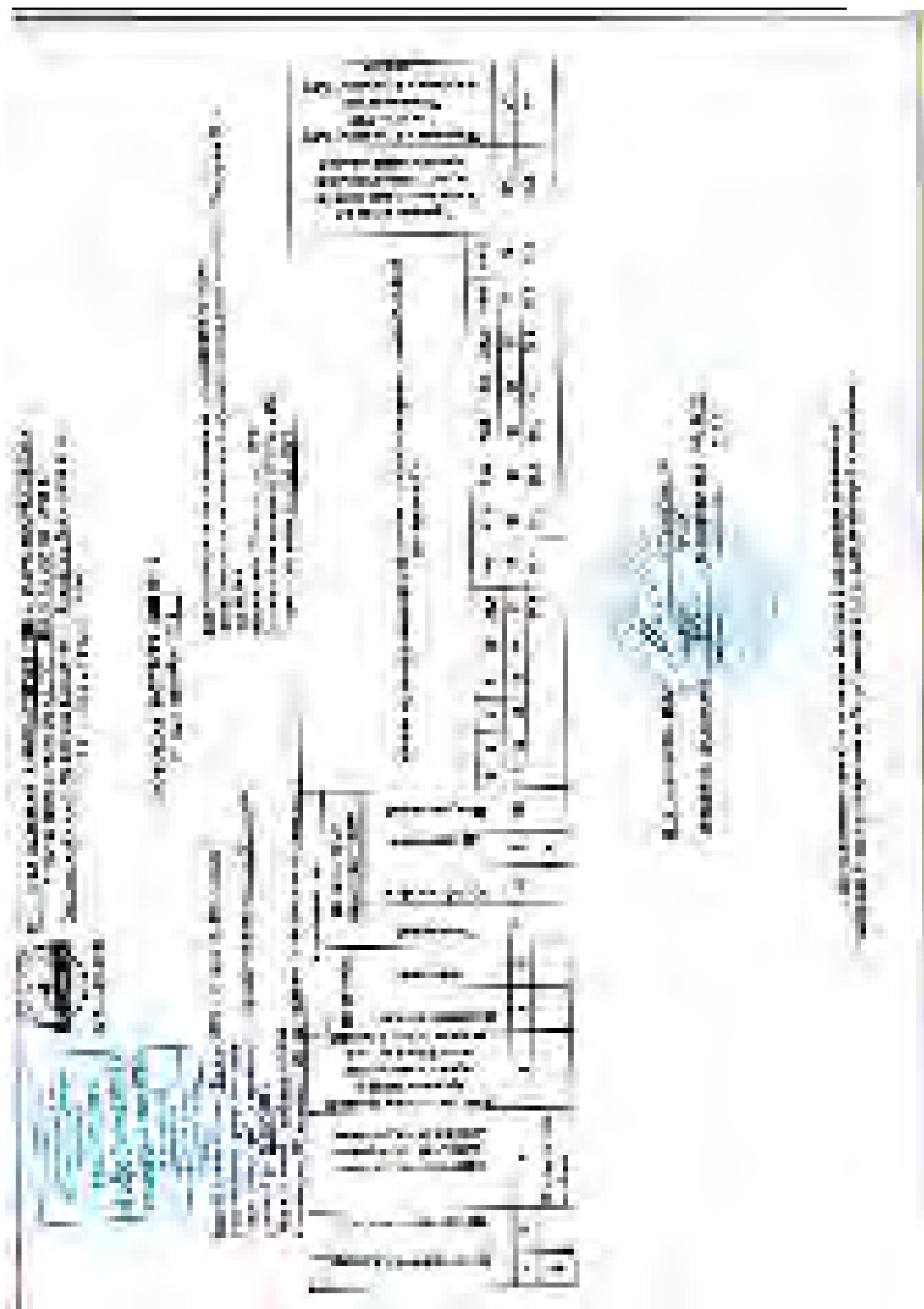


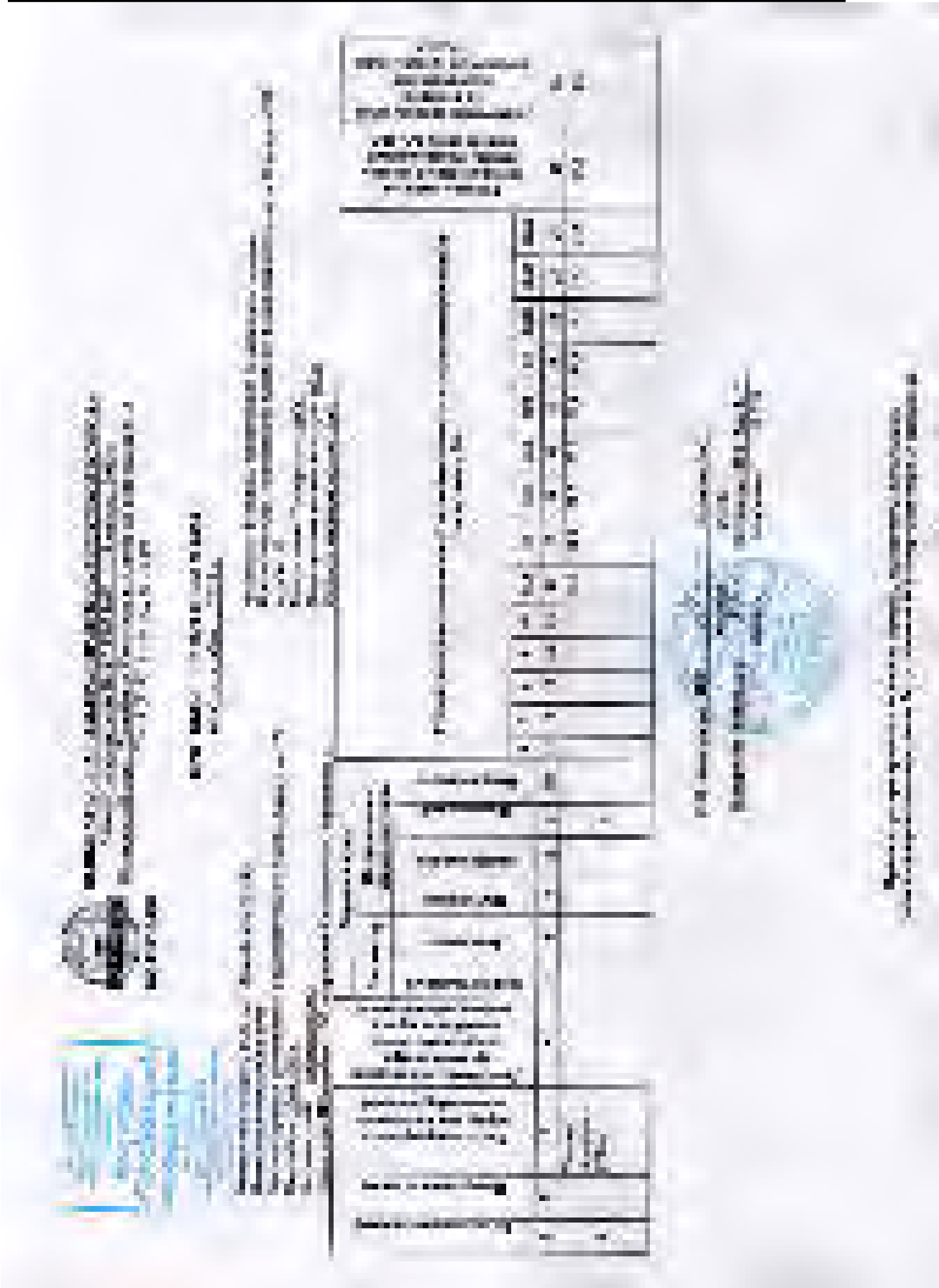


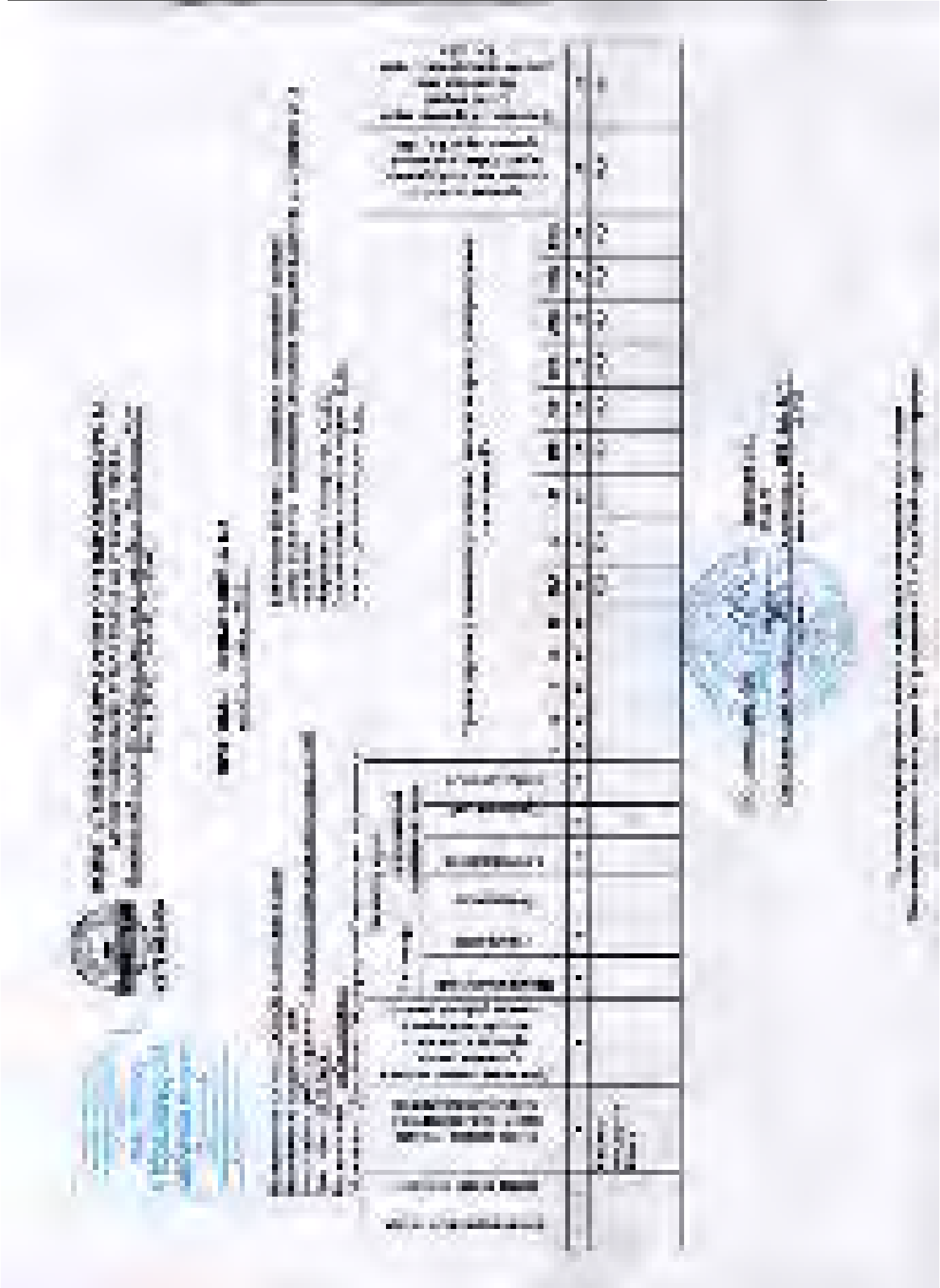




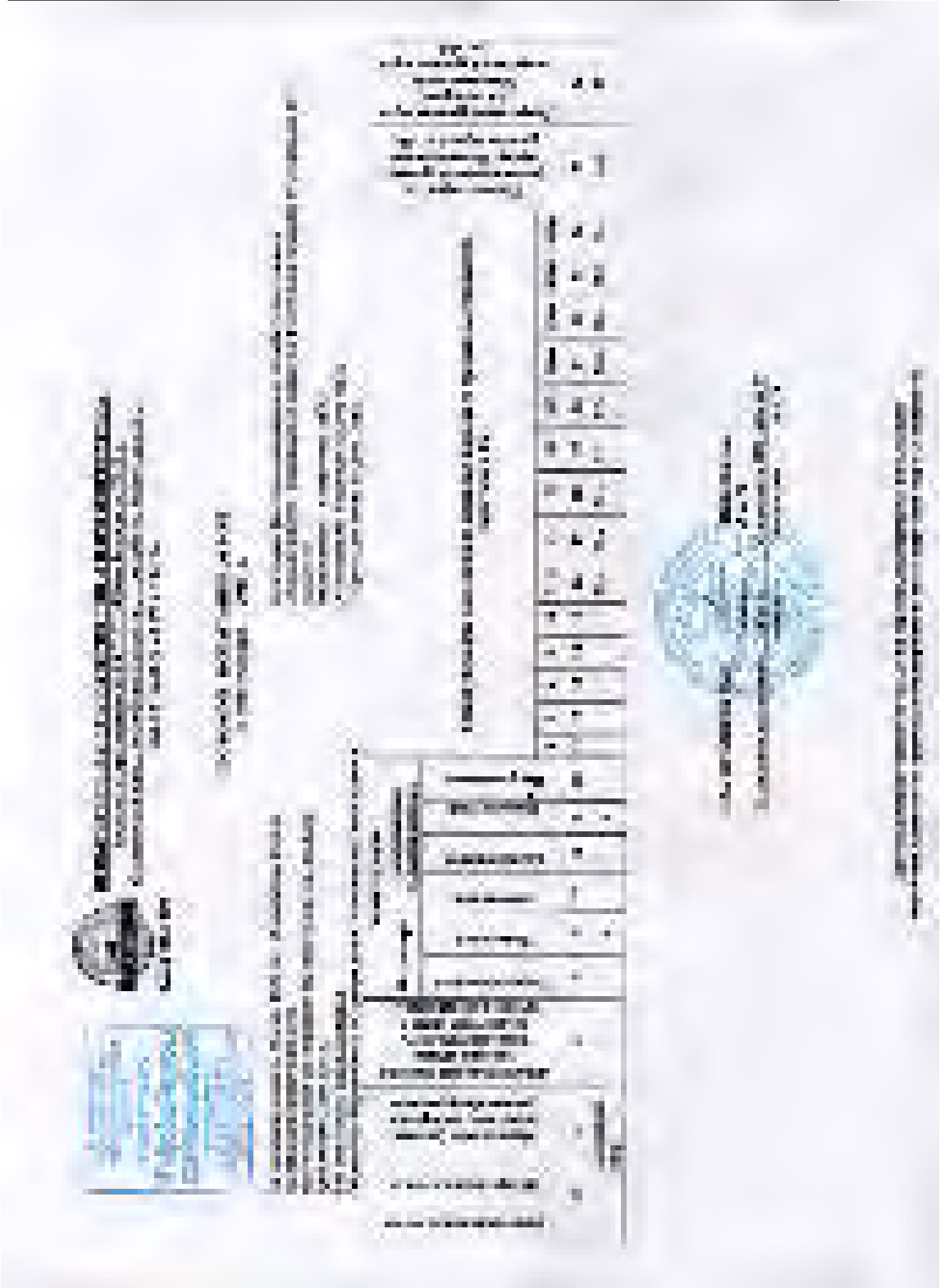


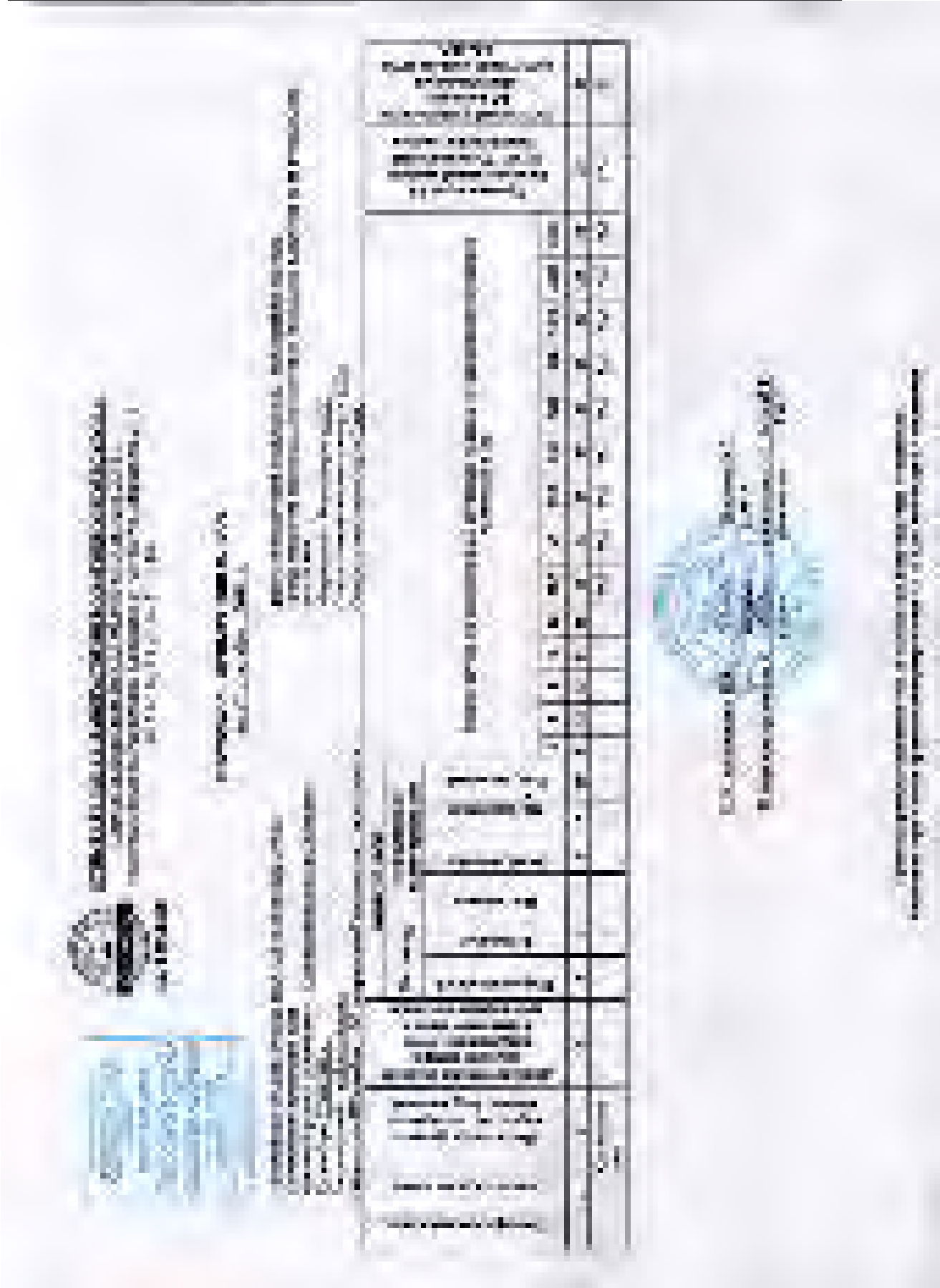


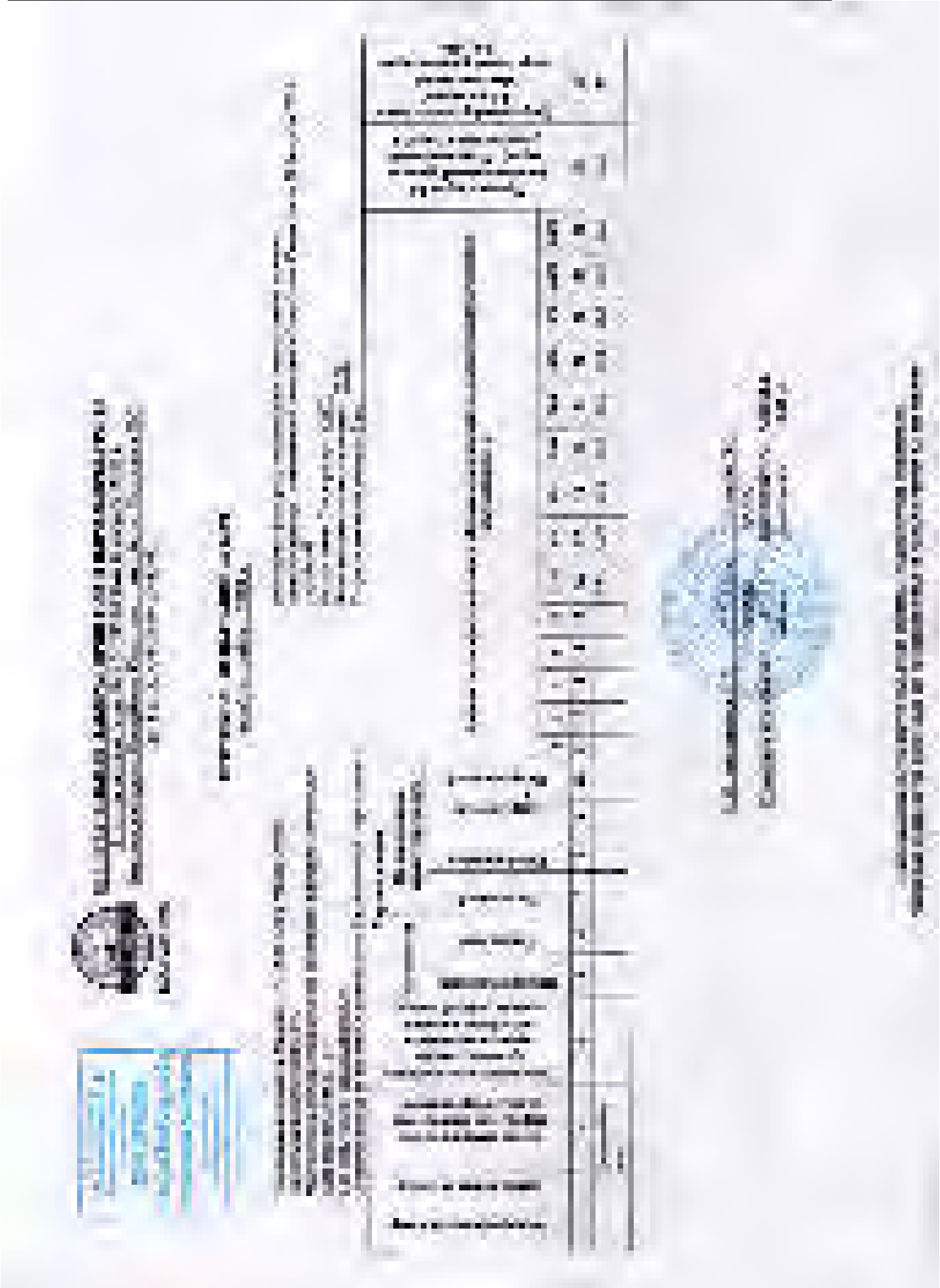


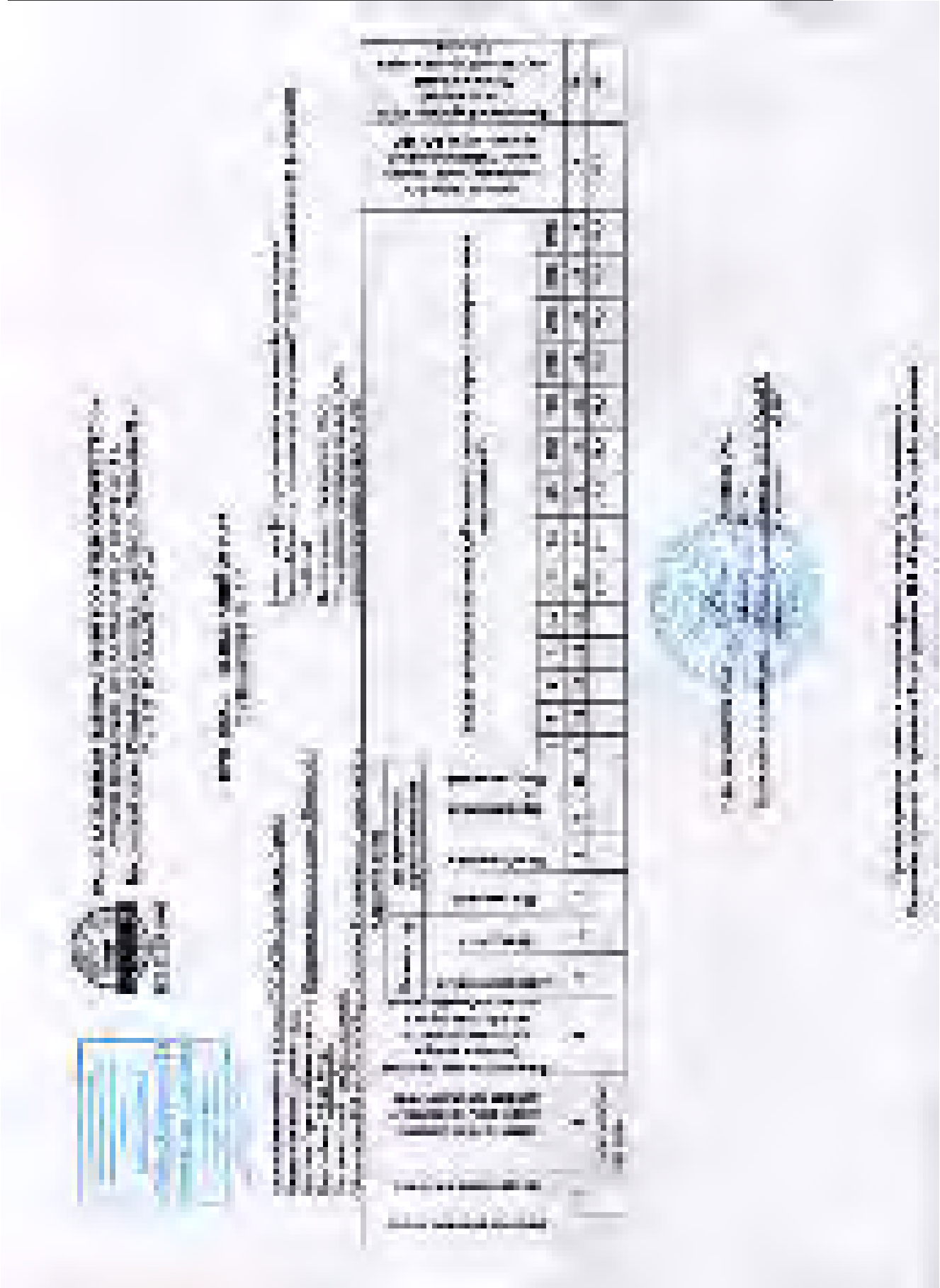




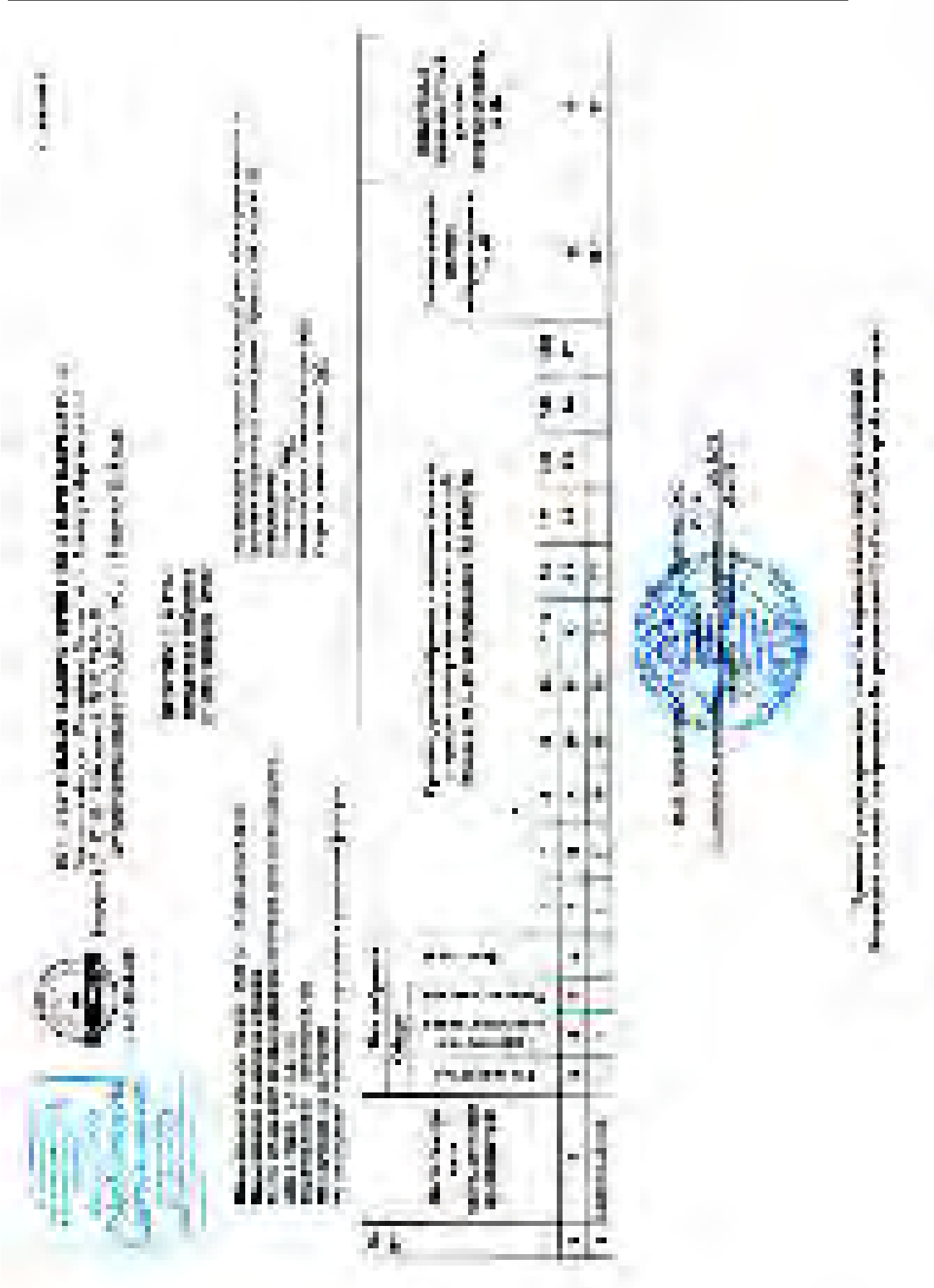








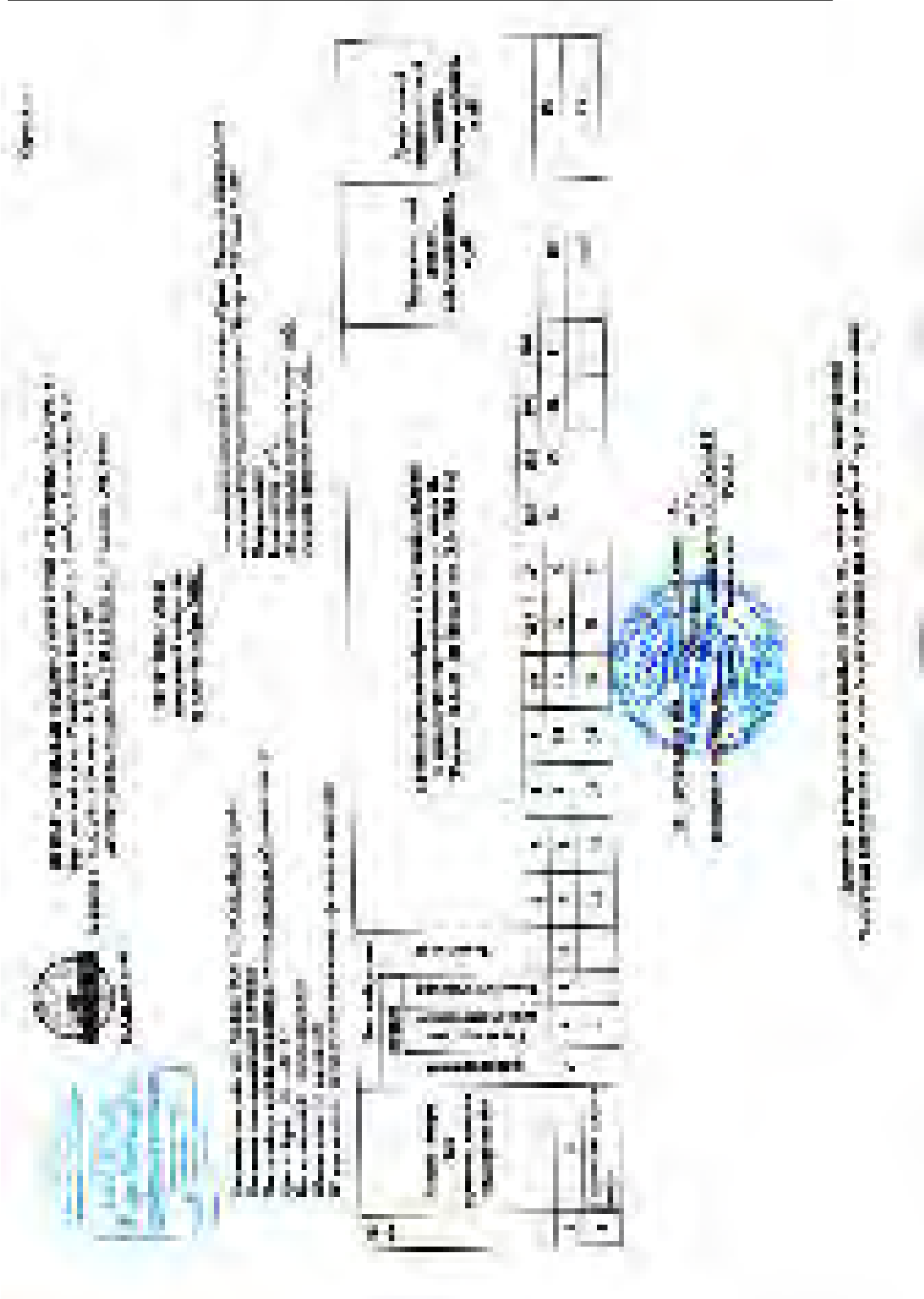






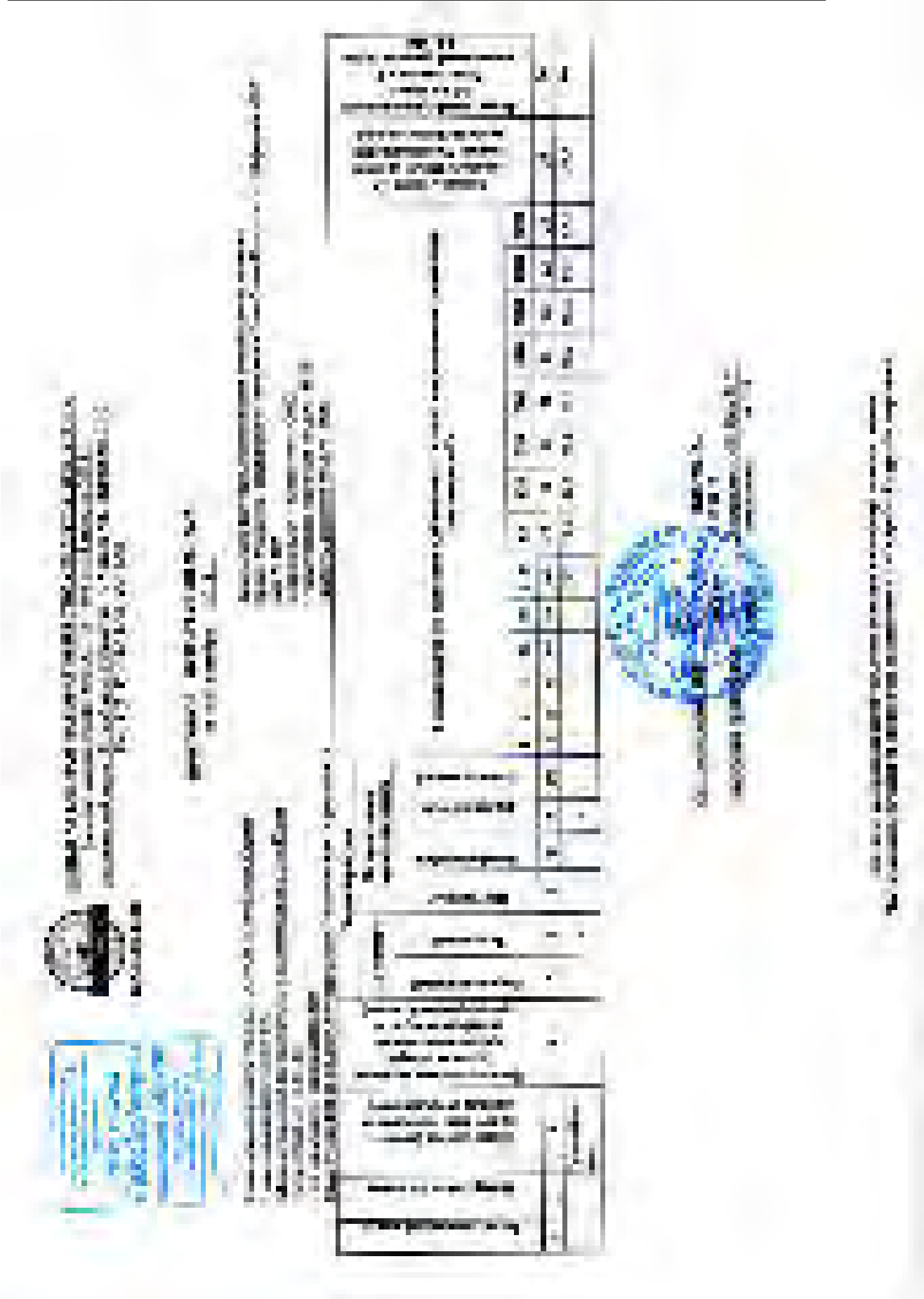
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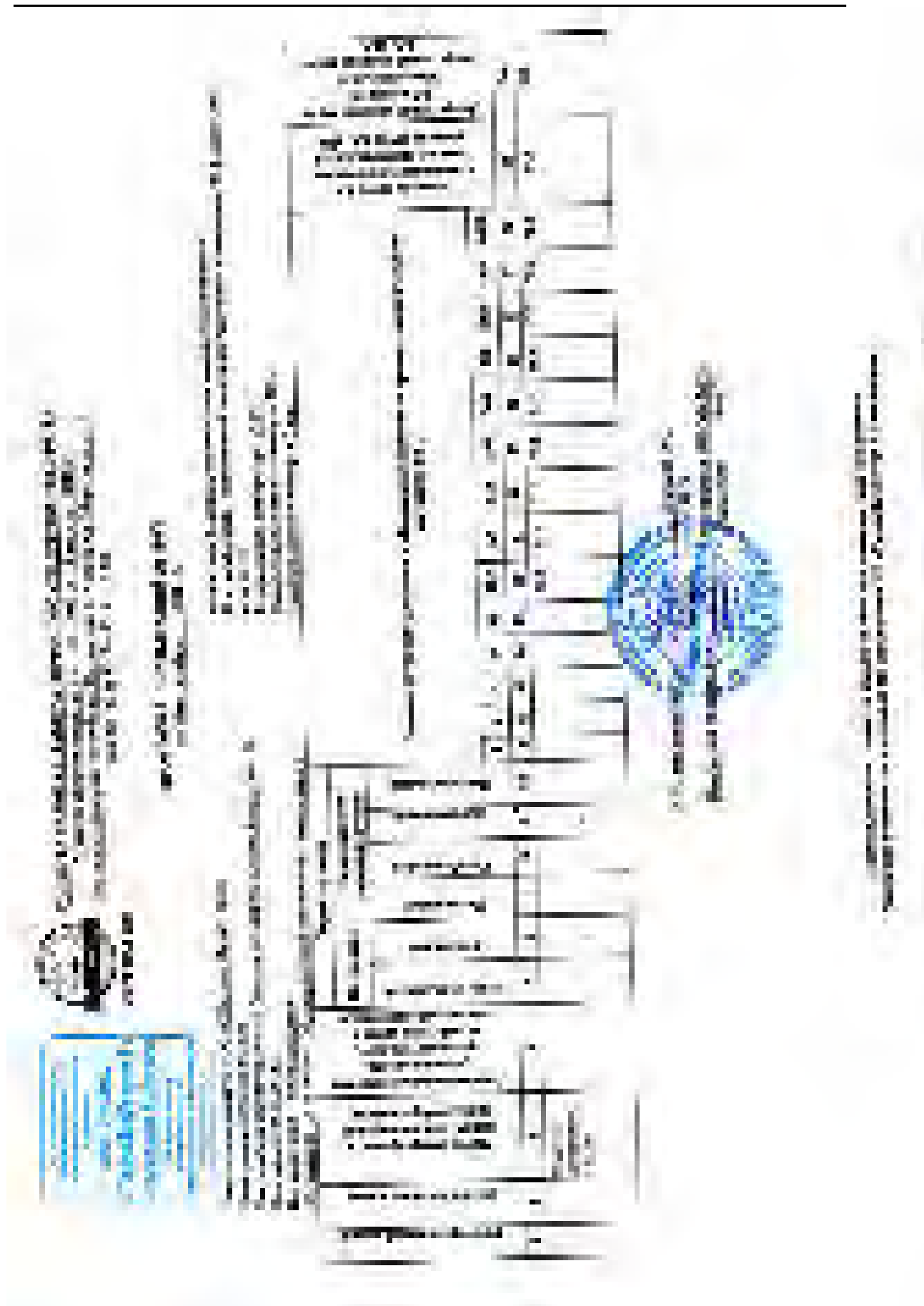


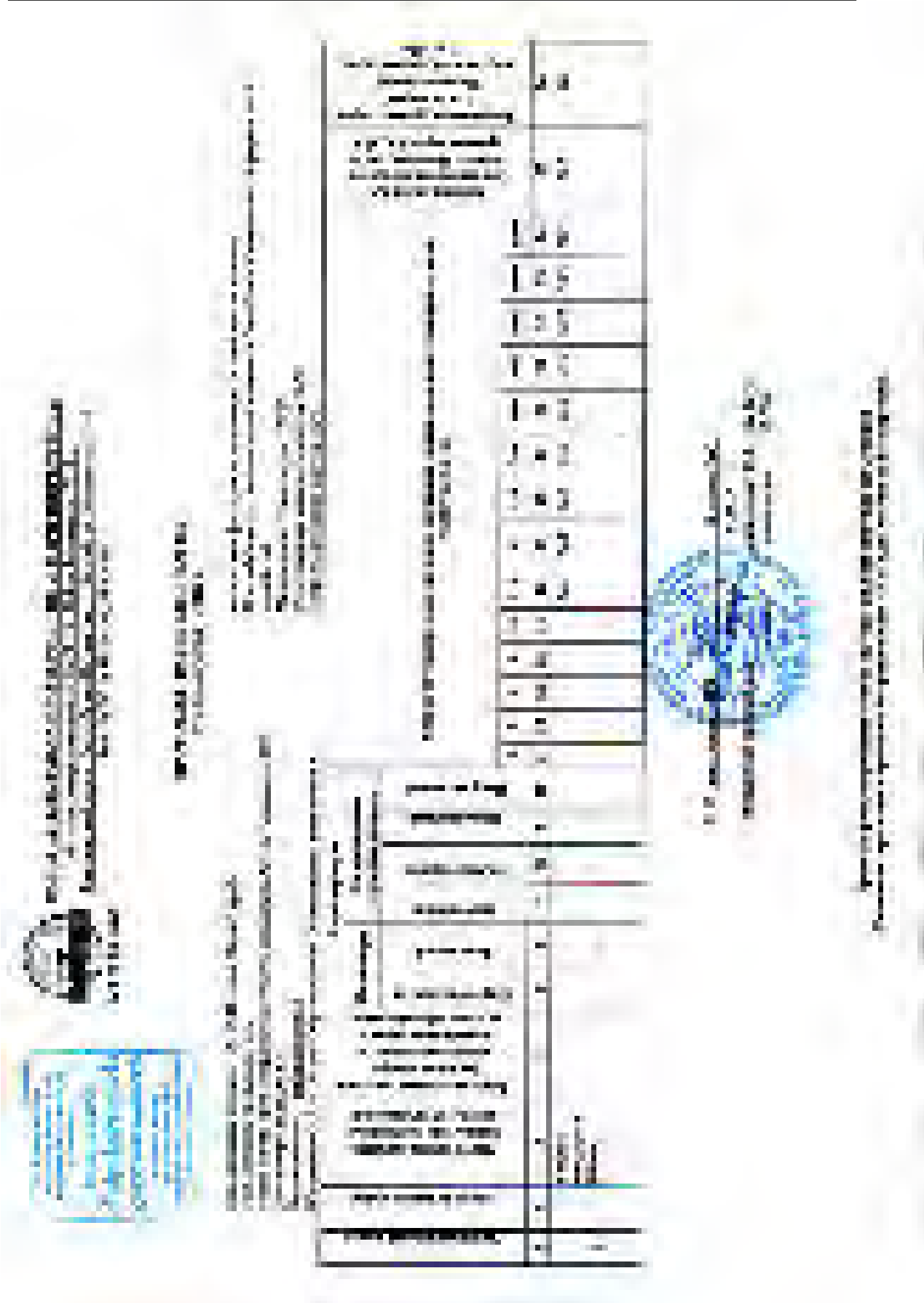


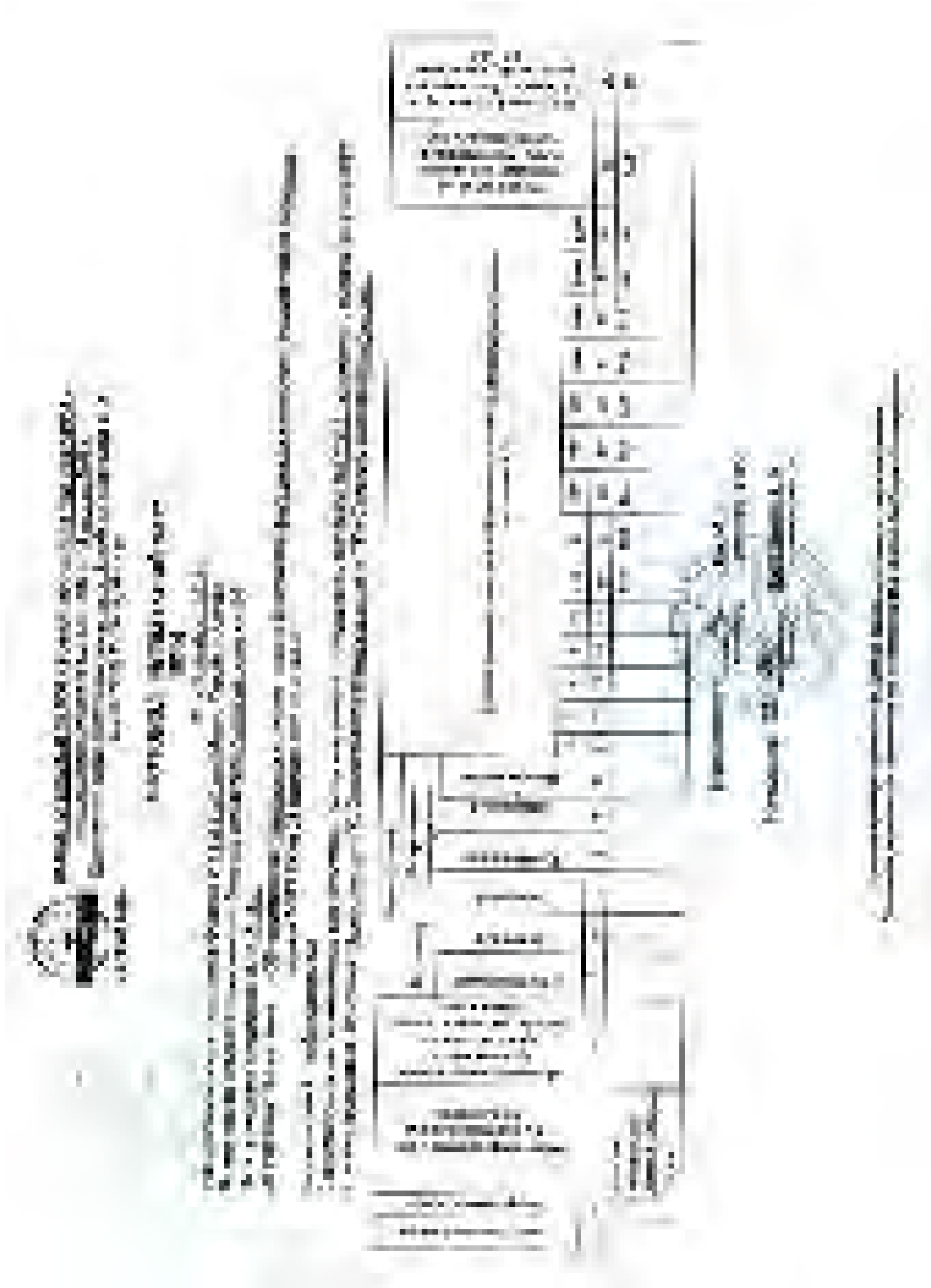


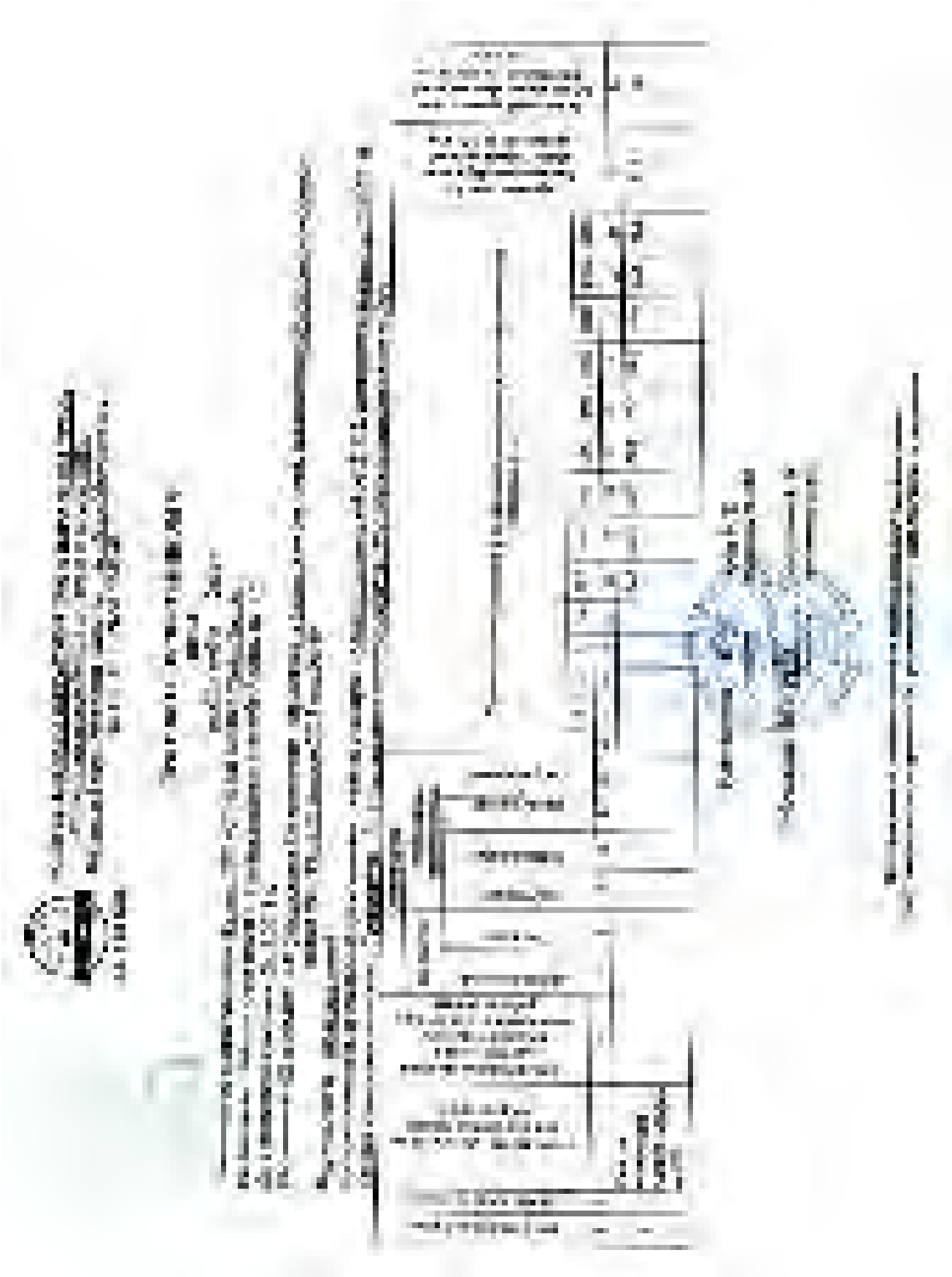




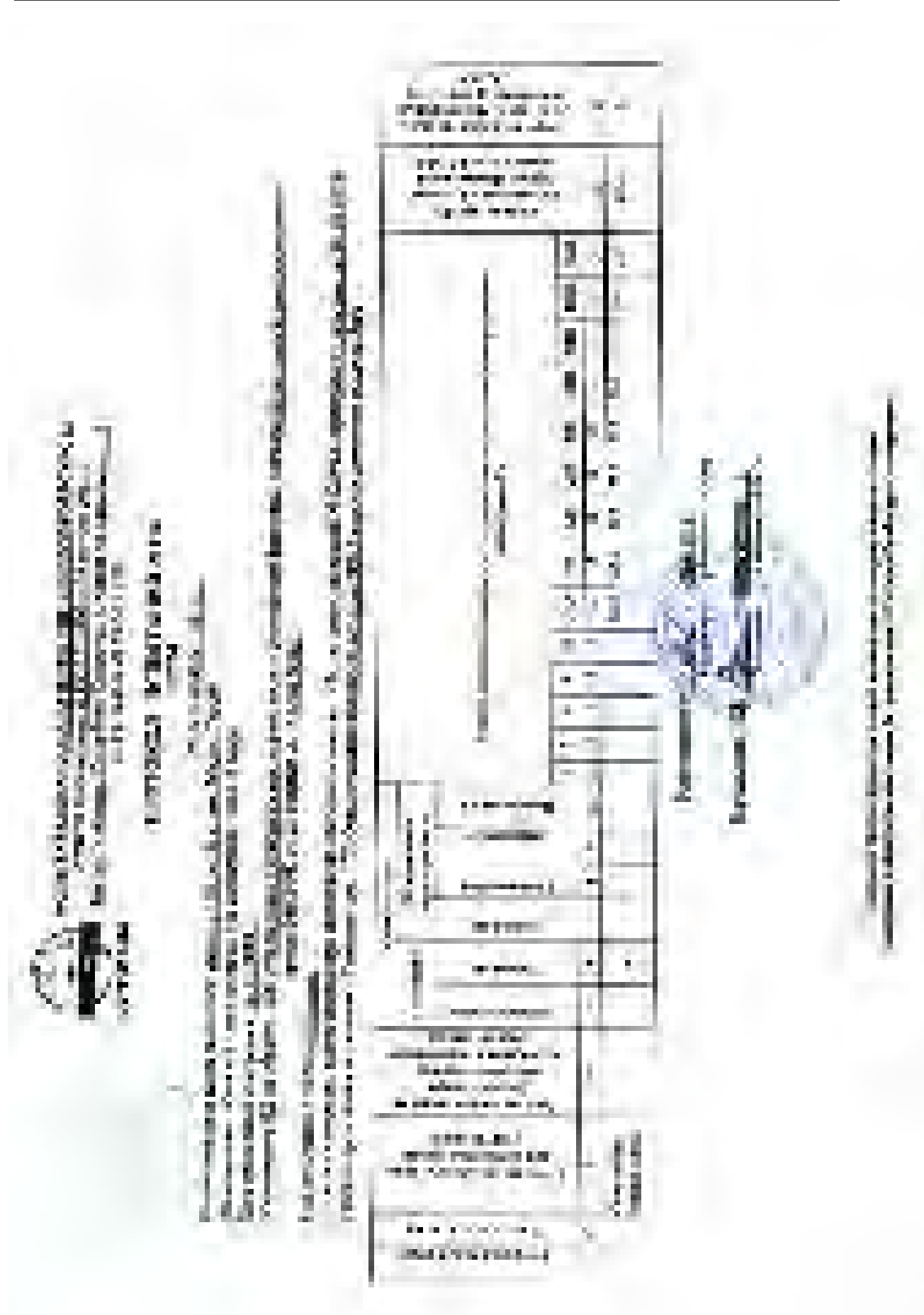


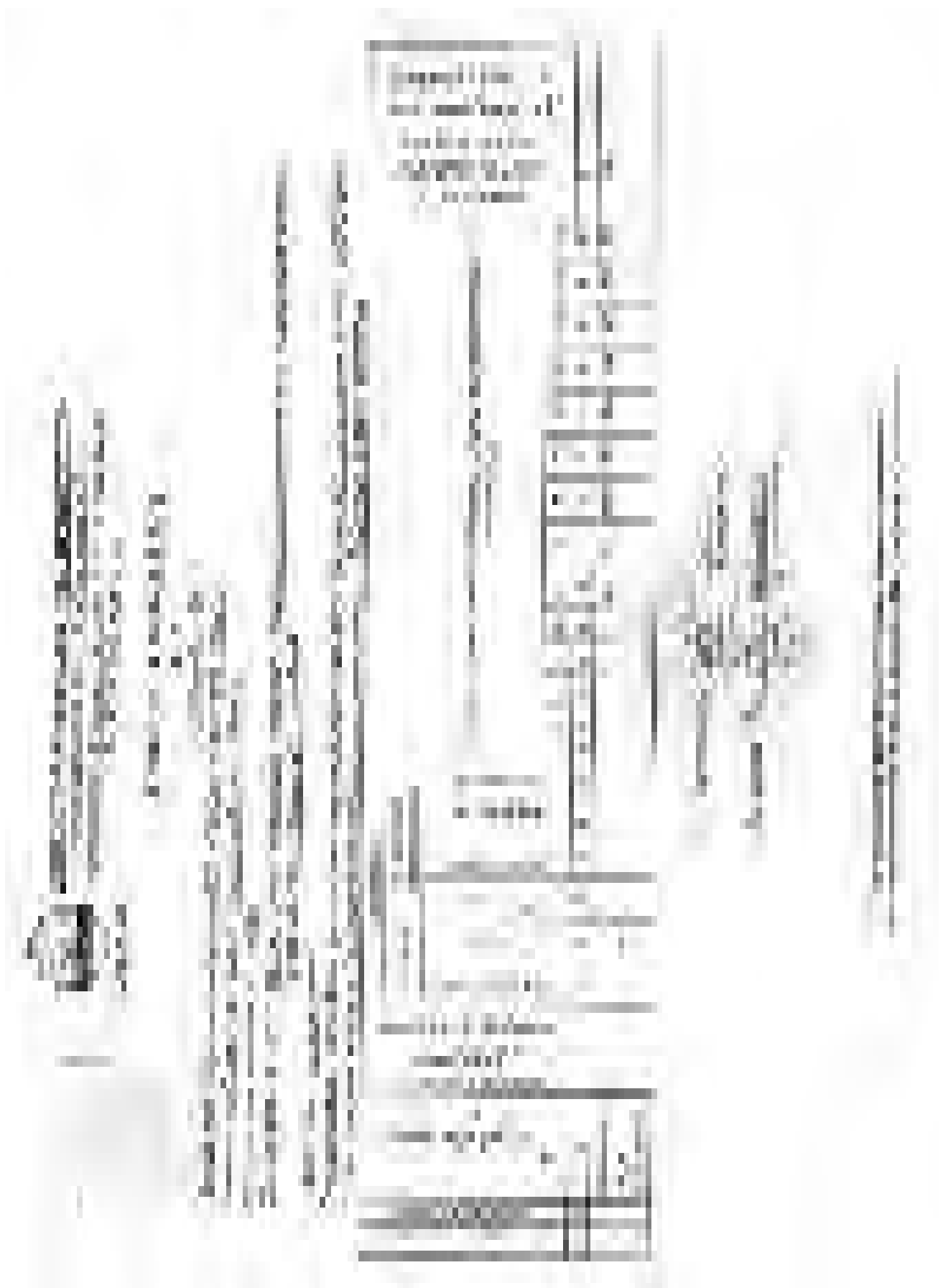


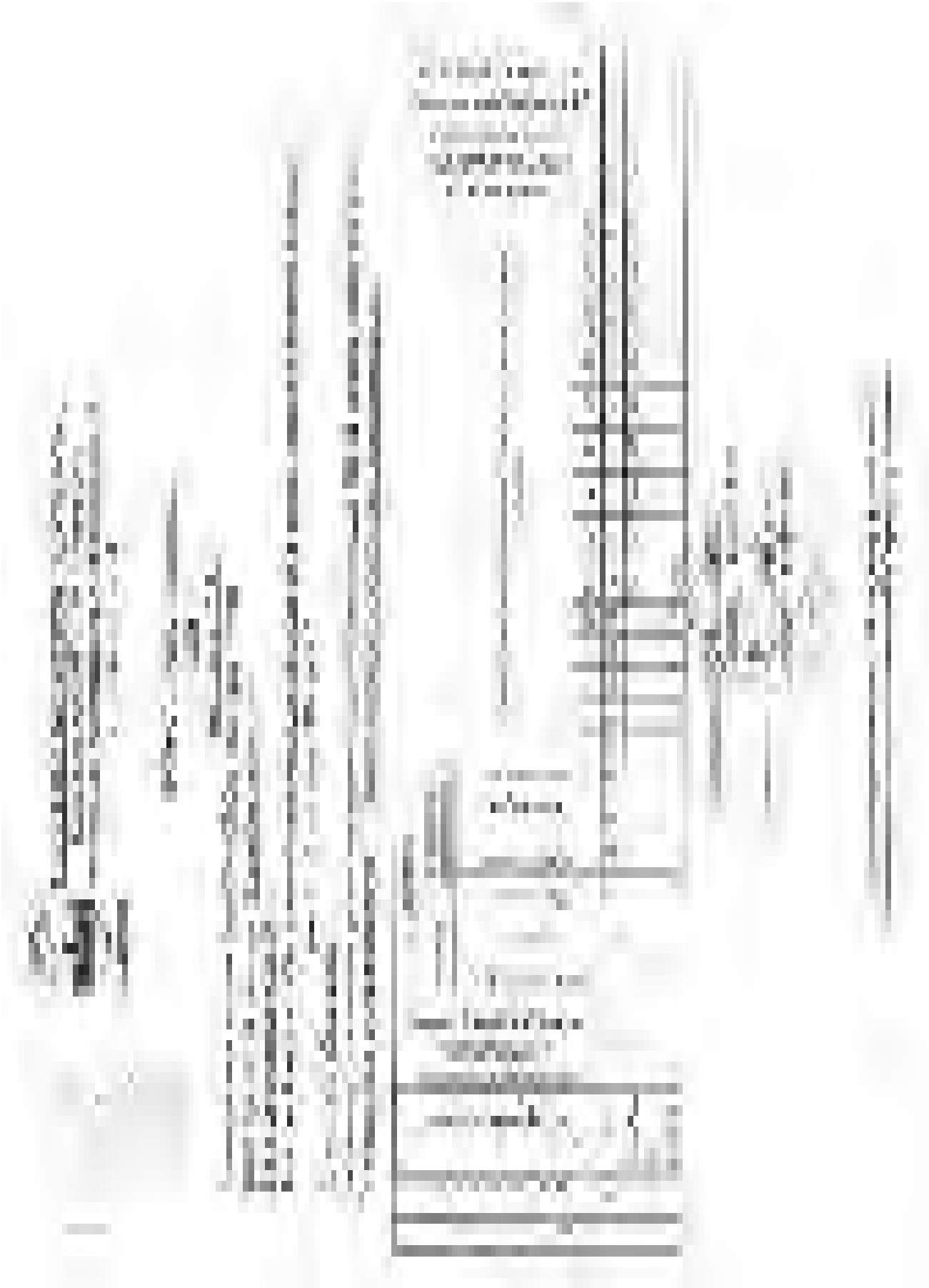


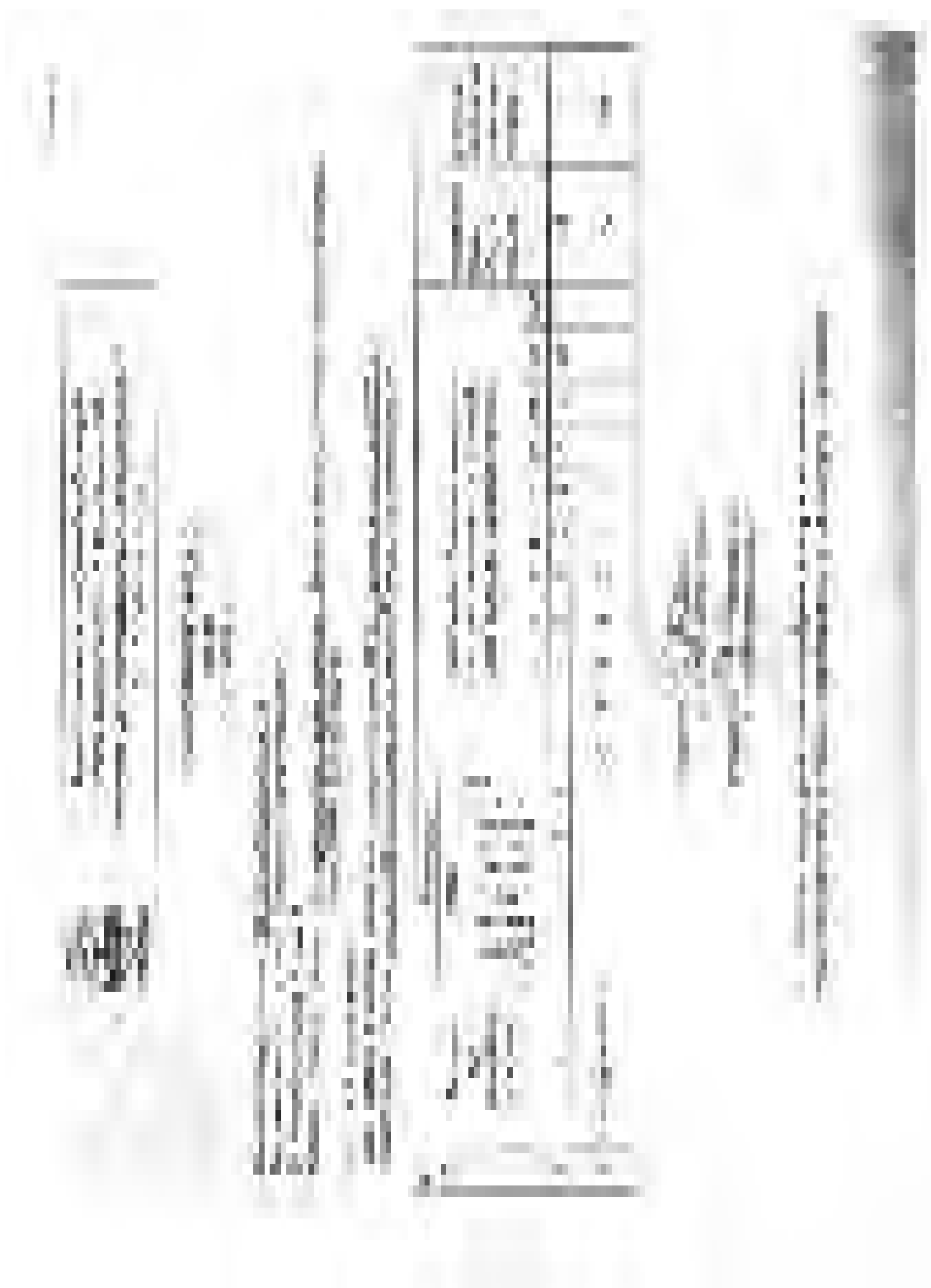


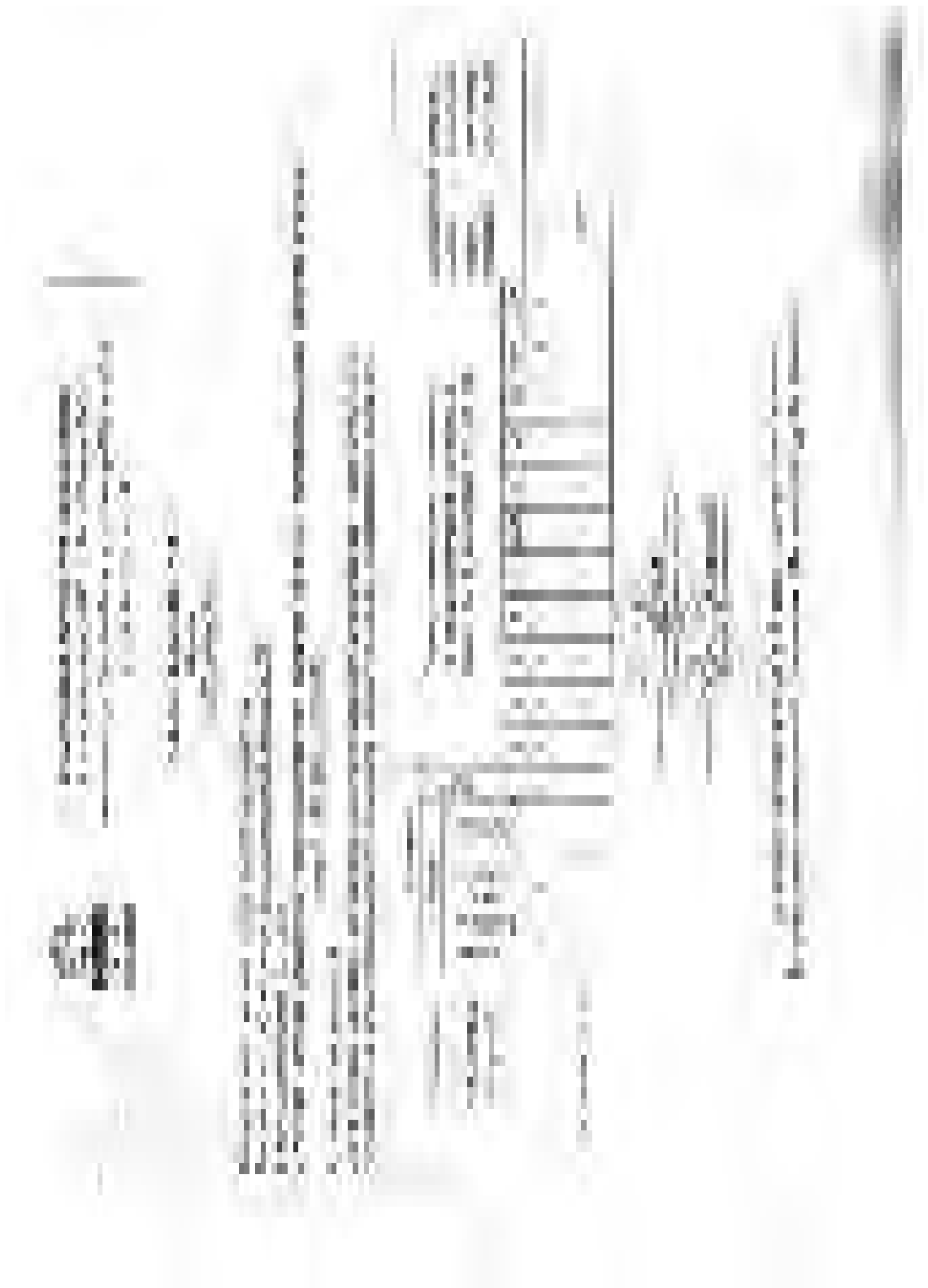


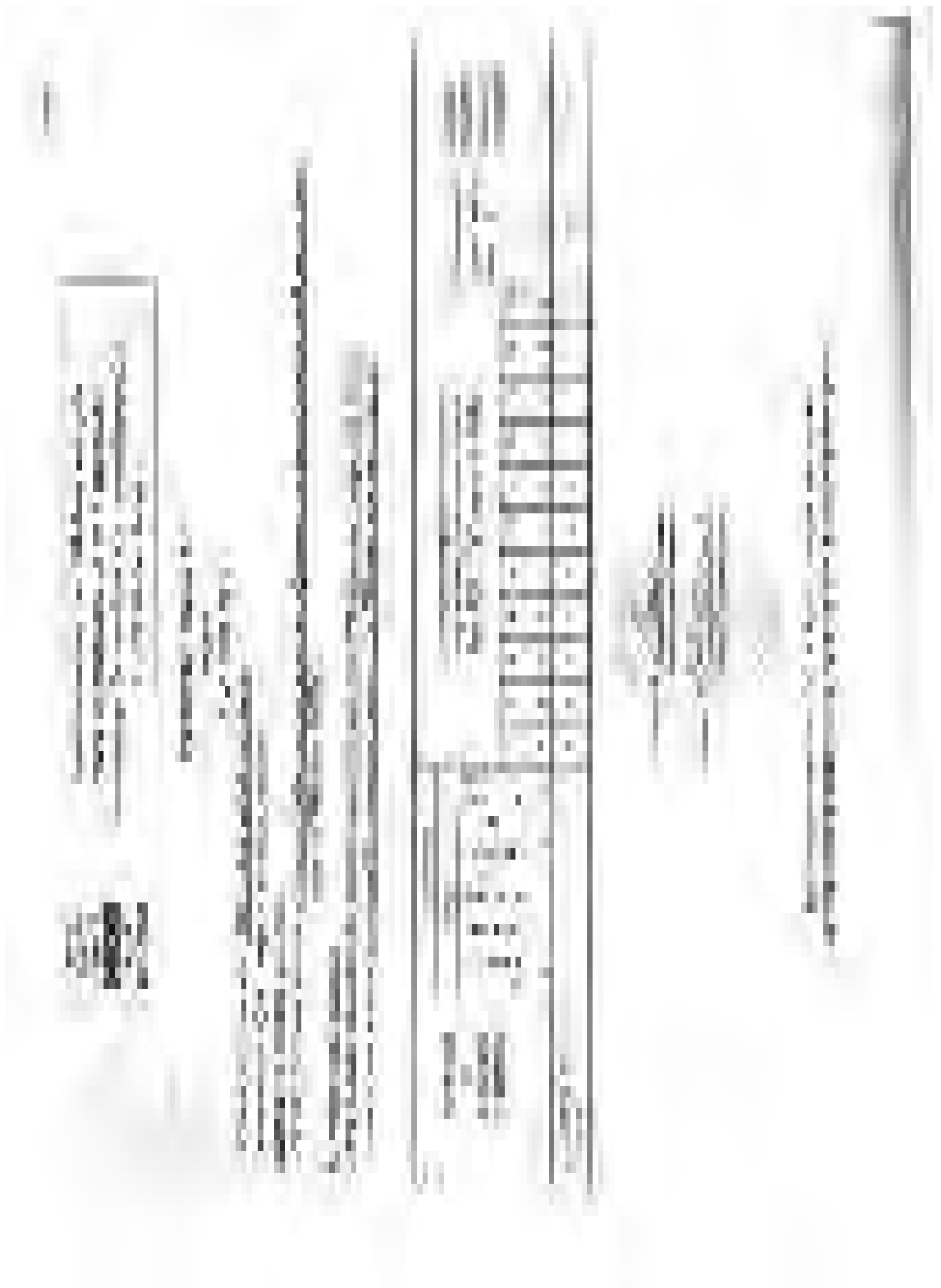


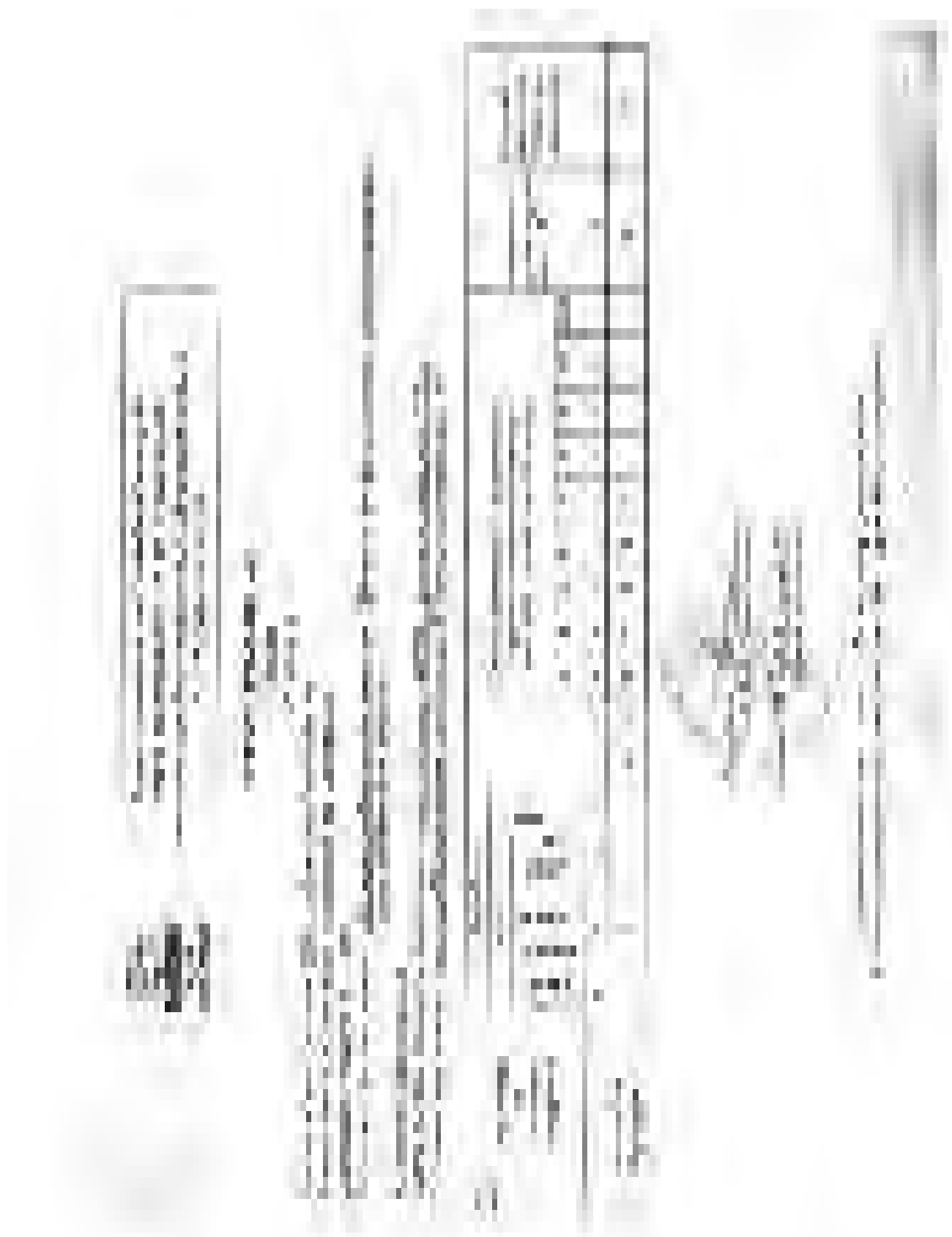


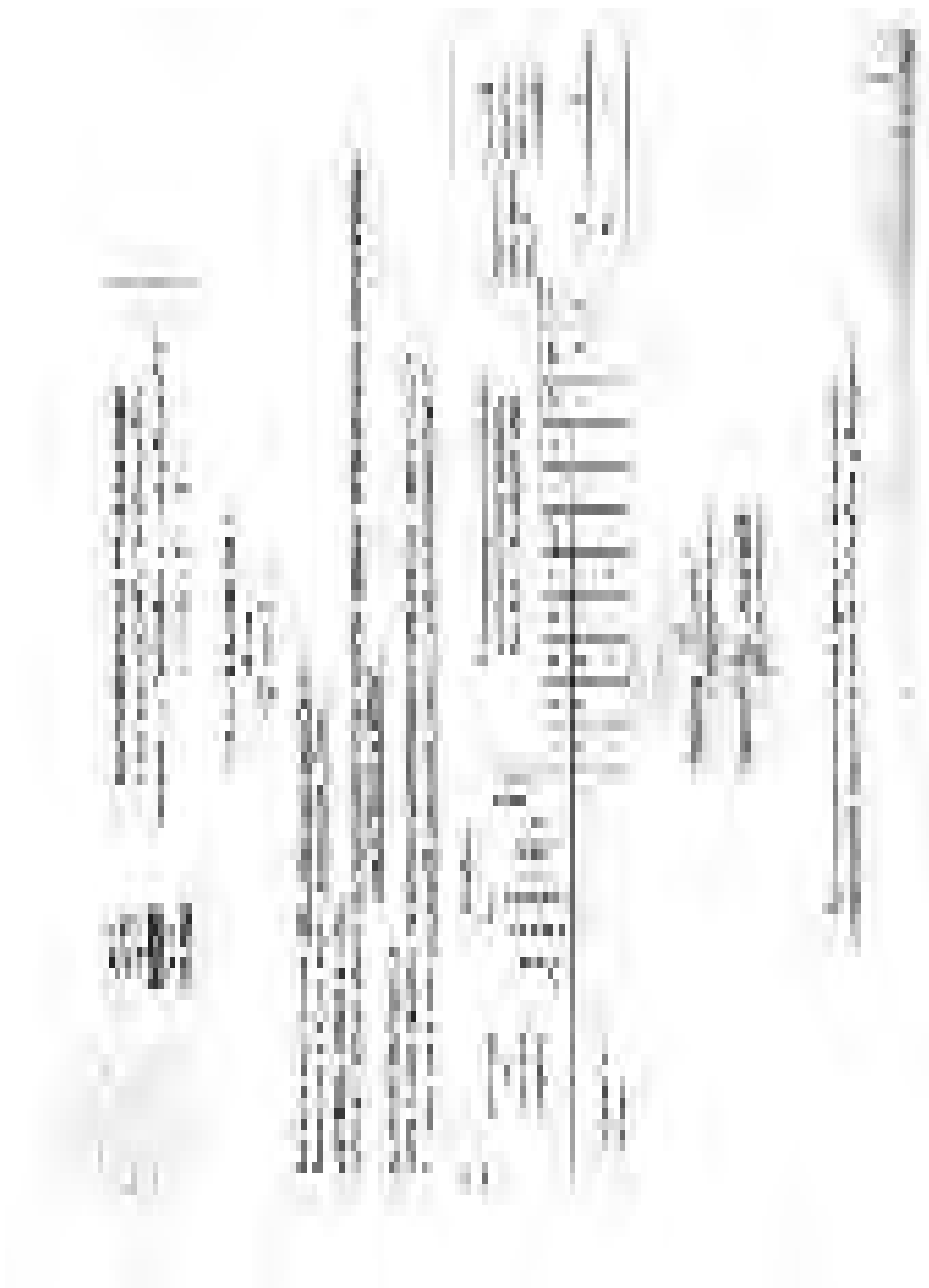






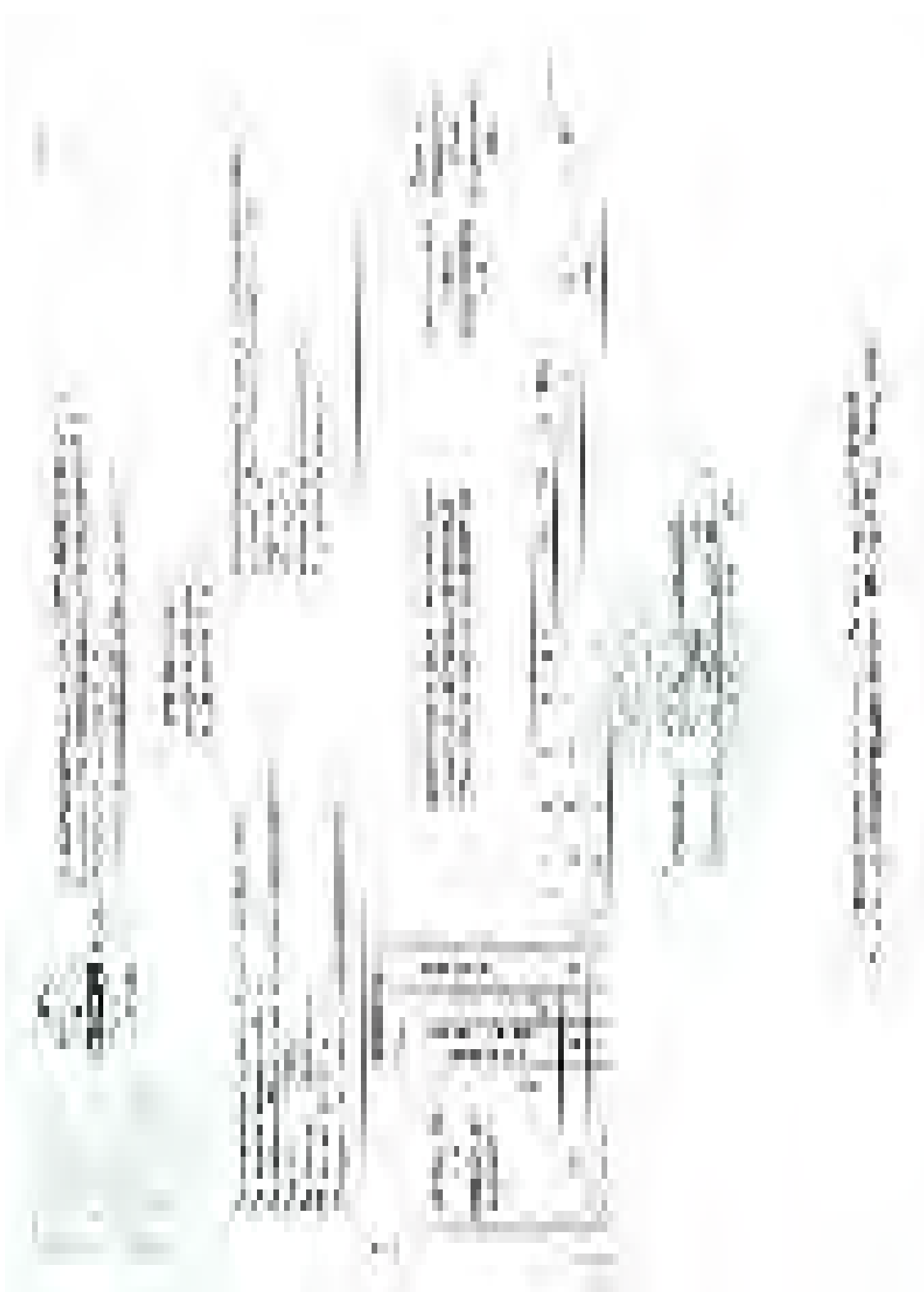


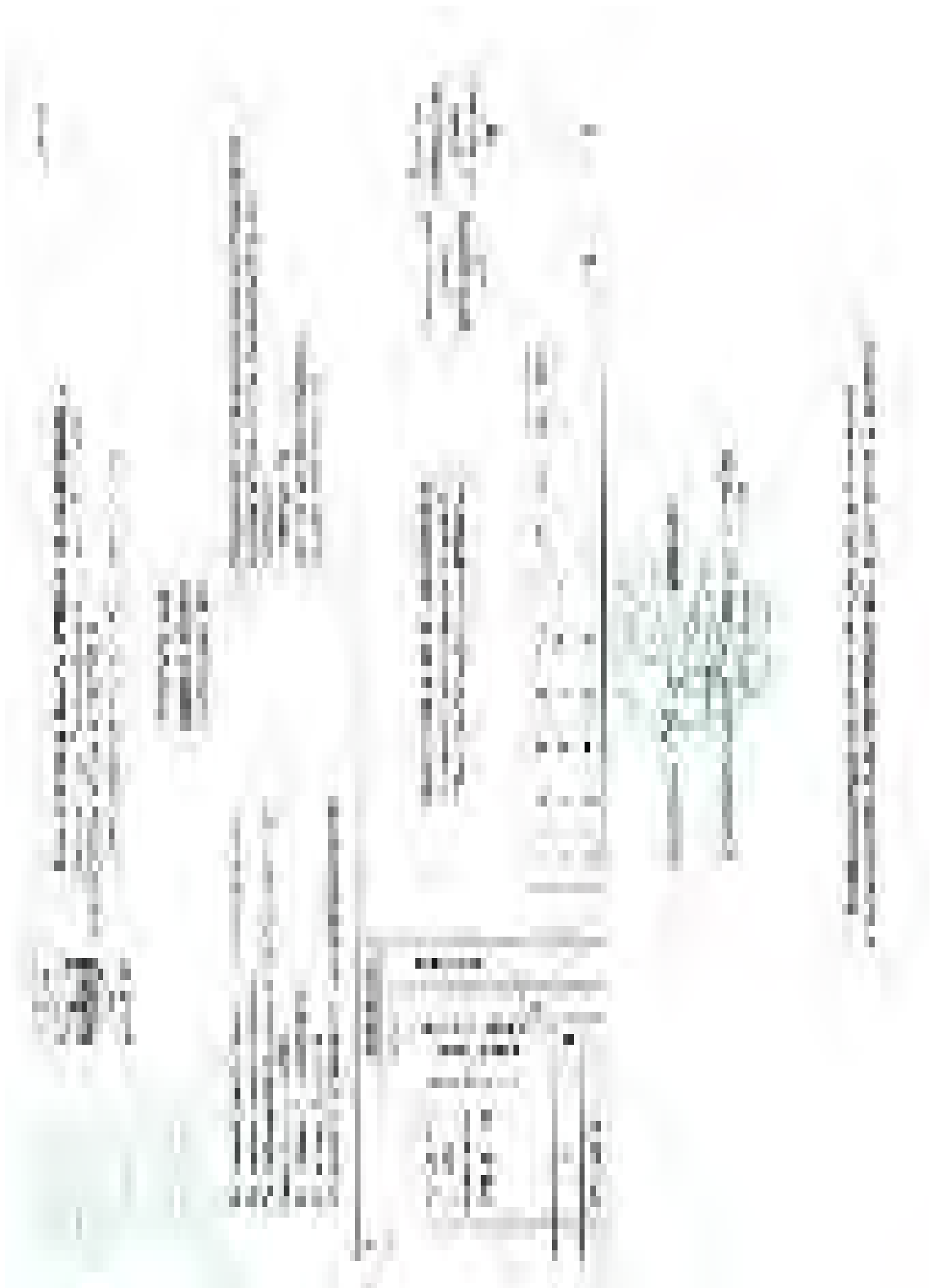




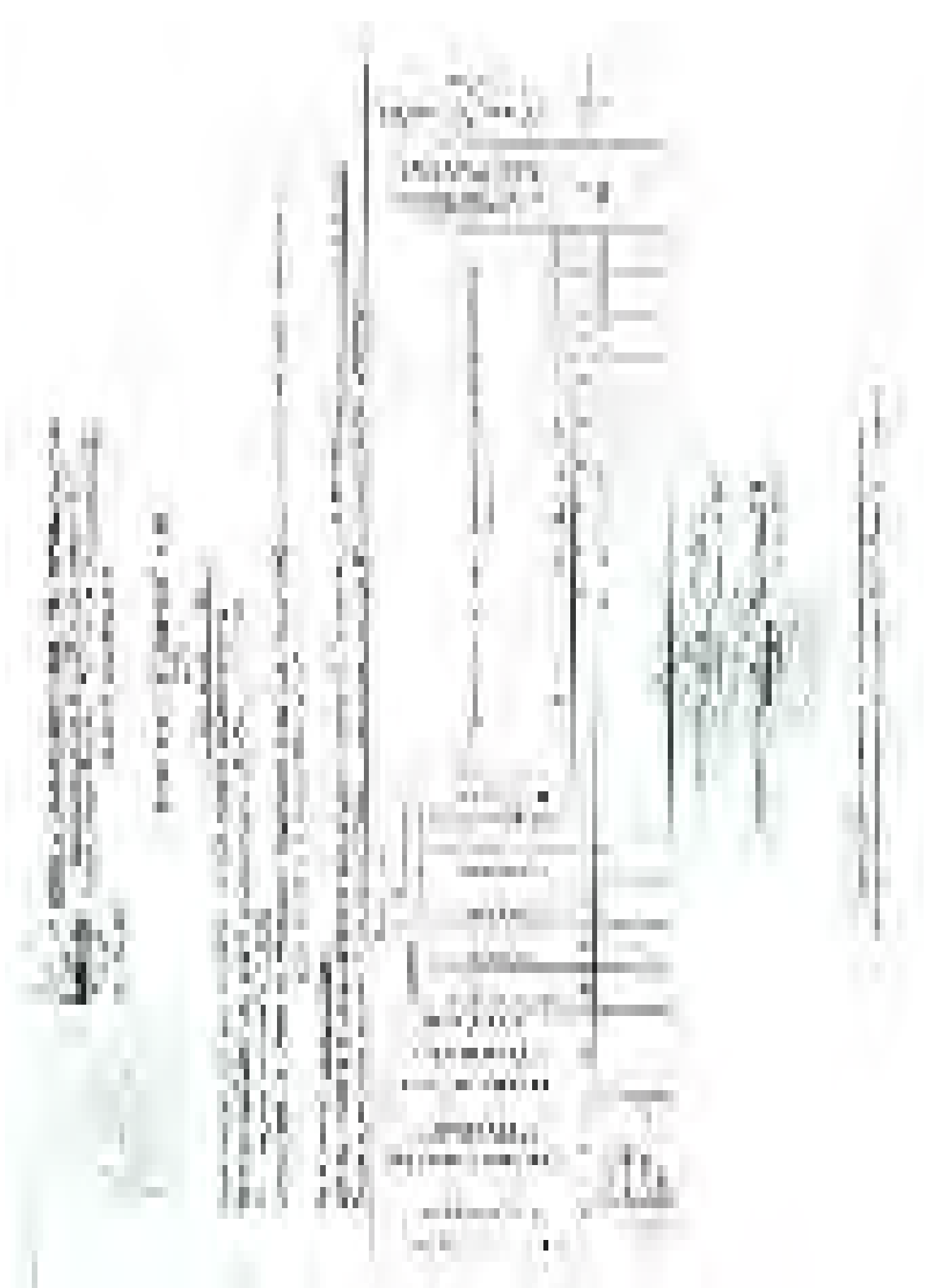


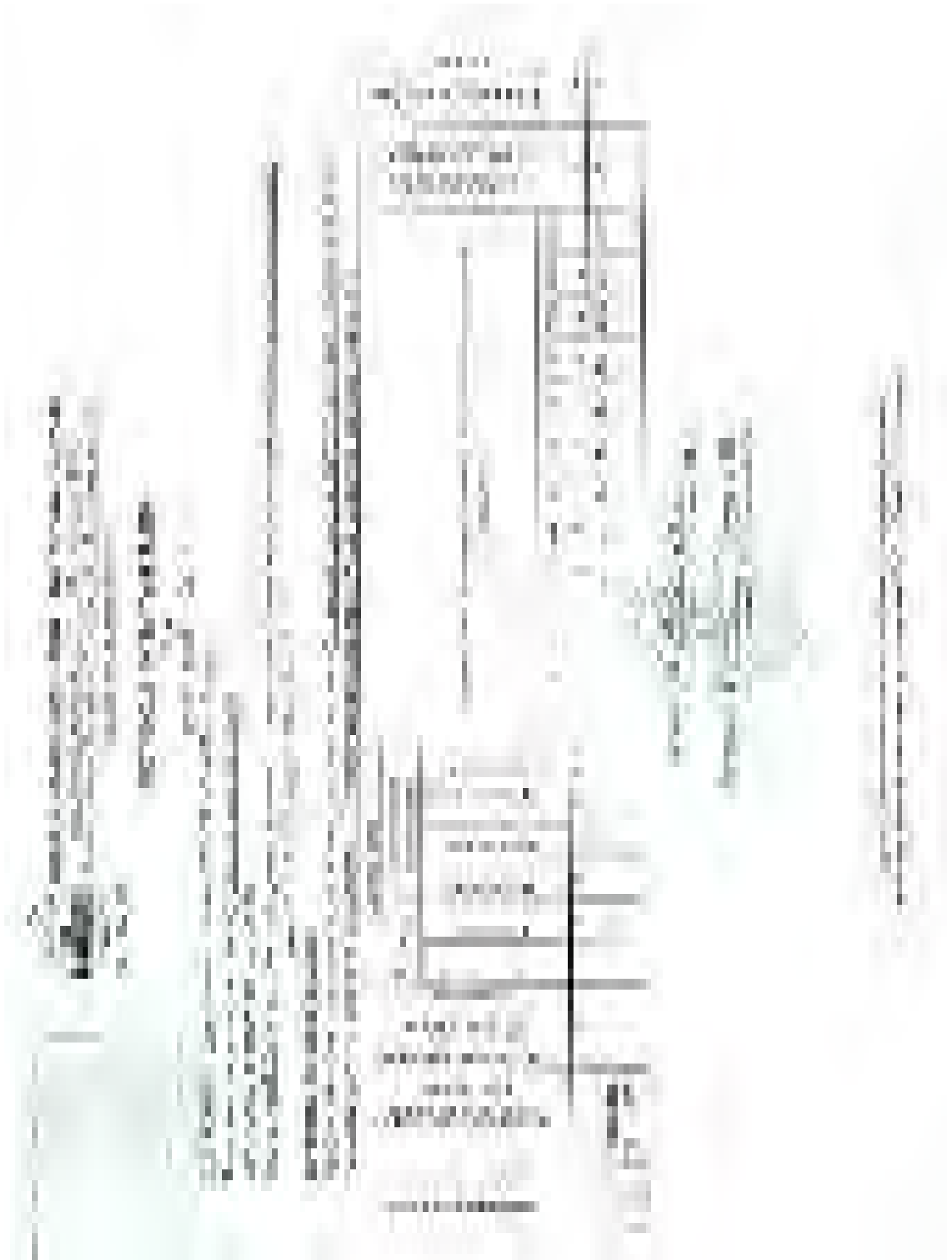


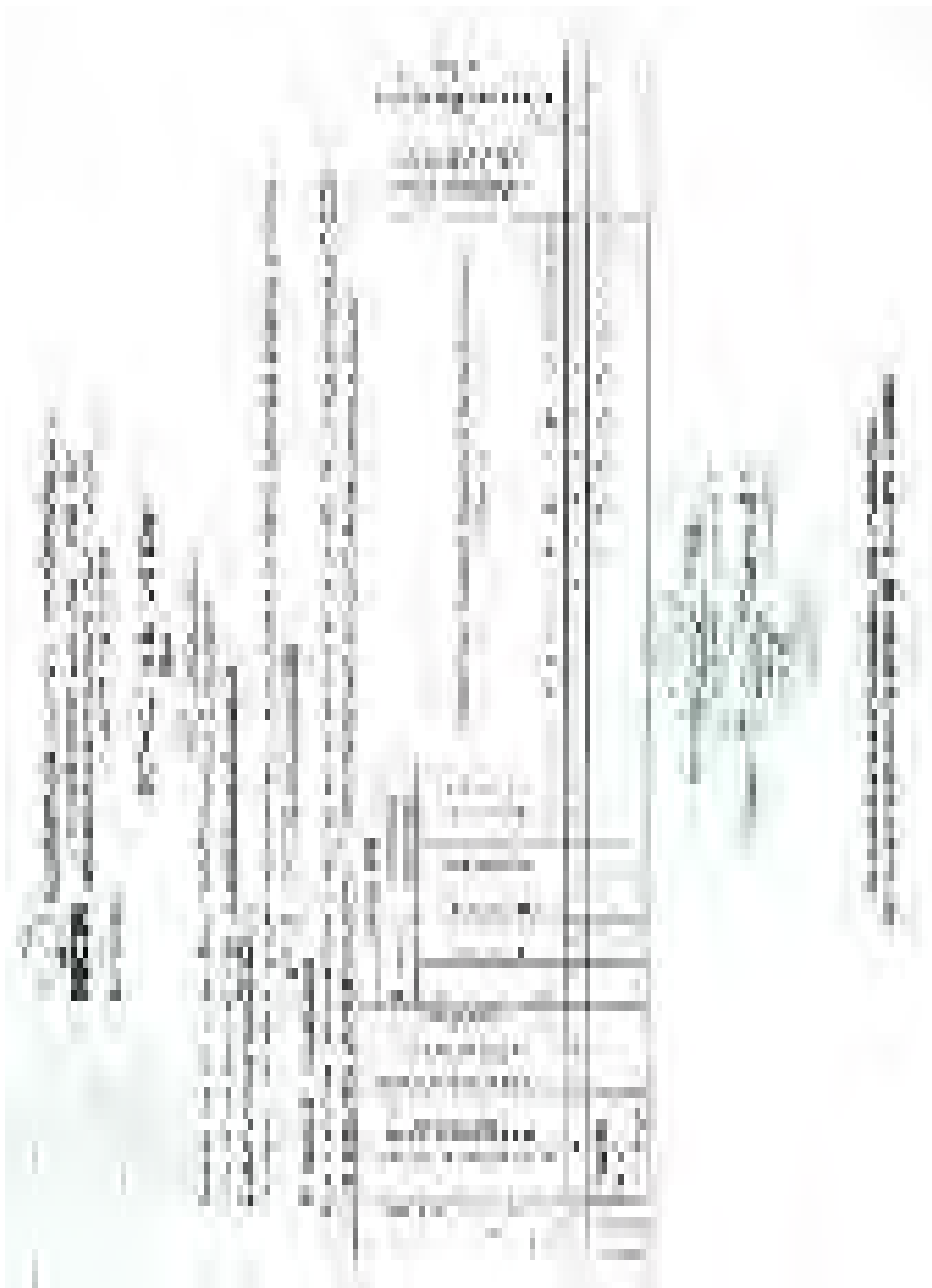


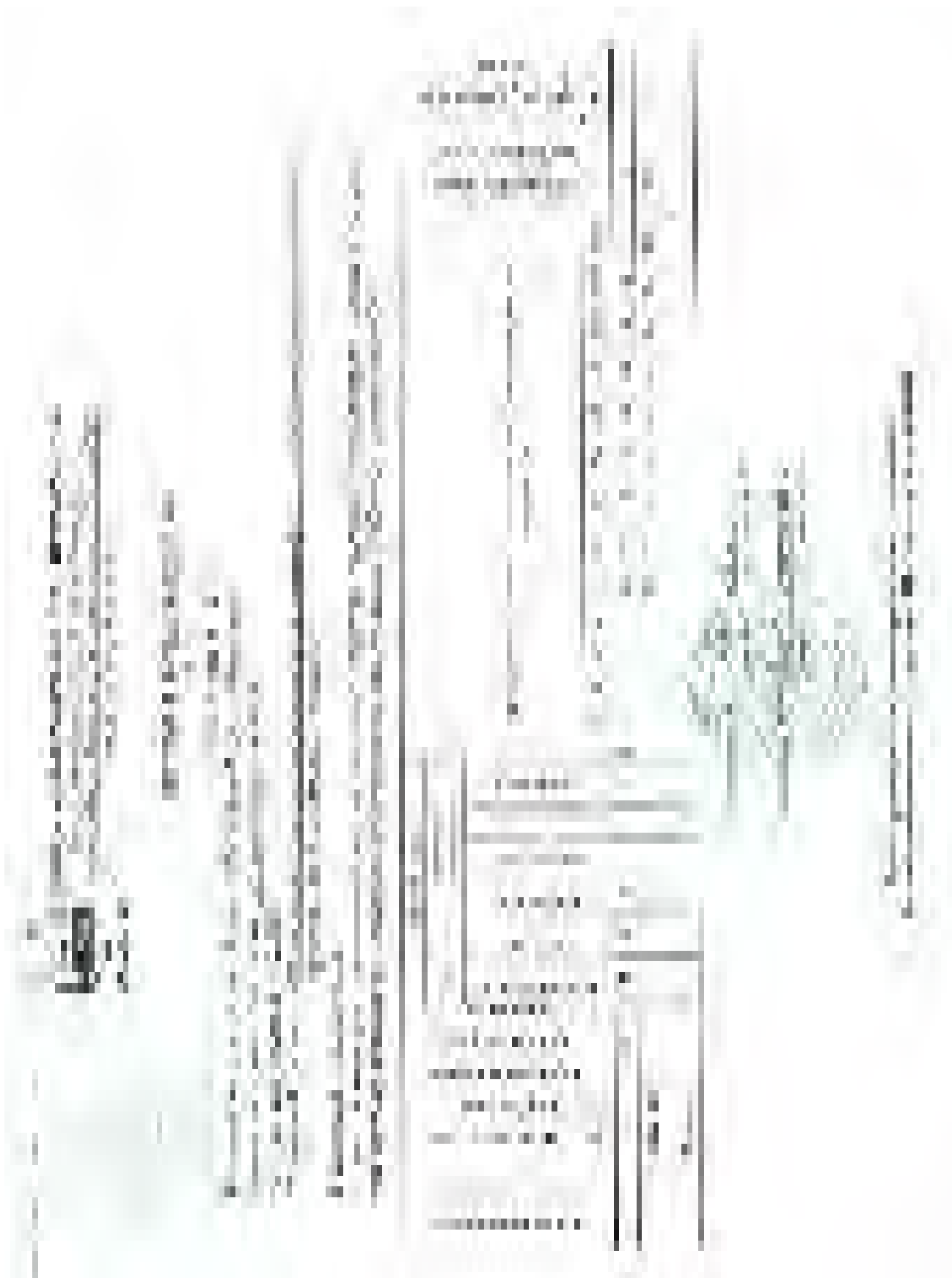




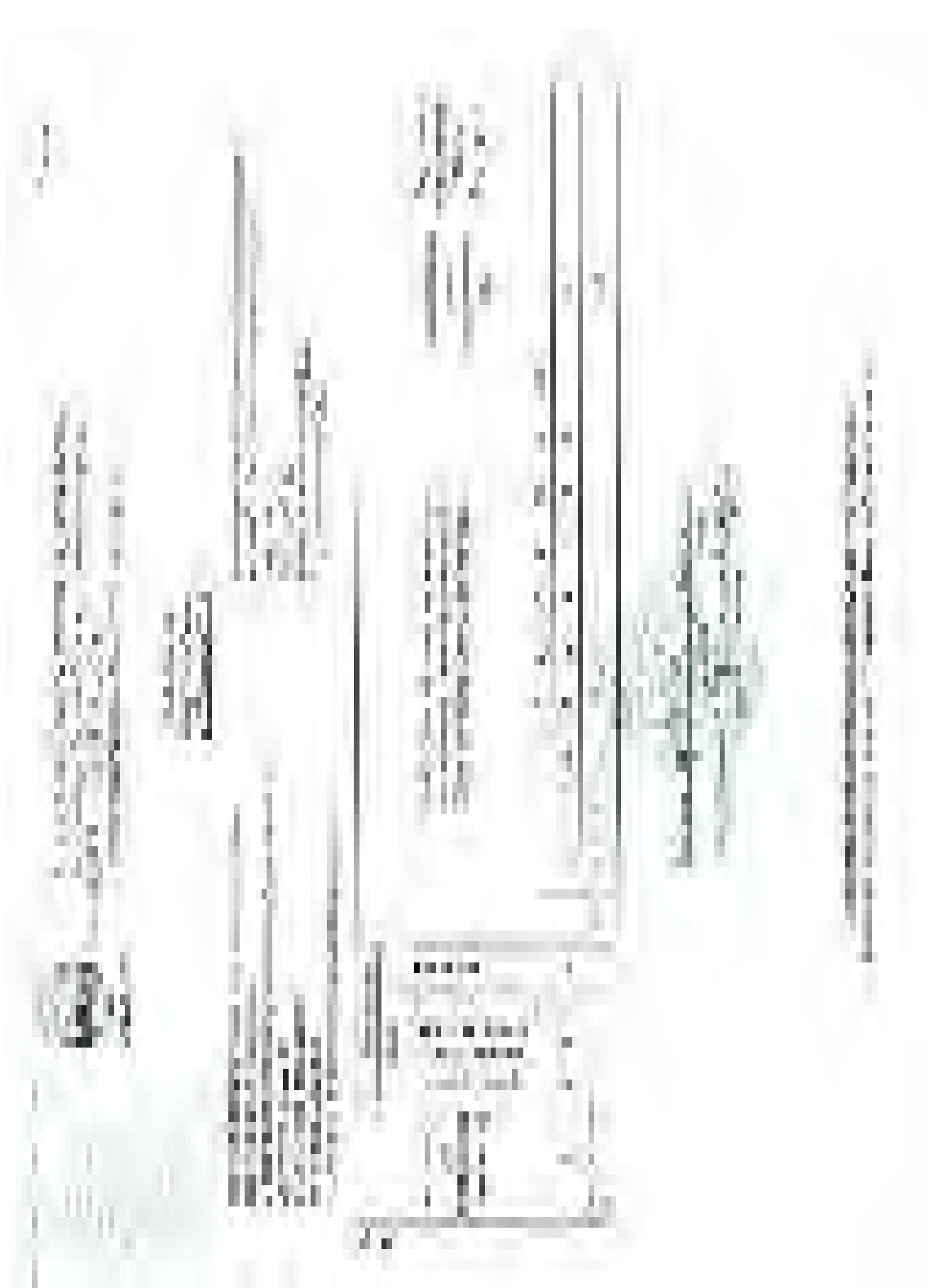














#### Appendix 4

##### Results of chemical analysis of natural (underground) water, Shieli river

Name of indicators	Permissible norms	Data, obtained prior to construction	July	August	September	October	November
Hydrogen pH	6.9	7.86	8.3	8.6	8.0	7.68	7.65
Dry residue, mg/dm <sup>3</sup>	1000	41.38	998.0	987.0	988.0	986.0	984.0
Water-insoluble substances, mg/dm <sup>3</sup>	0.25	13.0	15.2	6.1	15.1	7.3	4.7
Chlorides, mg / dm <sup>3</sup>	350	182. 4	294.0	290.0	289.0	285.0	155.3
Ammonium nitrogen, mg/dm <sup>3</sup>	2.0	6.93	2.0	1.9	1.7	1.2	0.98
Petroleum products, mg / dm <sup>3</sup>	0.1	0.04	0.002	0.003	0.002	0.002	0.0021
Total water hardness , mg-eq/l	7.0	6.4	7.0	7.3	7.0	6.7	6.5
Magnesium, mg-eq / l	Not normalized	78.0	62.2	68.0	67.0	66.0	72.0
Calcium, mg-eq/ l	Not normalized	30	30	36.0	35.0	34.0	39.6
Sulfate, mg-eq/ l	500	272	362	373.4	370.3	375.0	295.0
Nitrates, mg-eq / l	45	0.254	1.71	1.80	1.80	1.54	0.16
Nitrites, mg-eq/ l	3.3	0.072	0.10	0.22	0.21	0.20	0.20
Ferrum, mg-eq/ l	3.0	1.12	0.232	0.332	0.322	0.32	0.19
Chrome (6),	0.05	0.0	00	0.0	0.0	0	0.0
Total phosphorus,	0.0001	0.0	0.0	0.0	0.0	0	0.0
Anionic surfactants	0.5	0.02	0.04	0.06	0.03	0.03	0.023

##### The results of chemical analysis of natural (underground) water, Kenzhaly river

Name of indicators	Permissible norm	Data, obtained prior to construction	July 27-28.09.19	August	September 27-28.09.18	October 25-26.10.18	November
Hydrogen pH	6-9	8.34	7.87	7.80	7.75	7.64	7.68
Dry residue, mg / dm <sup>3</sup>	1000	41.50	995.0	993.0	991.0	987.0	986.0
Water-insoluble substances, mg/dm <sup>3</sup>	0.25	20	2.8	13.4	12.6	7.2	7.3
Chlorides, mg / dm <sup>3</sup>	350	2 835.0	137.4	145. 4	146.2	154.2	285.0
Ammonium nitrogen, mg/dm <sup>3</sup>	2.0	9.05	1.7	1.6	1.7	1.2	1.2
Petroleum products, mg / dm <sup>3</sup>	0.1	0.06	0.004	0.003	0.002	0.002	0.002
Total water	7.0	7.5	6.7	6.8	6.6	6.4	6.7

hardness , mg-equ/l							
Magnesium, mg-equ / l	Not normalized	560	39.6	38.5	39.5	38.5	34.00
Calcium, mg-equ/ l	Not normalized	564	71	70.0	71.0	70.0	66.0
Sulfate, mg-equ/ l	500	878	295	295.0	290.0	293.0	375.0
Nitrates, mg-equ / l	45	0,223	0,14	0,15	0,14	0,13	1,54
Nitrites, mg-equ/ l	3.3	0,672	0,2	0,20	0,19	0,19	0,20
Ferrum, mg-equ/ l	3,0	1,75	0,225	0,221	0,218	0,21	0,32
Chrome (6),	0,05	00	0,0	0,0	0,0	0	0,0
Total phosphorus,	0,0001	0,0	0,0	0,0	0,0	0	0,0
Anionic surfactants	0,5	0,07	0,07	0,06	0,05	0,03	0,03

## Water Analysis Protocols



**Ministry of Health and Family Welfare**  
**Government of India**  
**Department of Health and Family Welfare**  
**Ministry of Health and Family Welfare**

**Form No. 1**

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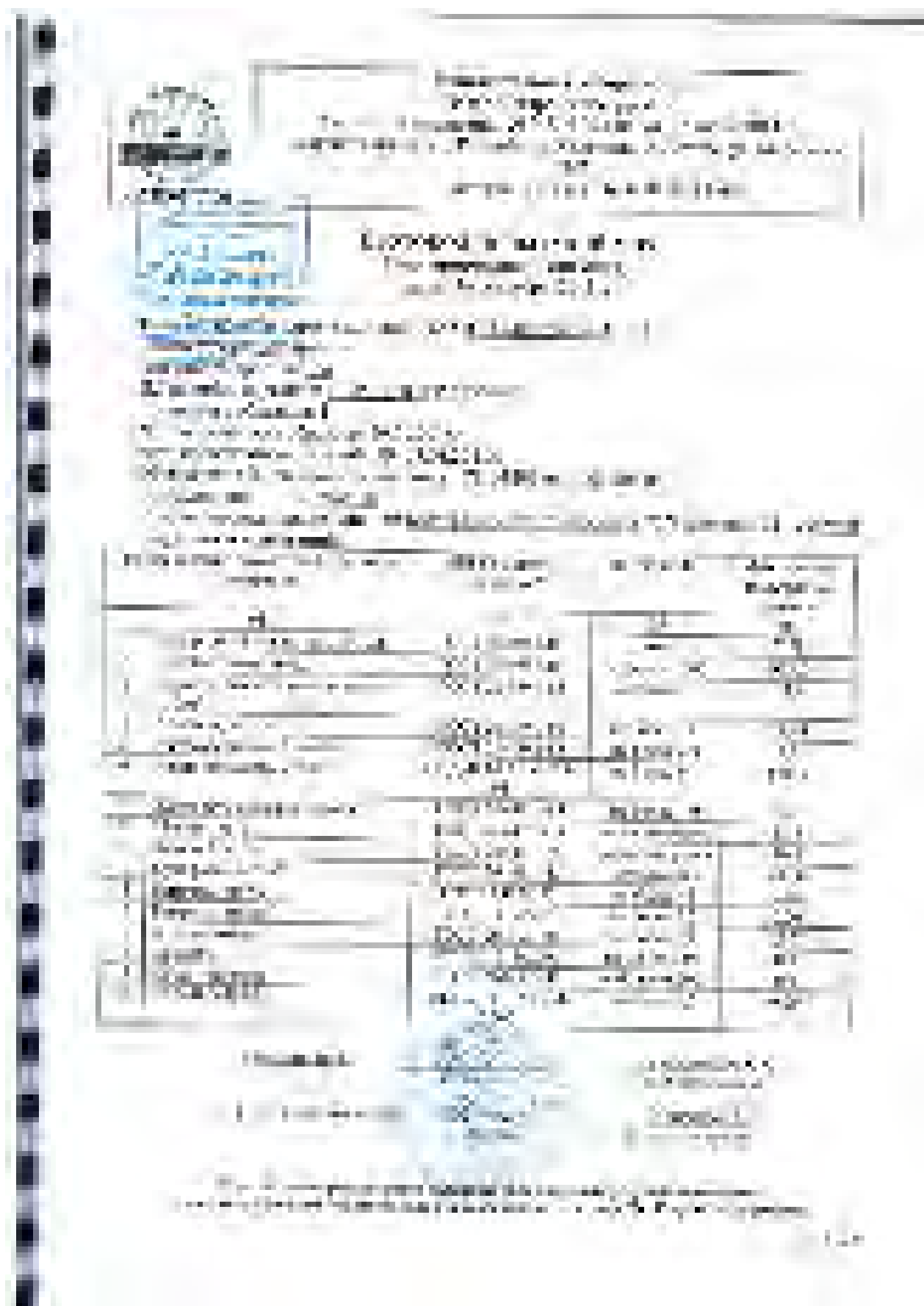
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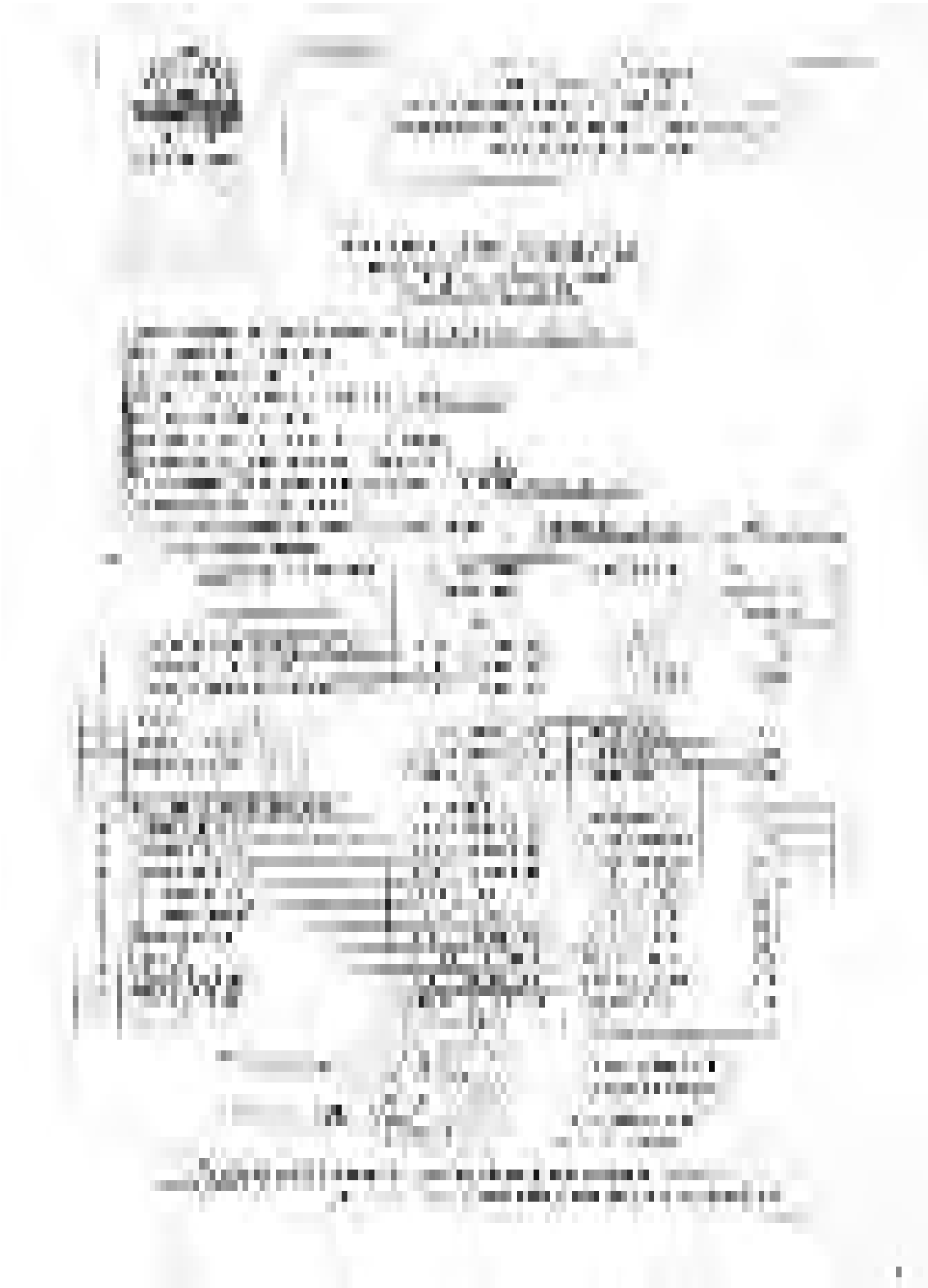


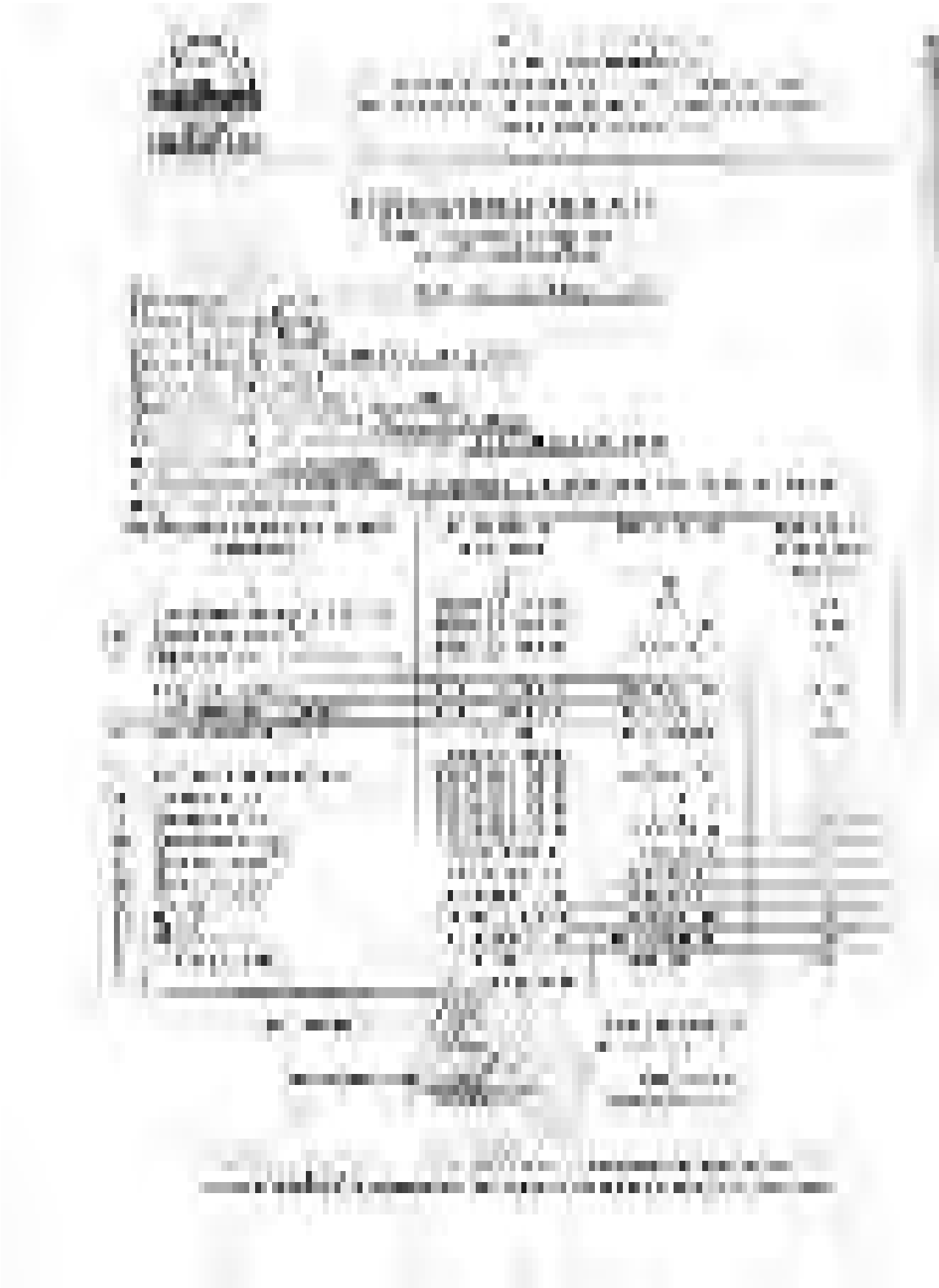
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**Appendix 5**

**The results of soil samples tests, 2018 Lot 1**

Name of indicators	Data, obtained prior to construction PB Zhaksymay (April)	July		August		September		October		November	
		1 point	2 point	1 point	2 point	1 point	2 point	1 point	2 point	1 point	2 point
Hydrogen PH	7.73	7.81	7.7	7.79	7.80	7.77	7.79	7.70	7.74	7.69	7.70
dense residue	0.272	0.149	0.157	0.150	0.155	0.145	0.153	0.143	0.150	0.144	0.152
Petroleum products, mg/g	0.050	0.013	0.011	0.015	0.013	0.02	0.02	0.01	0.02	0.011	0.019
Chlorides	0.18	0.049	0.052	0.052	0.058	0.06	0.07	0.05	0.06	0.055	0.064
Sulfates	0.480	0.281	0.283	0.286	0.289	0.280	0.286	0.282	0.287	0.286	0.288
Calcium	1.73	1.4	1.5	1.5	1.6	0.8	1.7	0.83	1.71	0.87	1.70
Magnesium	0.0	0.69	0.80	0.70	0.85	0.6	0.7	0.62	0.73	0.64	0.75
Carbonates	0.06	0.0	0	0.0	0	0.0	0	0	0	0	0
Bicarbonate	23.0	0.13	0.12	0.14	0.17	0.09	0.09	0.08	0.08	0.087	0.086

**Results of soil samples tests, Lot 1**

Name of indicators	Data, obtained prior to construction	Near Kopa vill.		Data, obtained prior to construction	Near Shubarkudyk vill.		Data, obtained prior to construction	Near Kenzhaly vill.	
		October	November		October	November		October	November
Hydrogen PH	7.20	7.55	7.45	7.22	7.63	7.59	7.78	7.64	7.62
dense residue	0.250	0.230	0.237	0.250	0.250	0.255	0.250	0.263	0.265
Petroleum products, mg / g	0.021	0.022	0.021	0.024	0.015	0.014	0.024	0.025	0.022
Chlorides	0.06	0.260	0.266	0.06	0.260	0.263	0.06	0.244	0.248
Sulfates	0.450	1.38	1.40	0.440	1.48	1.50	0.439	1.57	1.63
Calcium	1.12	0.84	0.85	15.5	0.75	0.77	0.49	0.80	0.84

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Magnesium	5.05	0.60	0.61	0.0	0.58	0.60	0.0	0.60	0.61
Carbonates	0.0	0	0	0.0	0	0	0.04	0	0
Bicarbonate	18.0	0.62	0.68	18	0.80	0.84	28	0.88	0.89



**Results of soil samples tests, Lot 1**

Name of indicators	160 km	July	August	September	October	November
Hydrogen PH	7,87	7,68	7,80	7,83	7,70	7,58
dense residue	0,147	0,131	0,150	0,157	0,153	0,150
Petroleum products, mg / g	0,01	0,013	0,02	0,01	0,01	0,011
Chlorides	0,05	0,010	0,10	0,15	0,16	0,18
Sulfates	0,462	0,495	0,470	0,469	0,470	0,473
Calcium	0,4	0,61	0,45	0,47	0,44	0,47
Magnesium	0,16	0,30	0,19	0,20	0,17	0,19
Carbonates	0,0	0,0	0	0	0	0
Bicarbonate	0,98	1,21	0,110	0,120	0,125	0,130

Name of indicators	170 km	July	August	September	October	November
Hydrogen PH	7,82	7,7	7,76	7,66	7,63	7,60
dense residue	0,150	0,168	0,163	0,157	0,160	0,165
Petroleum products, mg / g	0,02	0,012	0,03	0,01	0,01	0,012
Chlorides	0,15	0,25	0,22	0,15	0,235	0,233
Sulfates	0,452	0,521	0,464	0,469	0,462	0,460
Calcium	0,7	0,72	0,76	0,47	0,73	0,75
Magnesium	0,6	0,40	0,64	0,20	0,60	0,62
Carbonates	0,08	0,05	0,07	0	0,04	0,03
Bicarbonate	26,0	31,0	30	0,120	29,00	30,0

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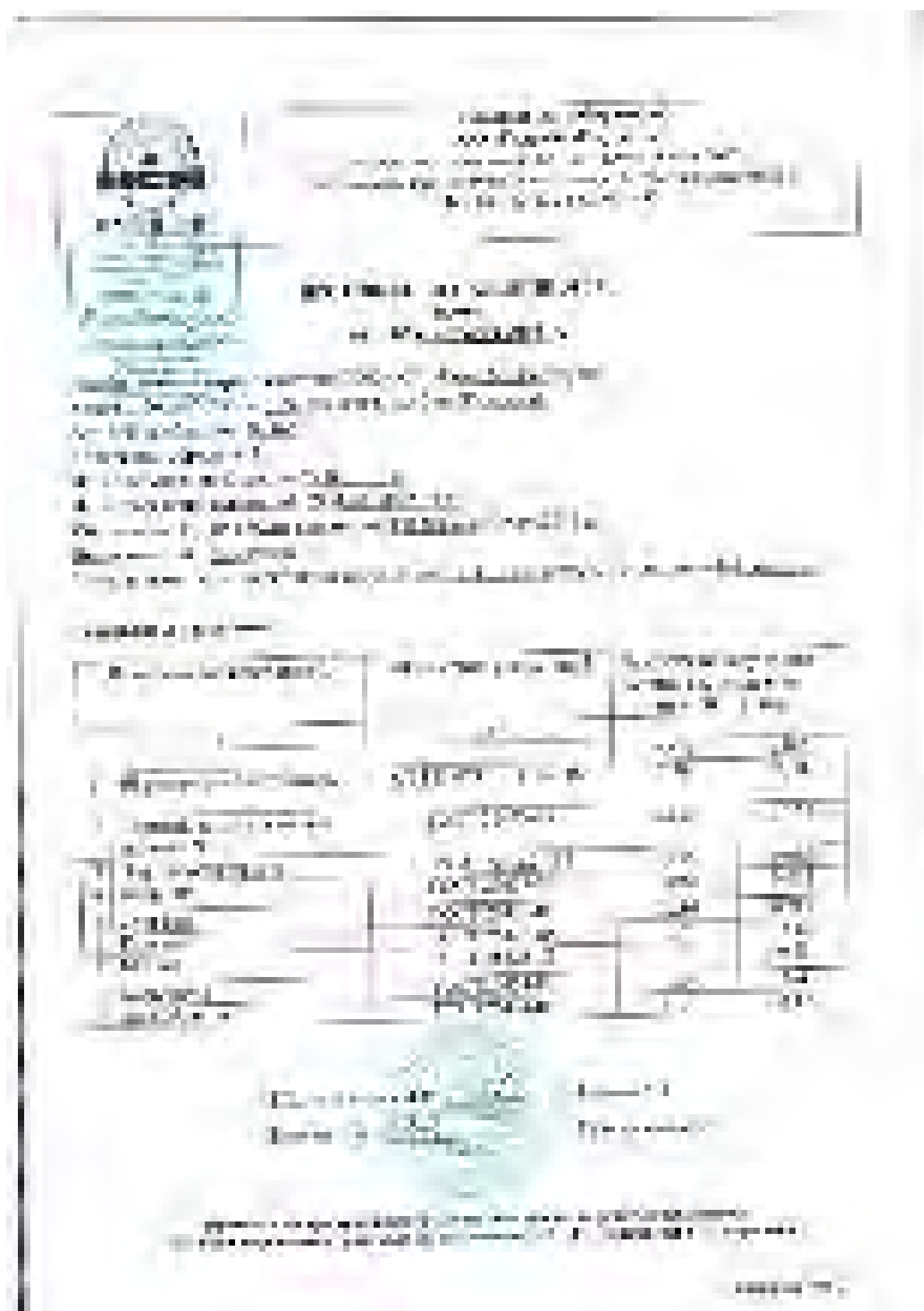
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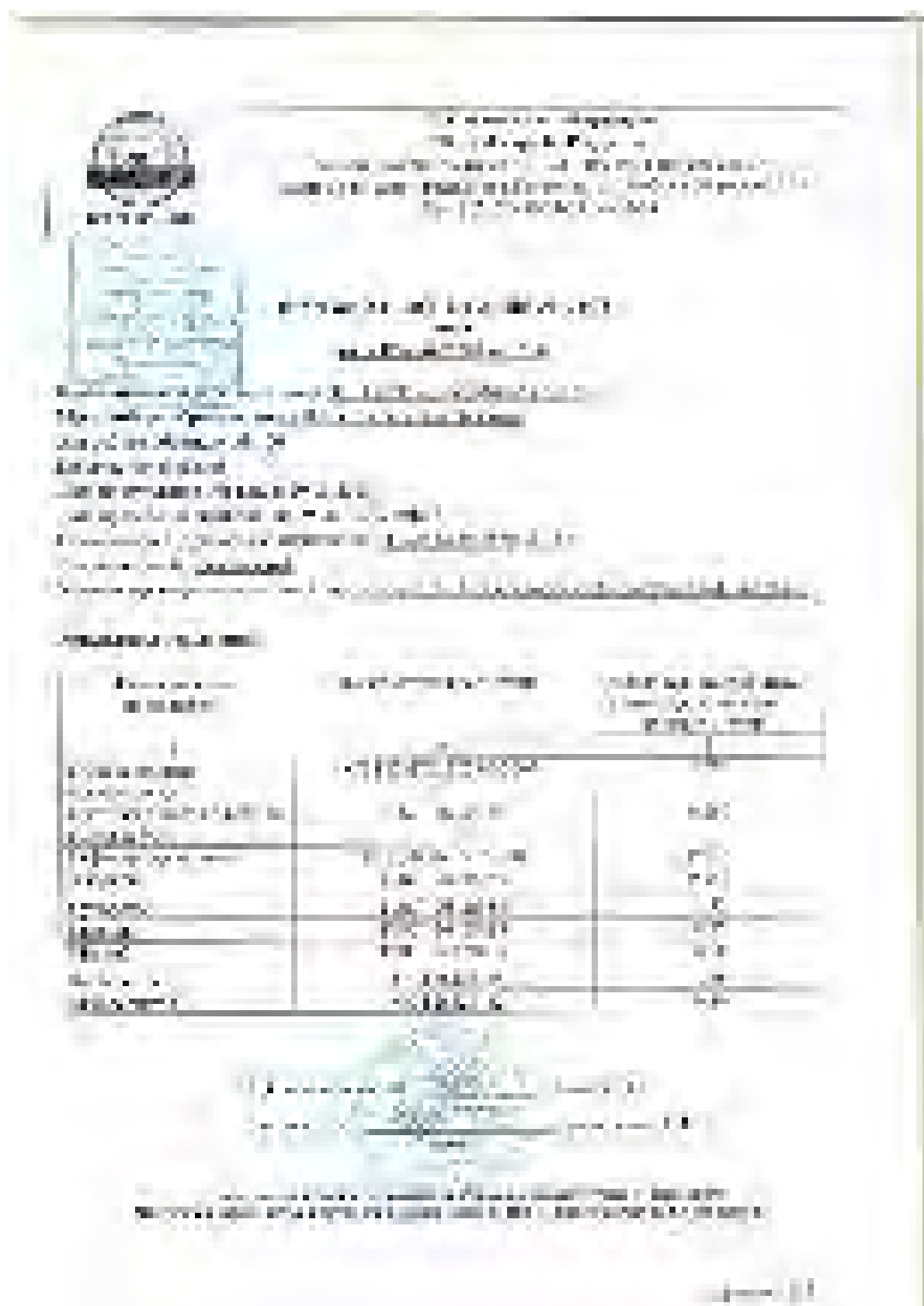
	<p>Министерство транспорта и инфраструктуры Республики Казахстан Департамент автомобильных дорог (Уполномоченный орган в сфере дорожного строительства)</p>
<p>Департамент автомобильных дорог Республики Казахстан (Уполномоченный орган в сфере дорожного строительства)</p>	
<p>1. Закон Республики Казахстан от 11 июля 2008 года «Об автомобильных дорогах и о дорожном строительстве» (далее – Закон) и Закон Республики Казахстан от 11 июля 2008 года «О внесении изменений и дополнений в Закон Республики Казахстан «Об автомобильных дорогах и о дорожном строительстве» и признании некоторых актов утратившими силу» 2. Постановление Правительства Республики Казахстан от 11 июля 2008 года «Об утверждении Положения об актах утративших силу» 3. Постановление Правительства Республики Казахстан от 11 июля 2008 года «Об утверждении Положения об актах утративших силу»</p>	
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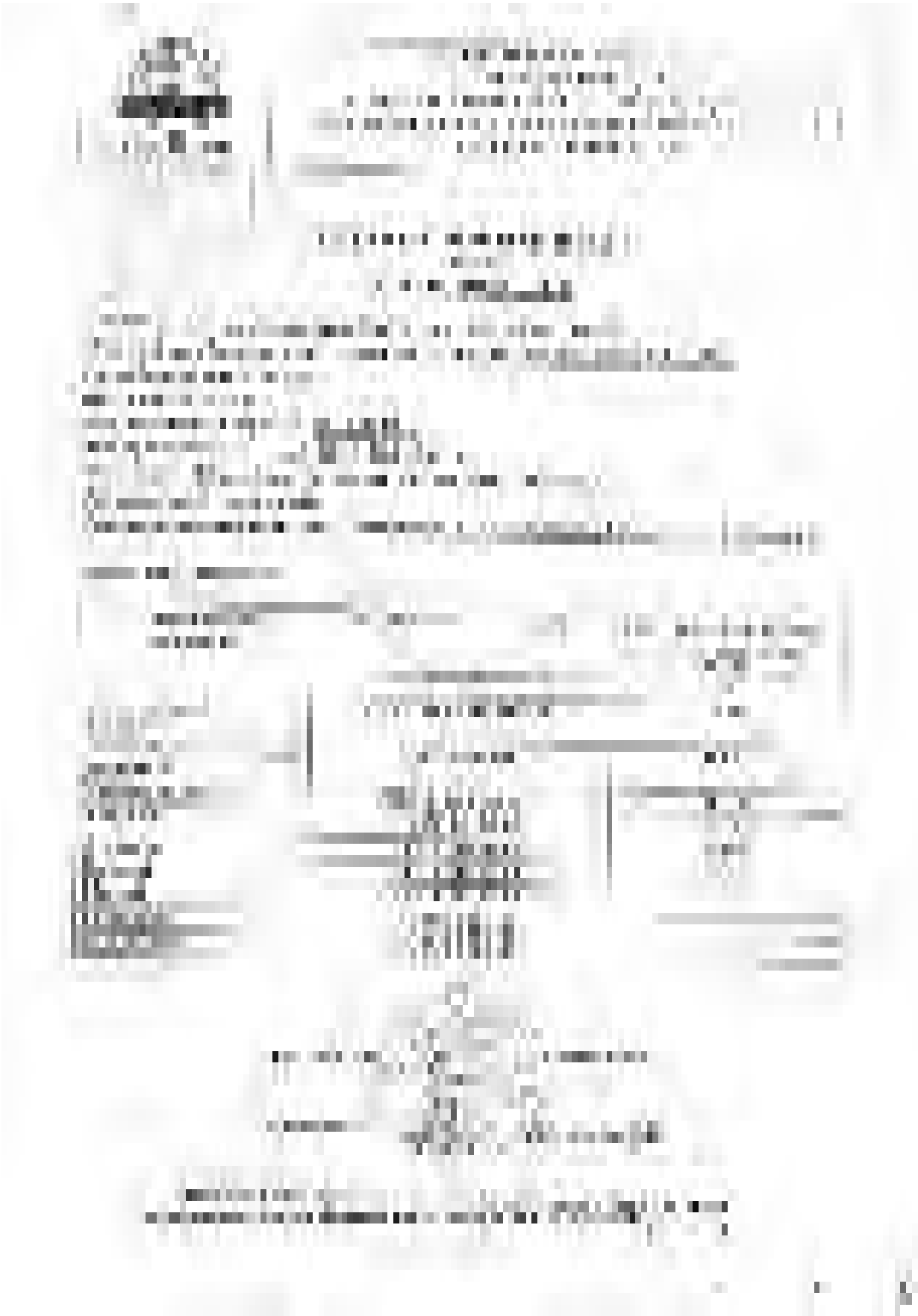








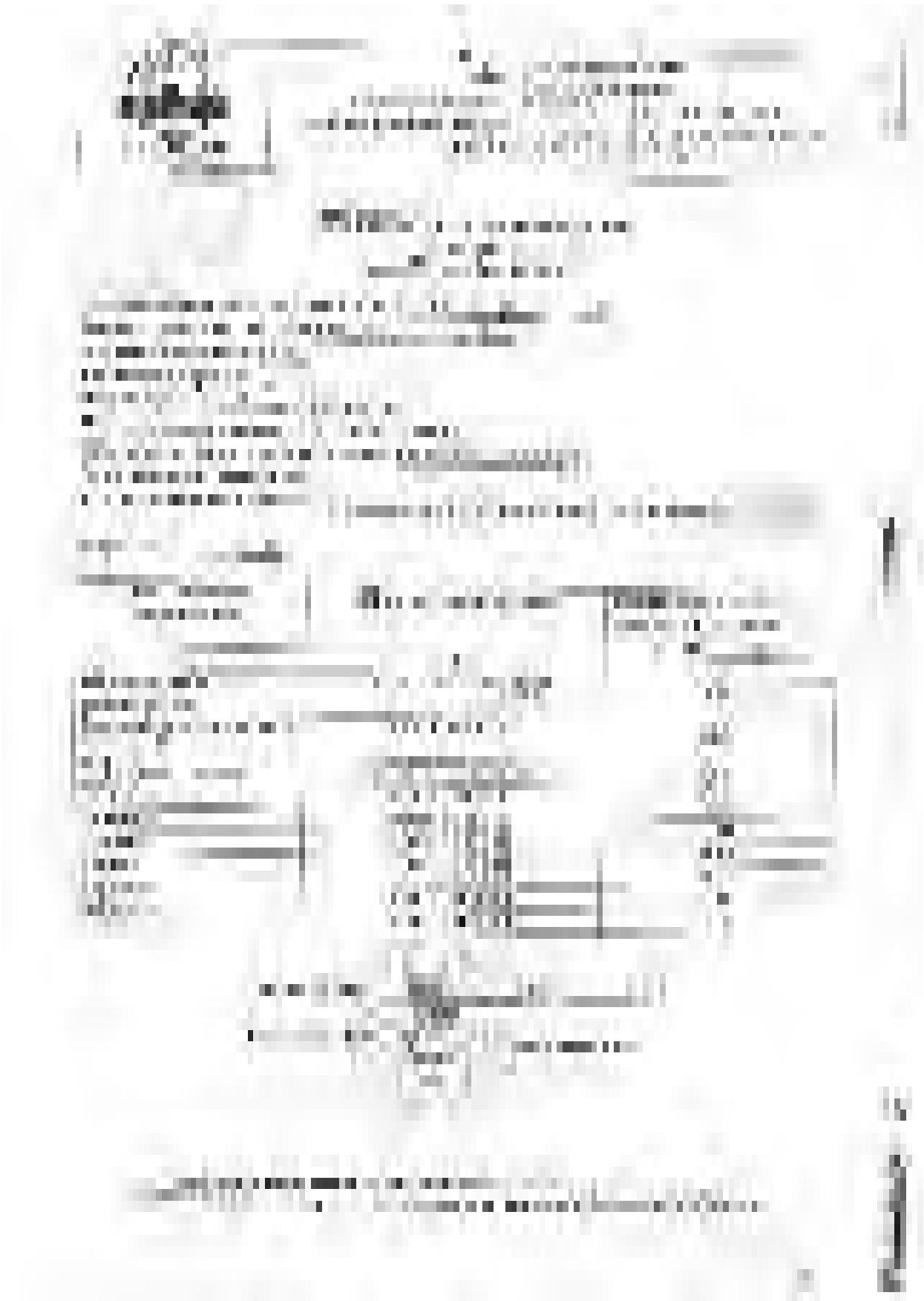


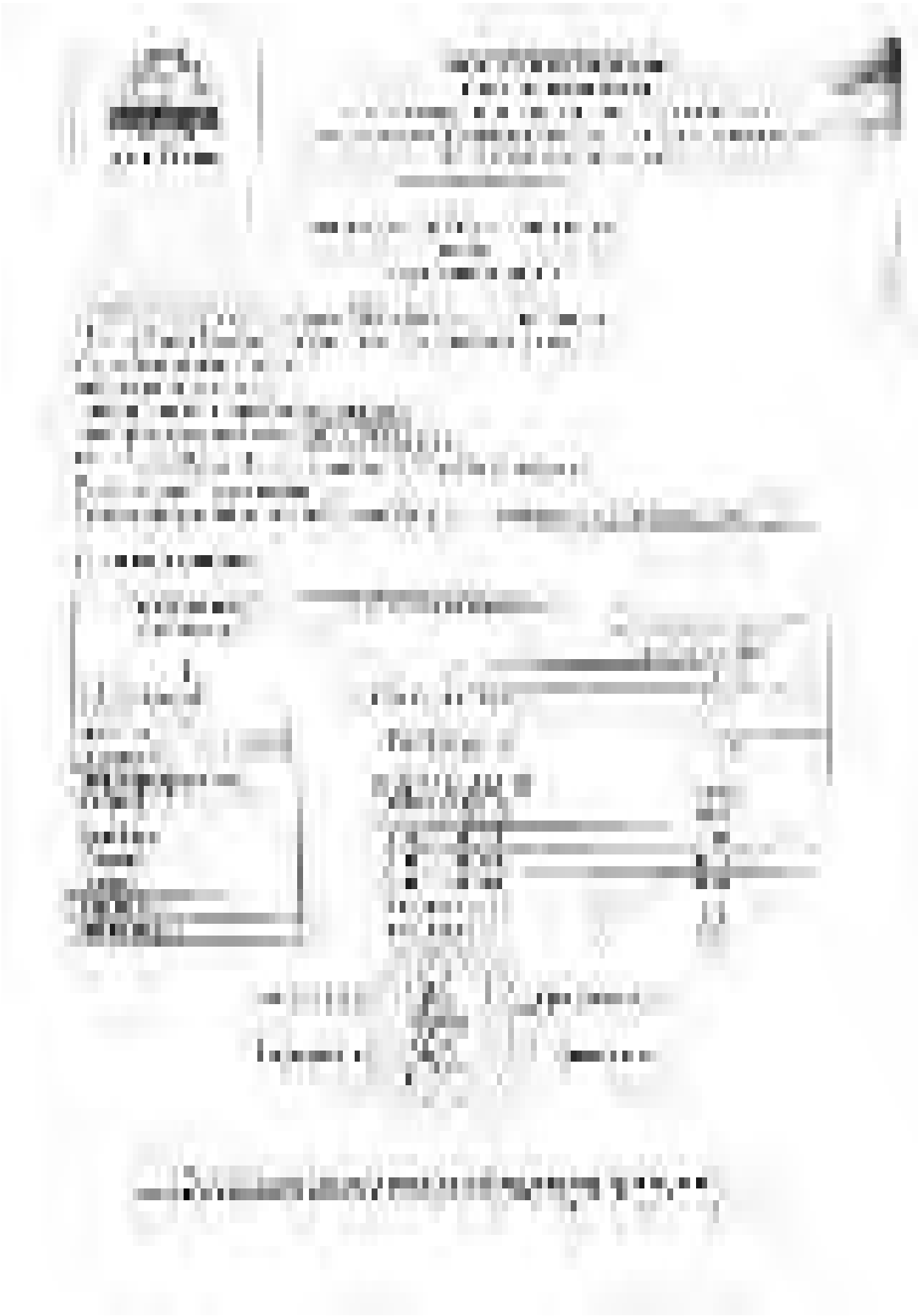


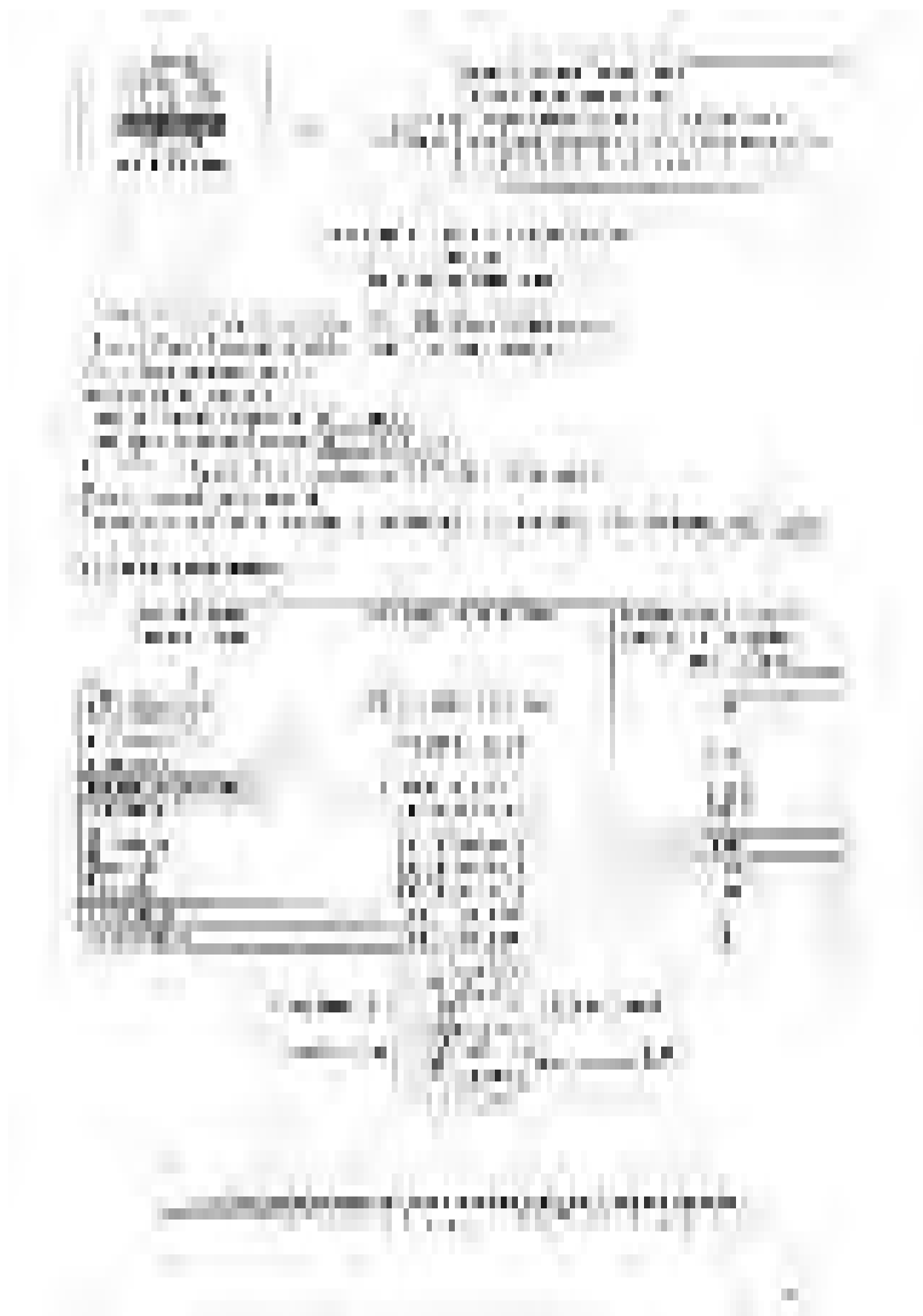












Appendix 6

Results of measurements of atmospheric air Lot 1

Sampling points	Name of pollutants	Data, obtained prior to construction Data, obtained prior to construction	Norm MPC m.r, mg/m <sup>3</sup>	Concentration					
				July	August	September	October	November	December (no reports submitted)
Road section km 160	Inorganic dust 70-20%	0.063	0.3	0.079	0.081	0.083	0.074	0.058	
	Nitrogen dioxide	0.062	0.2	0.073	0.075	0.077	0.072	0.064	
	Sulphur dioxide	n / a	0.5	0	0	0	0	0	
	Carbon oxide	1.2	5.0	1.7	1.8	1.9	1.6	1.0	
	formaldehyde	0.0013	0.051	0.0015	0.0016	0.017	0.014	0.0009	
	Hydrocarbons C <sub>12</sub> -C <sub>19</sub>	0.093	1	0.2	0.3	1.0	0.6	0.1	
	Benzene	0.060	0.3	0.065	0.067	0.068	0.065	0.059	
	Xylene	0.079	0.2	0.082	0.083	0.085	0.090	0.092	
	Methylbenzene	0.3	0.6	0.3	0.2	0.3	0.3	0.2	
	Hydrogen sulphide	n / a	0.008	0	0	0	0	0	
Road section, km 170	Inorganic dust 70-20%	0.063	0.3	0.077	0.080	0.082	0.074	0.064	
	Nitrogen dioxide	0.062	0.2	0.071	0.073	0.075	0.072	0.070	
	Sulphur dioxide	n / a	0.5	0	0	0	0	0	
	Carbon oxide	1.2	5.0	1.6	1.7	1.8	1.6	1.1	
	formaldehyde	0.0013	0.051	0.0013	0.0014	0.0015	0.0012	0.0010	
	Hydrocarbons C <sub>12</sub> -C <sub>19</sub>	0.093	1	0.1	0.2	0.3	0.6	0.2	
	Benzene	0.060	0.3	0.068	0.070	0.072	0.062	0.056	
	Xylene	0.079	0.2	0.087	0.089	0.091	0.088	0.082	
	Methylbenzene	0.3	0.6	0.4	0.3	0.2	0.3	0.1	
	Hydrogen sulphide	n / a	0.008	0	0	0	0	0	
Road section, km 180	Inorganic dust 70-20%	0.061	0.3	0.075	0.077	0.080	0.072	0.069	
	Nitrogen dioxide	0.063	0.2	0.072	0.074	0.076	0.076	0.071	

2nd Semi-Annual Environmental Monitoring Report 2018  
 CAREC corridors 1 and 6 connector “Aktobe-Makat” road reconstruction project (section 160-330)

	Sulphur dioxide	n / a	0.5	0	0	0	0	0	
	Carbon oxide	1.3	5.0	1.4	1.4	1.5	1.6	1.0	
	formaldehyde	0.0012	0.051	0.0015	0.0014	0.0015	0.0014	0.0007	
	Hydrocarbons C <sub>12</sub> -C <sub>19</sub>	0.095	1	0.2	0.3	0.4	0.5	0.1	
	Benzene	0.063	0.3	0.071	0.073	0.075	0.064	0.060	
	Xylene	0.081	0.2	0.093	0.095	0.097	0.084	0.076	
	Methylbenzene	0.2	0.6	0.5	0.4	0.3	0.3	0.1	
	Hydrogen sulphide	n / a	0.008	0	0	0	0	0	
Road section km 190	Inorganic dust 70-20%	0.063	0.3	0.075	0.077	0.079	0.074	0.080	
	Nitrogen dioxide	0.060	0.2	0.069	0.071	0.073	0.074	0.071	
	Sulphur dioxide	n / a	0.5	0	0	0	0	0	
	Carbon oxide	1.4	5.0	0.5	1.6	1.7	1.7	1.1	
	formaldehyde	0.0013	0.051	0.0016	0.0015	0.0013	0.0018	0.0016	
	Hydrocarbons C <sub>12</sub> -C <sub>19</sub>	0.097	1	0.3	0.4	0.5	0.5	0.1	
	Benzene	0.65	0.3	0.072	0.074	0.076	0.066	0.067	
	Xylene	0.082	0.2	0.092	0.092	0.094	0.082	0.074	
	Methylbenzene	0.3	0.6	0.4	0.4	0.3	0.2	0.1	
	Hydrogen sulphide	n / a	0.008	0	0	0	0	0	
The section of road 200 km	Inorganic dust 70-20%	0.065	0.3	0.077	0.079	0.080	0.078	0.064	
	Nitrogen dioxide	0.062	0.2	0.070	0.072	0.074	0.076	0.072	
	Sulphur dioxide	n / a	0.5	0	0	0	0	0	
	Carbon oxide	1.5	5.0	1.8	1.7	1.	1.5	1.0	
	formaldehyde	0.0014	0.051	0.0016	0.0015	0.0014	0.0014	0.0012	
	Hydrocarbons C <sub>12</sub> -C <sub>19</sub>	0.099	1	0.2	0.3	0.2	0.5	0.2	
	Benzene	0.067	0.3	0.076	0.078	0.080	0.062	0.064	
	Xylene	0.083	0.2	0.090	0.092	0.093	0.086	0.071	
	Methylbenzene	0.4	0.6	0.4	0.3	0.4	0.2	0.1	
	Hydrogen sulphide	n / a	0.008	0	0	0	0	0	
The road section km	Inorganic dust 70-20%	0.067	0.3	0.075	0.076	0.078	0.082	0.084	
	Nitrogen dioxide	0.064	0.2	0.071	0.074	0.076	0.078	0.072	

2nd Semi-Annual Environmental Monitoring Report 2018  
 CAREC corridors 1 and 6 connector “Aktobe-Makat” road reconstruction project (section 160-330)

210, Kenzhaly vill.	Sulphur dioxide	n / a	0.5	0	0	0	0	0	
	Carbon oxide	1.6	5.0	1.7	1.6	1.7	1.4	1.2	
	formaldehyde	0.0013	0.051	0.0014	0.0015	0.0016	0.0018	0.0010	
	Hydrocarbons C <sub>12</sub> -C <sub>19</sub>	0.1	1	0.2	0.3	0.4	0.5	0.2	
	Benzene	0.069	0.3	0.077	0.080	0.082	0.068	0.062	
	Xylene	0.085	0.2	0.093	0.094	0.096	0.084	0.080	
	Methylbenzene	0.3	0.6	0.4	0.5	0.4	0.2	0.1	
	Hydrogen sulphide	n / a	0.008	0	0	0	0	0	
Road section km 220	Inorganic dust 70-20%	0.068	0.3	0.078	0.078	0.080	0.080	0.085	
	Nitrogen dioxide	0.065	0.2	0.0730	0.075	0.077	0.075	0.079	
	Sulphur dioxide	n / a	0.5	0	0	0	0	0	
	Carbon oxide	1.7	5.0	1.6	1.7	1.6	1.4	1.2	
	formaldehyde	0.0014	0.051	0.0015	0.0016	0.0015	0.0014	0.0011	
	Hydrocarbons C <sub>12</sub> -C <sub>19</sub>	0.1	1	0.2	0.3	0.4	0.5	0.5	
	Benzene	0.070	0.3	0.077	0.080	0.082	0.066	0.067	
	Xylene	0.087	0.2	0.095	0.097	0.095	0.082	0.079	
	Methylbenzene	0.3	0.6	0.4	0.3	0.4	0.2	0.1	
	Hydrogen sulphide	n / a	0.008	0	0	0	0	0	
Production base Zhaksymay	Inorganic dust 70-20%	0.0362	0.3	0.041	0.0405	0.398	0.0416	0.0410	
	Nitrogen dioxide	0.0272	0.2	0.0306	0.0307	0.0302	0.0324	0.0286	
	Sulphur dioxide	n / a	0.5	0	0	0	0	0	
	Carbon oxide	1.6	5.0	1.7	1.8	1.7	1.7	1.2	
	formaldehyde	0.0012	0.051	0.005	0.0016	0.0015	0.0018	0.0012	
	Hydrocarbons C <sub>12</sub> -C <sub>19</sub>	0.099	1	1.0	0.4	0.5	0.3	0.2	
	Hydrogen sulphide	n / a	0.008	0.008	0	0	0	0	



	Characteristic	I-w**	MPC	July	August	September	October	November
Residential area of the Shubarkuduk village	Inorganic dust 70-20%	0.0353	0.3	0.0407	0.0406	0.0400	0.0400	0.0386
	Nitrogen dioxide	0.0263	0.2	0.0407	0.0273	0.0275	0.0272	0.0276
	Sulphur dioxide	n / a	0.5	0	0	0	0	0
	Carbon oxide	1.6	5.0	1.6	1.6	1.7	1.6	1.4
	formaldehyde	0.0012	0.051	0.0013	0.0014	0.0014	0.0016	0.0010
	Hydrocarbons C <sub>12</sub> -C <sub>19</sub>	0.0099	1	0.18	0.2	0.2	0.2	0.1
	Hydrogen sulphide	n / a	0.008	0	0	0	0	0
		I-w						
Residential area of Kopa village	Inorganic dust 70-20%	0.0345	0.3	0.0404	0.0405	0.0401	0.0396	0.040
	Nitrogen dioxide	0.0263	0.2	0.0312	0.0314	0.0315	0.0312	0.0270
	Sulphur dioxide	n / a	0.5	0	0	0	0	0
	Carbon oxide	1.5	5.0	1.6	1.7	1.6	1.8	1.1
	formaldehyde	0.0013	0.051	0.0014	0.0014	0.0014	0.0012	0.0018
	Hydrocarbons C <sub>12</sub> -C <sub>19</sub>	0.098	1	0.1	0.2	0.1	0.1	0.1
	Hydrogen sulphide	n / a	0.008	0	0	0	0	0

\* w-w - windward part

\* I-w - leeward part

		w-w *	MPC	July	August	September	October	November
Residential area of the Shubarkuduk village	Inorganic dust 70-20%	0.0351	0.3	0.0402	0.0404	0.0398	0.0396	0.380
	Nitrogen dioxide	0.0261	0.2	0.0272	0.0275	0.0277	0.0268	0.0272
	Sulphur dioxide	n / a	0.5	0	0	0	0	0
	Carbon oxide	1.5	5.0	1.6	1.7	1.7	1.6	1.3
	formaldehyde	0.0011	0.051	0.0014	0.0014	0.0015	0.018	0.0012
	Hydrocarbons C <sub>12</sub> -C <sub>19</sub>	0.097	1	0.1	0.2	0.2	0.2	0.1
	Hydrogen sulphide	n / a	0.008		0	0	0	0
		w-w *						
Residential area of Kopa village	Inorganic dust 70-20%	0.0344	0.3	0.0401	0.0403	0.0398	0.0384	0.0390
	Nitrogen dioxide	0.0261	0.2	0.0309	0.0310	0.0312	0.0310	0.0265
	Sulphur dioxide	n / a	0.5	0	0	0	0	0
	Carbon oxide	1.4	5.0	1.5	1.6	1.6	1.8	1.0
	formaldehyde	0.0012	0.051	0.0014	0.0015	0.0014	0.0012	0.0016
	Hydrocarbons C <sub>12</sub> -C <sub>19</sub>	0.096	1	0.1	0.1	0.1	0.1	0.1
	Hydrogen sulphide	n / a	0.008	0	0	0	0	0

\* w-w - windward part

\* I-w - leeward part

## Protocols for measuring air pollution

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<sup>†</sup>For more details on the results of the regression analysis, see the Appendix in the online version of this article.



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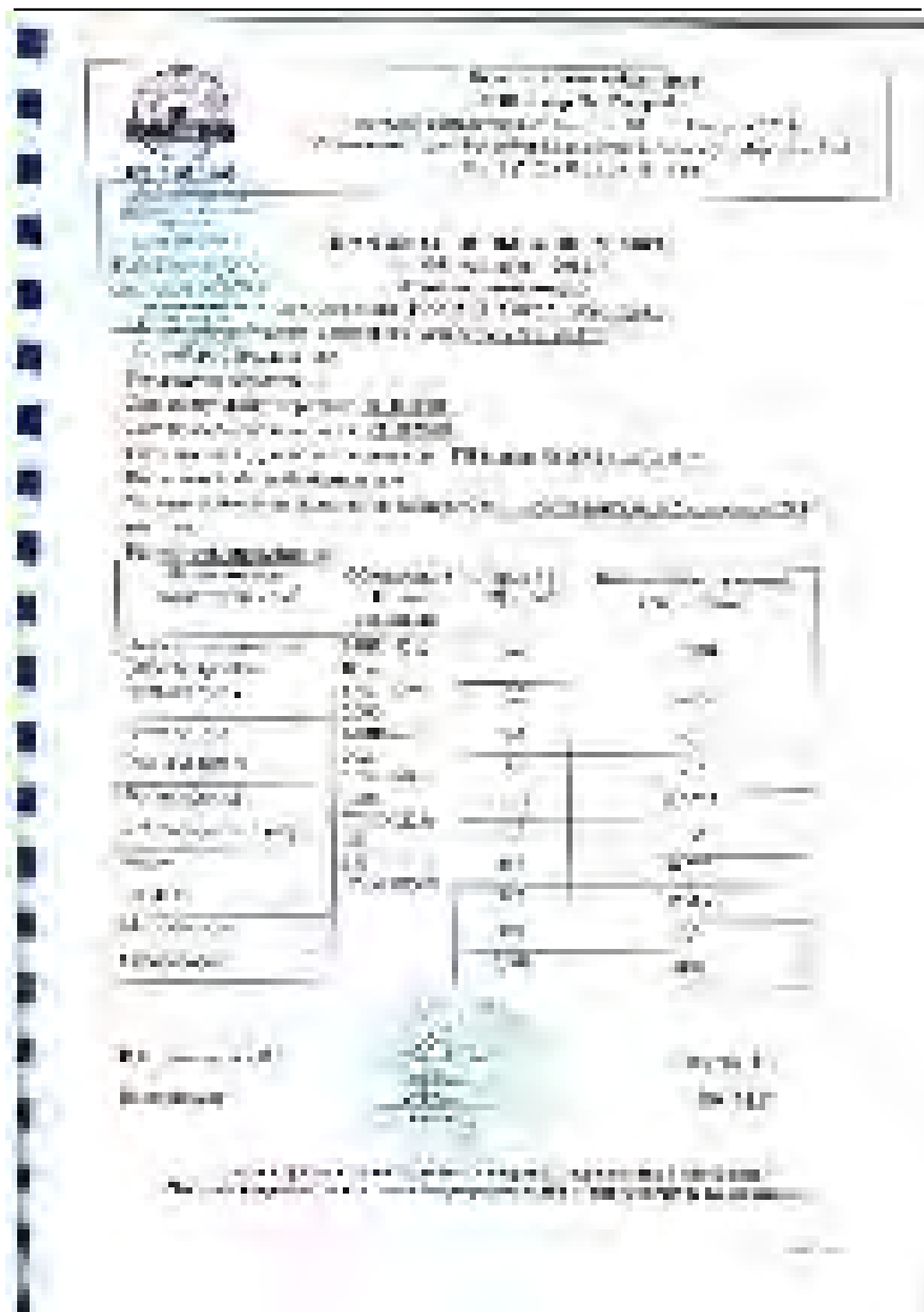



















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МОНИТОРИНГ  
ЭКОЛОГИЧЕСКОГО СОСТОЯНИЯ  
ОБЪЕКТА

Наименование объекта мониторинга:  
 1. Актобе-Макат  
 2. Дорожная инфраструктура  
 3. Дорожные работы на территории 160-330 км  
 4. Дорожные работы на территории 160-330 км  
 5. Дорожные работы на территории 160-330 км

Место проведения мониторинга:  
 1. Актобе-Макат  
 2. Дорожная инфраструктура  
 3. Дорожные работы на территории 160-330 км  
 4. Дорожные работы на территории 160-330 км  
 5. Дорожные работы на территории 160-330 км

Цели мониторинга:  
 1. Оценка экологического состояния объекта  
 2. Оценка воздействия на окружающую среду  
 3. Оценка качества воздуха  
 4. Оценка качества воды  
 5. Оценка качества почвы

Методы мониторинга:  
 1. Наблюдение  
 2. Измерения  
 3. Анализ проб  
 4. Моделирование  
 5. Другие методы

Наименование объекта мониторинга	Методы мониторинга	Периодичность мониторинга	Ответственный за мониторинг
1. Актобе-Макат	Наблюдение	Ежедневно	И.И.И.
2. Дорожная инфраструктура	Измерения	Ежедневно	И.И.И.
3. Дорожные работы на территории 160-330 км	Анализ проб	Ежедневно	И.И.И.
4. Дорожные работы на территории 160-330 км	Моделирование	Ежедневно	И.И.И.
5. Дорожные работы на территории 160-330 км	Другие методы	Ежедневно	И.И.И.

Подпись: \_\_\_\_\_  
 Должность: \_\_\_\_\_

Подпись: \_\_\_\_\_  
 Должность: \_\_\_\_\_

Подпись: \_\_\_\_\_  
 Должность: \_\_\_\_\_














**ҚАЗАҚСТАН РЕСПУБЛИКАСЫНЫҢ**  
**ТРАНСПОРТ ЖӘНЕ**  
**ИНФРАСТРУКТУРА МИНИСТРЛІГІ**

**Төтенше және Өкілеттілік**  
**Транспорт және Инфраструктура**  
 Үкіметінің 2018 жылғы 15.08.2018 № 1081 Қаулысымен бекітілген

**ТРАНСПОРТ ЖӘНЕ ИНФРАСТРУКТУРА**  
 АКАДЕМИЯСЫ

Астана қаласы

**Транспорт және Инфраструктура**  
 АКАДЕМИЯСЫНЫҢ АКАДЕМИК-МОНИТОРИНГ

Астана қаласы

**Транспорт және Инфраструктура**  
 АКАДЕМИЯСЫНЫҢ АКАДЕМИК-МОНИТОРИНГ

Астана қаласы

**Транспорт және Инфраструктура**  
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Астана қаласы

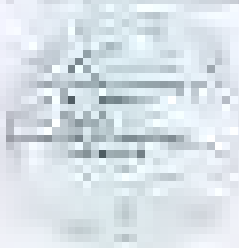
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Астана қаласы

Транспорт және Инфраструктура	Транспорт және Инфраструктура	Транспорт және Инфраструктура	Транспорт және Инфраструктура	Транспорт және Инфраструктура
Транспорт және Инфраструктура	Транспорт және Инфраструктура	Транспорт және Инфраструктура	Транспорт және Инфраструктура	Транспорт және Инфраструктура
Транспорт және Инфраструктура	Транспорт және Инфраструктура	Транспорт және Инфраструктура	Транспорт және Инфраструктура	Транспорт және Инфраструктура
Транспорт және Инфраструктура	Транспорт және Инфраструктура	Транспорт және Инфраструктура	Транспорт және Инфраструктура	Транспорт және Инфраструктура
Транспорт және Инфраструктура	Транспорт және Инфраструктура	Транспорт және Инфраструктура	Транспорт және Инфраструктура	Транспорт және Инфраструктура
Транспорт және Инфраструктура	Транспорт және Инфраструктура	Транспорт және Инфраструктура	Транспорт және Инфраструктура	Транспорт және Инфраструктура
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Транспорт және Инфраструктура	Транспорт және Инфраструктура	Транспорт және Инфраструктура	Транспорт және Инфраструктура	Транспорт және Инфраструктура
Транспорт және Инфраструктура	Транспорт және Инфраструктура	Транспорт және Инфраструктура	Транспорт және Инфраструктура	Транспорт және Инфраструктура
Транспорт және Инфраструктура	Транспорт және Инфраструктура	Транспорт және Инфраструктура	Транспорт және Инфраструктура	Транспорт және Инфраструктура

**Транспорт және Инфраструктура**

Астана қаласы



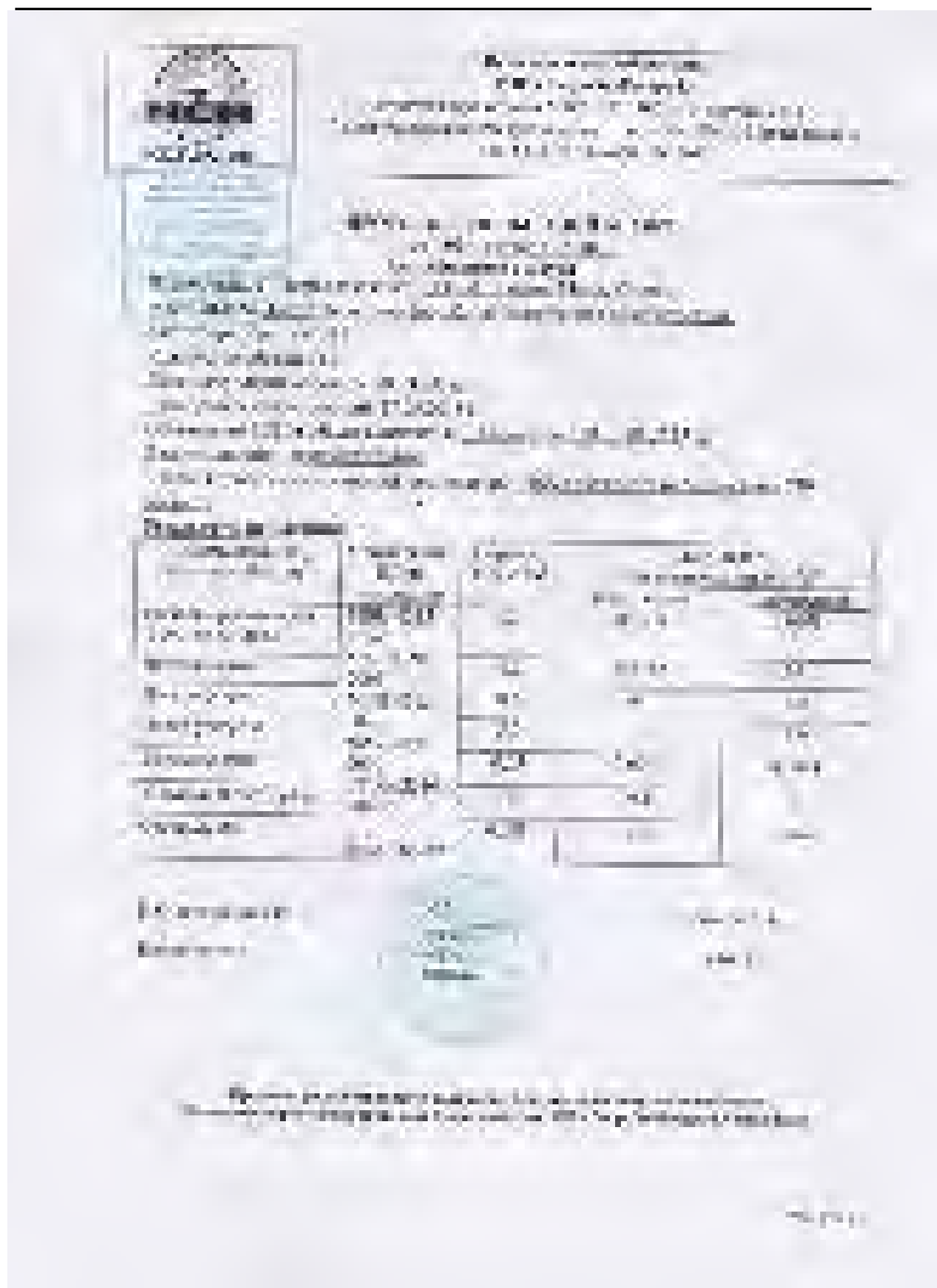
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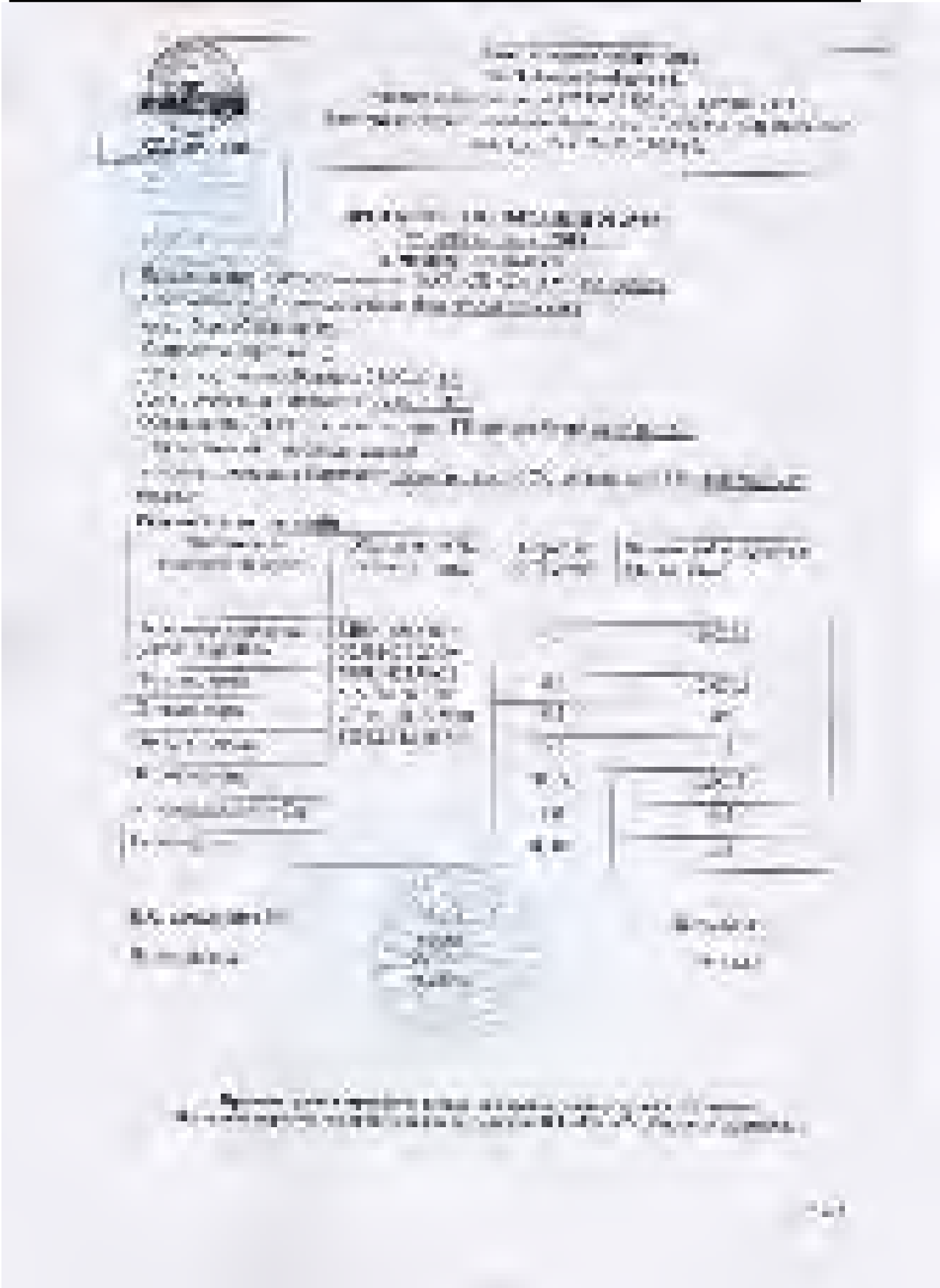
Астана қаласы

Қазақстан Республикасының Конституциясы мен Заңдарына сәйкес  
 Астана қаласының Мэриясының 2018 жылғы 15.08.2018 № 1081 Қаулысымен бекітілген

2018 жылғы 15.08.2018













Министерство транспорта и инфраструктуры  
 Республики Казахстан  
 Департамент автомобильных дорог  
 Департамент автомобильных дорог  
 Департамент автомобильных дорог

**АКТ**

**О результатах мониторинга состояния окружающей среды**

**по результатам мониторинга состояния окружающей среды**

**Объект мониторинга:** Строительство и эксплуатация автомобильной дороги «Актобе-Макат» (участок 160-330).

**Местоположение:** Республика Казахстан, Актобская область, Актобе.

**Дата проведения мониторинга:** 2018 г.

**Цель мониторинга:** Оценка воздействия на окружающую среду от строительства и эксплуатации автомобильной дороги «Актобе-Макат» (участок 160-330).

**Задачи мониторинга:**

- Определение факторов воздействия на окружающую среду.
- Оценка воздействия на окружающую среду.
- Определение мер по снижению негативного воздействия на окружающую среду.
- Определение мер по восстановлению окружающей среды.

**Методы мониторинга:** Наблюдение, измерение, анализ.

**Результаты мониторинга:**

Наименование фактора воздействия	Единица измерения	Полученные данные	Нормативное значение
Вибрация	дБ	75	85
Шум	дБ	75	85
Загрязнение воздуха	мг/м³	0,1	0,2
Загрязнение воды	мг/л	0,1	0,2
Загрязнение почвы	мг/кг	0,1	0,2
Загрязнение растительности	мг/м²	0,1	0,2
Загрязнение животного мира	мг/м³	0,1	0,2
Загрязнение человека	мг/м³	0,1	0,2
Загрязнение окружающей среды	мг/м³	0,1	0,2
Загрязнение атмосферы	мг/м³	0,1	0,2
Загрязнение гидросферы	мг/л	0,1	0,2
Загрязнение литосферы	мг/кг	0,1	0,2
Загрязнение биосферы	мг/м²	0,1	0,2
Загрязнение антропогенной среды	мг/м³	0,1	0,2

Исполнитель:

\_\_\_\_\_

Секретарь:

\_\_\_\_\_

М.П. Департамента автомобильных дорог

М.П. Департамента автомобильных дорог

Итого:

\_\_\_\_\_





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[illegible]

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GOVERNMENT OF INDIA  
MINISTRY OF HEALTH AND FAMILY WELFARE  
DEPARTMENT OF POPULATION RESEARCH AND TRAINING  
NEW DELHI - 110 054

**STATEMENT OF THE STATUS OF THE POPULATION**  
IN THE YEAR 1981

**1. Name of the State/Union Territory:** Andhra Pradesh

**2. District:** Tirumala

**3. Taluk:** Tirumala

**4. Village/Panchayat:** Tirumala

**5. Date of the Survey:** 1981

**6. Name of the Surveyor:** Tirumala

**7. Name of the Head of the Family:** Tirumala

**8. Name of the Head of the Household:** Tirumala

**9. Name of the Head of the Household (if different from 8):** Tirumala

Name of the Person	Relationship to the Head of the Household	Sex	Age	Date of Birth
Tirumala	Head of the Household	M	45	1936
Tirumala	Wife of the Head of the Household	F	42	1939
Tirumala	Son of the Head of the Household	M	15	1966
Tirumala	Daughter of the Head of the Household	F	12	1969
Tirumala	Grandson of the Head of the Household	M	5	1976
Tirumala	Granddaughter of the Head of the Household	F	3	1978
Tirumala	Grandson of the Head of the Household	M	2	1979
Tirumala	Granddaughter of the Head of the Household	F	1	1980
Tirumala	Grandson of the Head of the Household	M	0	1981
Tirumala	Granddaughter of the Head of the Household	F	0	1982
Tirumala	Grandson of the Head of the Household	M	0	1983
Tirumala	Granddaughter of the Head of the Household	F	0	1984
Tirumala	Grandson of the Head of the Household	M	0	1985
Tirumala	Granddaughter of the Head of the Household	F	0	1986
Tirumala	Grandson of the Head of the Household	M	0	1987
Tirumala	Granddaughter of the Head of the Household	F	0	1988
Tirumala	Grandson of the Head of the Household	M	0	1989
Tirumala	Granddaughter of the Head of the Household	F	0	1990
Tirumala	Grandson of the Head of the Household	M	0	1991
Tirumala	Granddaughter of the Head of the Household	F	0	1992
Tirumala	Grandson of the Head of the Household	M	0	1993
Tirumala	Granddaughter of the Head of the Household	F	0	1994
Tirumala	Grandson of the Head of the Household	M	0	1995
Tirumala	Granddaughter of the Head of the Household	F	0	1996
Tirumala	Grandson of the Head of the Household	M	0	1997
Tirumala	Granddaughter of the Head of the Household	F	0	1998
Tirumala	Grandson of the Head of the Household	M	0	1999
Tirumala	Granddaughter of the Head of the Household	F	0	2000
Tirumala	Grandson of the Head of the Household	M	0	2001
Tirumala	Granddaughter of the Head of the Household	F	0	2002
Tirumala	Grandson of the Head of the Household	M	0	2003
Tirumala	Granddaughter of the Head of the Household	F	0	2004
Tirumala	Grandson of the Head of the Household	M	0	2005
Tirumala	Granddaughter of the Head of the Household	F	0	2006
Tirumala	Grandson of the Head of the Household	M	0	2007
Tirumala	Granddaughter of the Head of the Household	F	0	2008
Tirumala	Grandson of the Head of the Household	M	0	2009
Tirumala	Granddaughter of the Head of the Household	F	0	2010
Tirumala	Grandson of the Head of the Household	M	0	2011
Tirumala	Granddaughter of the Head of the Household	F	0	2012
Tirumala	Grandson of the Head of the Household	M	0	2013
Tirumala	Granddaughter of the Head of the Household	F	0	2014
Tirumala	Grandson of the Head of the Household	M	0	2015
Tirumala	Granddaughter of the Head of the Household	F	0	2016
Tirumala	Grandson of the Head of the Household	M	0	2017
Tirumala	Granddaughter of the Head of the Household	F	0	2018
Tirumala	Grandson of the Head of the Household	M	0	2019
Tirumala	Granddaughter of the Head of the Household	F	0	2020
Tirumala	Grandson of the Head of the Household	M	0	2021
Tirumala	Granddaughter of the Head of the Household	F	0	2022
Tirumala	Grandson of the Head of the Household	M	0	2023
Tirumala	Granddaughter of the Head of the Household	F	0	2024
Tirumala	Grandson of the Head of the Household	M	0	2025
Tirumala	Granddaughter of the Head of the Household	F	0	2026
Tirumala	Grandson of the Head of the Household	M	0	2027
Tirumala	Granddaughter of the Head of the Household	F	0	2028
Tirumala	Grandson of the Head of the Household	M	0	2029
Tirumala	Granddaughter of the Head of the Household	F	0	2030
Tirumala	Grandson of the Head of the Household	M	0	2031
Tirumala	Granddaughter of the Head of the Household	F	0	2032
Tirumala	Grandson of the Head of the Household	M	0	2033
Tirumala	Granddaughter of the Head of the Household	F	0	2034
Tirumala	Grandson of the Head of the Household	M	0	2035
Tirumala	Granddaughter of the Head of the Household	F	0	















Table 1. Environmental Monitoring Data for the Road Reconstruction Project (Section 160-330)			
Monitoring Point	Parameter	Unit	Value
Point A	Temperature	°C	15.2
	Humidity	%	65.8
	Wind Speed	m/s	2.1
	Wind Direction	°	120
Point B	Temperature	°C	14.8
	Humidity	%	68.5
	Wind Speed	m/s	1.8
	Wind Direction	°	115
Point C	Temperature	°C	15.5
	Humidity	%	64.2
	Wind Speed	m/s	2.3
	Wind Direction	°	125
Point D	Temperature	°C	14.5
	Humidity	%	70.1
	Wind Speed	m/s	1.9
	Wind Direction	°	110
Point E	Temperature	°C	15.1
	Humidity	%	66.3
	Wind Speed	m/s	2.2
	Wind Direction	°	122
Point F	Temperature	°C	14.9
	Humidity	%	67.9
	Wind Speed	m/s	1.7
	Wind Direction	°	118
Point G	Temperature	°C	15.3
	Humidity	%	64.7
	Wind Speed	m/s	2.4
	Wind Direction	°	128
Point H	Temperature	°C	14.7
	Humidity	%	69.4
	Wind Speed	m/s	1.6
	Wind Direction	°	112
Point I	Temperature	°C	15.4
	Humidity	%	63.8
	Wind Speed	m/s	2.5
	Wind Direction	°	130
Point J	Temperature	°C	14.6
	Humidity	%	71.2
	Wind Speed	m/s	1.5
	Wind Direction	°	108

Environmental Monitoring Data for the Road Reconstruction Project (Section 160-330)

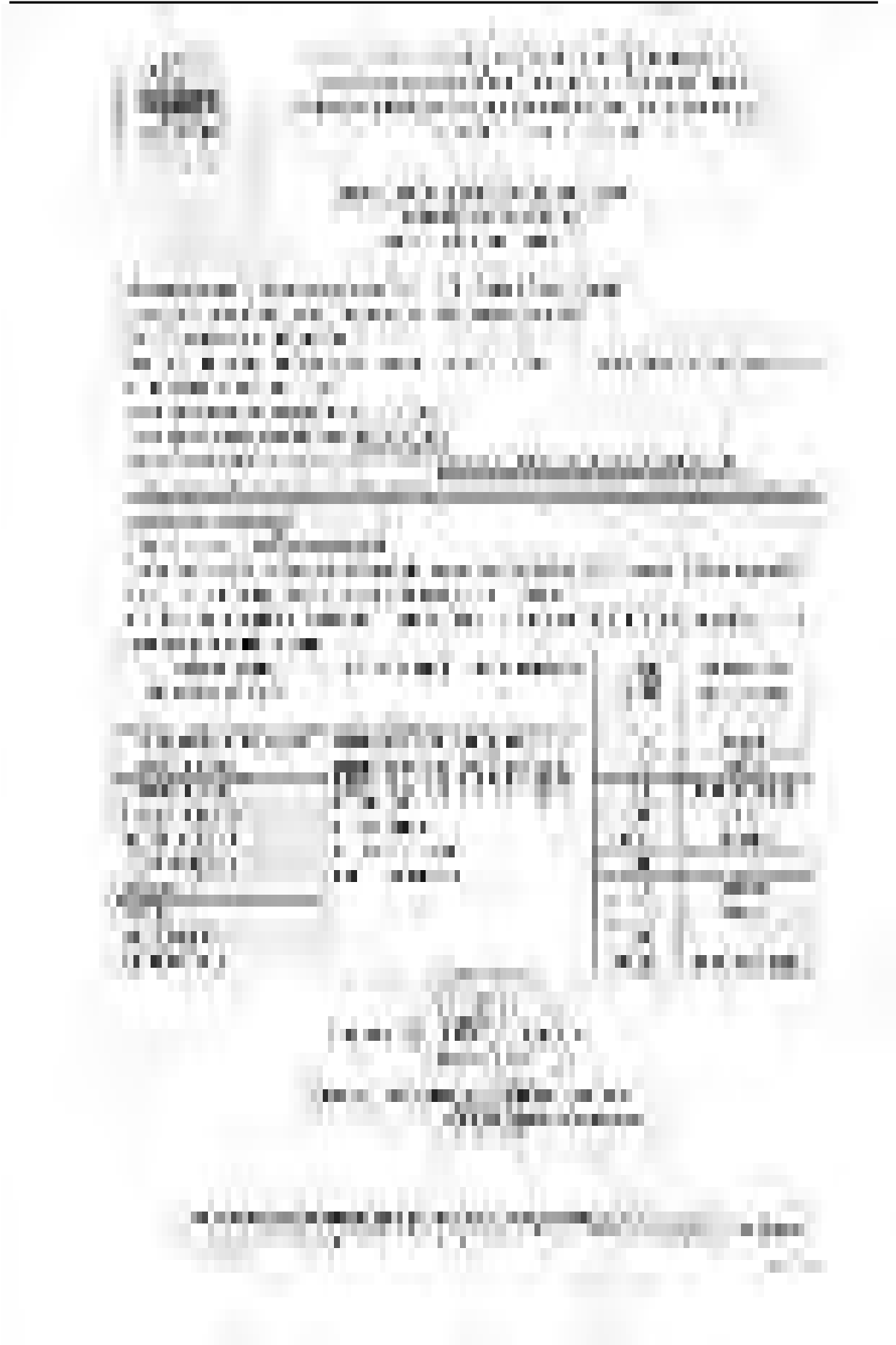






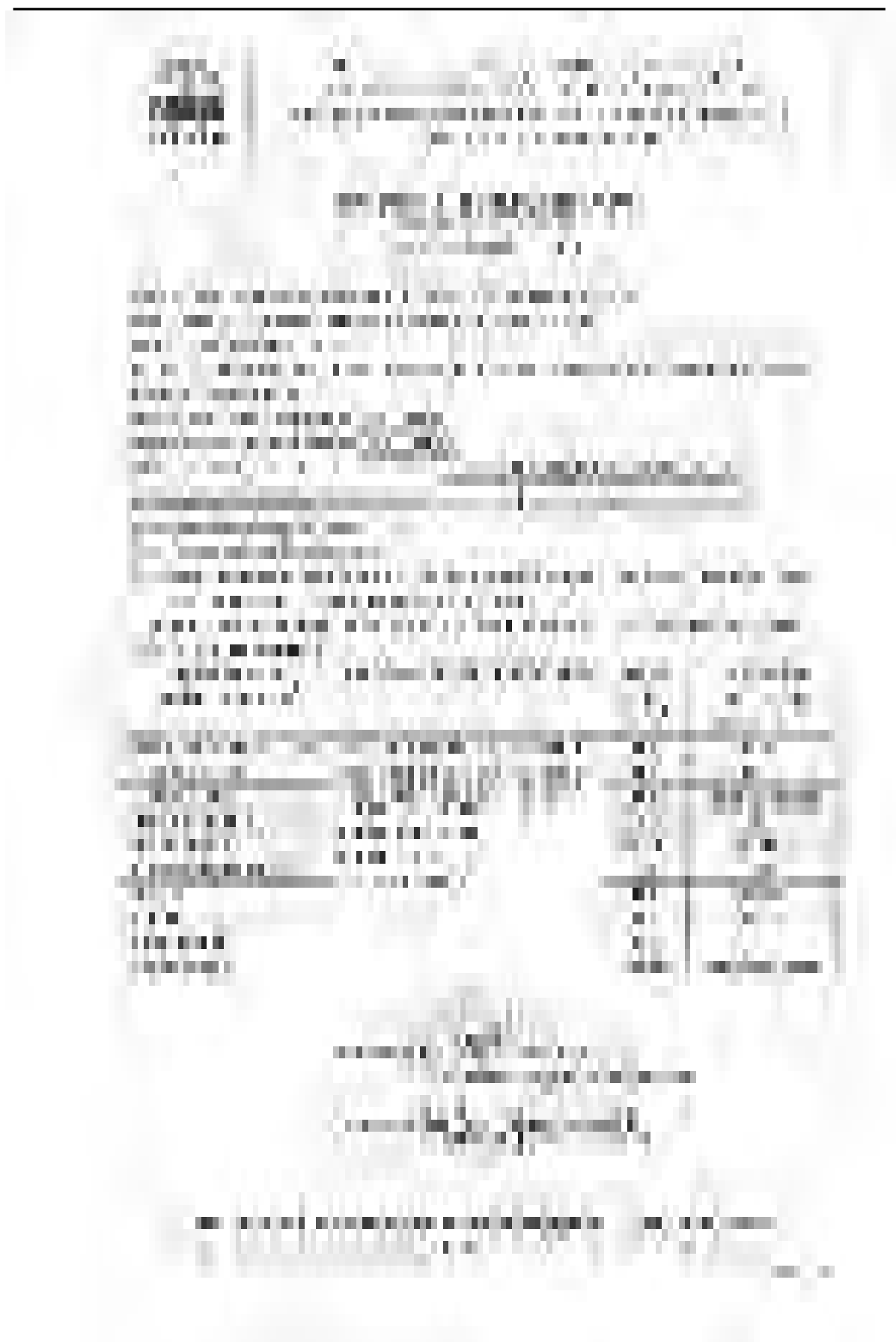


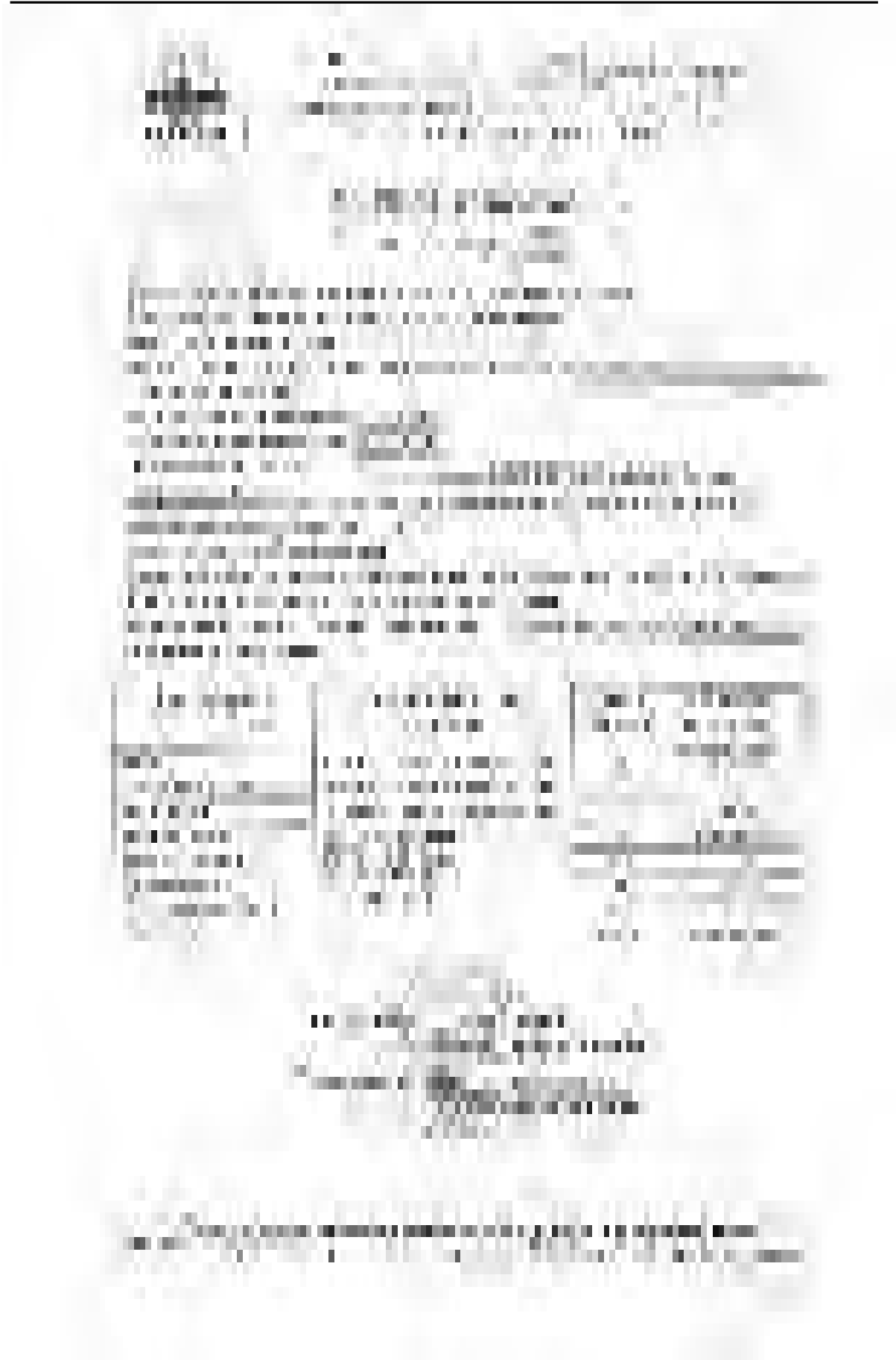














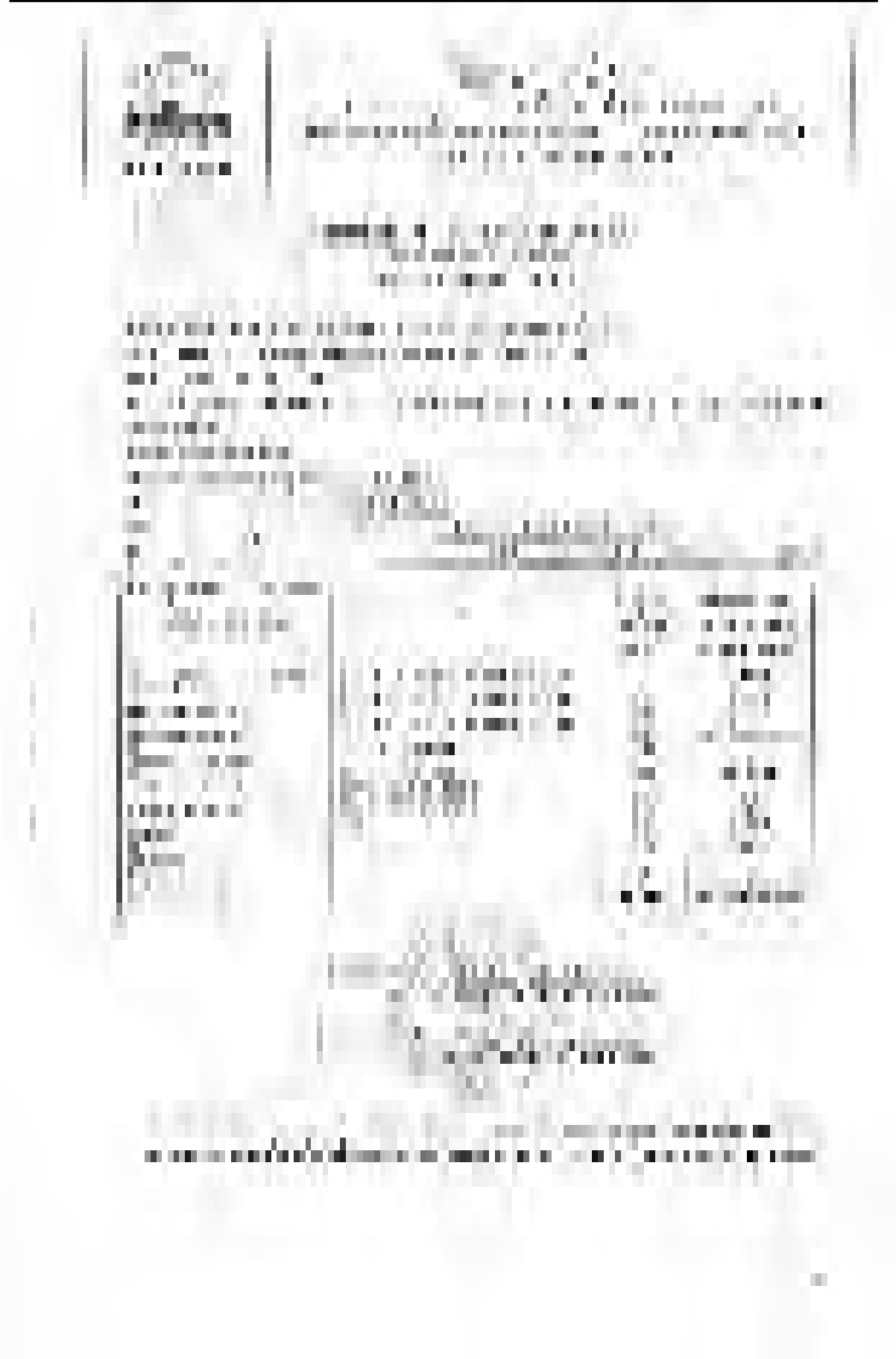




















**Appendix 7**

**Permit documents for Lot 2**

<b>Document title</b>	<b>Document information and status</b>
Road " Aktobe-Makat-km	June 1, 2017 No. K88VDD00094630
"Environmental impact assessment (EIA)" of the project	Number: KZ29VDC00070747 Date: 05.06.2018
Borrow pits and the status of work on them	Obtained 27.04.2018 and 07.06.18, received permission for surface resources use on 7.06.2018 to 20 January 2020
Environmental monitoring	A contract with "HydroEcoResource –L" LLP dated 5.04.2018 The laboratory has certificate of accreditation KZ.I. 05. dated 17.04.2013  Basic monitoring report submitted; the production monitoring (Data obtained prior to construction) was carried out before the start of construction works on the sites on April 12-13. The full report on all objects is made.
Services for the removal, disposal of solid waste and other waste	A contract with a specialized organization "Zelenstroy" LLP for the removal of industrial waste. Base Camp commissioned
The EMP with 10 action Plans for environmental protection	Approved by the PMC on 17.07.2018



**Appendix 8**

**The results of measurements of Noise and Vibration, Lot 2**

Place / points of measurements	Data obtained prior to construction 24.04.18	July 27.07.18	August 29.08.18	September	October
Residential area of Karaulkeldy vill.	37.6	38.7	38.9	38.9	38.7
Production Base Karaulkeldy	35.6	37.2	38.4	38.5	38.4
Residential area of Zharly village				38.9	38.7
km 236	37.2	38.4	38.7	38.8	388.2
km 245	36.2	-	38.4	38.6	36.6
km 250		37.2			
km 255	37.2	-	37.2	37.4	37.4
km 260		36.2			
km 265	36.2	-	38.22	38.4	37.2
km 275	37.6	37.6	36.5	36.7	36.6
Borrow pit No. 2 section				37.7	37.6
Borrow pit No. 5 section				38.5	38.4
Borrow pit No. 6 section					38.8

Acceptable

ble - 95 dB

**Dynamics of changes in Noise level, Lot 2**

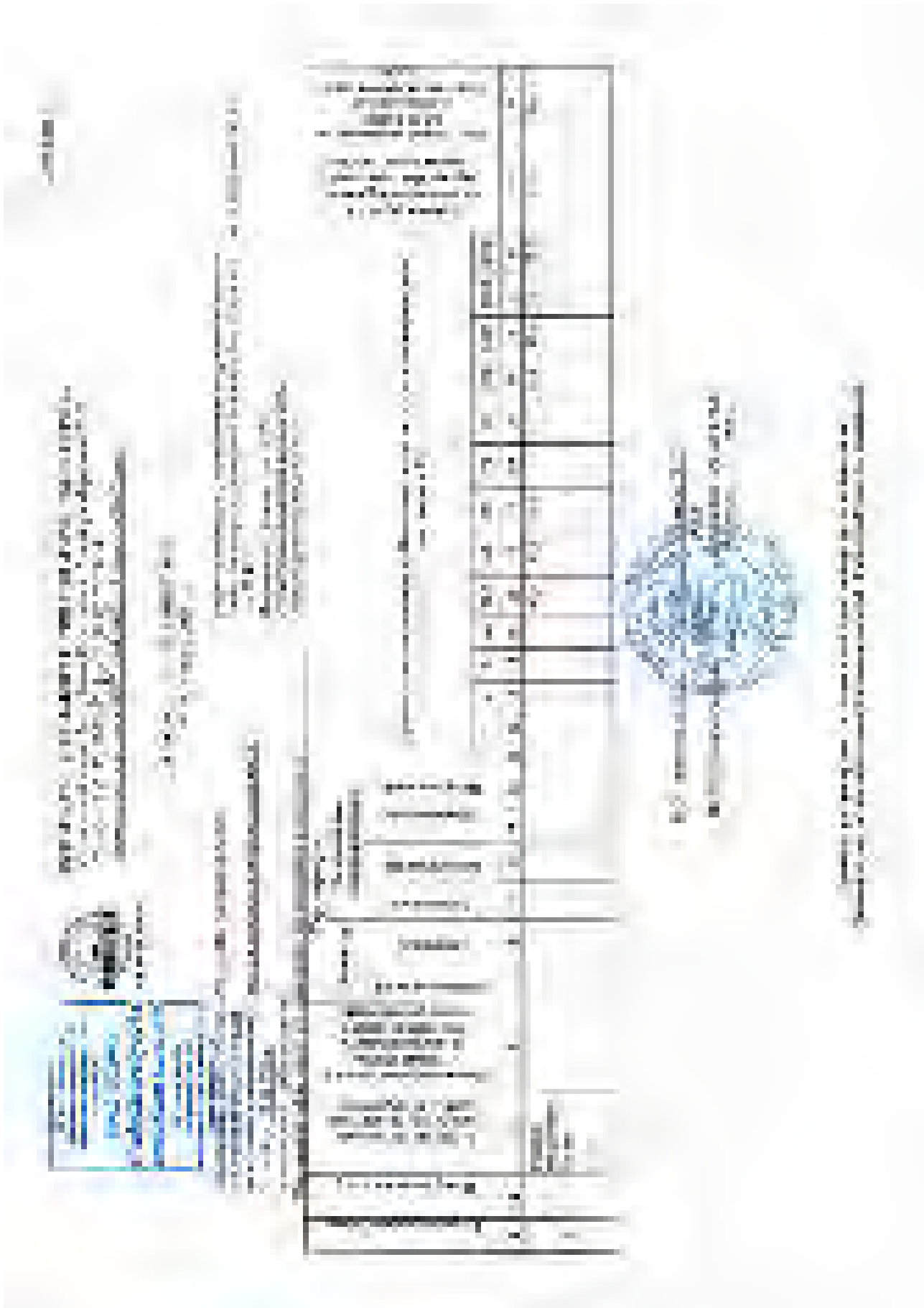
Place / points of measurements	Data obtained prior to construction 24.04.18	July 27.07.18	August 29.08.18	September 27.09.18	October 25-26.10.18
Residential area of Karaulkeldy vill.	52.4	55.7	55.3	55.6	55.7
Production Base Karaulkeldy	52.4	54.6	54.5	55.6	54.2
Residential Area of Zharly village				55.7	
km 236	51.4	51.8	-	55.8	55.0
km 245	52.4		54.4	55.7	54.8
km 250		53.2			
km 255	52.4		54.8	55.8	54.2
km 260		53.5			
km 265	52.4		52.4	55.8	55.4
km 275	52.4	52.4	53.5	55.9	55.8
Borrow pit No. 2 section				56.2	56.4
Borrow pit No. 5 section				56.6	56.2
Borrow pit No. 6 section				56.8	56.6

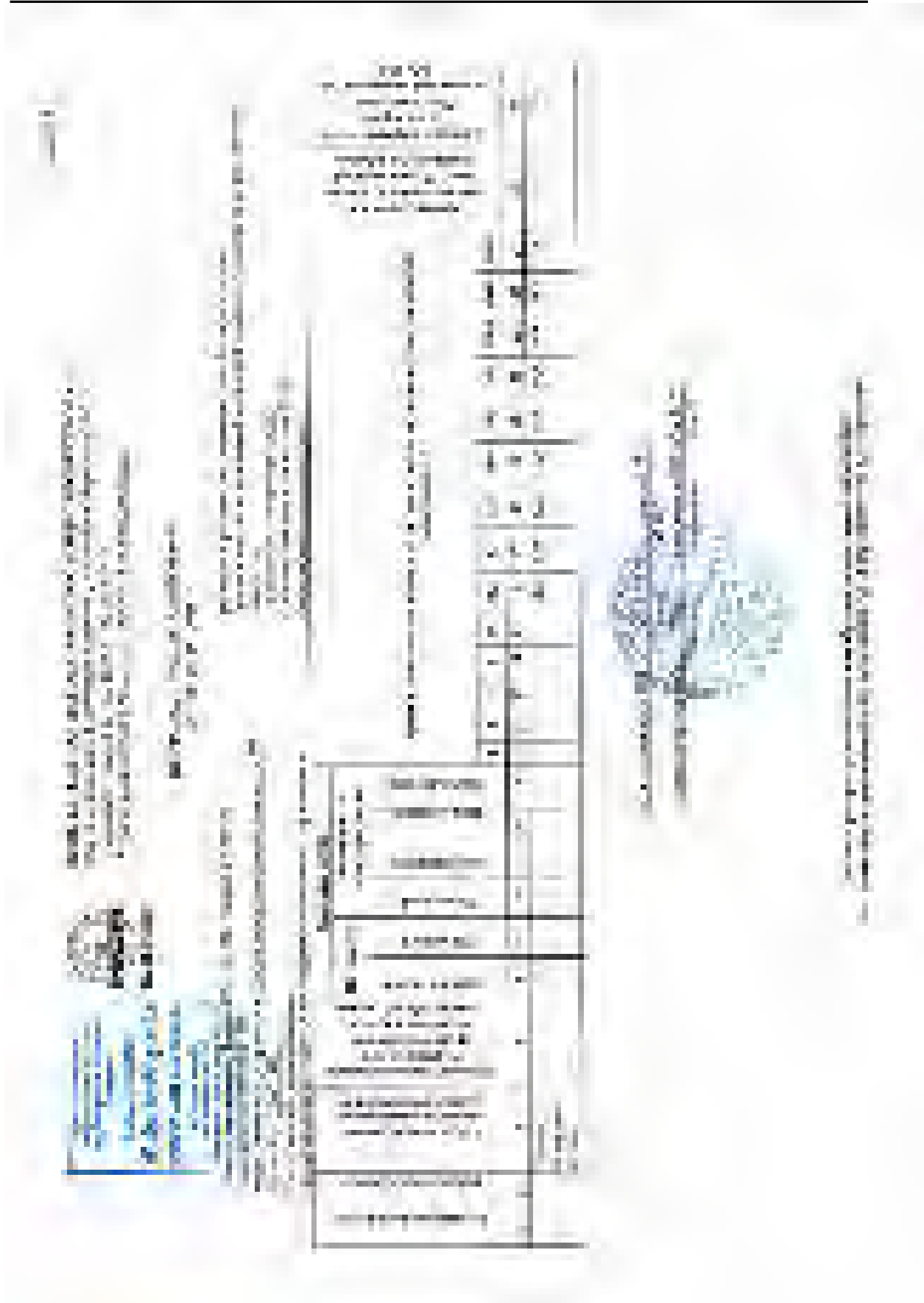
Acceptable

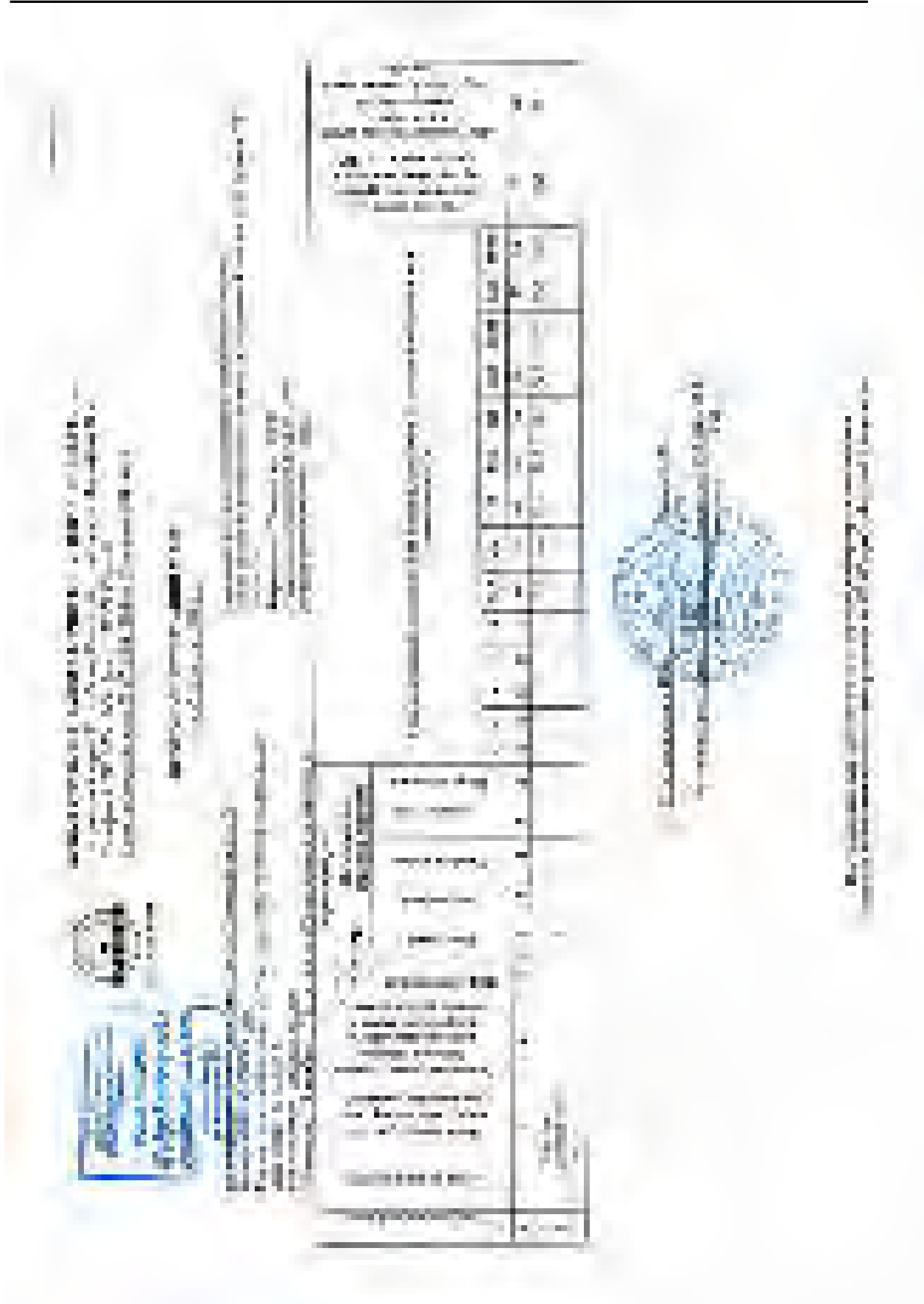
ptable - 80 dBA

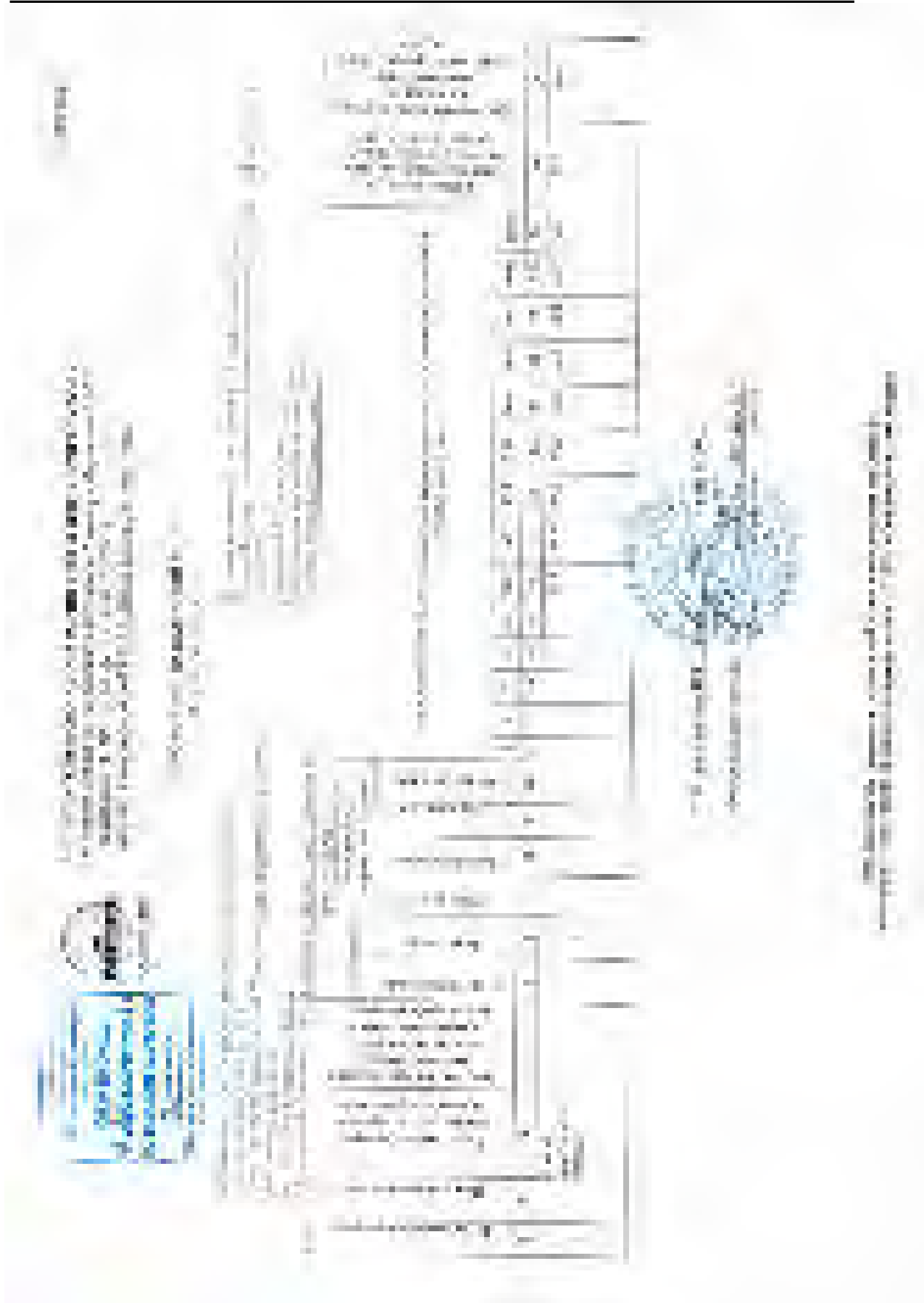
Appendix 8.1

Protocols of vibration acceleration and noise level measurements



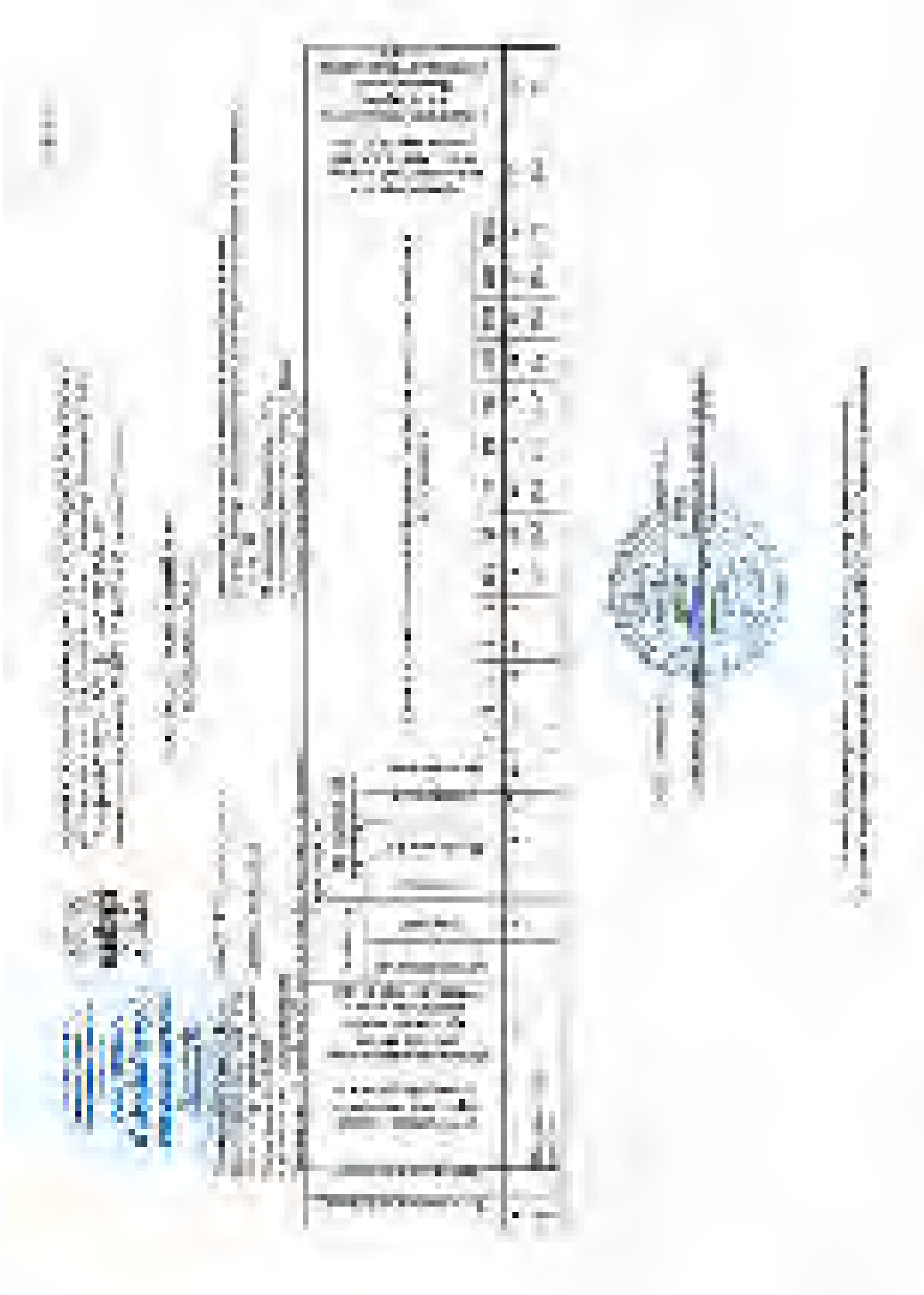




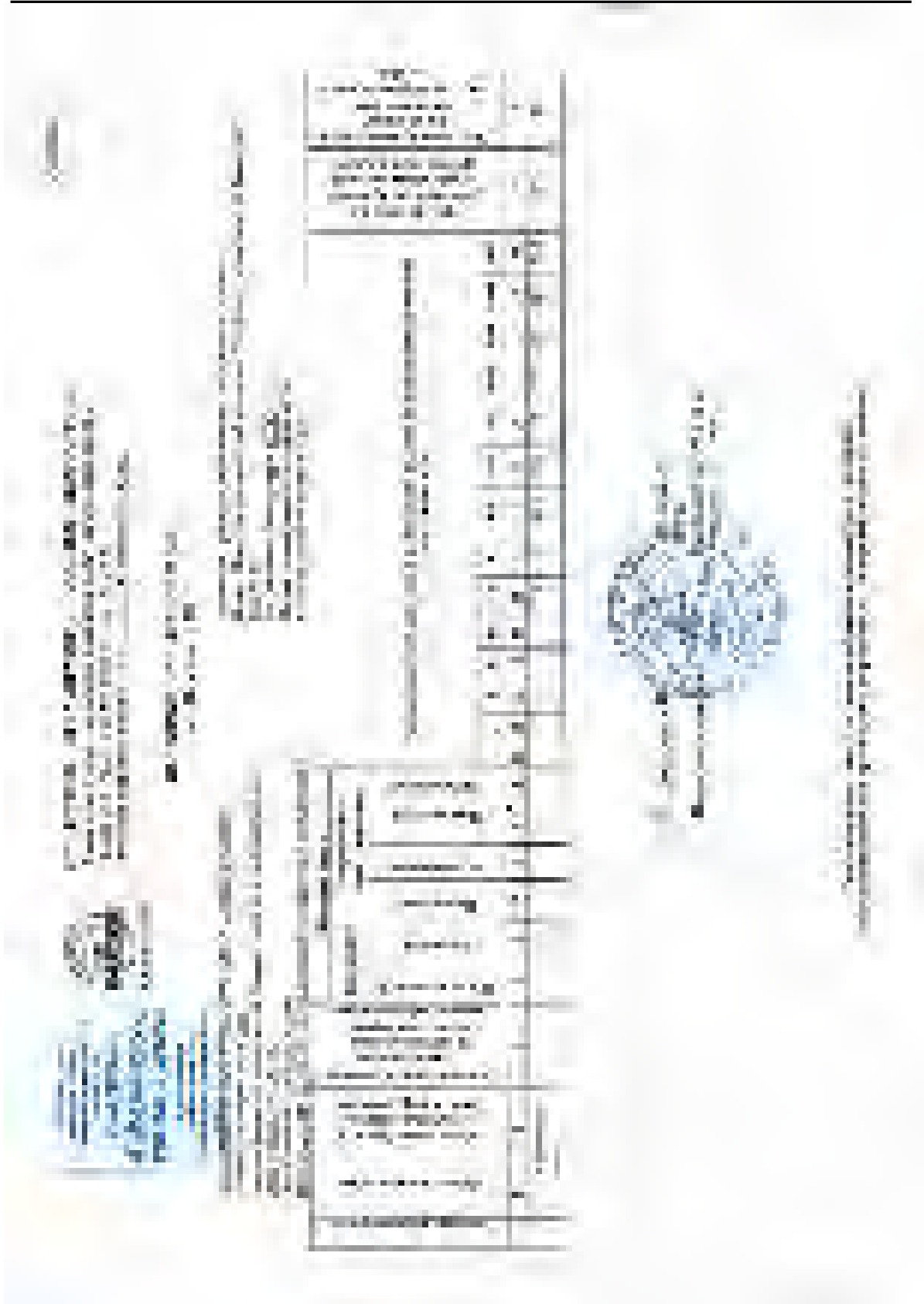


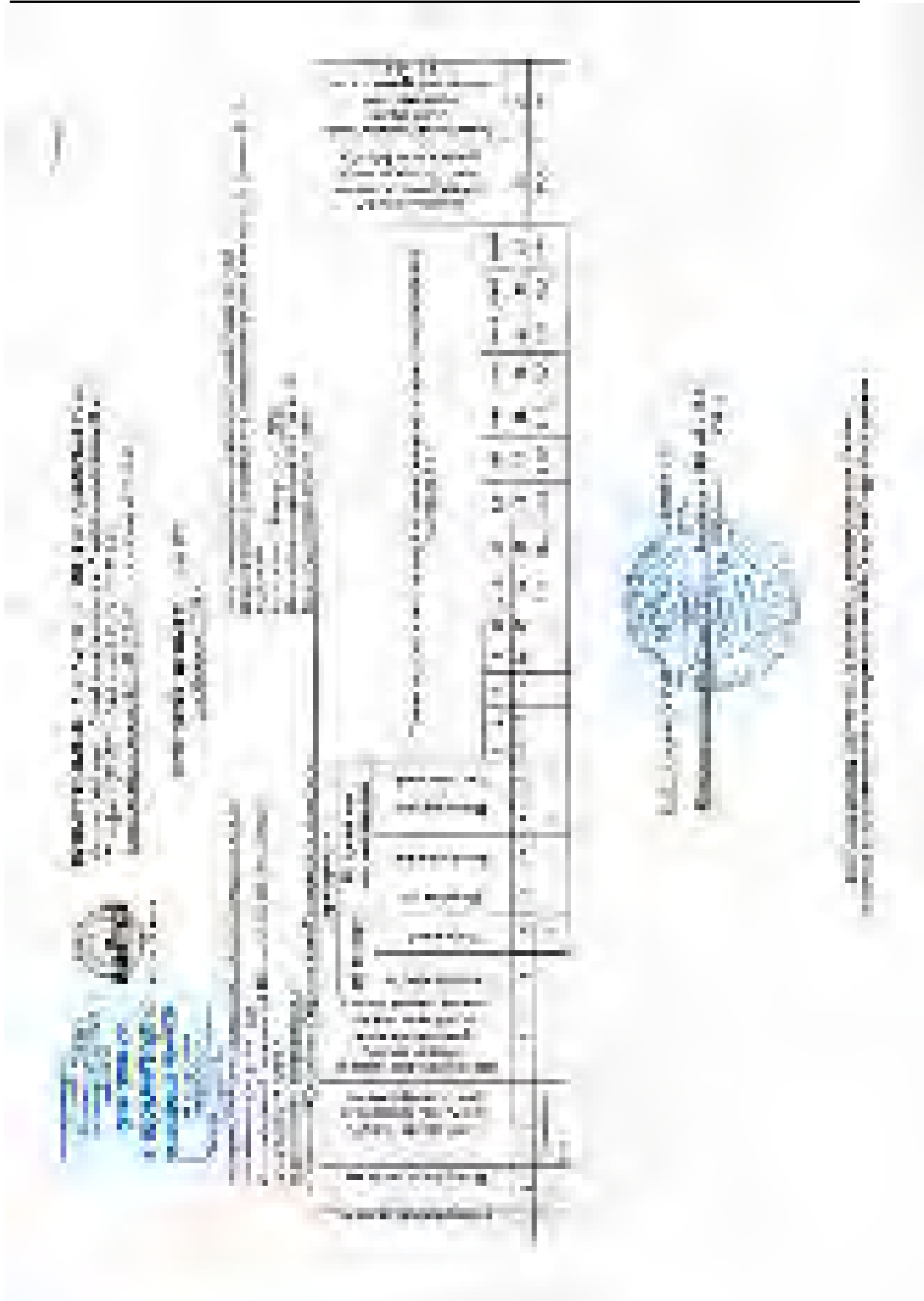


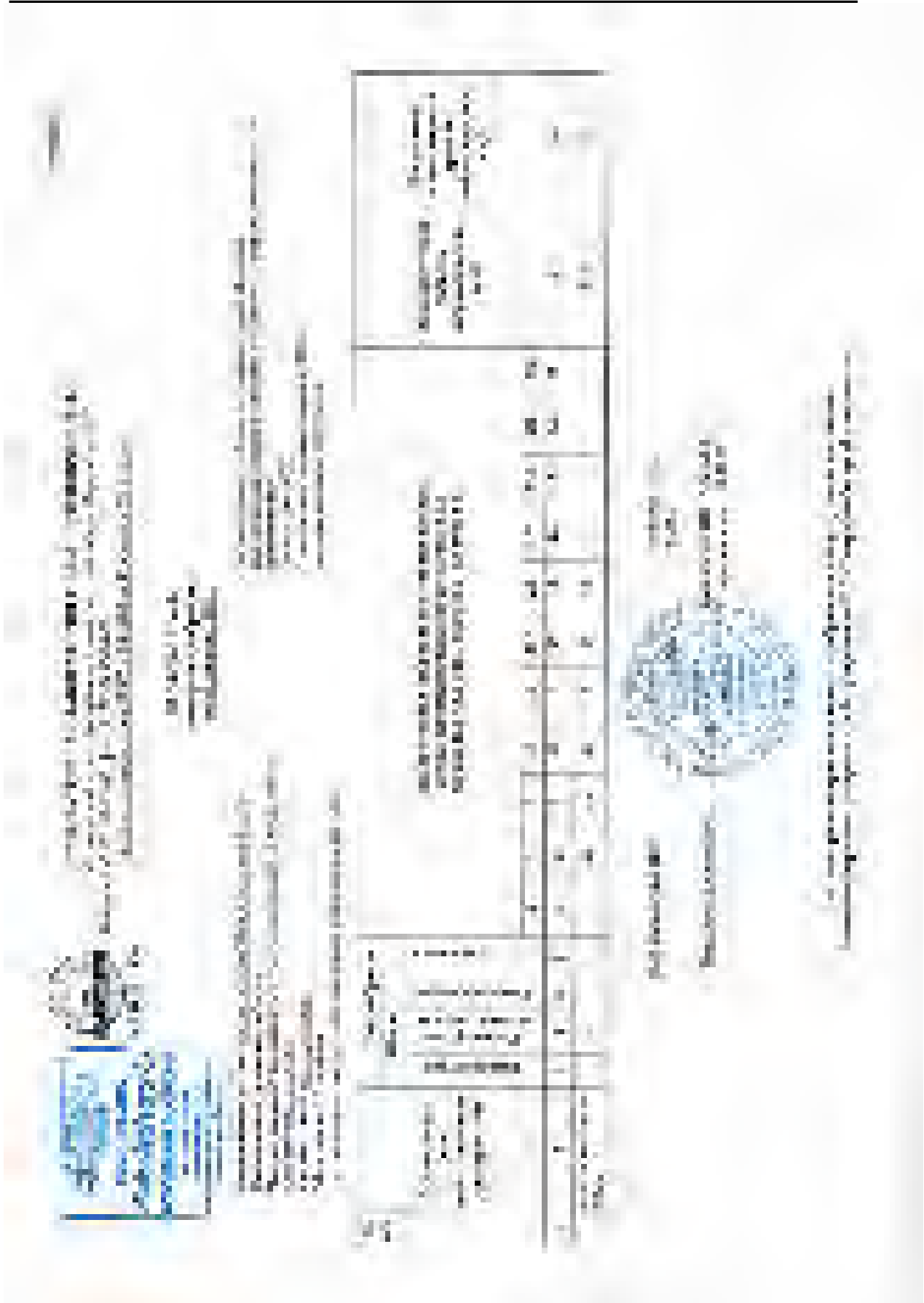


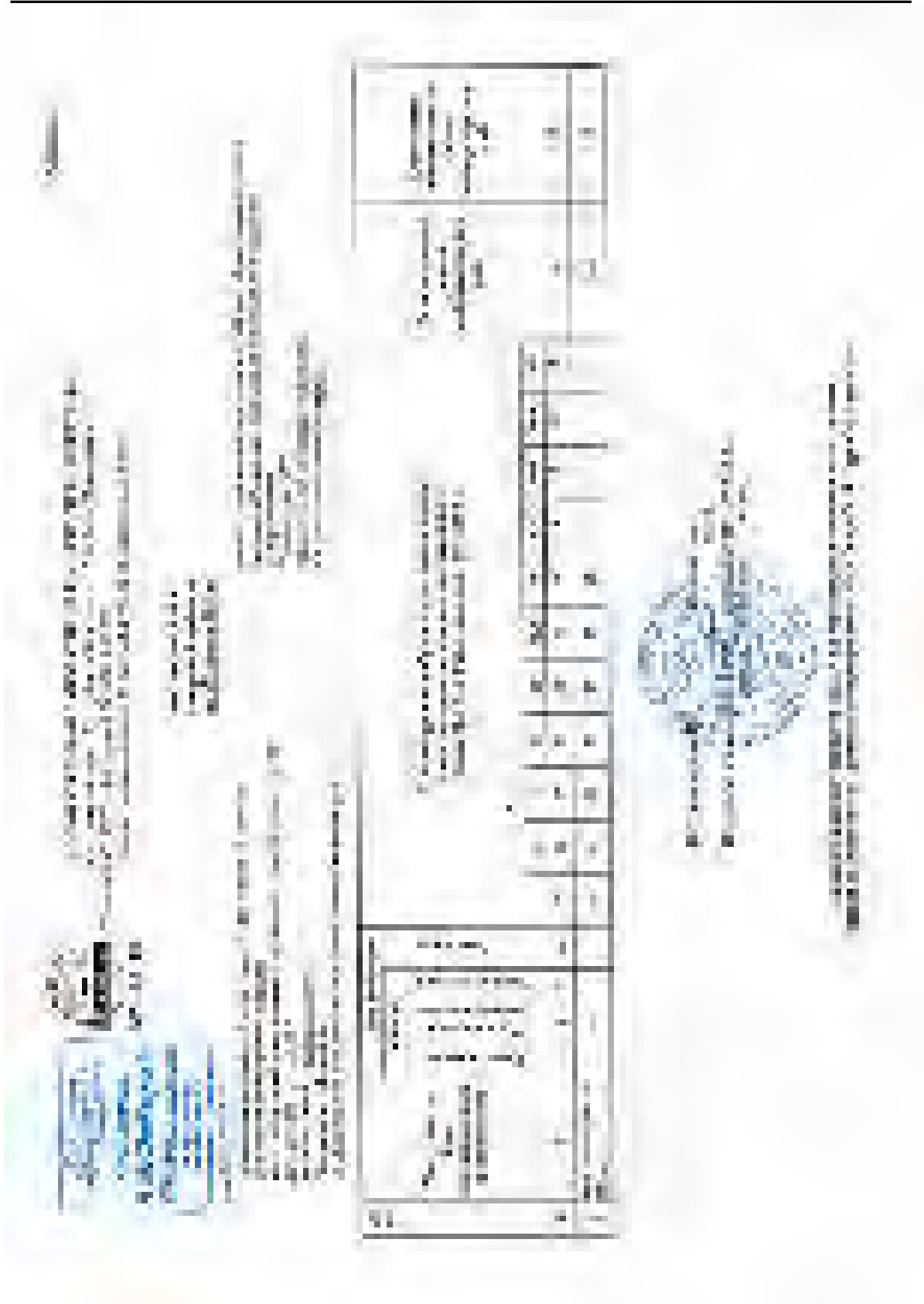


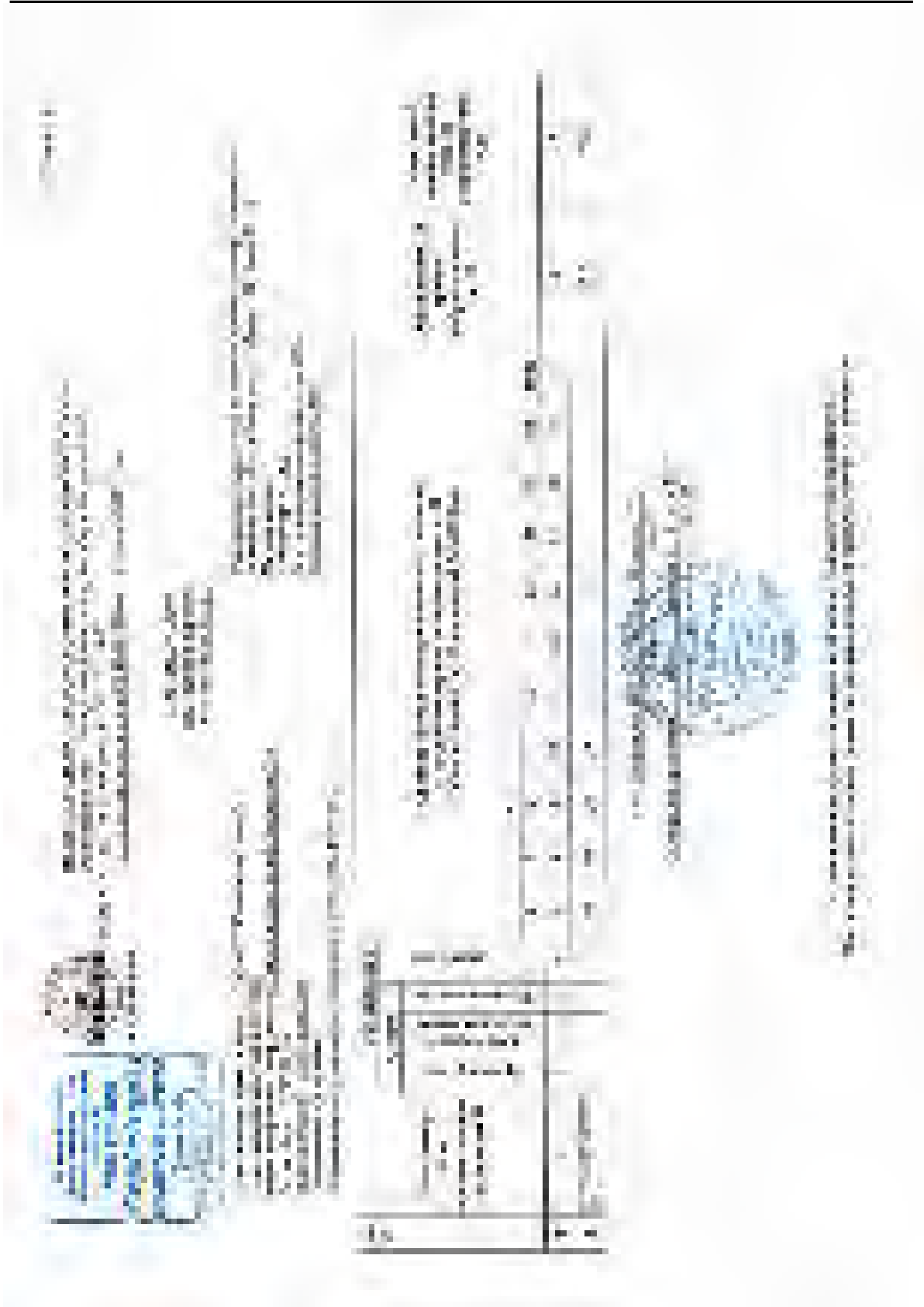






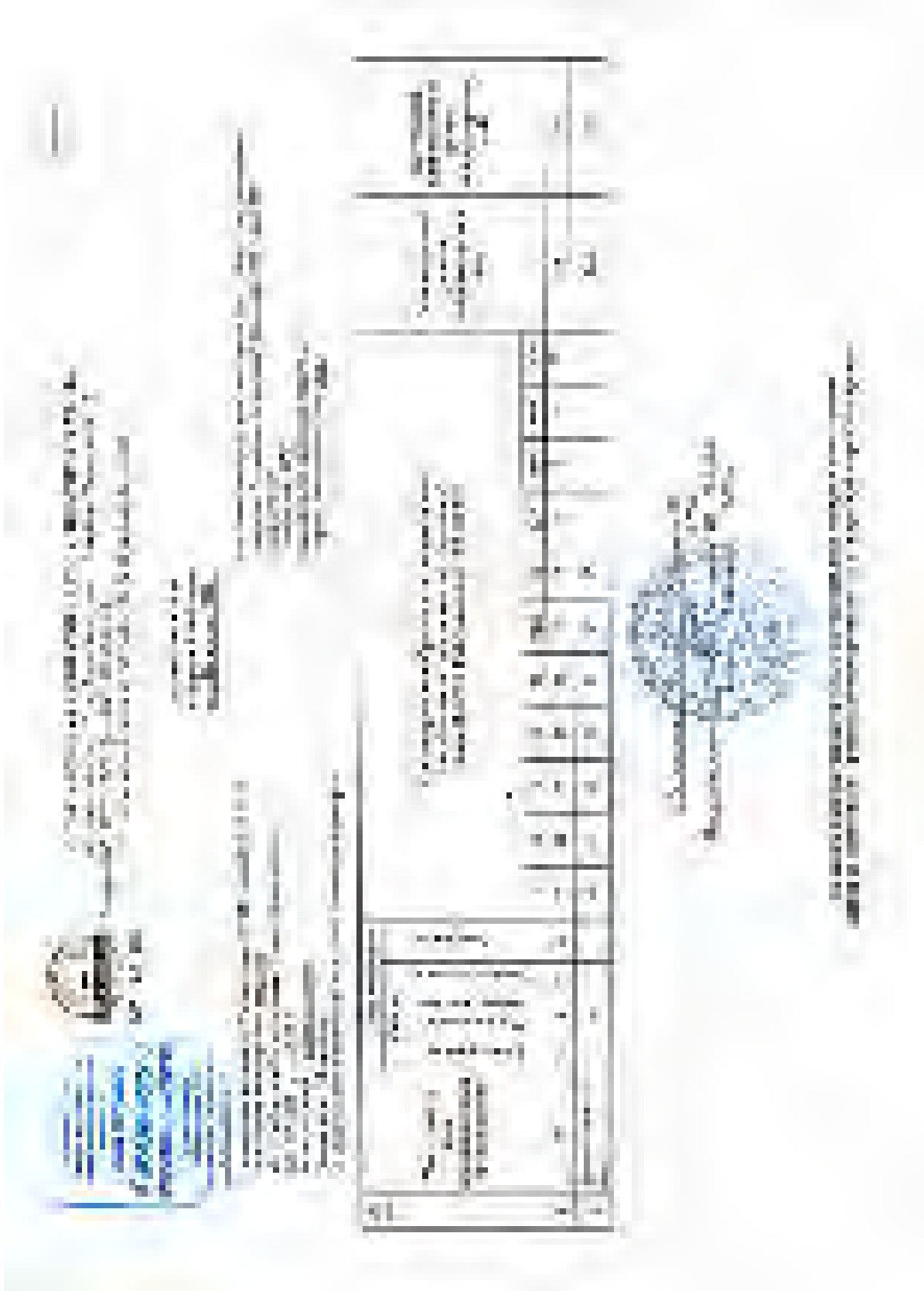




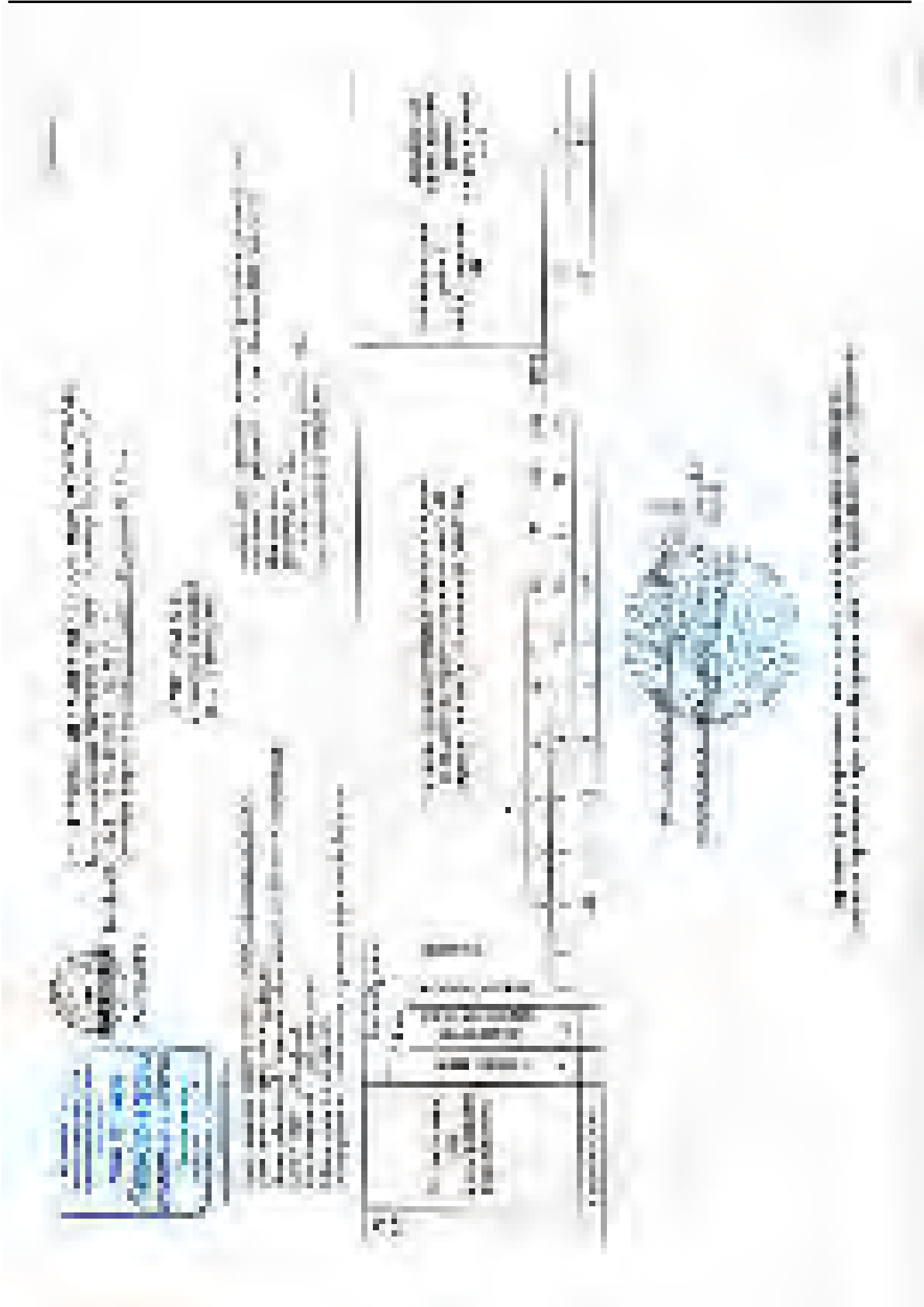


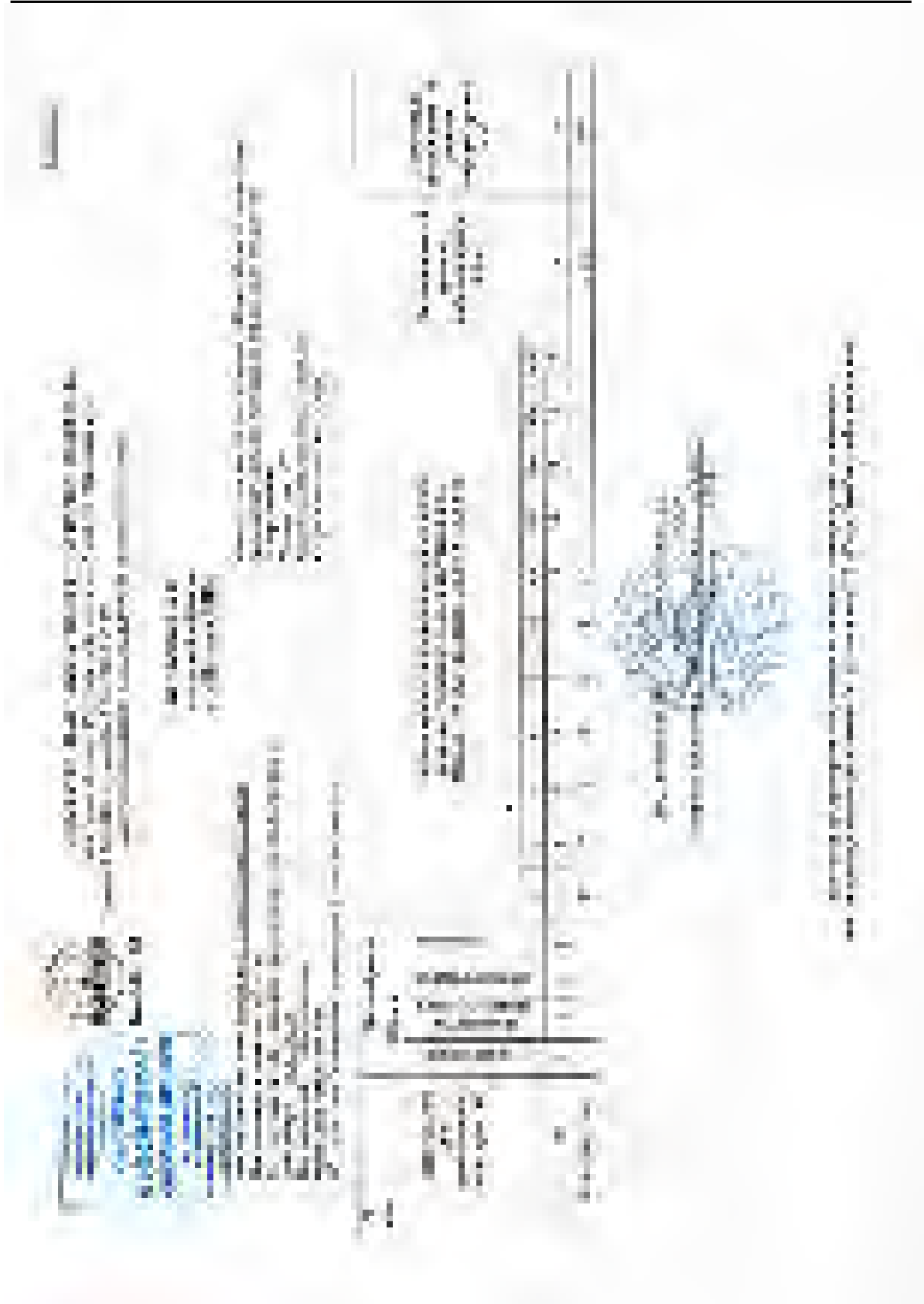




























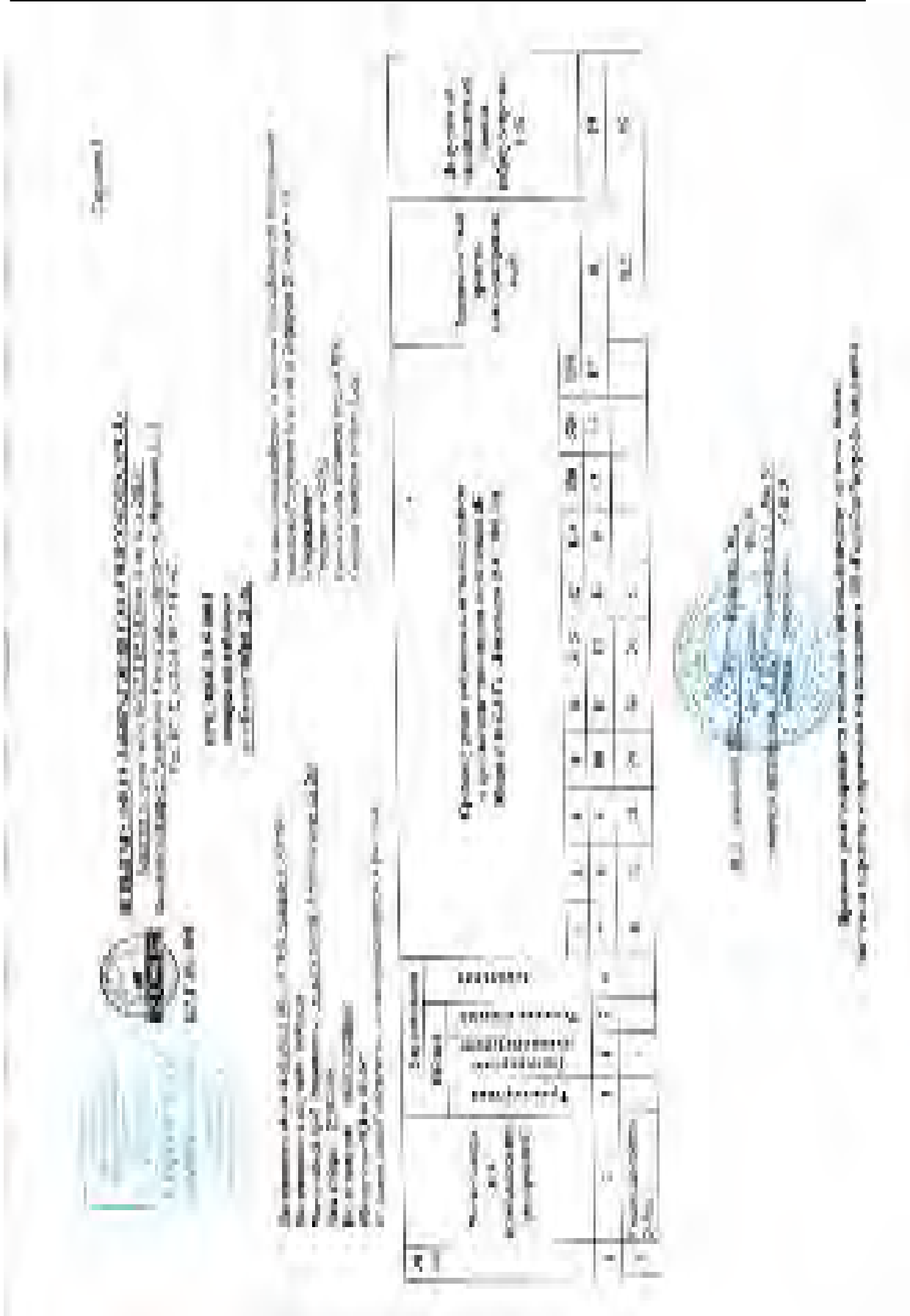
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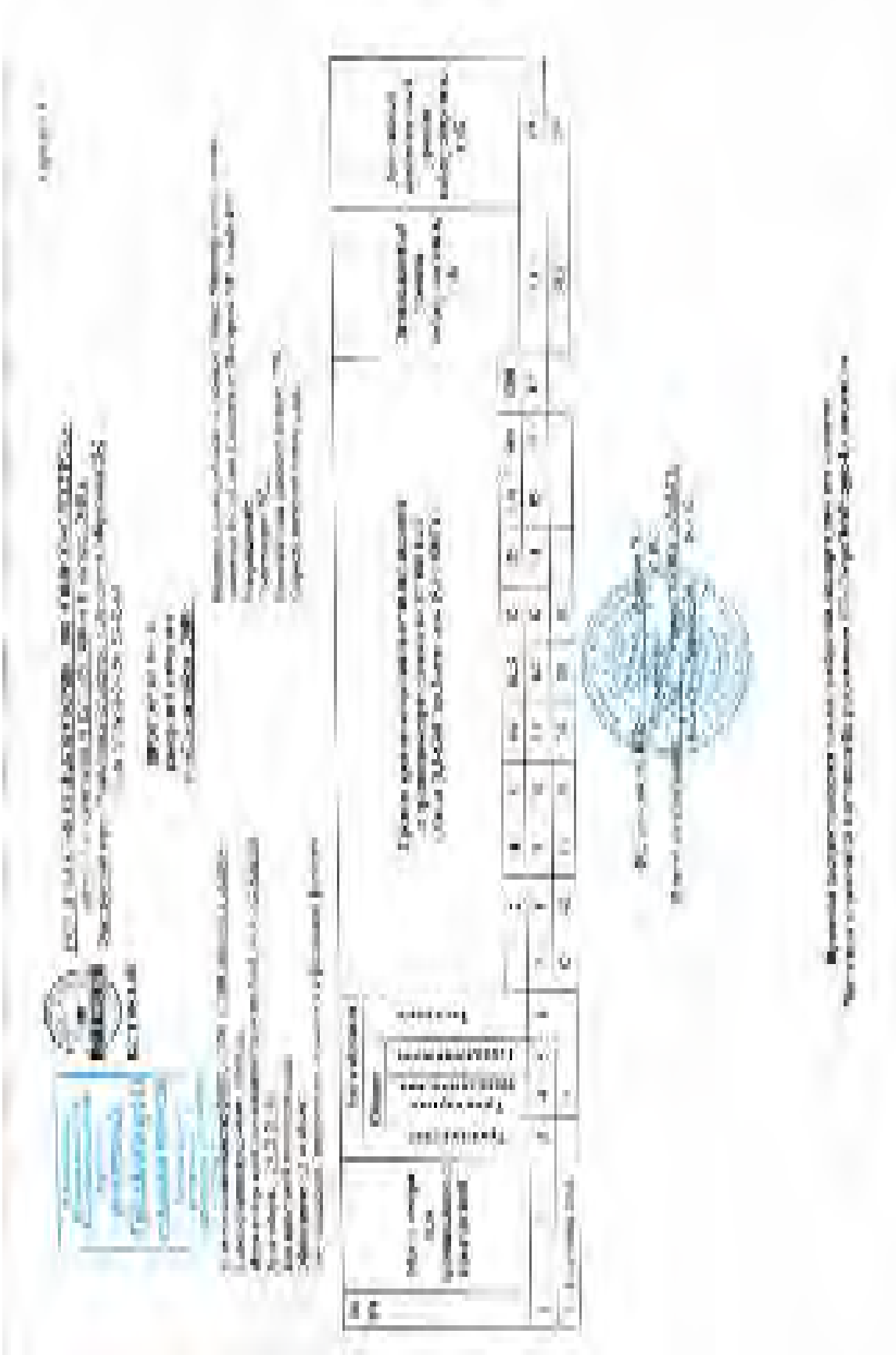


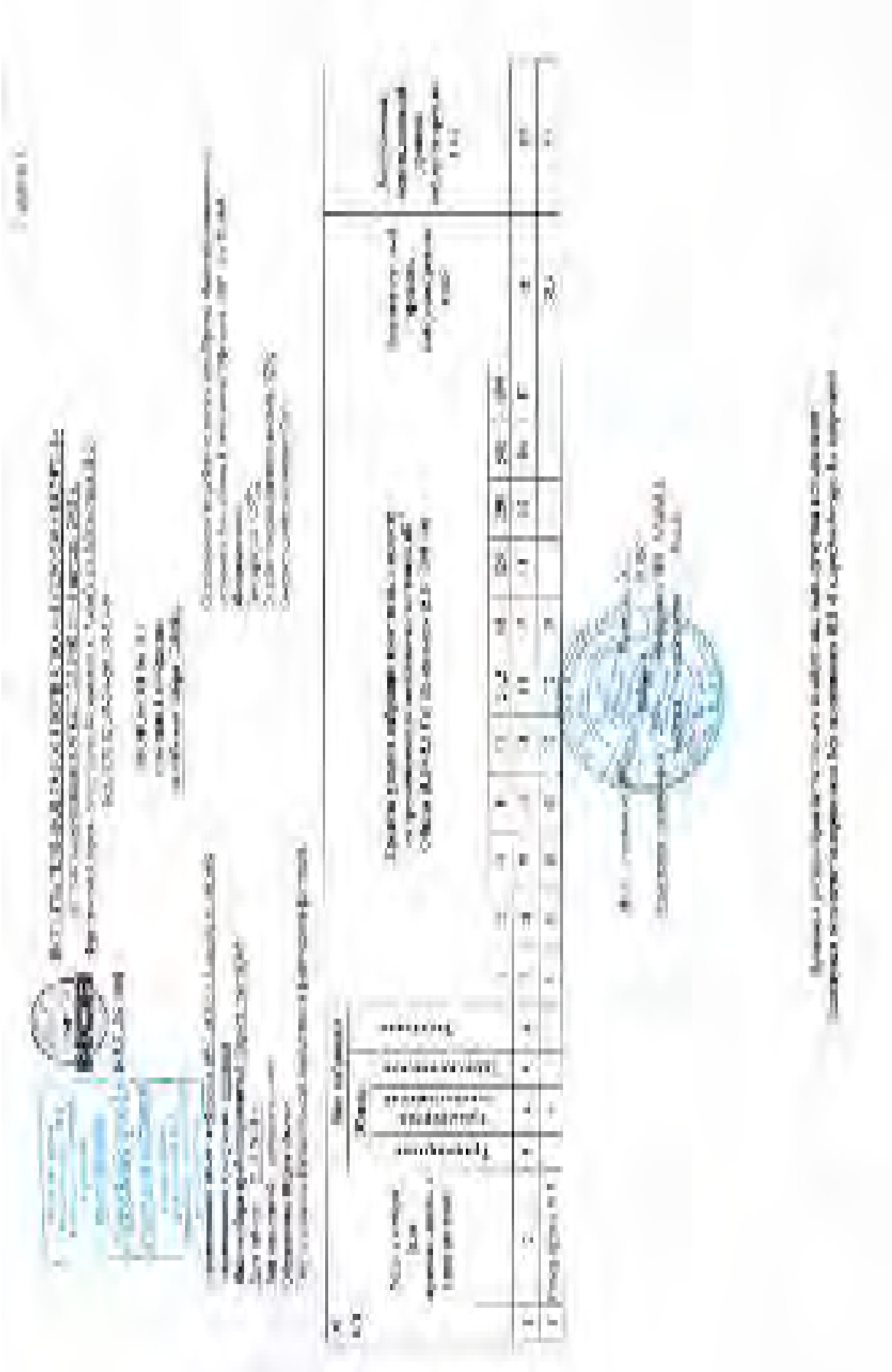




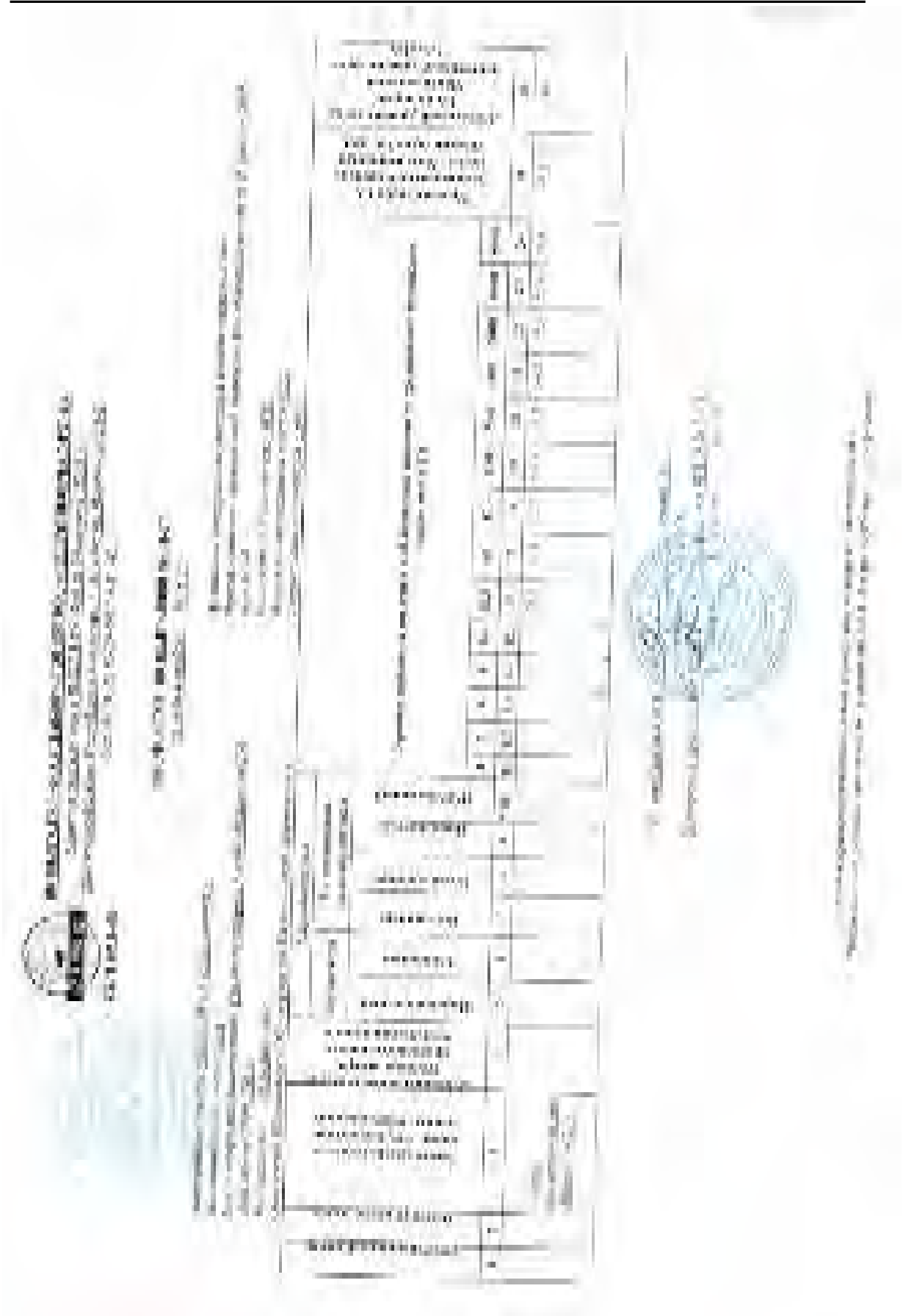


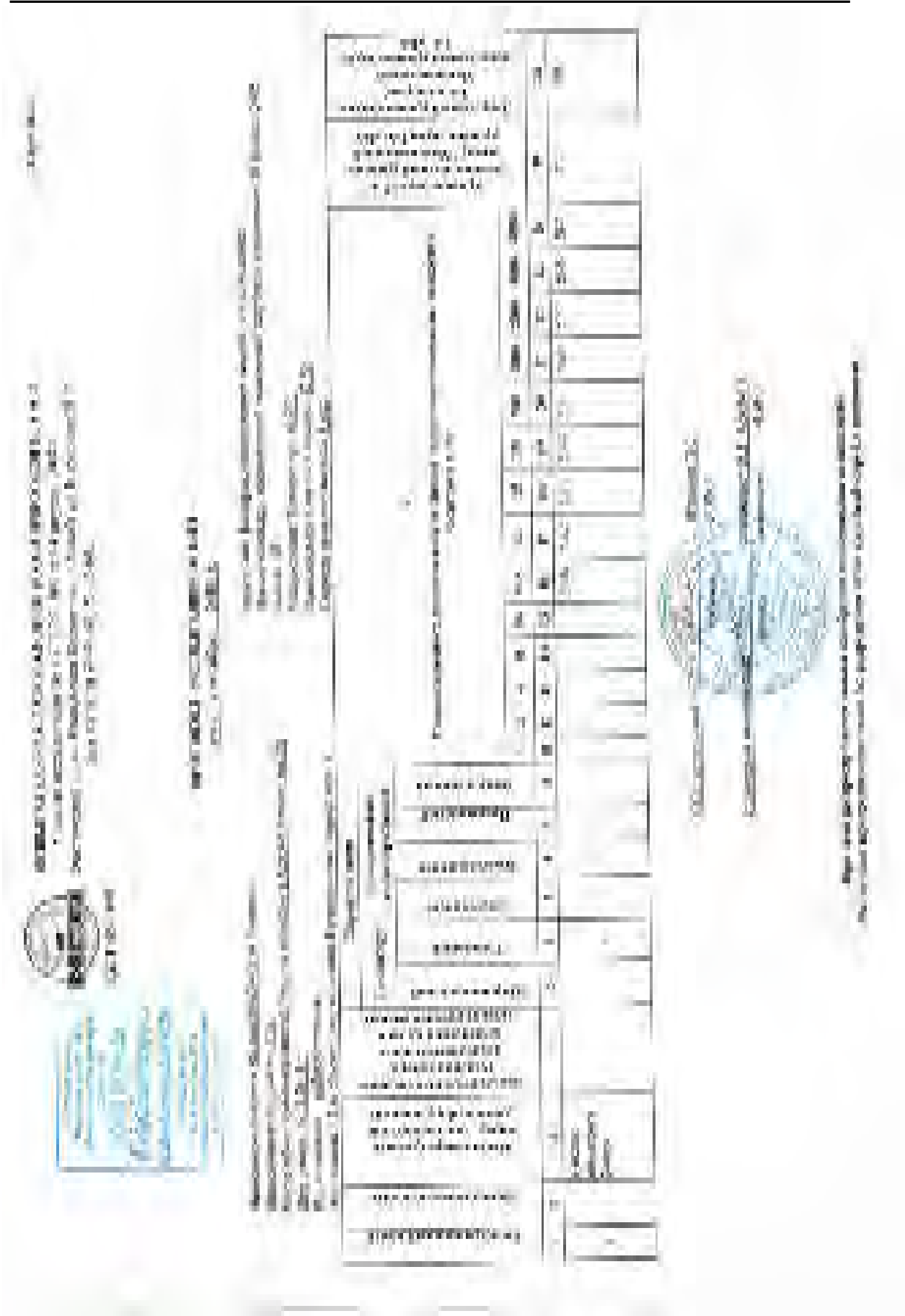




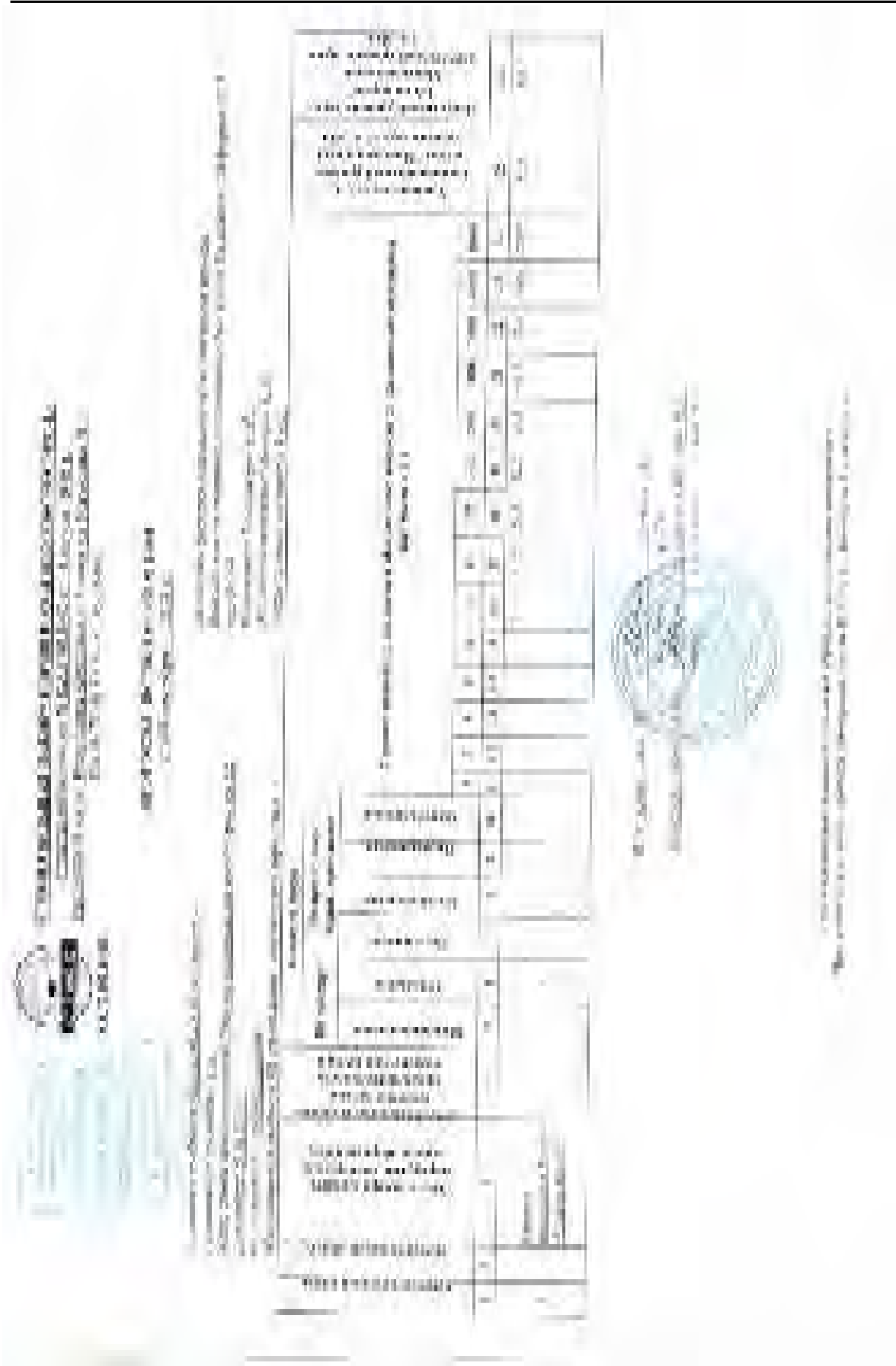






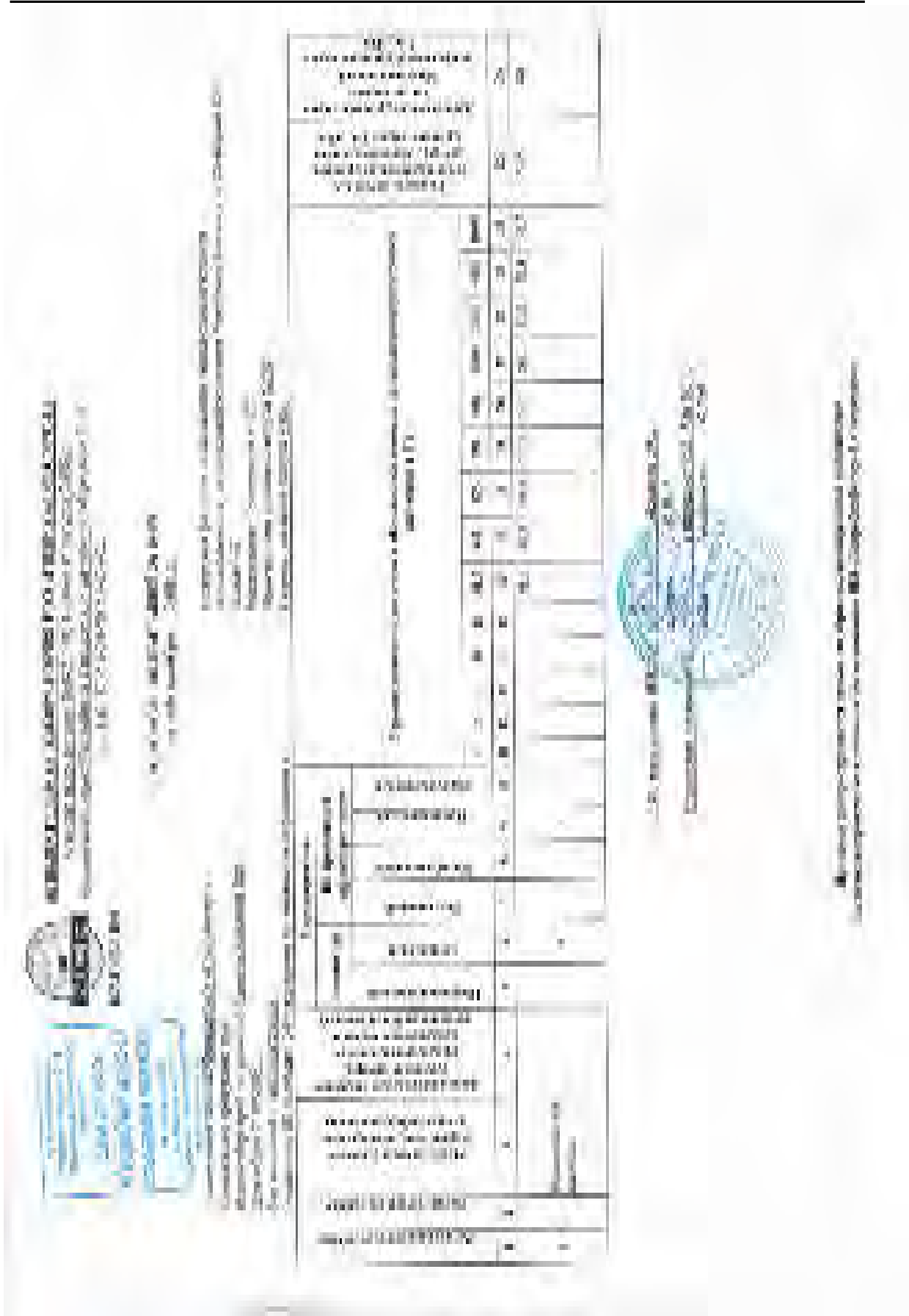




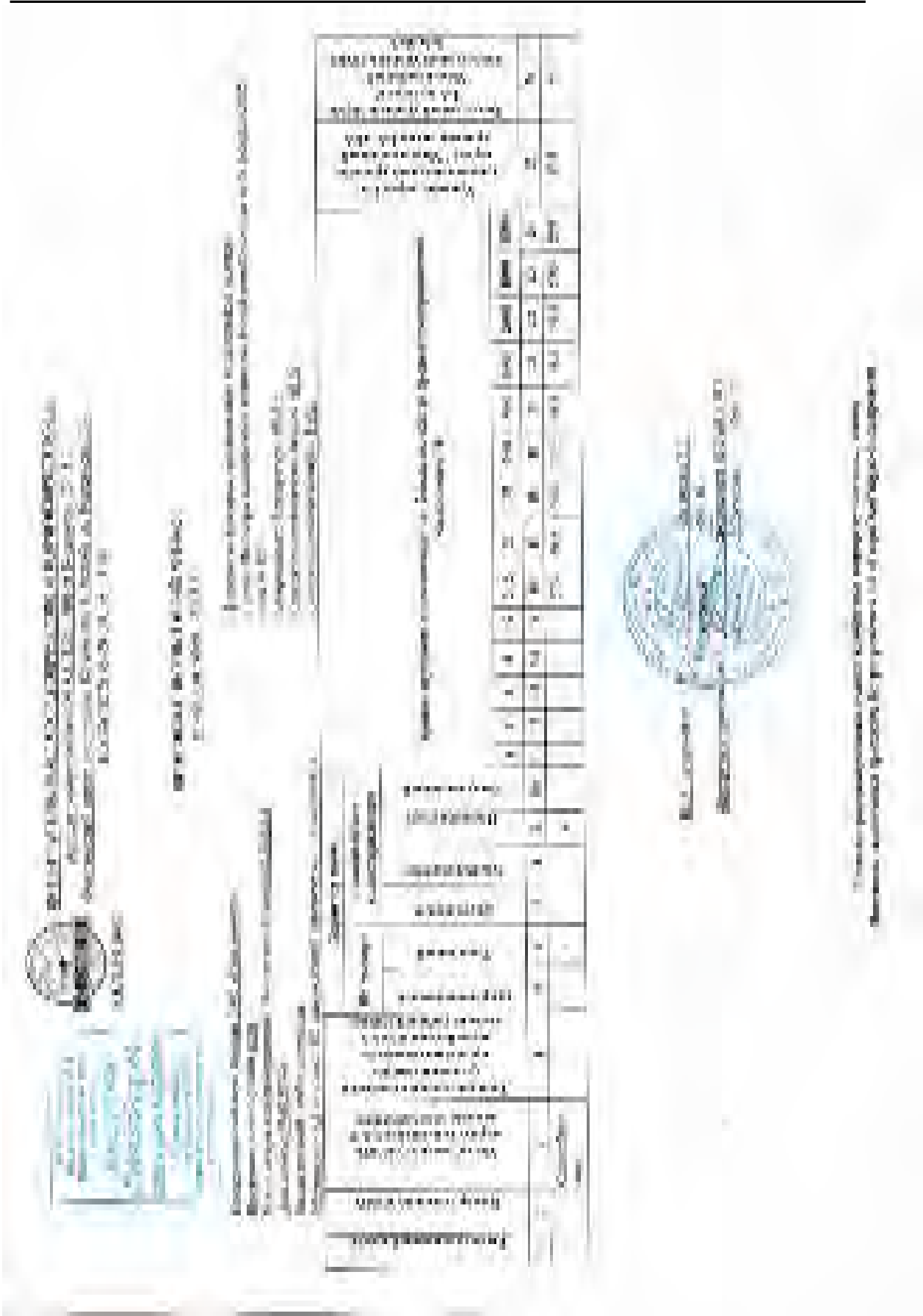


















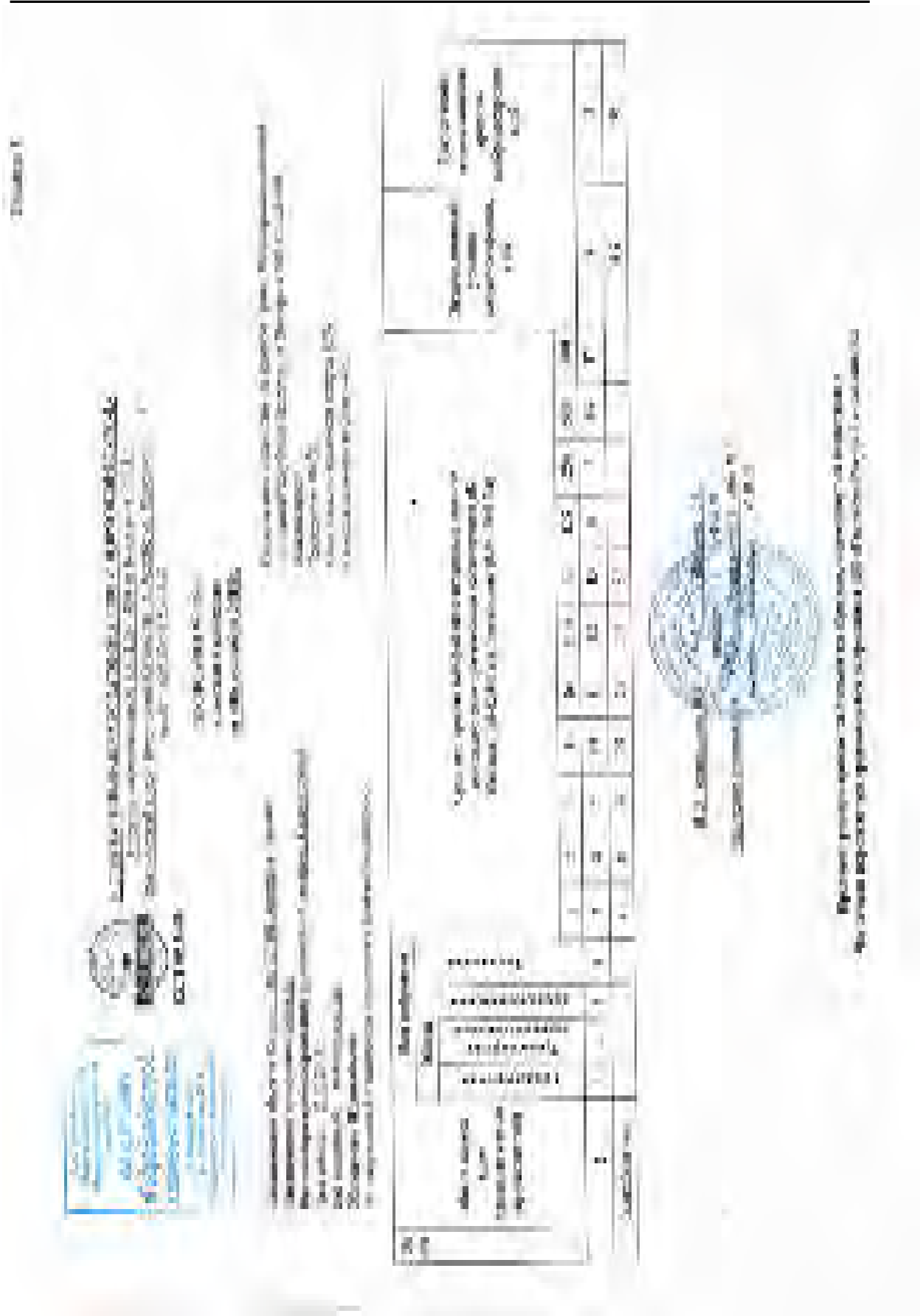


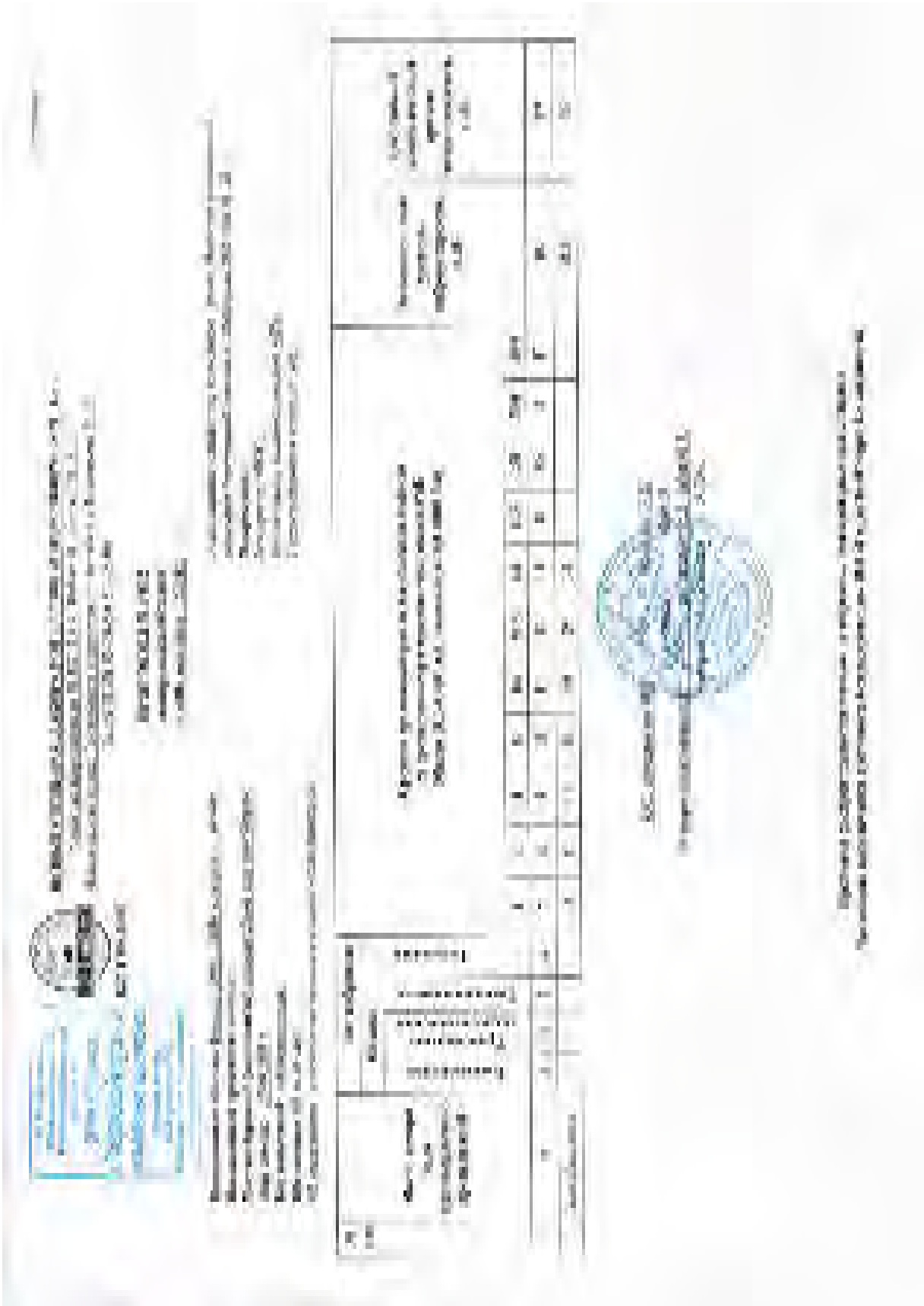












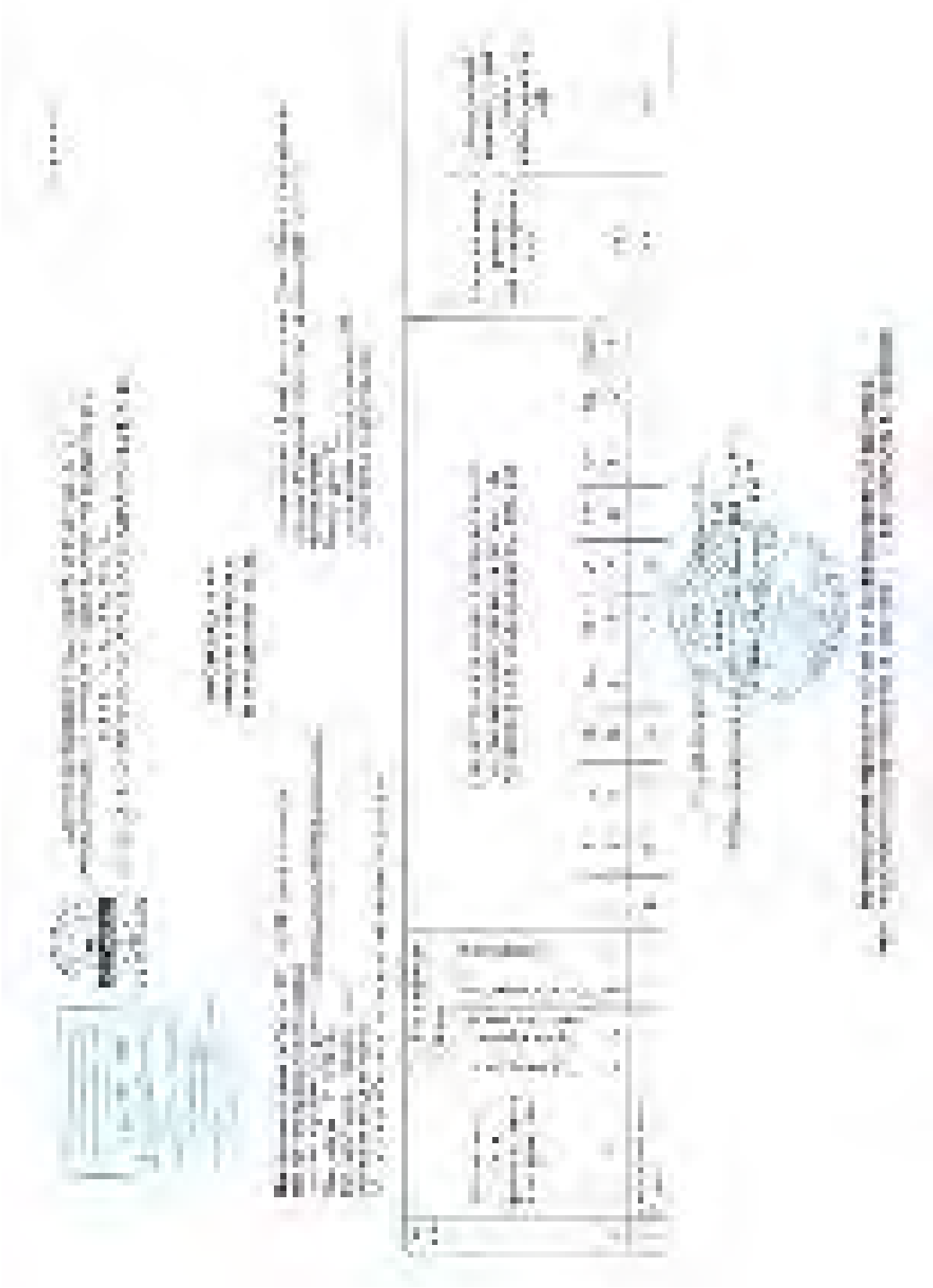




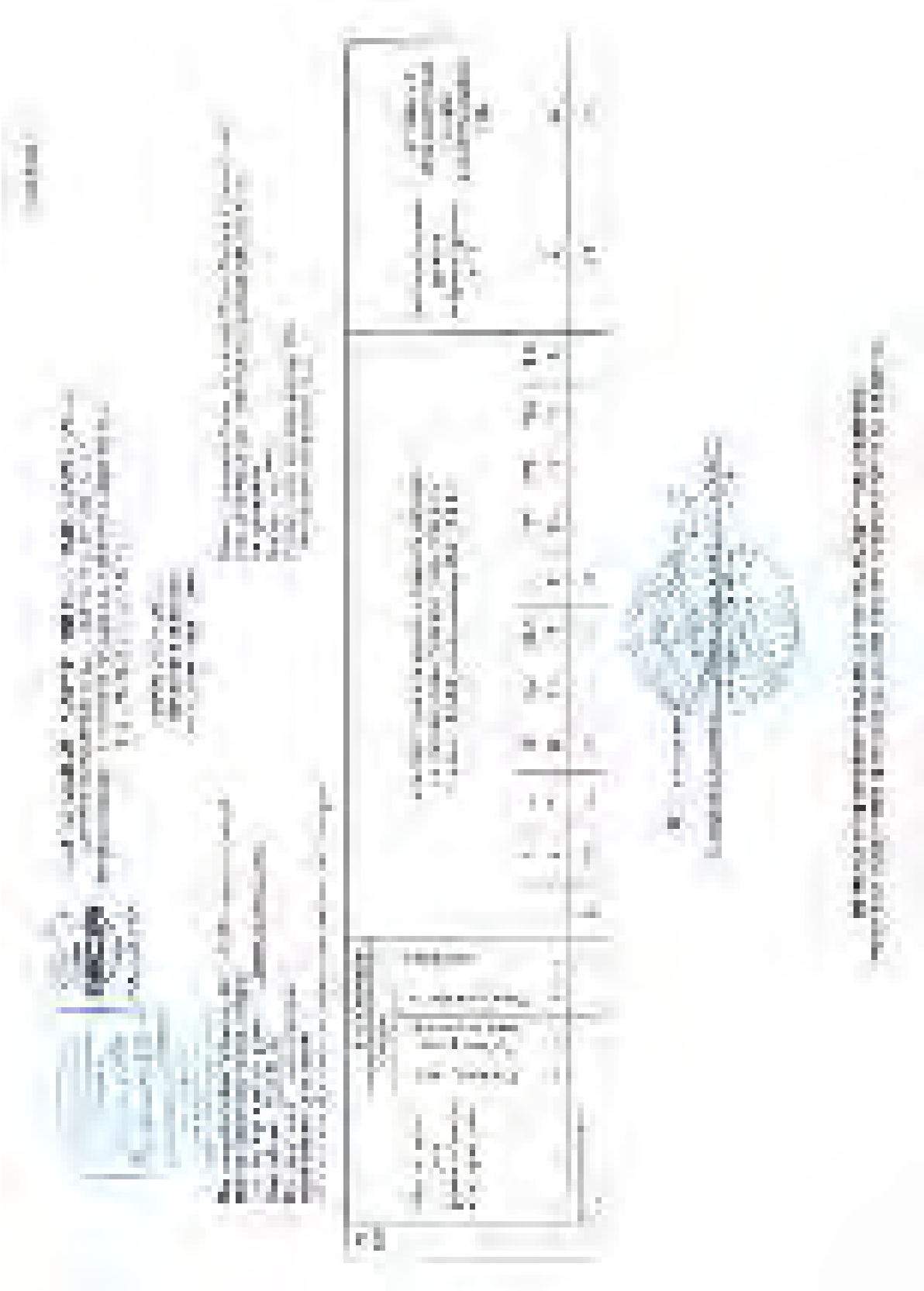






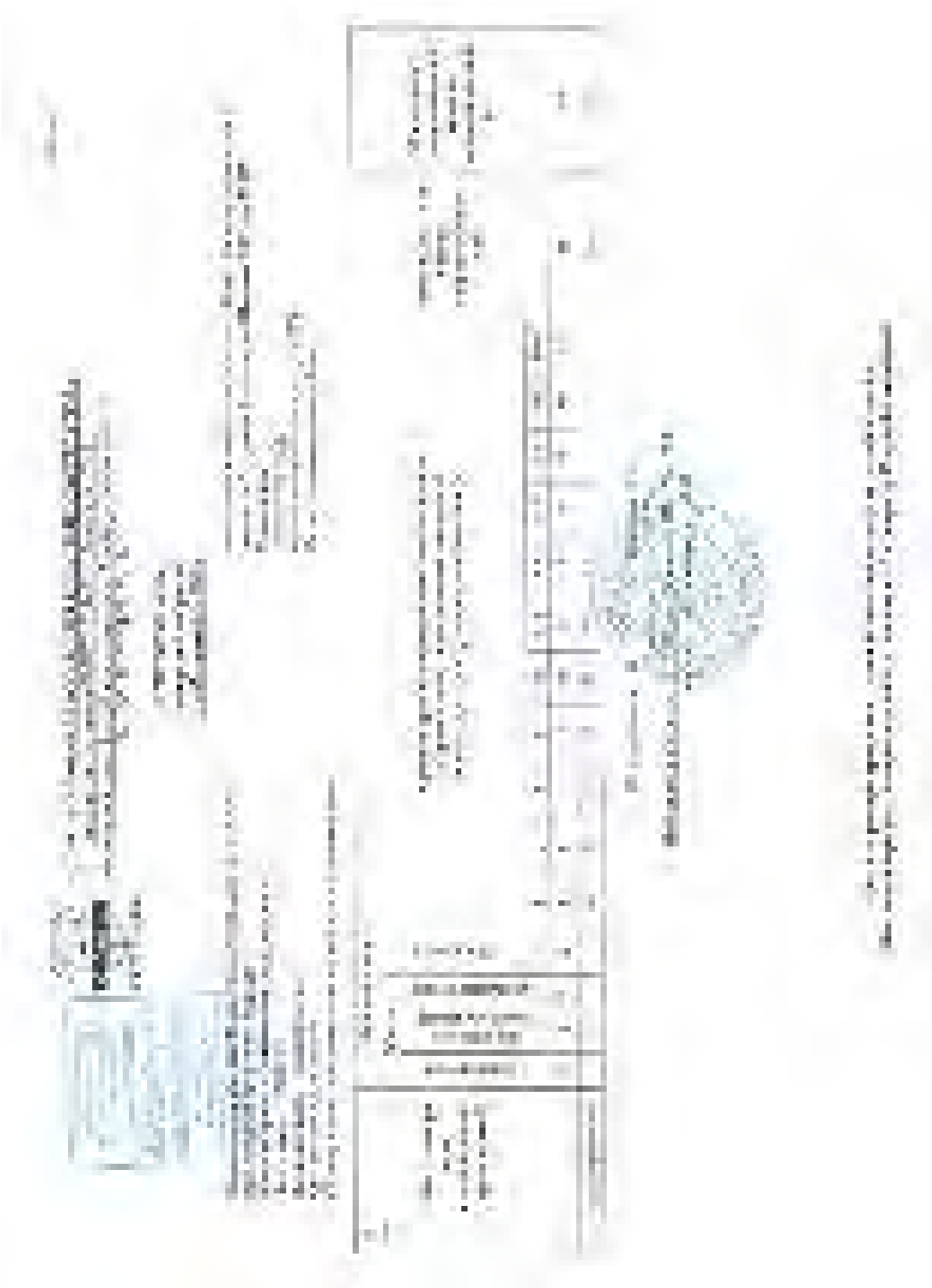


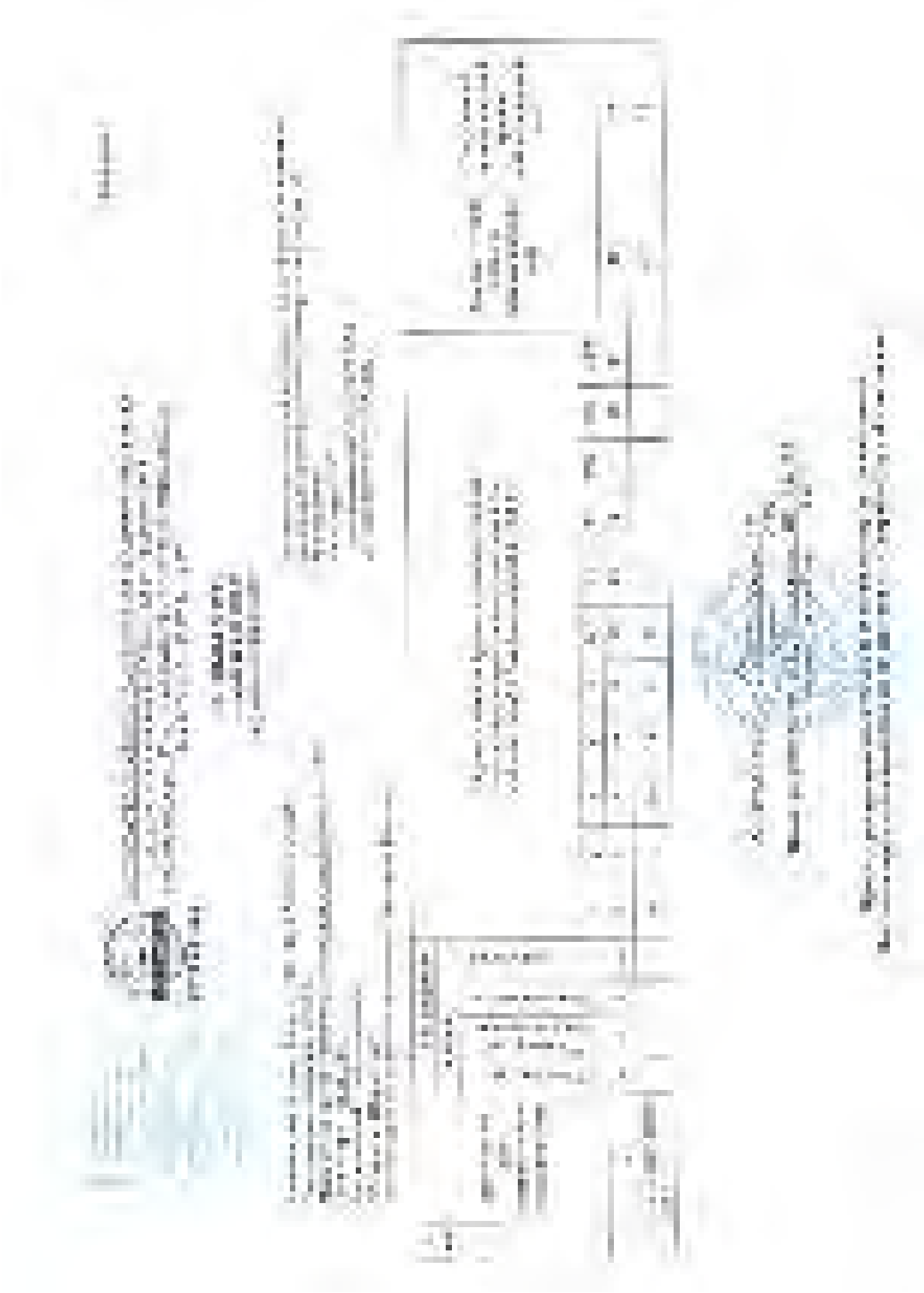






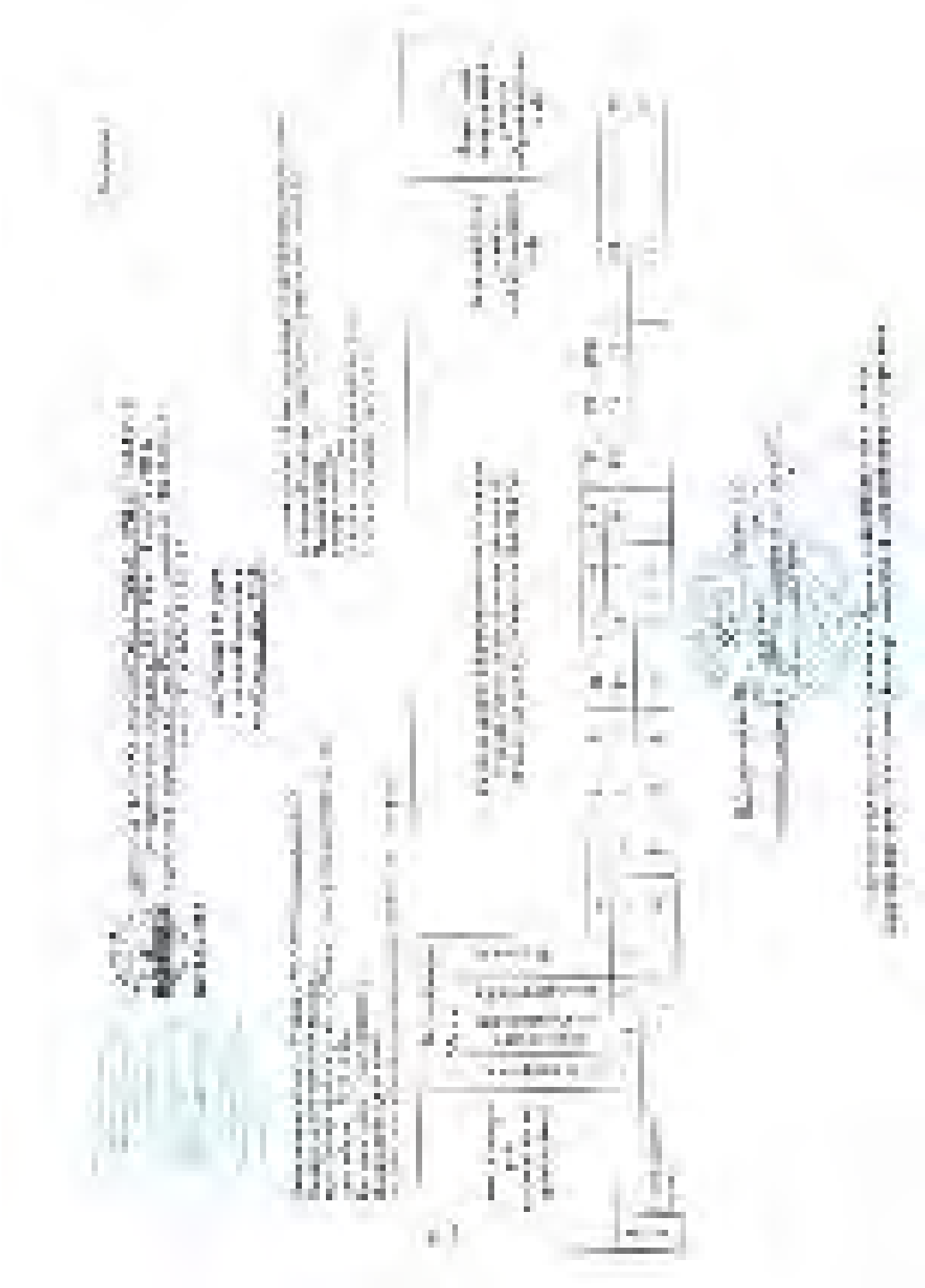


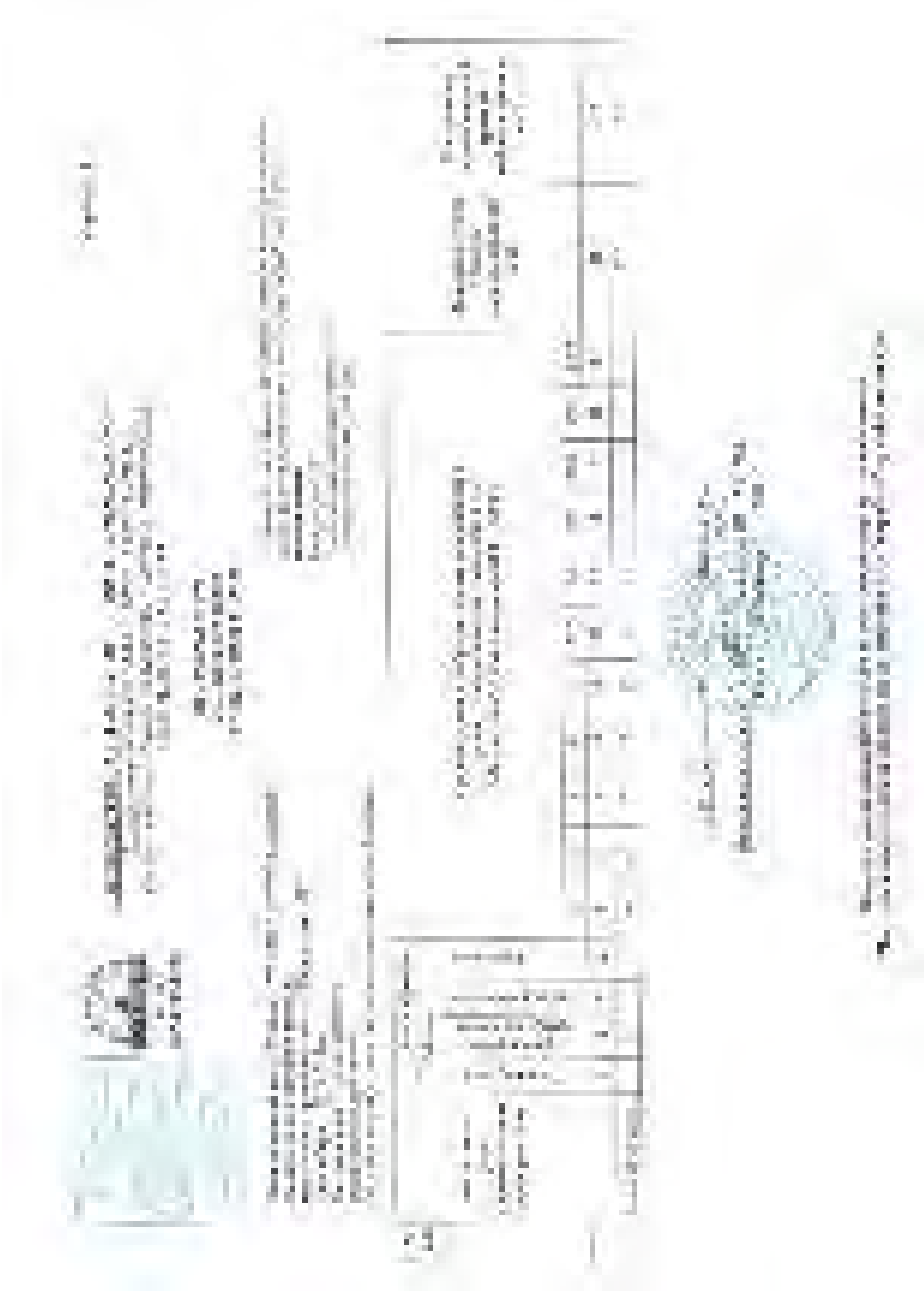




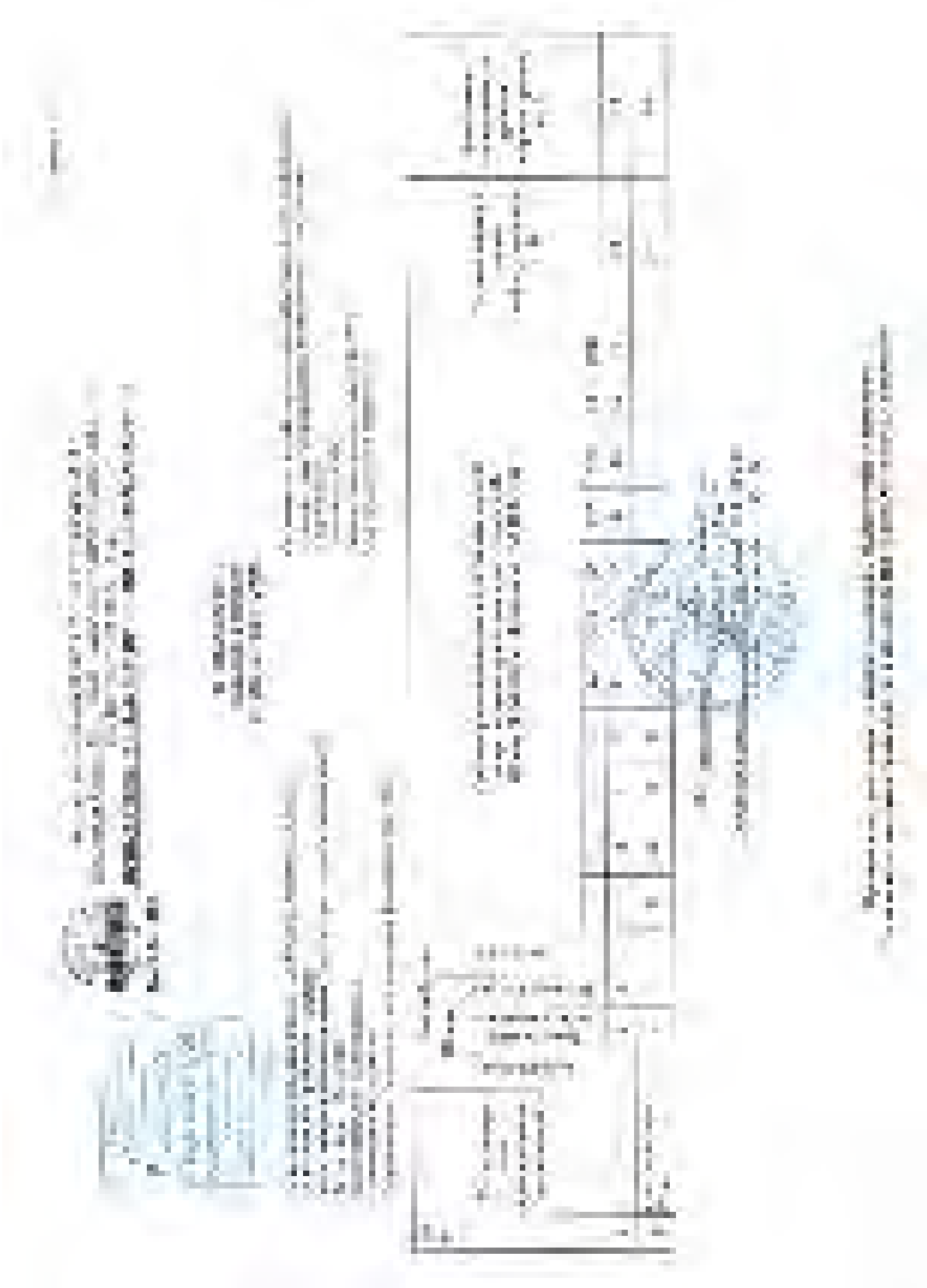


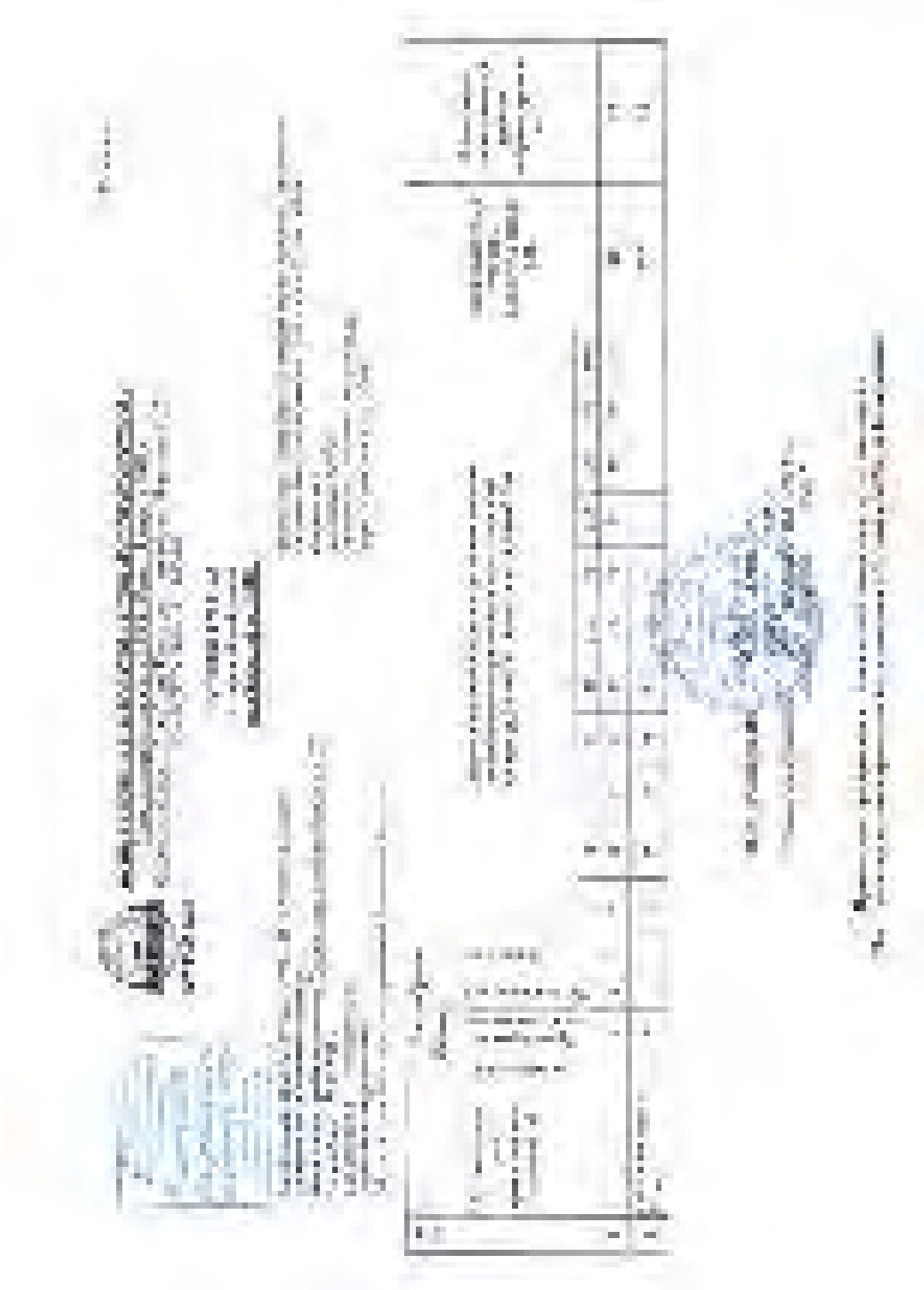


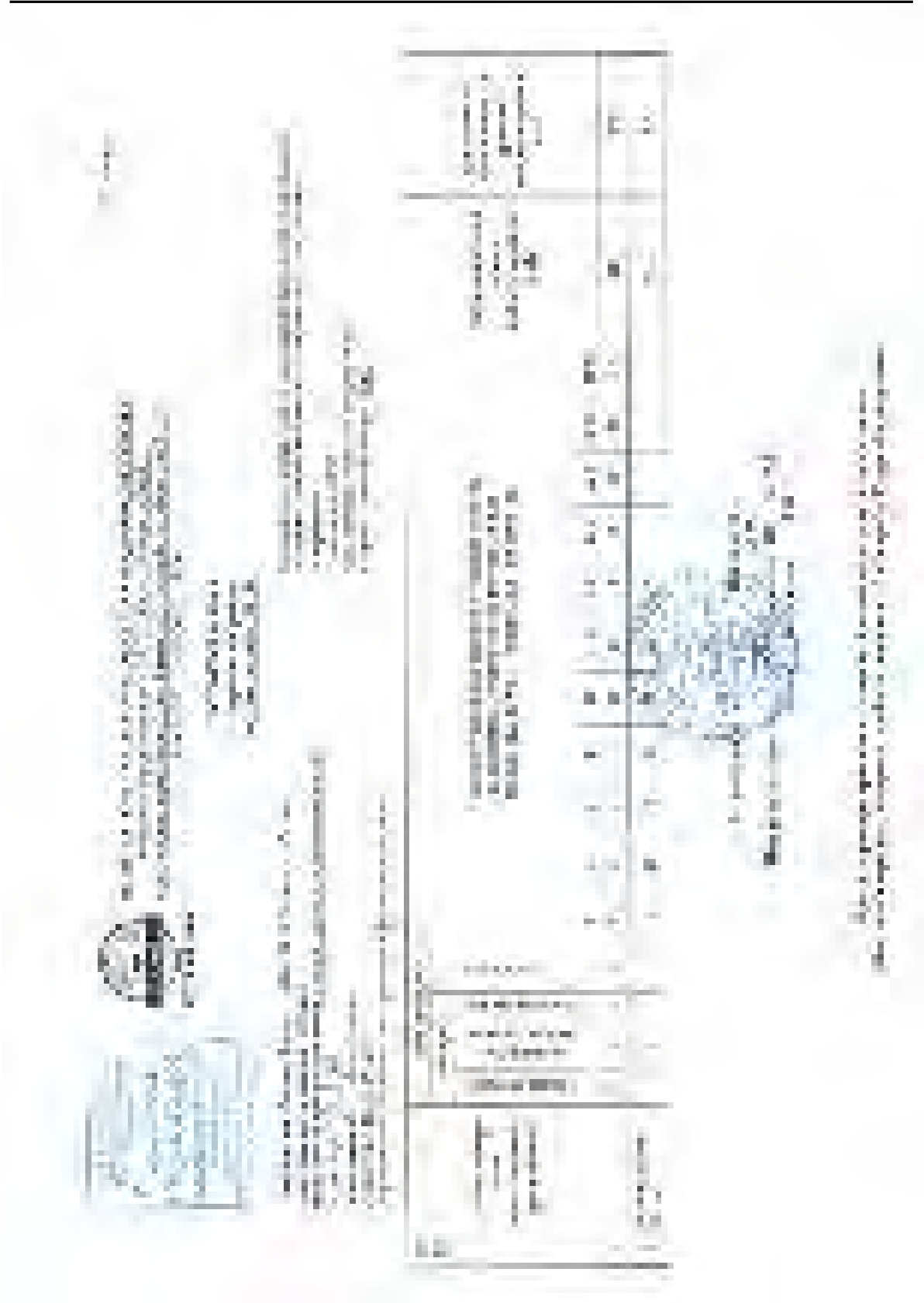










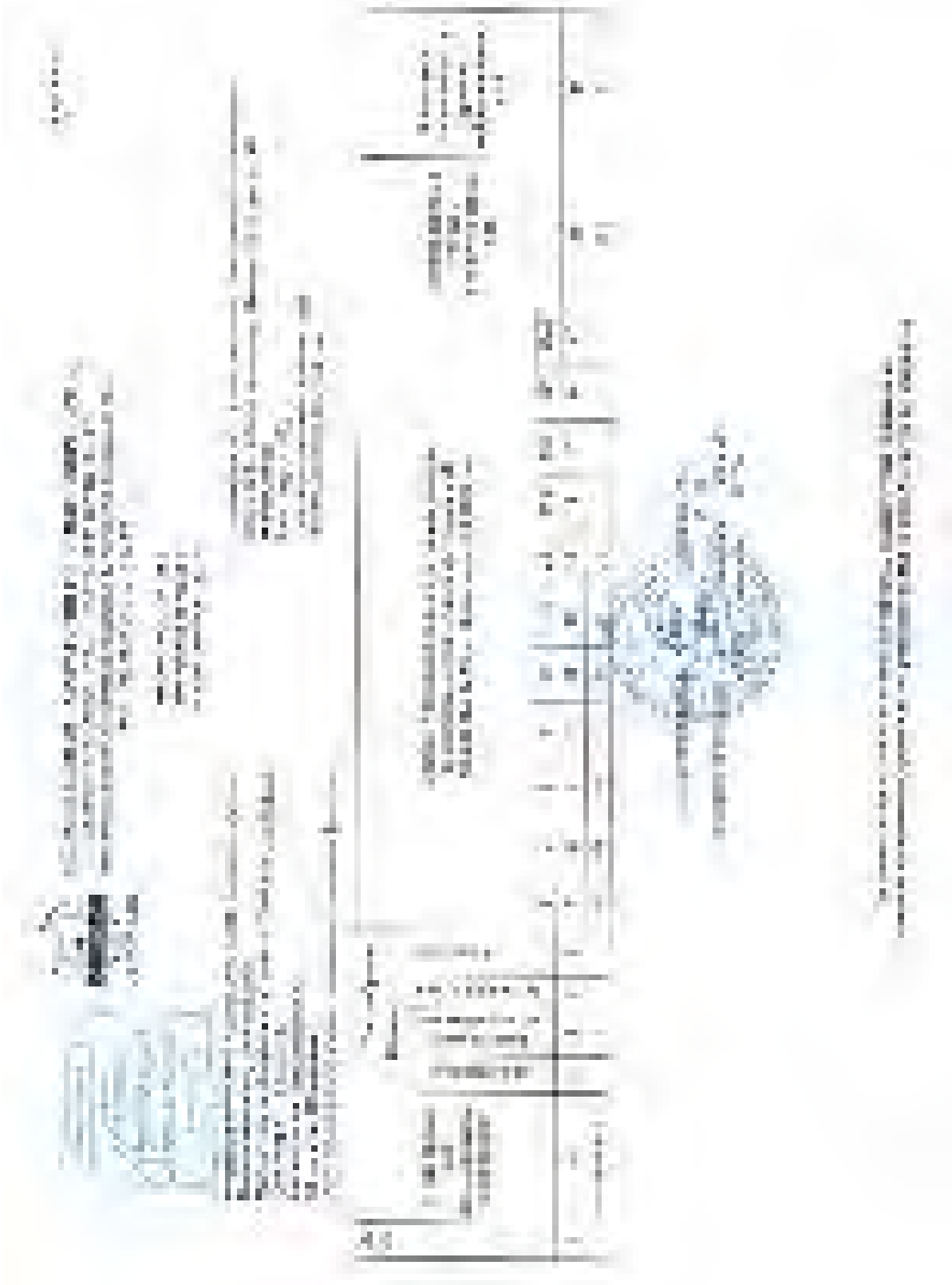




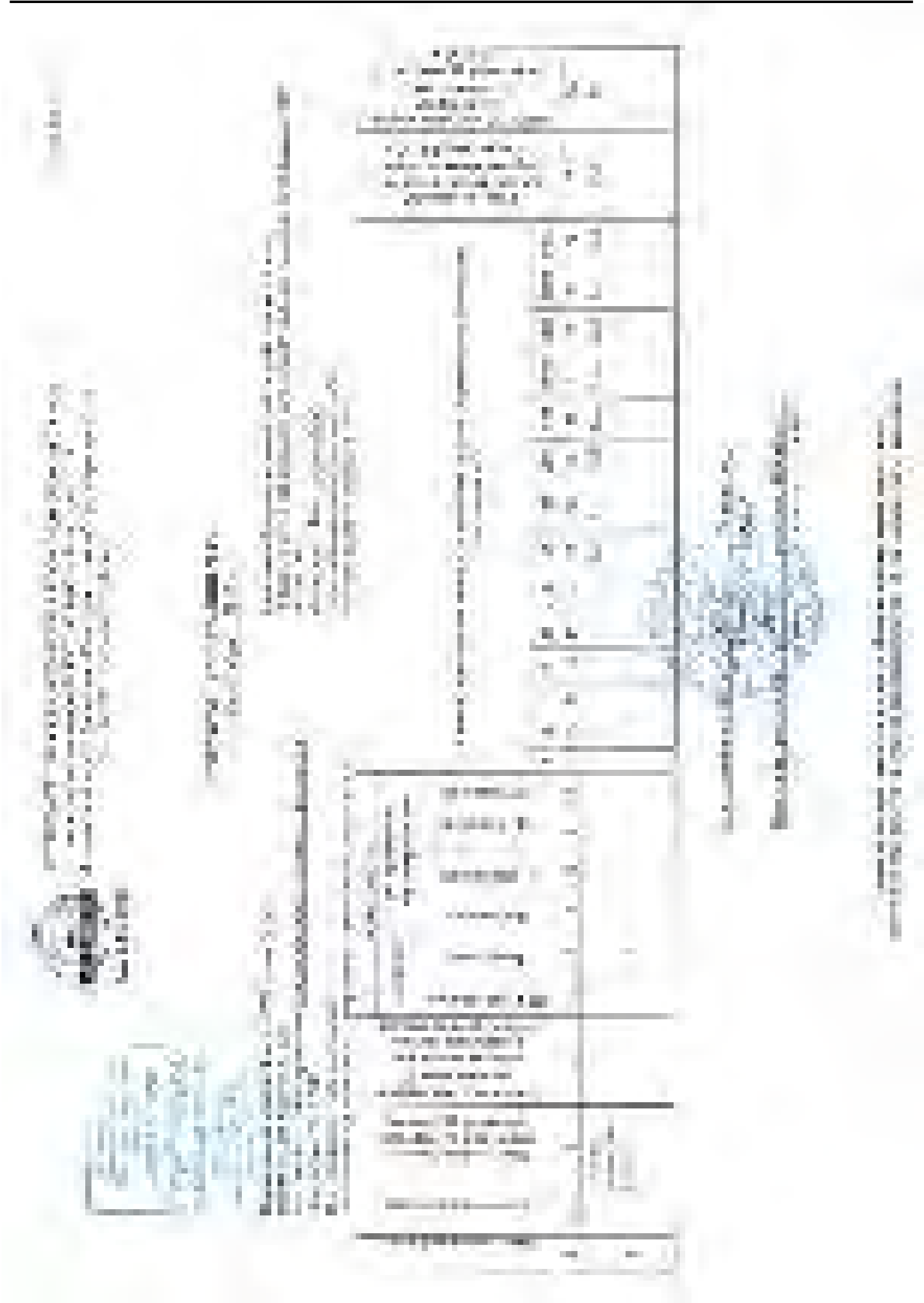


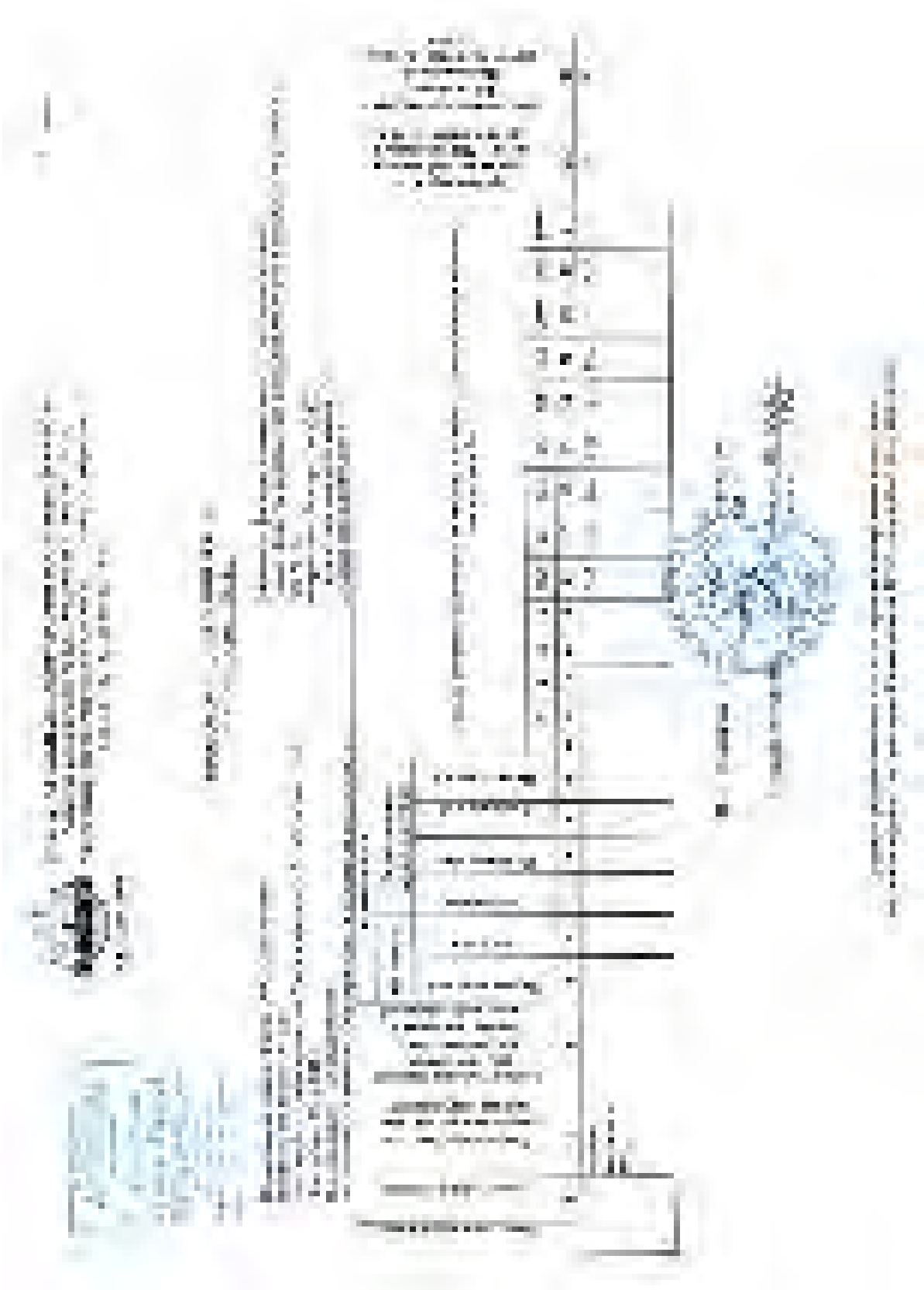


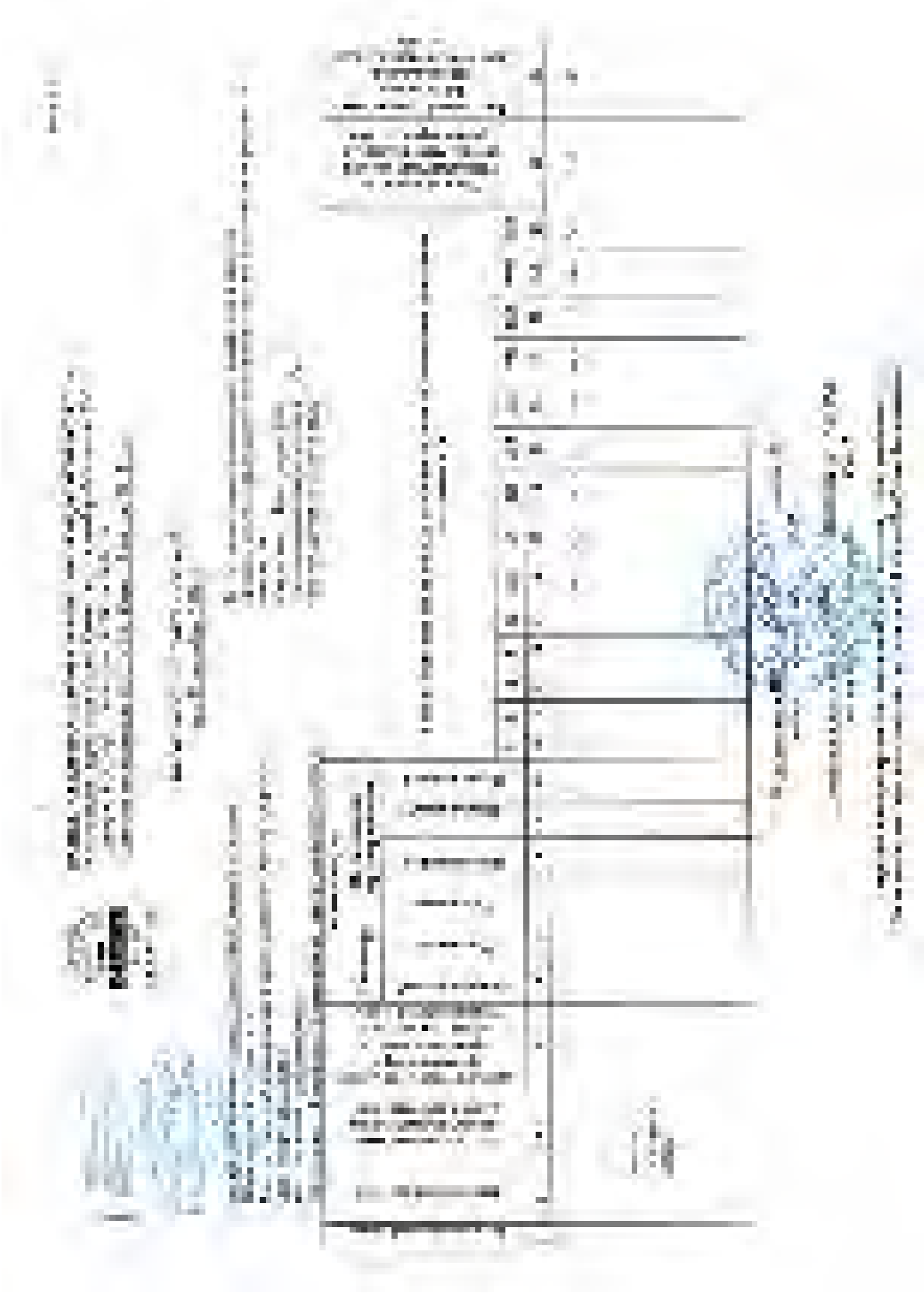


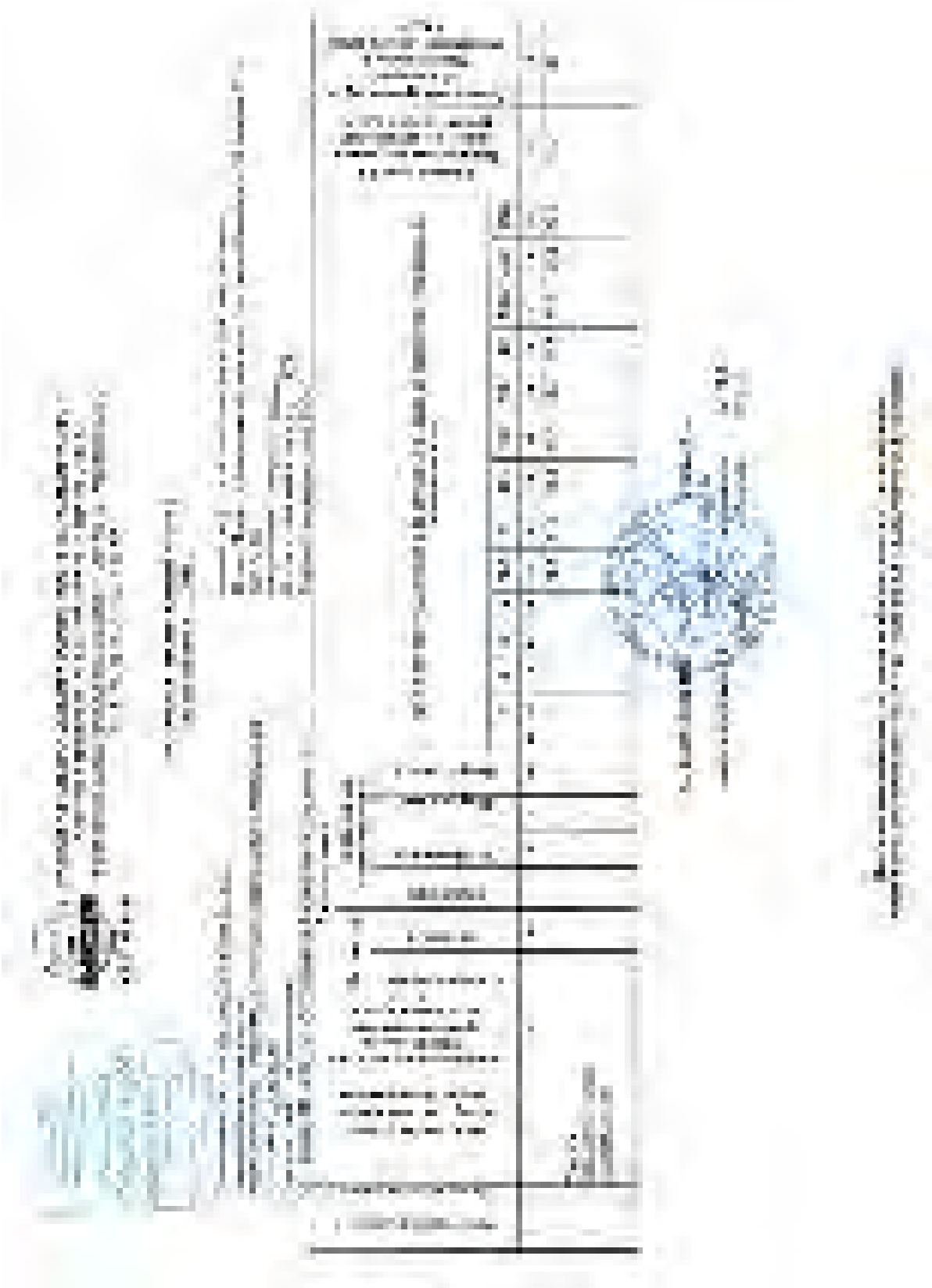






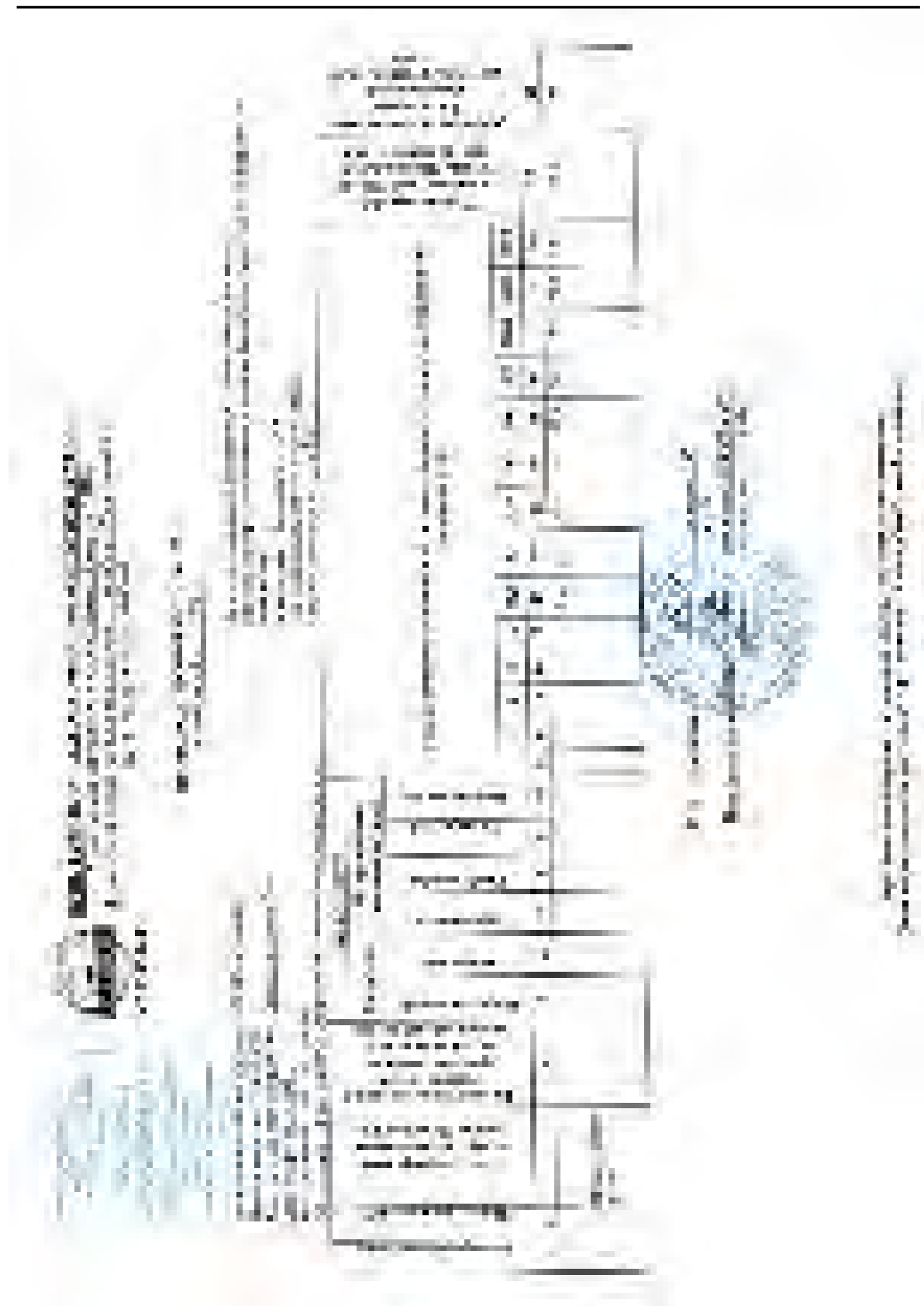




















1. **Project Name:** CAREC corridors 1 and 6 connector "Aktobe-Makat" road reconstruction project (section 160-330)

2. **Project Location:** Aktobe Region, Aktobe District, Aktobe-Makat road

3. **Project Description:** Road reconstruction project, including widening, resurfacing, and reconstruction of bridges and culverts.

4. **Project Period:** 2018-2020

5. **Project Manager:** [Signature]

6. **Project Coordinator:** [Signature]

7. **Project Engineer:** [Signature]

8. **Project Supervisor:** [Signature]

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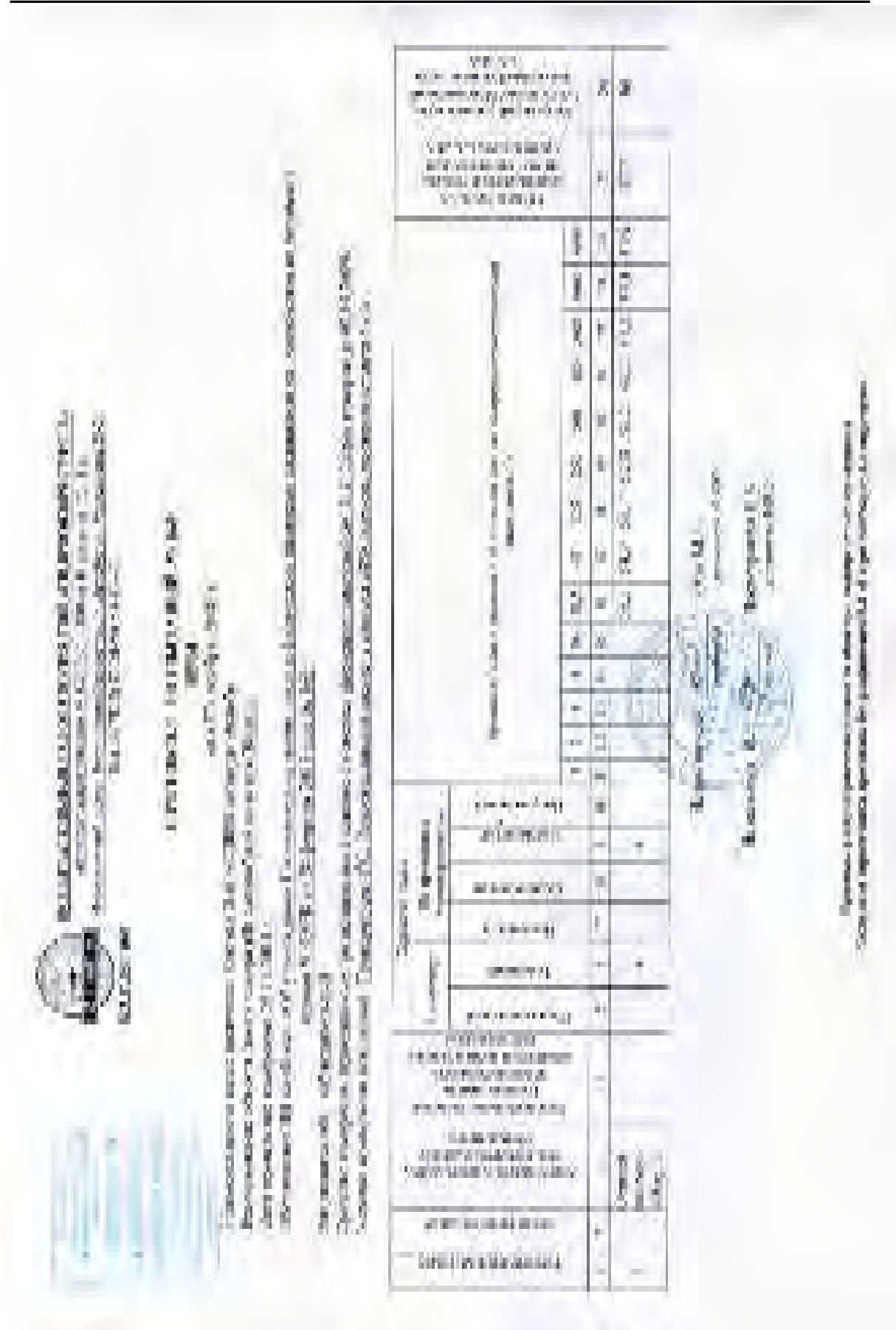




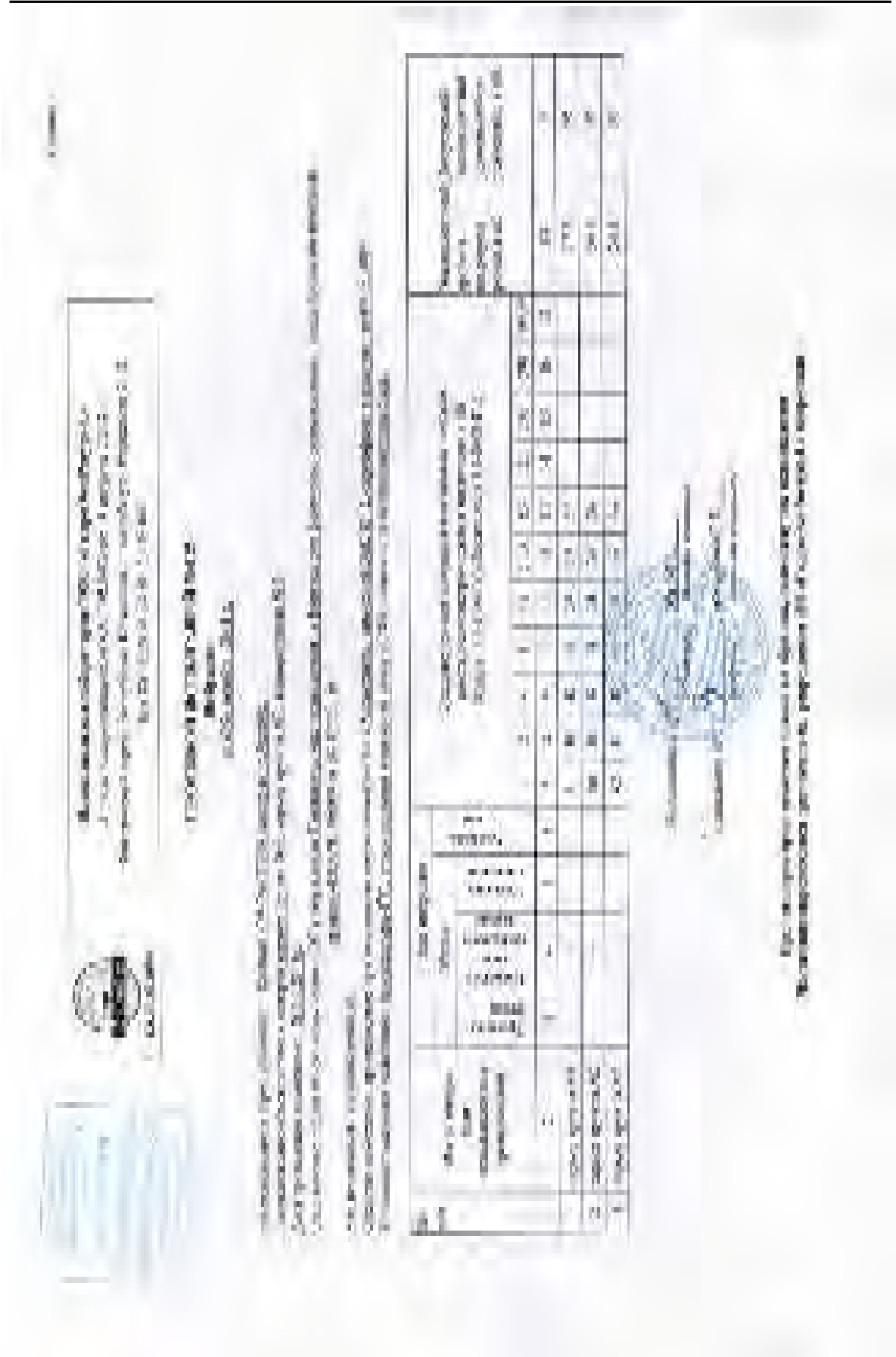




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1. <b>Environmental Monitoring</b>		2. <b>Water Quality Monitoring</b>		3. <b>Air Quality Monitoring</b>		4. <b>Noise Monitoring</b>		5. <b>Soil Quality Monitoring</b>		6. <b>Biological Monitoring</b>		7. <b>Other Monitoring</b>	
1.1. <b>Water Quality Monitoring</b>		1.1.1. <b>Surface Water Quality Monitoring</b>		1.1.2. <b>Groundwater Quality Monitoring</b>		1.1.3. <b>Drinking Water Quality Monitoring</b>		1.1.4. <b>Industrial Water Quality Monitoring</b>		1.1.5. <b>Other Water Quality Monitoring</b>		1.1.6. <b>Water Quality Monitoring Results</b>	
1.2. <b>Air Quality Monitoring</b>		1.2.1. <b>Background Air Quality Monitoring</b>		1.2.2. <b>On-site Air Quality Monitoring</b>		1.2.3. <b>Air Quality Monitoring Results</b>		1.2.4. <b>Air Quality Monitoring Data</b>		1.2.5. <b>Air Quality Monitoring Summary</b>		1.2.6. <b>Air Quality Monitoring Conclusions</b>	
1.3. <b>Noise Monitoring</b>		1.3.1. <b>Background Noise Monitoring</b>		1.3.2. <b>On-site Noise Monitoring</b>		1.3.3. <b>Noise Monitoring Results</b>		1.3.4. <b>Noise Monitoring Data</b>		1.3.5. <b>Noise Monitoring Summary</b>		1.3.6. <b>Noise Monitoring Conclusions</b>	
1.4. <b>Soil Quality Monitoring</b>		1.4.1. <b>Background Soil Quality Monitoring</b>		1.4.2. <b>On-site Soil Quality Monitoring</b>		1.4.3. <b>Soil Quality Monitoring Results</b>		1.4.4. <b>Soil Quality Monitoring Data</b>		1.4.5. <b>Soil Quality Monitoring Summary</b>		1.4.6. <b>Soil Quality Monitoring Conclusions</b>	
1.5. <b>Biological Monitoring</b>		1.5.1. <b>Background Biological Monitoring</b>		1.5.2. <b>On-site Biological Monitoring</b>		1.5.3. <b>Biological Monitoring Results</b>		1.5.4. <b>Biological Monitoring Data</b>		1.5.5. <b>Biological Monitoring Summary</b>		1.5.6. <b>Biological Monitoring Conclusions</b>	
1.6. <b>Other Monitoring</b>		1.6.1. <b>Background Other Monitoring</b>		1.6.2. <b>On-site Other Monitoring</b>		1.6.3. <b>Other Monitoring Results</b>		1.6.4. <b>Other Monitoring Data</b>		1.6.5. <b>Other Monitoring Summary</b>		1.6.6. <b>Other Monitoring Conclusions</b>	











Appendix 9

The results of soil samples tests, 2018 Lot 2

Sampling points*	Name of pollutants	Data obtained prior to construction	July 27.07.18	August 29-30.08.18	September 27-28.09.18	October 25-26.10.18
1	2	3	4	5	6	7
<b>Road sections of construction works</b>						
Road section Aktobe-Atyrau, km 236.	pH, units	7.91	8.15	8.17	8.0	7.40
	Dense residue,	0.150	0.18	0.21	0.26	0.28
	Petroleum products	0.01	0.056	0.057	0.042	0.037
	Chlorides	0.04	0.03	0.043	0.051	0.050
	Sulfates	0.814	1.2	1.38	1.4	1.42
	Calcium	0.6	0.9	0.95	0.97	0.99
	Magnesium	0.2	0.44	0.450	0.42	0.45
	Carbonates	0.0	0	0.65	0	0
	Bicarbonate	0.6	0.5	8.14	0.73	0.82
Aktobe –Atyrau road section , km 238.	pH, units		7.88	-	-	-
	Dense residue,		0.32			
	Petroleum products		0.045			
	Chlorides		0.05			
	Sulfates		1.3			
	Calcium		0.68			
	Magnesium		0.3			
	Carbonates		0			
	Bicarbonate		0.6			
Aktobe-Atyrau road section, 240 km.	pH, units		7.65	-	-	-
	Dense residue,		0.104			
	Petroleum products		0.035			
	Chlorides		0.05			
	Sulfates		0.99			
	Calcium		0.8			
	Magnesium		0.25			
	Carbonates		0			
	Bicarbonate		0.7			
Aktobe-Atyrau road section, km 246	pH, units			8.14	-	7.35
	Dense residue,			0.19		0.19
	Petroleum products			0.055		0.047
	Chlorides			0.045		0.052
	Sulfates			1.40		1.45
	Calcium			0.97		0.96
	Magnesium			0.48		0.47
	Carbonates			0		0
	Bicarbonate			0.67		0.70
Aktobe-Atyrau road section, km 250.	pH, units		8.09		-	-
	Dense residue,		0.159			
	Petroleum products		0.023			
	Chlorides		0.05			
	Sulfates		1.25			
	Calcium		0.6			
	Magnesium		0.2			
	Carbonates		0			

2nd Semi-Annual Environmental Monitoring Report 2018  
 CAREC corridors 1 and 6 connector "Aktobe-Makat" road reconstruction project (section 160-330)

	Bicarbonate		0.6			
Aktobe –Atyrau road section , km 255.	pH, units	8.08		7.87	-	7.66
	Dense residue,	0.15		0.39		0.42
	Petroleum products	0.15		0.042		0.033
	Chlorides	0.04		0.07		0.09
	Sulfates	0.782		.5		1.8
	Calcium	0.3		0.66		0.69
	Magnesium	0.10		0.33		0.37
	Carbonates	0		0		0
	Bicarbonate	0.80		0.63		0.68
Aktobe –Atyrau road section , km 260.	pH, units		8.1		-	-
	Dense residue,		0.153			
	Petroleum products		0.017			
	Chlorides		0.05			
	Sulfates		0.786			
	Calcium		0.4			
	Magnesium		0.2			
	Carbonates		0			
	Bicarbonate		0.7			
Aktobe –Atyrau road section , km 265.	pH, units	7.90		8.21	8.20	7.70
	Dense residue,	0.159		0.19	0.23	0.25
	Petroleum products	0.012		0.054	0.050	0.043
	Chlorides	0.04		0.047	0.054	0.055
	Sulfates	0.491		1.41	1.46	1.48
	Calcium	0.4		0.97	0.99	0.98
	Magnesium	0.1		0.48	0.47	0.46
	Carbonates	0.0		0	0	0
	Bicarbonate	0.72		0.67	0.7	0.75
Aktobe-Atyrau road section, km 275.	pH, units	7.79	7.65	7.83	7.80	7.75
	Dense residue,	0.160	0.104	0.157	0.160	0.158
	Petroleum products	0.010	0.035	0.03	0.02	0.02
	Chlorides	0.04	0.05	0.06	0.08	0.09
	Sulfates	0.460	0.99	0.825	0.830	0.832
	Calcium	0.6	0.8	0.8	0.88	0.85
	Magnesium	0.10	0.25	0.4	0.45	0.42
	Carbonates	0	0	0	0	0
	Bicarbonate	0.6	0.7	0.6	0.7	0.76
<b>Borrow pits</b>						
section 2	pH, units	7.75	7.87		7.85	7.85
	Dense residue,	0.175	0.182		0.180	0.180
	Petroleum products	0.06	0.06		0.05	0.05
	Chlorides	0.04	0.7		0.08	0.08
	Sulfates	0.478	0.486		0.484	0.484
	Calcium	0.4	0.5		0.56	0.56
	Magnesium	0.16	0.19		0.2	0.2
	Carbonates	0.0	0		0	0
	Bicarbonate	0.90	0.98		0.99	0.99
section 5	pH, units	8.0	7.81		7.80	7.80
	Dense residue,	0.181	0.180		0.179	0.179
	Petroleum products	0.05	0.07		0.06	0.06
	Chlorides	0.07	0.05		0.07	0.07
	Sulfates	0.490	0.482		0.480	0.480

2nd Semi-Annual Environmental Monitoring Report 2018  
 CAREC corridors 1 and 6 connector "Aktobe-Makat" road reconstruction project (section 160-330)

	Calcium	0.8	0.5		0.54	0.54
	Magnesium	0.20	0.18		0.19	0.19
	Carbonates	0.0	0		0	0
	Bicarbonate	1.42	0.92		0.95	0.95
Section 6	pH, units	7.96		7.84	7.82	7.82
	Dense residue,	0.175		0.179	0.178	0.178
	Petroleum products	0.04		0.07	0.05	0.05
	Chlorides	0.06		0.07	0.06	0.06
	Sulfates	0.481		0.484	0.482	0.482
	Calcium	0.7		0.4	0.47	0.47
	Magnesium	0.19		0.20	0.21	0.21
	Carbonates	0		0	0	0
	Bicarbonate	1.33		0.95	0.98	0.98
<b>Production base</b>						
point 1 (North)	pH, units	8.05	7.80		7.75	7.72
	Dense residue,	0.225	0.191		0.190	0.189
	Petroleum products	0.07	0.063		0.059	0.052
	Chlorides	0.10	0.24		0.26	0.26
	Sulfates	0.495	0.6		0.65	0.63
	Calcium	0.5	0.38		0.40	0.55
	Magnesium	0.17	0.25		0.26	0.32
	Carbonates	0.0	0		0	0
	Bicarbonate	1.75	1.47		1.50	1.56
point 2 (South)	pH, units	7.92	8.11		8.20	7.80
	Dense residue,	0.175	0.169		0.170	0.175
	Petroleum products	0.073	0.058		0.056	0.05
	Chlorides	0.09	0.058		0.40	0.061
	Sulfates	0.488	0.57		0.62	0.59
	Calcium	0.6	0.6		0.58	0.62
	Magnesium	0.18	0.27		0.30	0.36
	Carbonates	0.0	0		0	0
	Bicarbonate	1.90	1.48		1.42	1.51
point 3 (West)	pH, units	8.07	8.1		7.8	8.0
	Dense residue,	0.186	0.18		0.194	0.183
	Petroleum products	0.077	0.07		0.05	0.051
	Chlorides	0.11	0.17		0.20	0.058
	Sulfates	0.484	0.54		0.58	0.55
	Calcium	0.62	0.8		0.86	0.92
	Magnesium	0.28	0.28		0.33	0.33
	Carbonates	0.0	0		0	0
	Bicarbonate	1.93	1.70		1.77	1.76
point 4 (East)	pH, units	8.02	8.3		8.1	8.15
	Dense residue,	0.175	0.158		0.159	0.168
	Petroleum products	0.067	0.07		0.06	0.063
	Chlorides	0.074	0.079		0.061	0.07
	Sulfates	0.486	0.6		0.74	0.6
	Calcium	0.55	0.8		0.82	0.93
	Magnesium	0.27	0.3		0.3	0.44
	Carbonates	0.0	0		0	0
	Bicarbonate	1.75	1.47		1.67	1.50
point 5	pH, units	8.08	8.03		8.00	

2nd Semi-Annual Environmental Monitoring Report 2018  
 CAREC corridors 1 and 6 connector "Aktobe-Makat" road reconstruction project (section 160-330)

(center)	Dense residue,	0.197	0.3		0.310	
	Petroleum products	0.070	0.07		0.08	
	Chlorides	0.08	0.2		0.42	
	Sulfates	0.500	0.6		0.68	
	Calcium	0.81	0.5		0.55	
	Magnesium	0.22	0.27		0.32	
	Carbonates	0.0	0		0	
	Bicarbonate	1.62	1.47		1.48	
RA of Karaulkeldy village	pH, units				7.80	
	Dense residue,				0.152	
	Petroleum products				0.03	
	Chlorides				0.06	
	Sulfates				0.812	
	Calcium				0.8	
	Magnesium				0.4	
	Carbonates				0	
RA of Zharly vill.	Bicarbonate				0.7	
	pH, units				7.5	8.12
	Dense residue,				0.19	0.20
	Petroleum products				0.03	0.024
	Chlorides				0.08	0.09
	Sulfates				0.490	0.492
	Calcium				0.73	0.75
	Magnesium				0.21	0.24
	Carbonates				0	0
	Bicarbonate				0.74	0.8

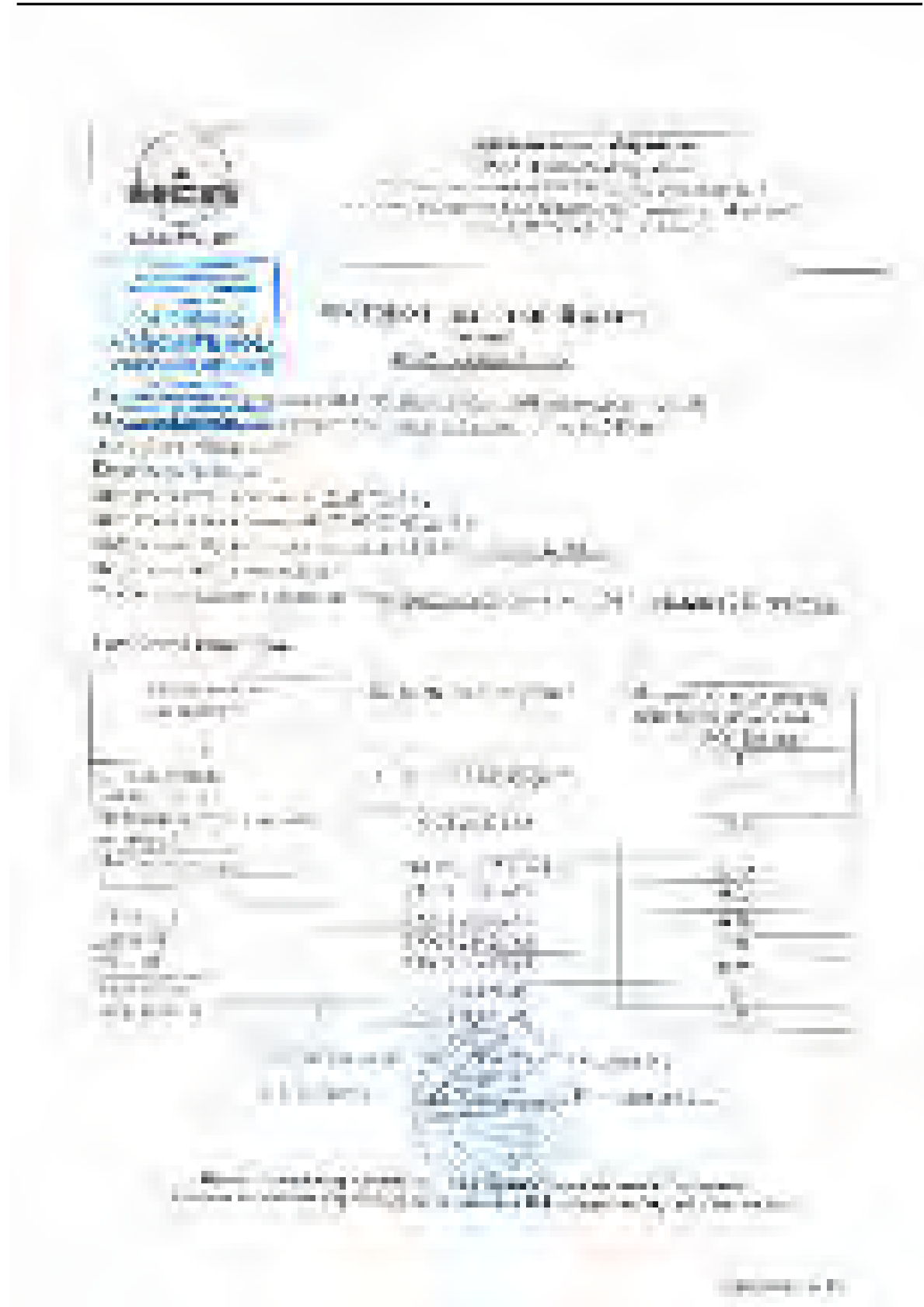
**Flowchart of the proposed method for the identification of the source of contamination**

The flowchart is organized into three main stages:

- Contamination source identification:**
  - Step 1: Identification of the contamination source (e.g., point source, non-point source, diffuse source).
  - Step 2: Identification of the contamination source (e.g., point source, non-point source, diffuse source).
  - Step 3: Identification of the contamination source (e.g., point source, non-point source, diffuse source).
- Source identification:**
  - Step 4: Identification of the contamination source (e.g., point source, non-point source, diffuse source).
  - Step 5: Identification of the contamination source (e.g., point source, non-point source, diffuse source).
  - Step 6: Identification of the contamination source (e.g., point source, non-point source, diffuse source).
- Source identification:**
  - Step 7: Identification of the contamination source (e.g., point source, non-point source, diffuse source).
  - Step 8: Identification of the contamination source (e.g., point source, non-point source, diffuse source).
  - Step 9: Identification of the contamination source (e.g., point source, non-point source, diffuse source).

The flowchart includes a legend for the symbols used: a circle for 'Contamination source', a square for 'Source identification', and a triangle for 'Source identification'.

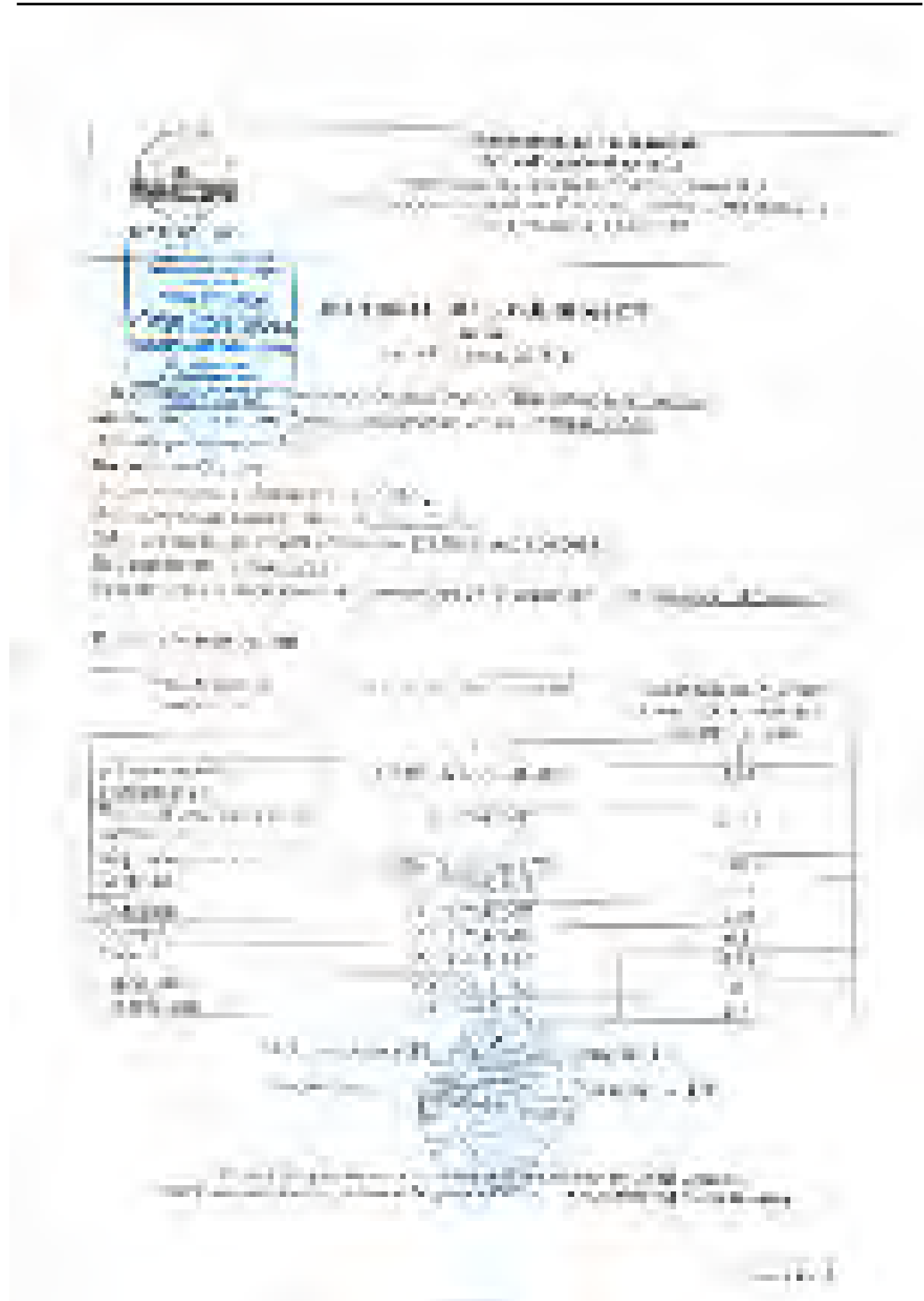
































<div>  <div>                     Ministry of Transport and Infrastructure of the Republic of Kazakhstan                      Department for Environmental Protection                      Department for Environmental Protection of the Ministry of Transport and Infrastructure of the Republic of Kazakhstan                      Department for Environmental Protection of the Ministry of Transport and Infrastructure of the Republic of Kazakhstan                 </div> </div>		
<div> <div>                         PROJECT NAME: "Aktobe-Makat" road reconstruction project (section 160-330)                          ROAD NO. 160-330                     </div> <div>                         Date: 2018-12-15                          Location: Aktobe region, Aktobe district                     </div> </div>		
<div>                         Report prepared by: Department for Environmental Protection of the Ministry of Transport and Infrastructure of the Republic of Kazakhstan                          Report prepared by: Department for Environmental Protection of the Ministry of Transport and Infrastructure of the Republic of Kazakhstan                          Report prepared by: Department for Environmental Protection of the Ministry of Transport and Infrastructure of the Republic of Kazakhstan                          Report prepared by: Department for Environmental Protection of the Ministry of Transport and Infrastructure of the Republic of Kazakhstan                          Report prepared by: Department for Environmental Protection of the Ministry of Transport and Infrastructure of the Republic of Kazakhstan                          Report prepared by: Department for Environmental Protection of the Ministry of Transport and Infrastructure of the Republic of Kazakhstan                          Report prepared by: Department for Environmental Protection of the Ministry of Transport and Infrastructure of the Republic of Kazakhstan                          Report prepared by: Department for Environmental Protection of the Ministry of Transport and Infrastructure of the Republic of Kazakhstan                          Report prepared by: Department for Environmental Protection of the Ministry of Transport and Infrastructure of the Republic of Kazakhstan                          Report prepared by: Department for Environmental Protection of the Ministry of Transport and Infrastructure of the Republic of Kazakhstan                     </div>		
Indicator	Value	Unit
1. Air quality	0.15	mg/m³
2. Water quality	0.15	mg/m³
3. Soil quality	0.15	mg/m³
4. Noise level	0.15	dB
5. Vibration level	0.15	mm/s²
6. Air pollution	0.15	mg/m³
7. Water pollution	0.15	mg/m³
8. Soil pollution	0.15	mg/m³
9. Noise level	0.15	dB
10. Vibration level	0.15	mm/s²
11. Air pollution	0.15	mg/m³
12. Water pollution	0.15	mg/m³
13. Soil pollution	0.15	mg/m³
14. Noise level	0.15	dB
15. Vibration level	0.15	mm/s²
16. Air pollution	0.15	mg/m³
17. Water pollution	0.15	mg/m³
18. Soil pollution	0.15	mg/m³
19. Noise level	0.15	dB
20. Vibration level	0.15	mm/s²
21. Air pollution	0.15	mg/m³
22. Water pollution	0.15	mg/m³
23. Soil pollution	0.15	mg/m³
24. Noise level	0.15	dB
25. Vibration level	0.15	mm/s²
26. Air pollution	0.15	mg/m³
27. Water pollution	0.15	mg/m³
28. Soil pollution	0.15	mg/m³
29. Noise level	0.15	dB
30. Vibration level	0.15	mm/s²
31. Air pollution	0.15	mg/m³
32. Water pollution	0.15	mg/m³
33. Soil pollution	0.15	mg/m³
34. Noise level	0.15	dB
35. Vibration level	0.15	mm/s²
36. Air pollution	0.15	mg/m³
37. Water pollution	0.15	mg/m³
38. Soil pollution	0.15	mg/m³
39. Noise level	0.15	dB
40. Vibration level	0.15	mm/s²
41. Air pollution	0.15	mg/m³
42. Water pollution	0.15	mg/m³
43. Soil pollution	0.15	mg/m³
44. Noise level	0.15	dB
45. Vibration level	0.15	mm/s²
46. Air pollution	0.15	mg/m³
47. Water pollution	0.15	mg/m³
48. Soil pollution	0.15	mg/m³
49. Noise level	0.15	dB
50. Vibration level	0.15	mm/s²
51. Air pollution	0.15	mg/m³
52. Water pollution	0.15	mg/m³
53. Soil pollution	0.15	mg/m³
54. Noise level	0.15	dB
55. Vibration level	0.15	mm/s²
56. Air pollution	0.15	mg/m³
57. Water pollution	0.15	mg/m³
58. Soil pollution	0.15	mg/m³
59. Noise level	0.15	dB
60. Vibration level	0.15	mm/s²
61. Air pollution	0.15	mg/m³
62. Water pollution	0.15	mg/m³
63. Soil pollution	0.15	mg/m³
64. Noise level	0.15	dB
65. Vibration level	0.15	mm/s²
66. Air pollution	0.15	mg/m³
67. Water pollution	0.15	mg/m³
68. Soil pollution	0.15	mg/m³
69. Noise level	0.15	dB
70. Vibration level	0.15	mm/s²
71. Air pollution	0.15	mg/m³
72. Water pollution	0.15	mg/m³
73. Soil pollution	0.15	mg/m³
74. Noise level	0.15	dB
75. Vibration level	0.15	mm/s²
76. Air pollution	0.15	mg/m³
77. Water pollution	0.15	mg/m³
78. Soil pollution	0.15	mg/m³
79. Noise level	0.15	dB
80. Vibration level	0.15	mm/s²
81. Air pollution	0.15	mg/m³
82. Water pollution	0.15	mg/m³
83. Soil pollution	0.15	mg/m³
84. Noise level	0.15	dB
85. Vibration level	0.15	mm/s²
86. Air pollution	0.15	mg/m³
87. Water pollution	0.15	mg/m³
88. Soil pollution	0.15	mg/m³
89. Noise level	0.15	dB
90. Vibration level	0.15	mm/s²
91. Air pollution	0.15	mg/m³
92. Water pollution	0.15	mg/m³
93. Soil pollution	0.15	mg/m³
94. Noise level	0.15	dB
95. Vibration level	0.15	mm/s²
96. Air pollution	0.15	mg/m³
97. Water pollution	0.15	mg/m³
98. Soil pollution	0.15	mg/m³
99. Noise level	0.15	dB
100. Vibration level	0.15	mm/s²

[illegible]







МОНИТОРИНГОВЫЙ ОТЧЕТ  
ПО РЕЗУЛЬТАТАМ РАБОТЫ  
ПО ОЦЕНКЕ ВОЗДЕЙСТВИЯ НА ОКРУЖАЮЩУЮ СРЕДУ  
ПРОЕКТА ВОССТАНОВЛЕНИЯ И РЕКОНСТРУКЦИИ  
ДОРОЖНО-ТЕХНИЧЕСКОГО КОМПЛЕКСА  
ПОСРЕДСТВОМ ВОССТАНОВЛЕНИЯ И РЕКОНСТРУКЦИИ

МОНИТОРИНГОВЫЙ ОТЧЕТ  
ПО РЕЗУЛЬТАТАМ РАБОТЫ  
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**МОНИТОРИНГОВЫЙ ОТЧЕТ  
ПО РЕЗУЛЬТАТАМ РАБОТЫ  
ПО ОЦЕНКЕ ВОЗДЕЙСТВИЯ НА ОКРУЖАЮЩУЮ СРЕДУ  
ПРОЕКТА ВОССТАНОВЛЕНИЯ И РЕКОНСТРУКЦИИ  
ДОРОЖНО-ТЕХНИЧЕСКОГО КОМПЛЕКСА  
ПОСРЕДСТВОМ ВОССТАНОВЛЕНИЯ И РЕКОНСТРУКЦИИ**

**Наименование объекта:** Проект восстановления и реконструкции дорожного технического комплекса посредством восстановления и реконструкции

**Местонахождение объекта:** Республика Казахстан, г. Актобе, районный округ Актобе, село Актобе

**Содержание работ:** Проект восстановления и реконструкции дорожного технического комплекса посредством восстановления и реконструкции

**Сроки проведения работ:** с 15.05.2018 по 15.05.2018 г.г.

**Содержание работ:** Проект восстановления и реконструкции дорожного технического комплекса посредством восстановления и реконструкции

**Сроки проведения работ:** с 15.05.2018 по 15.05.2018 г.г.

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**Сроки проведения работ:** с 15.05.2018 по 15.05.2018 г.г.

Наименование объекта	Содержание работ	Результаты работ		
		Всего работ	Выполнено	Не выполнено
Проект восстановления и реконструкции дорожного технического комплекса посредством восстановления и реконструкции	Проект восстановления и реконструкции дорожного технического комплекса посредством восстановления и реконструкции	100%	100%	0%
Содержание работ	Содержание работ	100%	100%	0%
Сроки проведения работ	Сроки проведения работ	100%	100%	0%
Содержание работ	Содержание работ	100%	100%	0%
Сроки проведения работ	Сроки проведения работ	100%	100%	0%
Содержание работ	Содержание работ	100%	100%	0%
Сроки проведения работ	Сроки проведения работ	100%	100%	0%
Содержание работ	Содержание работ	100%	100%	0%
Сроки проведения работ	Сроки проведения работ	100%	100%	0%

**Подпись и печать ответственного лица**

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Подпись: \_\_\_\_\_ Печать: \_\_\_\_\_











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Акты, подтверждающие выполнение работ, прилагаются к отчету.

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Акты, подтверждающие выполнение работ, прилагаются к отчету.



ҚАЗАҚСТАН РЕСПУБЛИКАСЫНЫҢ  
ТРАНСПОРТ ЖӘНЕ  
ИНФРАСТРУКТУРА МИНИСТРЛІГІ

**АКТӨБЕ-МАКАТ ЖОЛЫНЫ ҚАЙТА ҚОНДЫРУ**  
**АКТӨБЕ-МАКАТ ЖОЛЫНЫ ҚАЙТА ҚОНДЫРУ**  
 (АКТӨБЕ-МАКАТ ЖОЛЫНЫ ҚАЙТА ҚОНДЫРУ)



АКТӨБЕ ОБЛАСТЫ АҚАНЫ  
АКТӨБЕ ОБЛАСТЫ АҚАНЫ

**АКТӨБЕ-МАКАТ ЖОЛЫНЫ ҚАЙТА ҚОНДЫРУ**  
**АКТӨБЕ-МАКАТ ЖОЛЫНЫ ҚАЙТА ҚОНДЫРУ**  
 (АКТӨБЕ-МАКАТ ЖОЛЫНЫ ҚАЙТА ҚОНДЫРУ)

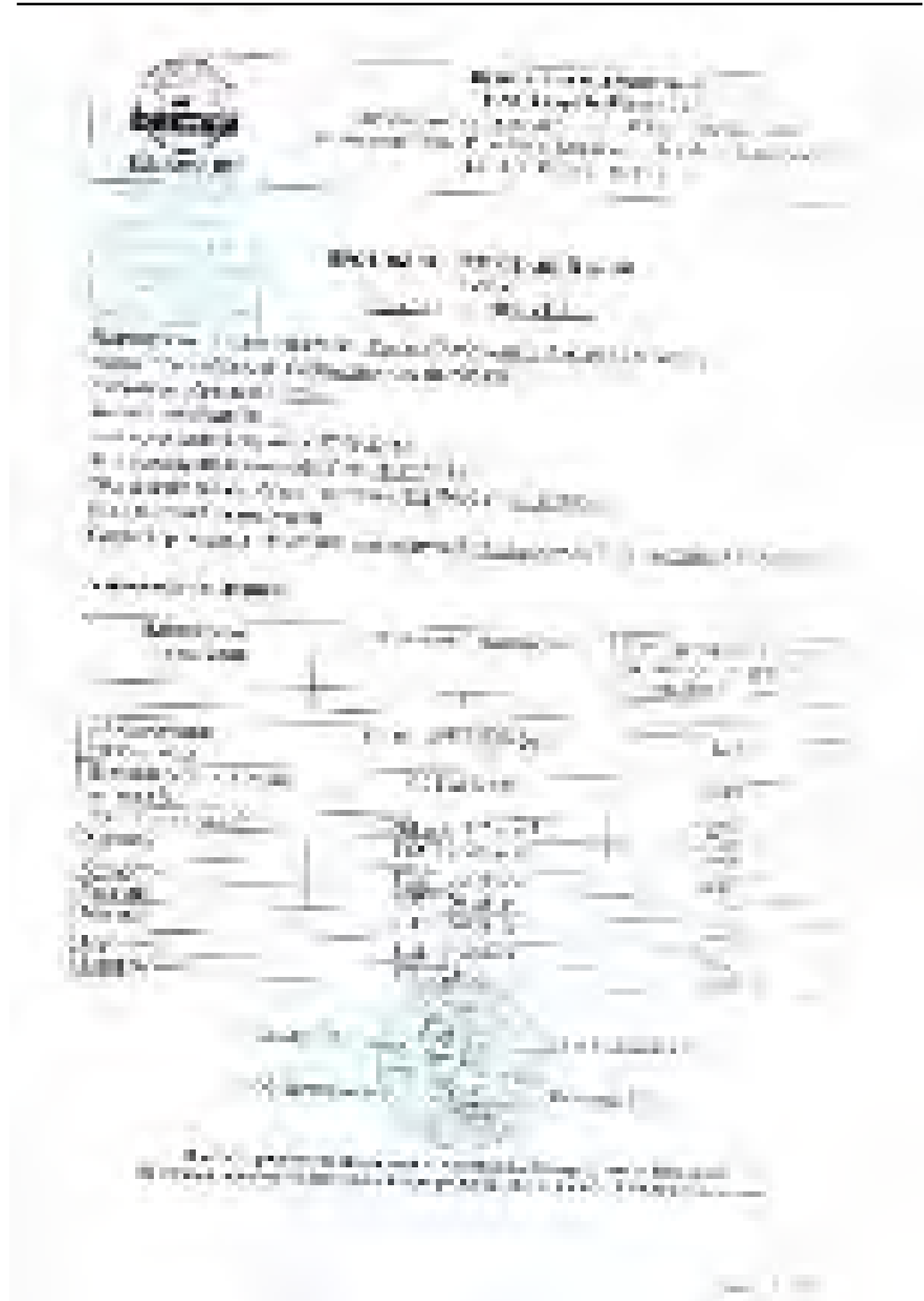
АКТӨБЕ-МАКАТ ЖОЛЫНЫ ҚАЙТА ҚОНДЫРУ (АКТӨБЕ-МАКАТ ЖОЛЫНЫ ҚАЙТА ҚОНДЫРУ)  
 АКТӨБЕ-МАКАТ ЖОЛЫНЫ ҚАЙТА ҚОНДЫРУ (АКТӨБЕ-МАКАТ ЖОЛЫНЫ ҚАЙТА ҚОНДЫРУ)  
 АКТӨБЕ-МАКАТ ЖОЛЫНЫ ҚАЙТА ҚОНДЫРУ (АКТӨБЕ-МАКАТ ЖОЛЫНЫ ҚАЙТА ҚОНДЫРУ)  
 АКТӨБЕ-МАКАТ ЖОЛЫНЫ ҚАЙТА ҚОНДЫРУ (АКТӨБЕ-МАКАТ ЖОЛЫНЫ ҚАЙТА ҚОНДЫРУ)  
 АКТӨБЕ-МАКАТ ЖОЛЫНЫ ҚАЙТА ҚОНДЫРУ (АКТӨБЕ-МАКАТ ЖОЛЫНЫ ҚАЙТА ҚОНДЫРУ)  
 АКТӨБЕ-МАКАТ ЖОЛЫНЫ ҚАЙТА ҚОНДЫРУ (АКТӨБЕ-МАКАТ ЖОЛЫНЫ ҚАЙТА ҚОНДЫРУ)  
 АКТӨБЕ-МАКАТ ЖОЛЫНЫ ҚАЙТА ҚОНДЫРУ (АКТӨБЕ-МАКАТ ЖОЛЫНЫ ҚАЙТА ҚОНДЫРУ)


АКТӨБЕ-МАКАТ ЖОЛЫНЫ ҚАЙТА ҚОНДЫРУ	АКТӨБЕ-МАКАТ ЖОЛЫНЫ ҚАЙТА ҚОНДЫРУ	АКТӨБЕ-МАКАТ ЖОЛЫНЫ ҚАЙТА ҚОНДЫРУ
АКТӨБЕ-МАКАТ ЖОЛЫНЫ ҚАЙТА ҚОНДЫРУ	АКТӨБЕ-МАКАТ ЖОЛЫНЫ ҚАЙТА ҚОНДЫРУ	АКТӨБЕ-МАКАТ ЖОЛЫНЫ ҚАЙТА ҚОНДЫРУ
АКТӨБЕ-МАКАТ ЖОЛЫНЫ ҚАЙТА ҚОНДЫРУ	АКТӨБЕ-МАКАТ ЖОЛЫНЫ ҚАЙТА ҚОНДЫРУ	АКТӨБЕ-МАКАТ ЖОЛЫНЫ ҚАЙТА ҚОНДЫРУ
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АКТӨБЕ-МАКАТ ЖОЛЫНЫ ҚАЙТА ҚОНДЫРУ	АКТӨБЕ-МАКАТ ЖОЛЫНЫ ҚАЙТА ҚОНДЫРУ	АКТӨБЕ-МАКАТ ЖОЛЫНЫ ҚАЙТА ҚОНДЫРУ



АКТӨБЕ ОБЛАСТЫ АҚАНЫ  
АКТӨБЕ ОБЛАСТЫ АҚАНЫ

АКТӨБЕ-МАКАТ ЖОЛЫНЫ ҚАЙТА ҚОНДЫРУ (АКТӨБЕ-МАКАТ ЖОЛЫНЫ ҚАЙТА ҚОНДЫРУ)  
 АКТӨБЕ-МАКАТ ЖОЛЫНЫ ҚАЙТА ҚОНДЫРУ (АКТӨБЕ-МАКАТ ЖОЛЫНЫ ҚАЙТА ҚОНДЫРУ)





**МОНИТОРИНГОВЫЙ ОТЧЕТ**  
 по состоянию на 30.06.2018 г.

**ПРОЕКТ "РЕКОНСТРУКЦИЯ ДОРОЖНОГО КОМПЛЕКСА ПОСЕЛКА АКТОБЕ-МАКАТ"**

**ЭТАП "ПРОЕКТИРОВАНИЕ"**

**ВЕРСИЯ 1.0**

1. ОБЩИЕ СВЕДЕНИЯ

1.1. Наименование объекта: Реконструкция дорожного комплекса поселка Актобе-Мakat

1.2. Адрес объекта: Республика Казахстан, Актюбинская область, Актюбинский район, поселок Актобе-Мakat

1.3. Координаты объекта: 50° 15' 00" N, 68° 00' 00" E

1.4. Масштаб: 1:500

1.5. Дата составления отчета: 30.06.2018 г.

1.6. Составитель отчета: [Подпись]

1.7. Проверил: [Подпись]

2. ЦЕЛИ И ЗАДАЧИ

2.1. Цель: Оценка воздействия на окружающую среду (ОВОС) проекта реконструкции дорожного комплекса поселка Актобе-Мakat.

2.2. Задачи: Выявление потенциальных источников воздействия, оценка значимости воздействия, разработка мер по снижению негативных последствий.

3. МЕТОДЫ ИСЛЕДОВАНИЙ

3.1. Методы: Наблюдение, опрос, анализ документов, лабораторные анализы.

3.2. Оборудование: Автомобильный транспорт, измерительные приборы.

4. РЕЗУЛЬТАТЫ ИССЛЕДОВАНИЙ

Наименование фактора воздействия	Характер воздействия	Интенсивность воздействия	Степень воздействия
Автомобильный транспорт	Загрязнение воздуха	Средняя	Средняя
Автомобильный транспорт	Шум	Средняя	Средняя
Автомобильный транспорт	Вибрация	Средняя	Средняя
Автомобильный транспорт	Загрязнение почвы	Средняя	Средняя
Автомобильный транспорт	Загрязнение воды	Средняя	Средняя
Автомобильный транспорт	Загрязнение растительности	Средняя	Средняя
Автомобильный транспорт	Загрязнение животных	Средняя	Средняя
Автомобильный транспорт	Загрязнение человека	Средняя	Средняя

5. ВЫВОДЫ

5.1. Проект реконструкции дорожного комплекса поселка Актобе-Мakat имеет среднюю степень воздействия на окружающую среду.

5.2. Для снижения негативных последствий необходимо принять меры по снижению интенсивности воздействия.

6. ДОПОЛНИТЕЛЬНЫЕ СВЕДЕНИЯ

6.1. Адрес объекта: Республика Казахстан, Актюбинская область, Актюбинский район, поселок Актобе-Мakat

6.2. Контактная информация: [Подпись]



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[illegible]









**Министерство транспорта и инфраструктуры  
Республики Казахстан**

Актюбінская область, Актобе, ул. Тургышова, 100  
 Тел: +7 312 251 10 00, факс: +7 312 251 10 01  
 e-mail: info@mintrinf.kz

**Содержание**

**1. Общие сведения**

**2. Описание объекта**

**3. Описание территории**

**4. Описание объектов**

**5. Описание объектов**

**6. Описание объектов**

**7. Описание объектов**

**8. Описание объектов**

**9. Описание объектов**

**10. Описание объектов**

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**Environmental Monitoring Report**  
 for the period from 01.01.2018 to 30.06.2018  
 for the section 160-330 of the "Aktobe-Makat" road reconstruction project

**1. General Information**

**1.1. Name of the project:** "Aktobe-Makat" road reconstruction project (section 160-330)

**1.2. Location:** Aktobe Region, Aktau District, Aktobe-Makat road

**1.3. Coordinates:** 48° 15' N, 60° 30' E

**2. Objectives of the monitoring:**

2.1. To assess the impact of the project on the environment.

2.2. To identify the sources of pollution and their impact on the environment.

2.3. To monitor the quality of the environment during the implementation of the project.

2.4. To provide information for the development of measures to mitigate the negative impact of the project on the environment.

**3. Methodology of the monitoring:**

3.1. The monitoring was carried out using the following methods:

Method	Frequency	Responsible
Visual observation	Once a week	Environmental specialist
Sampling of air, water, soil	Once a month	Environmental specialist
Measurement of noise level	Once a month	Environmental specialist
Measurement of dust level	Once a month	Environmental specialist
Measurement of water level	Once a month	Environmental specialist
Measurement of soil pH	Once a month	Environmental specialist
Measurement of soil moisture	Once a month	Environmental specialist
Measurement of soil temperature	Once a month	Environmental specialist

3.2. The monitoring was carried out using the following equipment:

- Visual observation: binoculars, camera.
- Sampling of air, water, soil: sampling equipment, analytical equipment.
- Measurement of noise level: noise meter.
- Measurement of dust level: dust meter.
- Measurement of water level: water level gauge.
- Measurement of soil pH: pH meter.
- Measurement of soil moisture: soil moisture meter.
- Measurement of soil temperature: soil temperature meter.

**4. Results of the monitoring:**

4.1. The monitoring results show that the project has a negative impact on the environment.

4.2. The main sources of pollution are the construction site and the road.

4.3. The impact of the project on the environment is as follows:

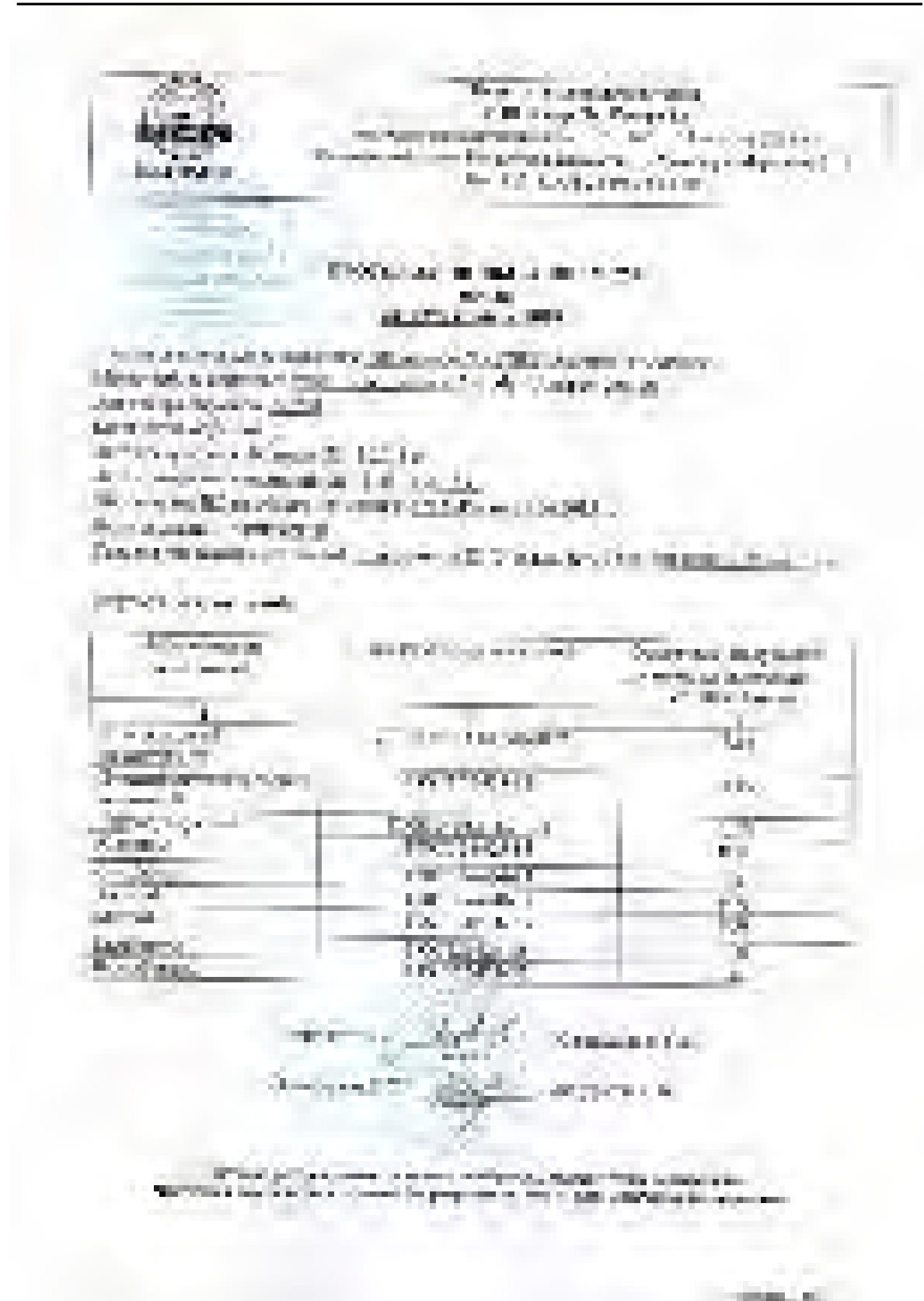
Impact	Level
Air pollution	High
Water pollution	Medium
Soil pollution	Low
Noise pollution	High
Dust pollution	High
Water level	Low
Soil pH	Low
Soil moisture	Low
Soil temperature	Low

4.4. The measures to mitigate the negative impact of the project on the environment are as follows:

- Establishment of a buffer zone around the construction site.
- Use of dust suppressants.
- Use of noise barriers.
- Regular cleaning of the road.
- Regular monitoring of the environment.

**5. Conclusion:**

The project has a negative impact on the environment. The main sources of pollution are the construction site and the road. The impact of the project on the environment is as follows: air pollution (High), water pollution (Medium), soil pollution (Low), noise pollution (High), dust pollution (High), water level (Low), soil pH (Low), soil moisture (Low), soil temperature (Low). The measures to mitigate the negative impact of the project on the environment are as follows: establishment of a buffer zone around the construction site, use of dust suppressants, use of noise barriers, regular cleaning of the road, regular monitoring of the environment.









Category	Indicator	Value
Water quality	Water quality index (WQI)	85
Air quality	Air quality index (AQI)	75
Soil quality	Soil quality index (SQI)	80
Vegetation	Vegetation index (VI)	70
Wildlife	Wildlife index (WI)	65
Human health	Human health index (HHI)	78
Environmental impact	Environmental impact index (EII)	72
Water quality	Water quality index (WQI)	85
Air quality	Air quality index (AQI)	75
Soil quality	Soil quality index (SQI)	80
Vegetation	Vegetation index (VI)	70
Wildlife	Wildlife index (WI)	65
Human health	Human health index (HHI)	78
Environmental impact	Environmental impact index (EII)	72

Figure 1: Environmental Monitoring Results (2018)


The figure shows a bar chart comparing the Environmental Monitoring Results (2018) for various indicators. The indicators are listed on the x-axis, and the corresponding values are shown on the y-axis. The indicators and their values are: Water quality (85), Air quality (75), Soil quality (80), Vegetation (70), Wildlife (65), Human health (78), and Environmental impact (72).

Legend: Environmental Monitoring Results (2018)

Source: Environmental Monitoring Data (2018)







МОН  
МОНСТ

Әлеуметтік жауапкершілік  
 ҚОҒАМ АРНАЛЫҚ ҚЫЗМЕТІ  
 2018 жылғы 1-ші жартыжылдықтың  
 қорытынды есебі: «Қоғамдық бақылау, азаматтық қоғам және  
 экология» бағыты бойынша

«АКТӨБЕ-МАКАТ» АЖАҚ-НЫҢ  
 ҚОҒАМ АРНАЛЫҚ ҚЫЗМЕТІ  
 ҚОҒАМ АРНАЛЫҚ ҚЫЗМЕТІ

Қоғам арналық қызметінің мақсаты: АЖАҚ-ның қызметін жақсарту, қоғаммен байланысты нығайту, азаматтық қоғаммен өзара ынтықтасу, экологиялық жауапкершілікті қамтамасыз ету.

Қоғам арналық қызметінің міндеттері:

- АЖАҚ-ның қызметін жақсарту;
- Қоғаммен байланысты нығайту;
- Азаматтық қоғаммен өзара ынтықтасу;
- Экологиялық жауапкершілікті қамтамасыз ету.

Қоғам арналық қызметінің нәтижелері:

Қоғам арналық қызметінің нәтижелері туралы мәліметтер келесі кестеде келтірілген:

Қоғам арналық қызметінің түрі	Қоғам арналық қызметінің міндеттері	Қоғам арналық қызметінің нәтижелері		
		Қол жеткізілген	Қол жеткізілмеген	Барлығы
АЖАҚ-ның қызметін жақсарту	АЖАҚ-ның қызметін жақсарту	100%	0%	100%
Қоғаммен байланысты нығайту	Қоғаммен байланысты нығайту	100%	0%	100%
Азаматтық қоғаммен өзара ынтықтасу	Азаматтық қоғаммен өзара ынтықтасу	100%	0%	100%
Экологиялық жауапкершілікті қамтамасыз ету	Экологиялық жауапкершілікті қамтамасыз ету	100%	0%	100%
Қорытынды	Қорытынды	100%	0%	100%

Қоғам арналық қызметінің нәтижелері туралы мәліметтер келесі кестеде келтірілген:

Қоғам арналық қызметінің нәтижелері туралы мәліметтер келесі кестеде келтірілген:

Appendix 10

Results of chemical analysis of water (natural), Lot 2

Sampling points*	Name of pollutants	Data obtained prior to construction	MPC norms, mg/dm <sup>3</sup>	July 27.07.18	August 30.08.18	September 28.09.18	October 25-26.10.18
1	2	3	4	5	6	7	8
river Karaulkeldy	pH	8.20	6.0-9.0	7.91	8.15	7.50	7.27
	Solids	896.0	1000	984.0	975.0	970.0	981.0
	Insoluble substances	18.0	Not normalized	17.5	177.0	14.0	6.8
	Chlorides	328.4	Not more than 350	329.2	324.2	322.1	324.2
	Ammonium nitrogen	0.528	Not more than 0.2	0.491	0.522	0.435	0.415
	Petroleum products	0.041	Not more than 0.1	0.044	0.039	0.032	0.022
	Total water hardness	7.01	7.0(10)	6.6	7.2	7.0	6.7
	Calcium	194	Not normalized	212.5	189.0	184.0	185.0
	Magnesium	93.6	Not normalized	100.2	91.2	87.2	88.1
	Sulfates	410.0	Not more than 500	401.0	390.0	396.0	393.0
	Nitrates	3.57	Not more than 45	3.48	3.41	3.37	3.32
	Nitrites	0.195	Not more than 3.3	0.20	0.189	0.182	0.170
	Ferrum	0.125	Not more than 3.0	0.19	0.121	0.118	0.114
	Chrome	0.0	Not more than 0.05	0	0	0	0
	Total phosphorus	0.0	Not more than 0.0001	0	0	0	0
	Anionic surfactants	0.008	0.5	0.004	0.007	0.004	0.003

# Water quality measurement protocols

















Parameter/Component	Unit	Value	Limit
CO <sub>2</sub> emissions (kg)	kg	1000	1000
Water quality (mg/L)	mg/L	100	100
Soil pH	pH	7.0	7.0



The information provided in this report is for informational purposes only and does not constitute a guarantee or warranty of any kind. The information is provided as is, without any representations or warranties of any kind.

Page 180





Appendix 11

The results of measurements of atmospheric air for Lot 2

Sampling points	Name of pollutants	Data obtained prior to construction on 24.04.18	Norm MPC m.r., mg/m <sup>3</sup>	July 27.07.18	August 30.08.18	September 28.09.18	October 25-26.10.18
The stretch of road km 236	Inorganic dust 70-20%	0.058	0.3	0.071	0.073	0.075	0.072
	Nitrogen dioxide	0.057	0.2	0.068	0.070	0.072	0.070
	Sulphur dioxide	n / a	0.5	0	0	n / a	n / a
	Carbon oxide	1.2	5.0	1.6	1.7	1.6	1.5
	formaldehyde	0.0011	0.051	0.0012	0.0013	0.0014	0.0014
	Hydrocarbons C <sub>12</sub> -C <sub>19</sub>	0.089	1	0.096	0.098	0.1	0.1
	Benzene	0.056	0.3	0.066	0.06	0.070	0.068
	Xylene	0.074	0.2	0.082	0.083	0.085	0.082
	Methylbenzene	0.3	0.6	0.4	0.5	0.4	0.3
Road section km 238	Hydrogen sulphide	n / a	0.008	0	0	n / a	n / a
	Inorganic dust 70-20%		0.3	0.073	-	-	-
	Nitrogen dioxide		0.2	0.065			
	Sulphur dioxide		0.5	0			
	Carbon oxide		5.0	1.4			
	formaldehyde		0.051	0.0013			
	Hydrocarbons C <sub>12</sub> -C <sub>19</sub>		1	0.070			
	Benzene		0.3	0.061			
	Xylene		0.2	0.080			
Road section km 240	Methylbenzene		0.6	0.5			
	Hydrogen sulphide		0.008	0			
	Inorganic dust 70-20%		0.3	0.068	-		
	Nitrogen dioxide		0.2	0.061			
	Sulphur dioxide		0.5	0			
	Carbon oxide		5.0	1.5			
	formaldehyde		0.051	0.0014			
	Hydrocarbons C <sub>12</sub> -C <sub>19</sub>		1	0.068			
	Benzene		0.3	0.060			
Road section km 246	Xylene		0.2	0.067			
	Methylbenzene		0.6	0.5			
	Hydrogen sulphide		0.008	0			
	Inorganic dust 70-20%		0.3	0.068	0.075	0.077	0.070
	Nitrogen dioxide		0.2	0.061	0.067	0.069	0.068
	Sulphur dioxide		0.5	0	0	n / a	n / a
	Carbon oxide		5.0	1.5	1.5	1.6	1.4
	formaldehyde		0.051	0.0014	0.0014	0.0013	0.0012
	Hydrocarbons C <sub>12</sub> -C <sub>19</sub>		1	0.068	0.072	0.074	0.1
Road section km 250	Benzene		0.3	0.060	0.063	0.065	0.070
	Xylene		0.2	0.067	0.082	0.084	0.080
	Methylbenzene		0.6	0.5	0.4	0.5	0.2
	Hydrogen sulphide		0.008	0	0	n / a	n / a
	Inorganic dust 70-20%			0.067	-	-	-
	Nitrogen dioxide			0.063			

	Sulphur dioxide			0			
	Carbon oxide			1.5			
	formaldehyde			0.0013			
	Hydrocarbons C <sub>12</sub> -C <sub>19</sub>			0.071			
	Benzene			0.063			
	Xylene			0.070			
	Methylbenzene			0.4			
	Hydrogen sulphide			0			
Road section km 255	Inorganic dust 70-20%	0.060	0.3		0.071	0.072	0.070
	Nitrogen dioxide	0.054	0.2		0.063	0.064	0.070
	Sulphur dioxide	n / a	0.5		0	n / a	n / a
	Carbon oxide	1.3	5.0		1.6	1.7	1.5
	formaldehyde	0.0012	0.051		0.0015	0.0016	0.0016
	Hydrocarbons C <sub>12</sub> -C <sub>19</sub>	0.063	1		0.071	0.073	0.068
	Benzene	0.55	0.3		0.063	0.064	0.062
	Xylene	0.061	0.2		0.069	0.070	0.072
	Methylbenzene	0.3	0.6		0.4	n / a	0.2
	Hydrogen sulphide	n / a	0.008		0		n / a
Road section km 260	Inorganic dust 70-20%		0.3	0.059	-	-	-
	Nitrogen dioxide		0.2	0.060			
	Sulphur dioxide		0.5	0			
	Carbon oxide		5.0	1.3			
	formaldehyde		0.051	0.0013			
	Hydrocarbons C <sub>12</sub> -C <sub>19</sub>		1	0.068			
	Benzene		0.3	0.059			
	Xylene		0.2	0.079			
	Methylbenzene		0.6	0.3			
	Hydrogen sulphide		0.008	0			
Road section km 265	Inorganic dust 70-20%	0.052	0.3		0.069	0.071	0.065
	Nitrogen dioxide	0.055	0.2		0.065	0.065	0.058
	Sulphur dioxide	n / a	0.5		0	n / a	n / a
	Carbon oxide	1.0	5.0		1.6	1.7	1.3
	formaldehyde	0.0010	0.051		0.0014	0.0015	0.0012
	Hydrocarbons C <sub>12</sub> -C <sub>19</sub>	0.062	1		0.073	0.075	0.071
	Benzene	0.052	0.3		0.065	0.066	0.062
	Xylene	0.073	0.2		0.072	0.073	0.071
	Methylbenzene	0.1	0.6		0.5	0.4	0.3
	Hydrogen sulphide	n / a	0.008		0	n / a	n / a
Road section km 275	Inorganic dust 70-20%	0.054	0.3	0.063	0.061	0.063	0.062
	Nitrogen dioxide	0.058	0.2	0.066	0.062	0.064	0.052
	Sulphur dioxide	n / a	0.5	0	0	n / a	n / a
	Carbon oxide	1.2	5.0	1.3	1.4	1.5	1.2
	formaldehyde	0.0010	0.051	0.0011	0.0014	0.0015	0.0010
	Hydrocarbons C <sub>12</sub> -C <sub>19</sub>	0.076	1	0.84	0.071	0.073	0.064
	Benzene	0.057	0.3	0.068	0.061	0.063	0.056
	Xylene	0.069	0.2	0.079	0.081	0.082	0.074
	Methylbenzene	0.2	0.6	0.5	0.4	0.05	0.2
	Hydrogen sulphide	n / a	0.008	0	0	n / a	n / a
The	Inorganic dust 70-20%	0.094	0.3	0.1	0.2	0.1	0.1

boundary of the SPZ (North) Production base	Nitrogen dioxide	0.064	0.2	0.074	0.076	0.077	0.076
	Sulphur dioxide	n / a	0.5	0	0	n / a	n / a
	Carbon oxide	0.76	5.0	0.83	0.85	0.86	0.85
	formaldehyde	0.02	0.051	0.03	0.04	0.03	0.03
	Hydrocarbons C <sub>12</sub> -C <sub>19</sub>	0.089	1	0.096	0.098	0.099	0.099
	Benzene	0.075	0.3	0.083	0.085	0.087	0.085
	Xylene	0.091	0.2	0.098	0.099	0.099	0.094
	Methylbenzene	0.2	0.6	0.3	0.4	0.4	0.3
	Hydrogen sulphide	n / a	0.008	0	0	n / a	n / a
Production base of Karaulkeldy The boundary of the SPZ (South) Production base	Inorganic dust 70-20%	0.096	0.3	0.2	0.2	0.2	0.2
	Nitrogen dioxide	0.066	0.2	0.072	0.074	0.076	0.075
	Sulphur dioxide	n / a	0.5	0	0	n / a	n / a
	Carbon oxide	0.77	5.0	0.84	0.86	0.87	0.86
	formaldehyde	0.03	0.051	0.03	0.03	0.03	0.02
	Hydrocarbons C <sub>12</sub> -C <sub>19</sub>	0.090	1	0.098	0.1	0.1	0.094
	Benzene	0.077	0.3	0.084	0.086	0.088	0.085
	Xylene	0.092	0.2	0.1	0.1	0.1	0.1
	Methylbenzene	0.1	0.6	0.4	0.4	0.3	0.3
	Hydrogen sulphide	n / a	0.008	0	0	n / a	n / a
The boundary of the SPZ (East) Production base	Inorganic dust 70-20%	0.097	0.3	0.2	0.2	0.2	0.2
	Nitrogen dioxide	0.068	0.2	0.073	0.075	0.076	0.075
	Sulphur dioxide	n / a	0.5	0	0	n / a	n / a
	Carbon oxide	0.74	5.0	0.82	0.84	0.85	0.86
	formaldehyde	0.01	0.051	0.03	0.03	0.02	0.02
	Hydrocarbons C <sub>12</sub> -C <sub>19</sub>	0.091	1	0.097	0.099	0.1	0.086
	Benzene	0.097	0.3	0.082	0.084	0.085	0.084
	Xylene	0.095	0.2	0.099	0.1	0.099	0.092
	Methylbenzene	0.3	0.6	0.4	0.4	0.4	0.4
	Hydrogen sulphide	n / a	0.008	0	0	n / a	n / a
The boundary of the SPZ (West) Production base	Inorganic dust 70-20%	0.095	0.3	0.1	0.1	0.1	0.1
	Nitrogen dioxide	0.070	0.2	0.075	0.076	0.078	0.077
	Sulphur dioxide	n / a	0.5	0	0	n / a	n / a
	Carbon oxide	0.80	5.0	0.85	0.86	0.86	0.85
	formaldehyde	0.02	0.051	0.04	0.04	0.04	0.03
	Hydrocarbons C <sub>12</sub> -C <sub>19</sub>	0.092	1	0.097	0.1	0.099	0.099
	Benzene	0.078	0.3	0.084	0.086	0.087	0.08
	Xylene	0.093	0.2	0.099	0.1	0.1	0.1
	Methylbenzene	0.2	0.6	0.3	0.3	0.3	0.3
	Hydrogen sulphide	n / a	0.008	0	0	n / a	n / a

**The results of measurements of atmospheric air in borrow pits Lot 2**

Sampling points	Name of pollutants	Data obtained prior to construction	Norm MPC m.r, mg/m <sup>3</sup>	July 27.07.18	August 30.08.18	September 28.09.18	October 25-26.10.18
Borrow pit No.2	Inorganic dust 70-20%	0.088	0.3	0.095	0.095	0.096	0.090
	Nitrogen dioxide	0.074	0.2	0.088	0.088	0.089	0.082
	Sulphur dioxide	n/d	0.5	0	0	n/d	n/d



	Carbon oxide	1.5	5.0	1.9	1.9	2.0	2.0
	formaldehyde	0.0013	0.051	0.0014	0.0014	0.0015	0.0012
	Hydrocarbons C <sub>12</sub> -C <sub>19</sub>	0.092	1	0.098	0.098	0.099	0.092
	Benzene	0.065	0.3	0.075	0.075	0.075	0.070
	Xylene	0.092	0.2	0.098	0.098	0.098	0.092
	Methylbenzene	0.3	0.6	0.5	0.5	0.4	0.3
	Hydrogen sulphide	n/d	0.008	0	0	n/d	n/d
Borrow pit No.5	Inorganic dust 70-20%	0.090	0.3	0.099	0.090	0.099	0.092
	Nitrogen dioxide	0.081	0.2	0.086	0.085	0.089	0.085
	Sulphur dioxide	n/d	0.5	0	0	n/d	n/d
	Carbon oxide	1.6	5.0	1.9	1.8	2.0	2.0
	formaldehyde	0.0013	0.051	0.0013	0.0013	0.0014	0.0012
	Hydrocarbons C <sub>12</sub> -C <sub>19</sub>	0.094	1	0.1	0.10.070	0.2	0.82
	Benzene	0.072	0.3	0.079	0.095	0.075	0.072
	Xylene	0.095	0.2	0.1	0.4	0.098	0.88
	Methylbenzene	0.3	0.6	0.3	0	0.4	0.3
	Hydrogen sulphide	n/d	0.008	0		n/d	n/d
Borrow pit No.6	Inorganic dust 70-20%	0.090	0.3		0.091	0.093	0.091
	Nitrogen dioxide	0.081	0.2		0.083	0.085	0.084
	Sulphur dioxide	n/d	0.5		0	n/d	n/d
	Carbon oxide	1.6	5.0		1.6	1.7	1.5
	formaldehyde	0.0013	0.051		0.0012	0.0013	0.0014
	Hydrocarbons C <sub>12</sub> -C <sub>19</sub>	0.094	1		0.2	0.3	0.78
	Benzene	0.072	0.3		0.027	0.075	0.068
	Xylene	0.095	0.2		0.093	0.096	0.092
	Methylbenzene	0.3	0.6		0.5	0.4	0.3
	Hydrogen sulphide	n/d	0.008		0	n/d	n/d

**Appendix 11.1.**

**The results of measurements of atmospheric air polluting substances for Lot 2,**

						July		August		September		October	
		MPC	w-w *	l-w*		w-w *	l-w**	w-w *	l-w**	w-w *	l-w**	w-w *	l-w**
Residential area of Karaulkeldy	Inorganic dust 70-20%	0.3	0.0325	0.0328	0.3	0.0337	0.0338	0.034	0.0341	0.0339	0.0342	0.036	0.0340
	Nitrogen dioxide	0.2	0.0254	0.0256	0.2	0.0299	0.03	0.03	0.0302	0.0299	0.030	0.0295	0.0298
	Sulphur dioxide	0.5	n/d	n/d	0.5	0	0	0	0	n/d	n/d	n/d	n/d
	Carbon oxide	5.0	1.4	1.5	5.0	1.6	1.6	1.6	1.7	1.6	1.6	1.5	1.6
	formaldehyde	0.05	0.0012	0.0014	0.051	0.0014	0.0014	0.0015	0.0014	0.0014	0.0014	0.0012	0.0014
	Hydrocarbons C <sub>12</sub> -C <sub>19</sub>	1	0.095	0.0097	1	0.2	0.1	0.1	0.2	0.1	0.1	0.1	0.1
	Hydrogen sulphide	0.008	n/d	n/d	0.008	0	0	0	0	n/d	n/d	n/d	n/d
			w-w *	l-w**		w-w *	l-w**	w-w *	l-w**	w-w *	l-w**	w-w *	l-w**
Residential area of Zharly vill.	Inorganic dust 70-20%	0.3						0034	0.0341	0.0404	0.0392	0.0400	0.0388
	Nitrogen dioxide	0.2						0.03	0.0302	0.0283	0.0283	0.0282	0.0283
	Sulphur dioxide	0.5						0	0	n/d	n/d	n/d	n/d
	Carbon oxide	5.0						1.6	1.7	1.6	1.7	1.5	1.6
	formaldehyde	0.05						0.0015	0.0014	0.0014	0.0015	0.0012	0.0014
	Hydrocarbons C <sub>12</sub> -C <sub>19</sub>	1						0.1	0.2	0.1	0.2	0.1	0.2
	Hydrogen sulphide	0.008						0	0	n/d	n/d	n/d	n/d

\* w-w - windward part

\* l-w - leeward part

n/d – not defined / not found

## Protocols for measuring air pollution

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 Ministry of Transport and Infrastructure of the Republic of Kazakhstan Department for Environmental Protection and Safety	Project Name: Aktobe-Makat Road Reconstruction Project (Section 160-330) Project No.: 160-330 Date: 2018-12-31
Project Manager: [Name] Project Engineer: [Name]	Project Location: Aktobe Region, Aktobe District Project Description: Road reconstruction project (Section 160-330)
Project Start Date: 2018-01-01 Project End Date: 2018-12-31 Project Status: Completed	Project Budget: [Amount] Project Cost: [Amount]
Project Objectives:	Project Results:
Project Description:	Project Description:
Project Description:	Project Description:
Project Description:	Project Description:
Project Description:	Project Description:
Project Description:	Project Description:
Project Description:	Project Description:
Project Description:	Project Description:
Project Description:	Project Description:









**МОН**  
 Министерство  
 транспорта и  
 инфраструктуры  
 Республики  
 Казахстан

**Актюбін ауданы**  
 Ақтөбе-Мақат қосатын жолының  
 160-330 км аралығындағы жолдың  
 реконструкциясы жобасының  
 2-жартыжылдық экологиялық  
 мониторингін туралы  
 2018 жылғы 12 айдың қорытындысы

Құрастырушы: **А.А.А.**  
 Қолданушы: **Б.Б.Б.**

Жобаның мақсаты: жолдың реконструкциясы кезіндегі  
 экологиялық жағдайды бақылау, зиянды әсерлерді  
 бағалау және оларды жоюға қажетті шараларды  
 анықтау.

Мониторингтің мақсаты: жолдың реконструкциясы  
 кезіндегі экологиялық жағдайды бақылау,  
 зиянды әсерлерді бағалау және оларды жоюға  
 қажетті шараларды анықтау.

Мониторингтің объектісі: Ақтөбе-Мақат қосатын  
 жолының 160-330 км аралығындағы жолдың  
 реконструкциясы.

Мониторингтің субъектісі: **А.А.А.**

Мониторингтің объектісі: **Б.Б.Б.**

Мониторингтің субъектісі: **В.В.В.**

Мониторингтің объектісі: **Г.Г.Г.**

Мониторингтің субъектісі: **Д.Д.Д.**

Мониторингтің объектісі: **Е.Е.Е.**

Мониторингтің субъектісі: **Ж.Ж.Ж.**

Мониторингтің объектісі: **З.З.З.**

Мониторингтің субъектісі: **И.И.И.**

Мониторингтің объектісі: **К.К.К.**

Мониторингтің субъектісі: **Л.Л.Л.**

Мониторингтің объектісі: **М.М.М.**

Мониторингтің субъектісі: **Н.Н.Н.**

Мониторингтің объектісі: **О.О.О.**

Мониторингтің субъектісі: **П.П.П.**

Мониторингтің объектісі: **Қ.Қ.Қ.**

Мониторингтің субъектісі: **Р.Р.Р.**

Мониторингтің объектісі: **С.С.С.**

Мониторингтің субъектісі: **Т.Т.Т.**

Мониторингтің объектісі: **У.У.У.**

Мониторингтің субъектісі: **Ф.Ф.Ф.**

Мониторингтің объектісі: **Х.Х.Х.**

Мониторингтің субъектісі: **Ц.Ц.Ц.**

Мониторингтің объектісі: **Ч.Ч.Ч.**

Мониторингтің субъектісі: **Ш.Ш.Ш.**

Мониторингтің объектісі: **Щ.Щ.Щ.**

Мониторингтің субъектісі: **Ъ.Ъ.Ъ.**

Мониторингтің объектісі: **Ы.Ы.Ы.**

Мониторингтің субъектісі: **Э.Э.Э.**

Мониторингтің объектісі: **Ю.Ю.Ю.**

Мониторингтің субъектісі: **Я.Я.Я.**



**MINISTRY OF HEALTH AND FAMILY WELFARE**  
GOVERNMENT OF INDIA

**Form No. 1 (Part A)**  
**Annual Report of the District Health Officer**  
**for the year ending 31st March 1961**

---

**1. Name of the District Health Officer**

**2. Name of the District**

**3. Name of the Division**

**4. Name of the Sub-division**

**5. Name of the Block**

**6. Name of the Panchayat**

**7. Name of the Village**

**8. Name of the Hamlet**

**9. Name of the Locality**

**10. Name of the Settlement**

**11. Name of the Estate**

**12. Name of the Land**

**13. Name of the Building**

**14. Name of the Furniture**

**15. Name of the Vehicle**

**16. Name of the Animal**

**17. Name of the Plant**

**18. Name of the Tree**

**19. Name of the Flower**

**20. Name of the Fruit**

**21. Name of the Vegetable**

**22. Name of the Grain**

**23. Name of the Oil**

**24. Name of the Sugar**

**25. Name of the Salt**

**26. Name of the Cloth**

**27. Name of the Paper**

**28. Name of the Ink**

**29. Name of the Pen**

**30. Name of the Book**

**31. Name of the Map**

**32. Name of the Chart**

**33. Name of the Table**

**34. Name of the Chair**

**35. Name of the Bed**

**36. Name of the Sofa**

**37. Name of the Lamp**

**38. Name of the Fan**

**39. Name of the Mirror**

**40. Name of the Clock**

**41. Name of the Calendar**

**42. Name of the Diary**

**43. Name of the Notebook**

**44. Name of the Ledger**

**45. Name of the Account Book**

**46. Name of the Receipt Book**

**47. Name of the Invoice Book**

**48. Name of the Order Book**

**49. Name of the Delivery Book**

**50. Name of the Receipt Book**

**1. Name of the District Health Officer**

**2. Name of the District**

**3. Name of the Division**

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**18. Name of the Tree**

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**27. Name of the Paper**

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**40. Name of the Clock**

**41. Name of the Calendar**

**42. Name of the Diary**

**43. Name of the Notebook**

**44. Name of the Ledger**

**45. Name of the Account Book**

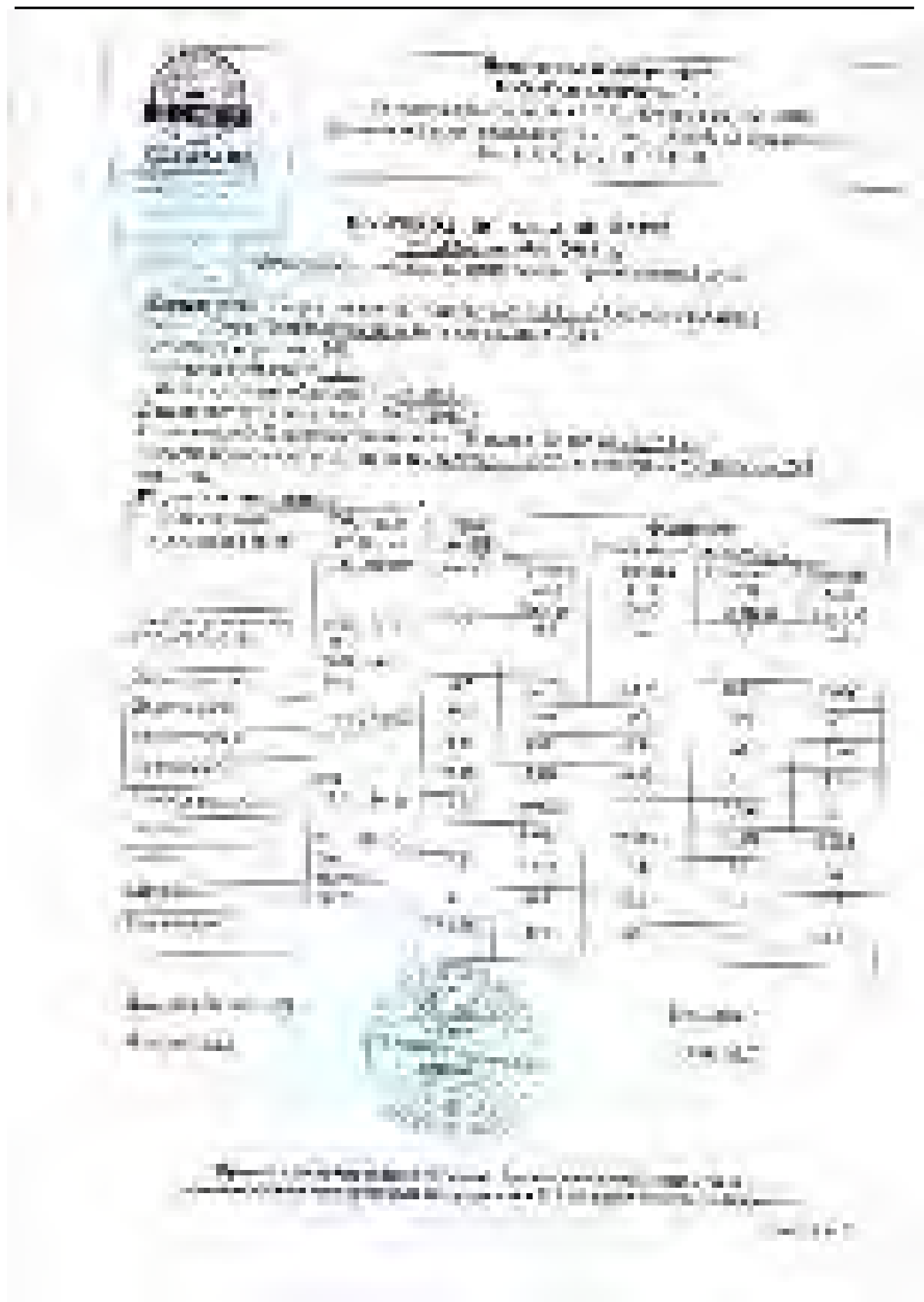
**46. Name of the Receipt Book**

**47. Name of the Invoice Book**

**48. Name of the Order Book**

**49. Name of the Delivery Book**

**50. Name of the Receipt Book**





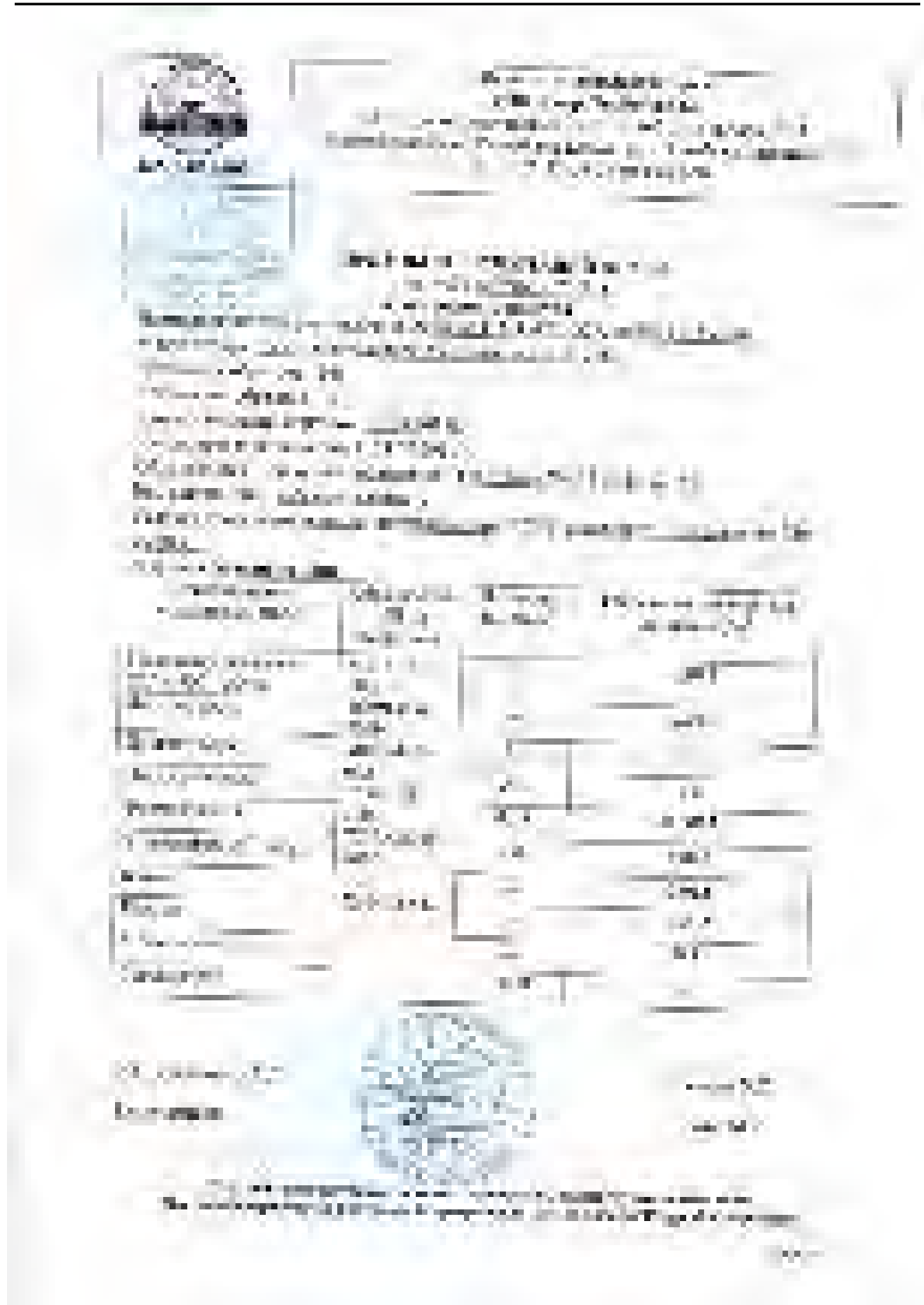






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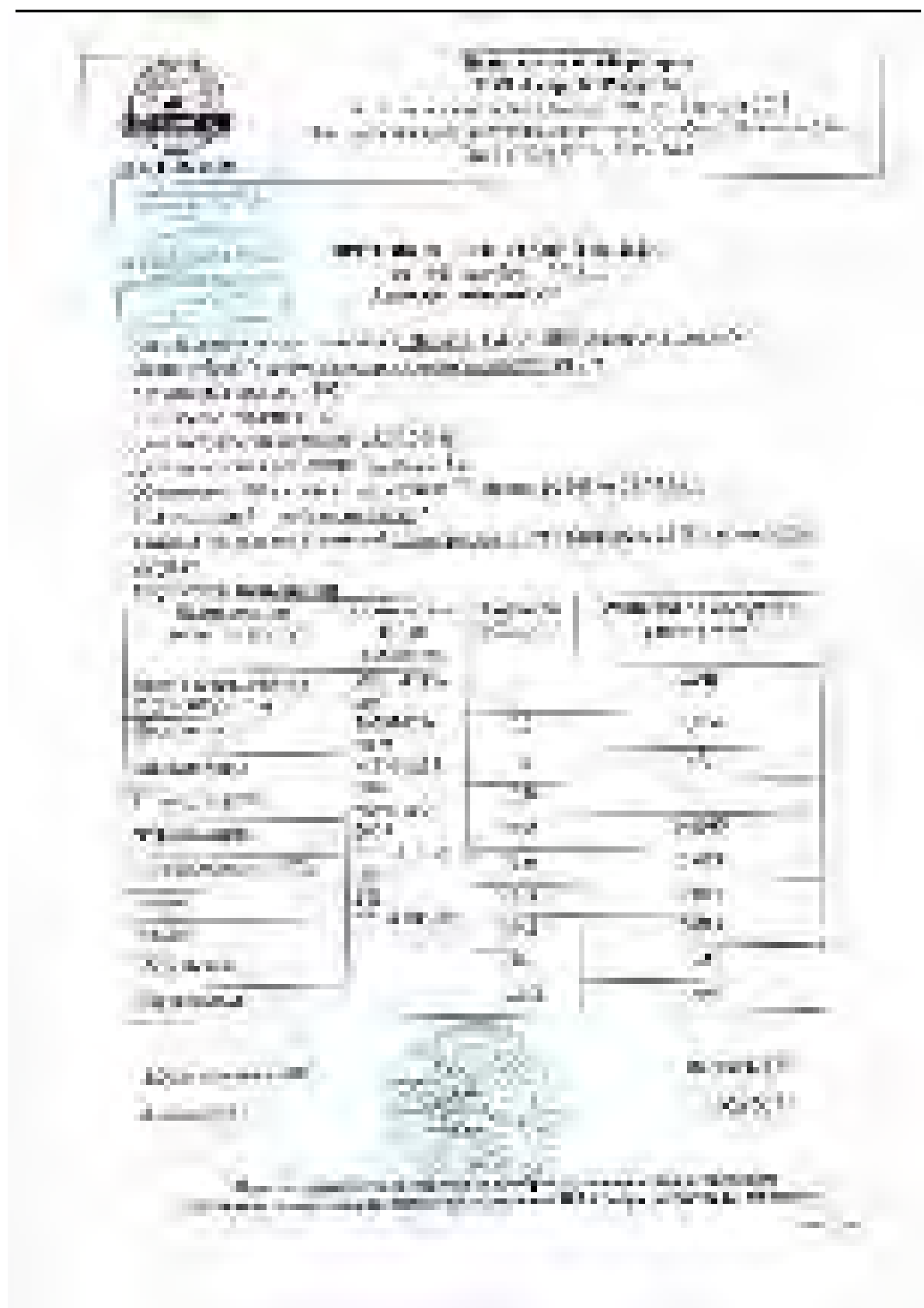


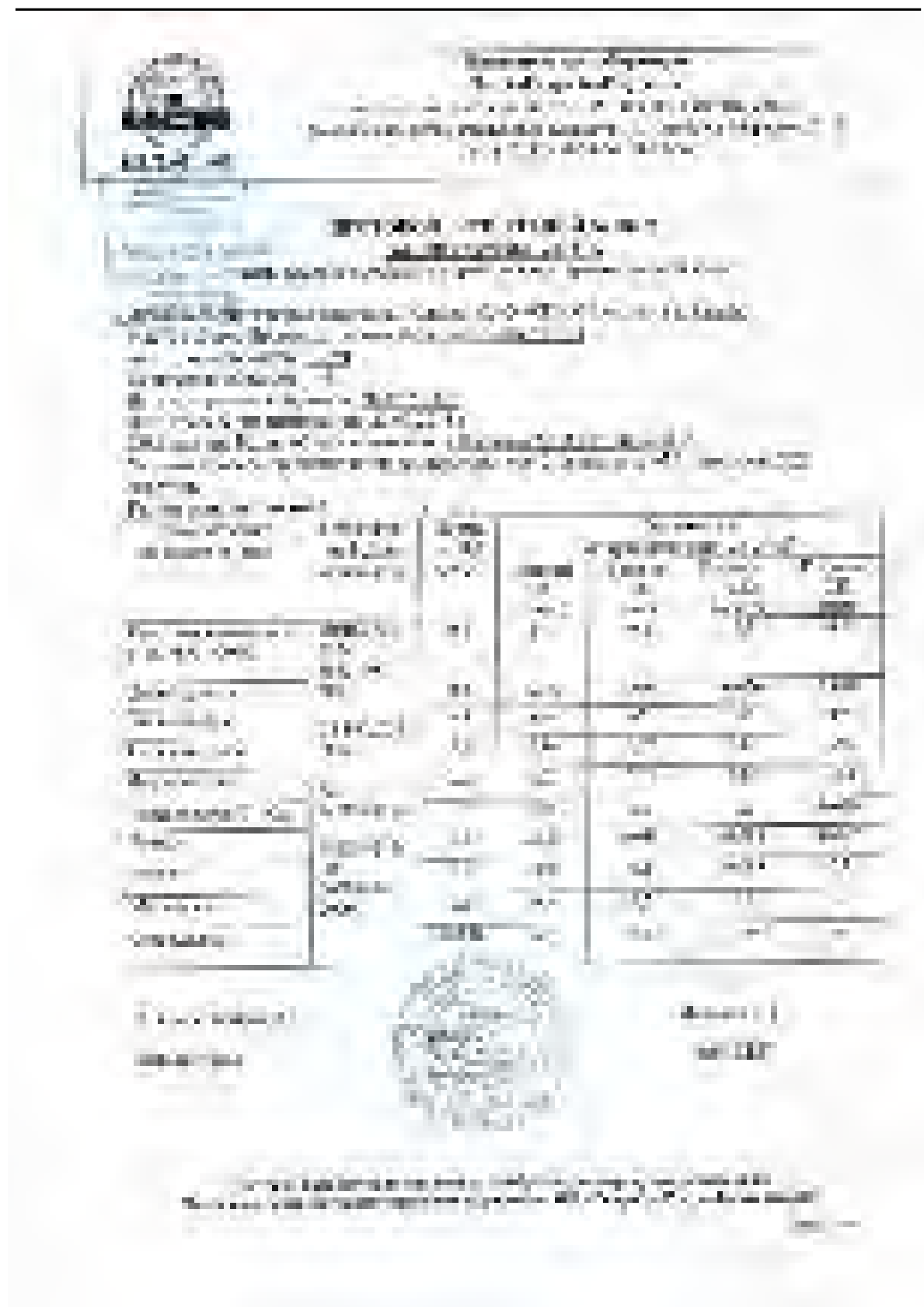


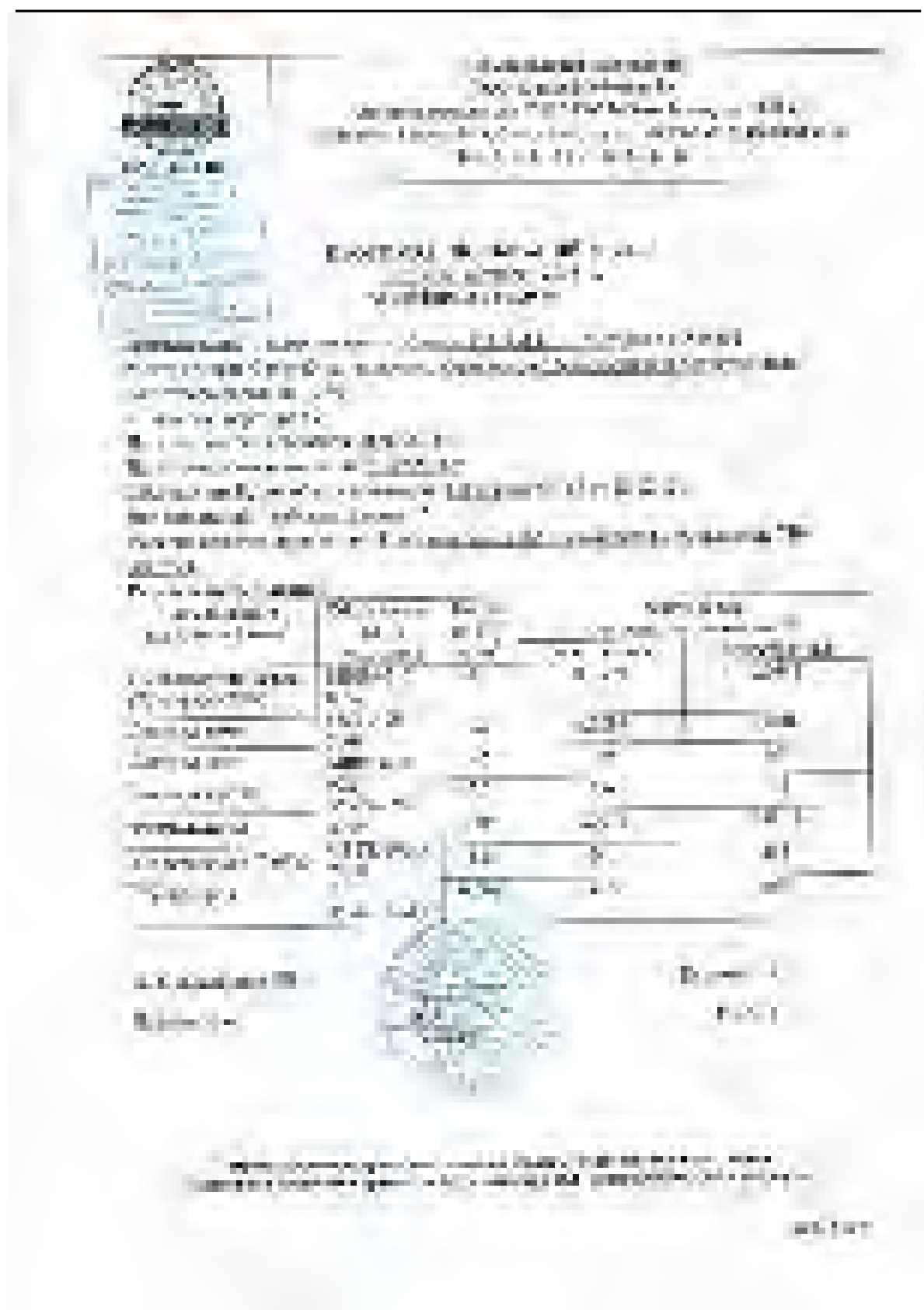















Министерство транспорта и инфраструктуры  
 Республики Казахстан

Акционерное общество «Актюбеский районный дорожный ремонтно-строительный отдел»

«Актюбеский районный дорожный ремонтно-строительный отдел»

**Справка об экологическом мониторинге**

по объекту: «Реконструкция автомобильной дороги «Актюба – Макат» (участок 160-330)»

по состоянию на: 30.06.2018 г.

в городе: Актюба

**Выводы:**

В ходе проведения экологического мониторинга в течение 2-х месяцев (с 01.05.2018 по 30.06.2018 г.) в районе проведения работ по реконструкции автомобильной дороги «Актюба – Макат» (участок 160-330) не выявлено негативных изменений в состоянии окружающей среды.

Состояние окружающей среды в районе проведения работ по реконструкции автомобильной дороги «Актюба – Макат» (участок 160-330) соответствует фоновому уровню.


В ходе проведения работ по реконструкции автомобильной дороги «Актюба – Макат» (участок 160-330) не выявлено негативных изменений в состоянии окружающей среды.

В ходе проведения работ по реконструкции автомобильной дороги «Актюба – Макат» (участок 160-330) не выявлено негативных изменений в состоянии окружающей среды.

Наименование объекта мониторинга	Единица измерения	Значение фоновых данных	Значения фоновых данных	
			по состоянию на 01.05.2018 г.	по состоянию на 30.06.2018 г.
Воздух (атмосферный)	мг/м³	0,1	0,1	0,1
Вода (поверхностная)	мг/л	0,1	0,1	0,1
Почва (поверхностная)	мг/кг	0,1	0,1	0,1
Растительность	шт./га	100	100	100
Животный мир	шт./га	100	100	100
Лесной фонд	га	100	100	100
Водный фонд	га	100	100	100
Земельный фонд	га	100	100	100
Объекты культурного наследия	шт.	100	100	100
Объекты культурного наследия	шт.	100	100	100

Исполнитель:

\_\_\_\_\_



Подпись:

\_\_\_\_\_

Справка об экологическом мониторинге

по объекту: «Реконструкция автомобильной дороги «Актюба – Макат» (участок 160-330)»

по состоянию на: 30.06.2018 г.

в городе: Актюба



**स्वास्थ्य विभाग, भारत सरकार**  
**Health Department, Government of India**

---

**स्वास्थ्य विभाग, भारत सरकार**  
**Health Department, Government of India**

**स्वास्थ्य विभाग, भारत सरकार**  
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**स्वास्थ्य विभाग, भारत सरकार**  
**Health Department, Government of India**

**स्वास्थ्य विभाग, भारत सरकार**  
**Health Department, Government of India**

**स्वास्थ्य विभाग, भारत सरकार**  
**Health Department, Government of India**





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 <div> <p>GOVERNMENT OF INDIA MINISTRY OF HEALTH AND FAMILY WELFARE GOVERNMENT OF INDIA MINISTRY OF HEALTH AND FAMILY WELFARE GOVERNMENT OF INDIA MINISTRY OF HEALTH AND FAMILY WELFARE</p> </div>	
<p><b>STATEMENT OF WORKING CAPITAL</b></p> <p>For the year ending 31st March 1967</p>	
<p>1. <b>Fixed Capital</b></p> <p>(a) Land and buildings</p> <p>(b) Plant and machinery</p> <p>(c) Furniture and fixtures</p> <p>(d) Motor vehicles</p> <p>(e) Other tangible assets</p>	
<p>2. <b>Current Capital</b></p> <p>(a) Trade receivables</p> <p>(b) Trade payables</p> <p>(c) Debtors</p> <p>(d) Creditors</p> <p>(e) Other current assets</p> <p>(f) Other current liabilities</p>	
<p>3. <b>Working Capital</b></p> <p>(a) Fixed Capital</p> <p>(b) Current Capital</p>	
<p>4. <b>Total Capital</b></p> <p>(a) Fixed Capital</p> <p>(b) Current Capital</p>	
<p>5. <b>Working Capital</b></p> <p>(a) Fixed Capital</p> <p>(b) Current Capital</p>	
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<p>8. <b>Total Capital</b></p> <p>(a) Fixed Capital</p> <p>(b) Current Capital</p>	
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<p>15. <b>Working Capital</b></p> <p>(a) Fixed Capital</p> <p>(b) Current Capital</p>	
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<p>72. <b>Total Capital</b></p> <p>(a) Fixed Capital</p> <p>(b) Current Capital</p>	
<p>73. <b>Working Capital</b></p>	

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<sup>11</sup> See, e.g., *United States v. Gurnea*, 199 F.3d 1005, 1010 (9th Cir. 2000) (quoting *United States v. Gurnea*, 199 F.3d 1005, 1010 (9th Cir. 2000)).

100



**Ministry of Health and Family Welfare**  
Government of India

**Form No. 1 (A) - 1974**

**Annual Report of the District Health Officer**

**For the year ending 31st March 1975**

**1. Name of the District Health Officer:** \_\_\_\_\_

**2. Name of the District:** \_\_\_\_\_

**3. Name of the State:** \_\_\_\_\_

**4. Name of the Union Territory:** \_\_\_\_\_

**5. Name of the Sub-Division:** \_\_\_\_\_

**6. Name of the Block:** \_\_\_\_\_

**7. Name of the Panchayat Union:** \_\_\_\_\_

**8. Name of the Village:** \_\_\_\_\_

**9. Name of the Gram Panchayat:** \_\_\_\_\_

**10. Name of the Gram Sabha:** \_\_\_\_\_

**11. Name of the Gram Panchayat Office:** \_\_\_\_\_

**12. Name of the Gram Panchayat Office:** \_\_\_\_\_

**13. Name of the Gram Panchayat Office:** \_\_\_\_\_

**14. Name of the Gram Panchayat Office:** \_\_\_\_\_

**15. Name of the Gram Panchayat Office:** \_\_\_\_\_

**16. Name of the Gram Panchayat Office:** \_\_\_\_\_

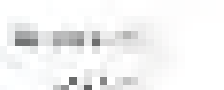
**17. Name of the Gram Panchayat Office:** \_\_\_\_\_

**18. Name of the Gram Panchayat Office:** \_\_\_\_\_

**19. Name of the Gram Panchayat Office:** \_\_\_\_\_

**20. Name of the Gram Panchayat Office:** \_\_\_\_\_

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**Ministry of Health and Family Welfare**  
Government of India

**Annual Report of the Government of India**  
for the year 1960-61

**Part I**

**General Information**

1. Name of the institution: **Ministry of Health and Family Welfare, Government of India**

2. Address: **Ministry of Health and Family Welfare, Government of India, New Delhi**

3. Telephone: **2331**

4. Telegram: **Health, New Delhi**

5. Cable: **Health, New Delhi**

6. Post Office: **Ministry of Health and Family Welfare, Government of India, New Delhi**

7. Branches: **Ministry of Health and Family Welfare, Government of India, New Delhi**

8. Other: **Ministry of Health and Family Welfare, Government of India, New Delhi**

**Part II**

**Financial Statement**

Particulars	Amount in Rs.	Amount in Rs.			
		1960-61	1959-60	1958-59	1957-58
Revenue	1000000	1000000	1000000	1000000	1000000
Capital	1000000	1000000	1000000	1000000	1000000
Grants-in-aid	1000000	1000000	1000000	1000000	1000000
Other	1000000	1000000	1000000	1000000	1000000
<b>Total</b>	<b>4000000</b>	<b>4000000</b>	<b>4000000</b>	<b>4000000</b>	<b>4000000</b>

**Part III**

**Administrative Information**

1. Name of the institution: **Ministry of Health and Family Welfare, Government of India**

2. Address: **Ministry of Health and Family Welfare, Government of India, New Delhi**

3. Telephone: **2331**

4. Telegram: **Health, New Delhi**

5. Cable: **Health, New Delhi**

6. Post Office: **Ministry of Health and Family Welfare, Government of India, New Delhi**

7. Branches: **Ministry of Health and Family Welfare, Government of India, New Delhi**

8. Other: **Ministry of Health and Family Welfare, Government of India, New Delhi**

**Part IV**

**Technical Information**

1. Name of the institution: **Ministry of Health and Family Welfare, Government of India**

2. Address: **Ministry of Health and Family Welfare, Government of India, New Delhi**

3. Telephone: **2331**

4. Telegram: **Health, New Delhi**

5. Cable: **Health, New Delhi**

6. Post Office: **Ministry of Health and Family Welfare, Government of India, New Delhi**

7. Branches: **Ministry of Health and Family Welfare, Government of India, New Delhi**

8. Other: **Ministry of Health and Family Welfare, Government of India, New Delhi**



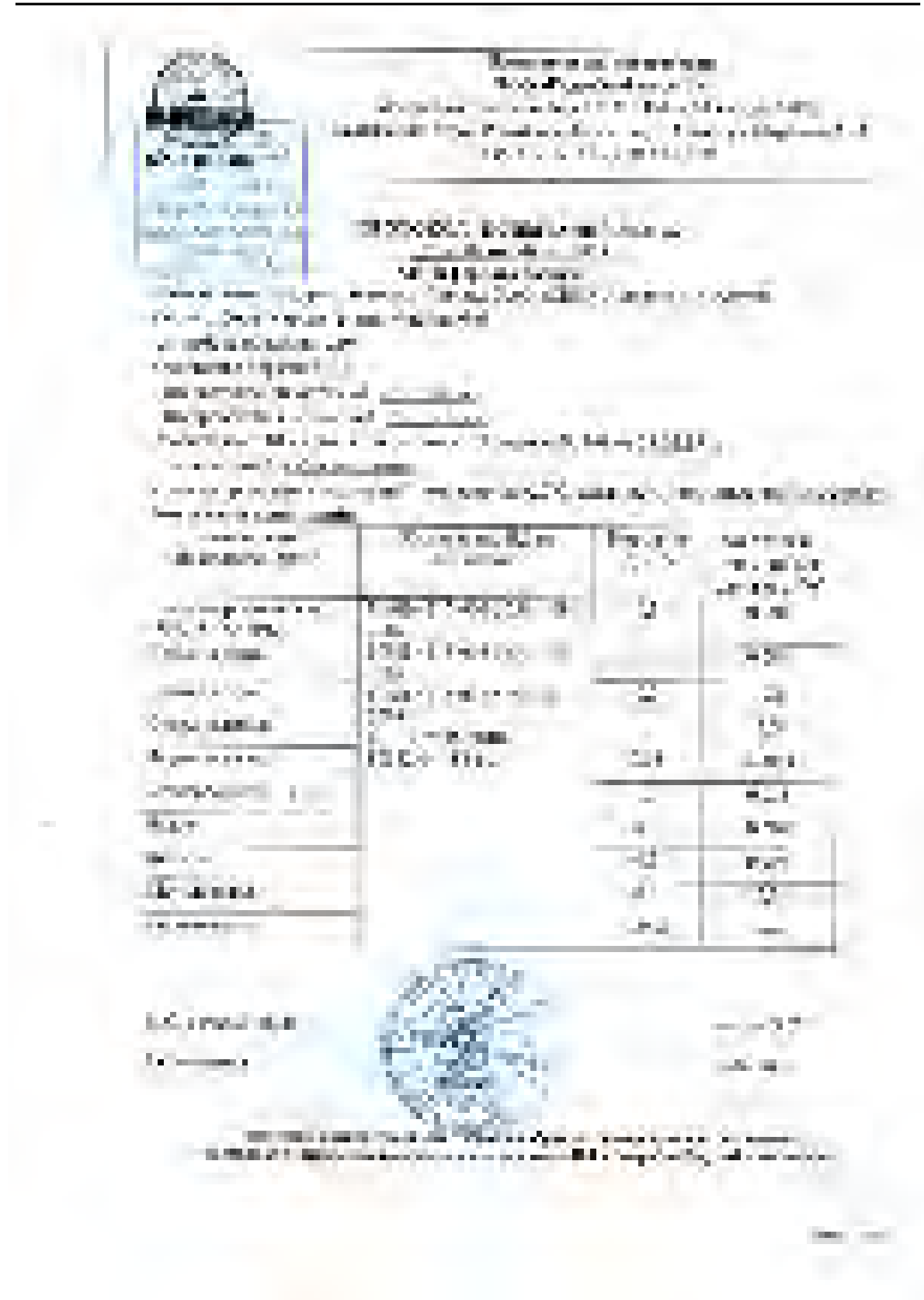
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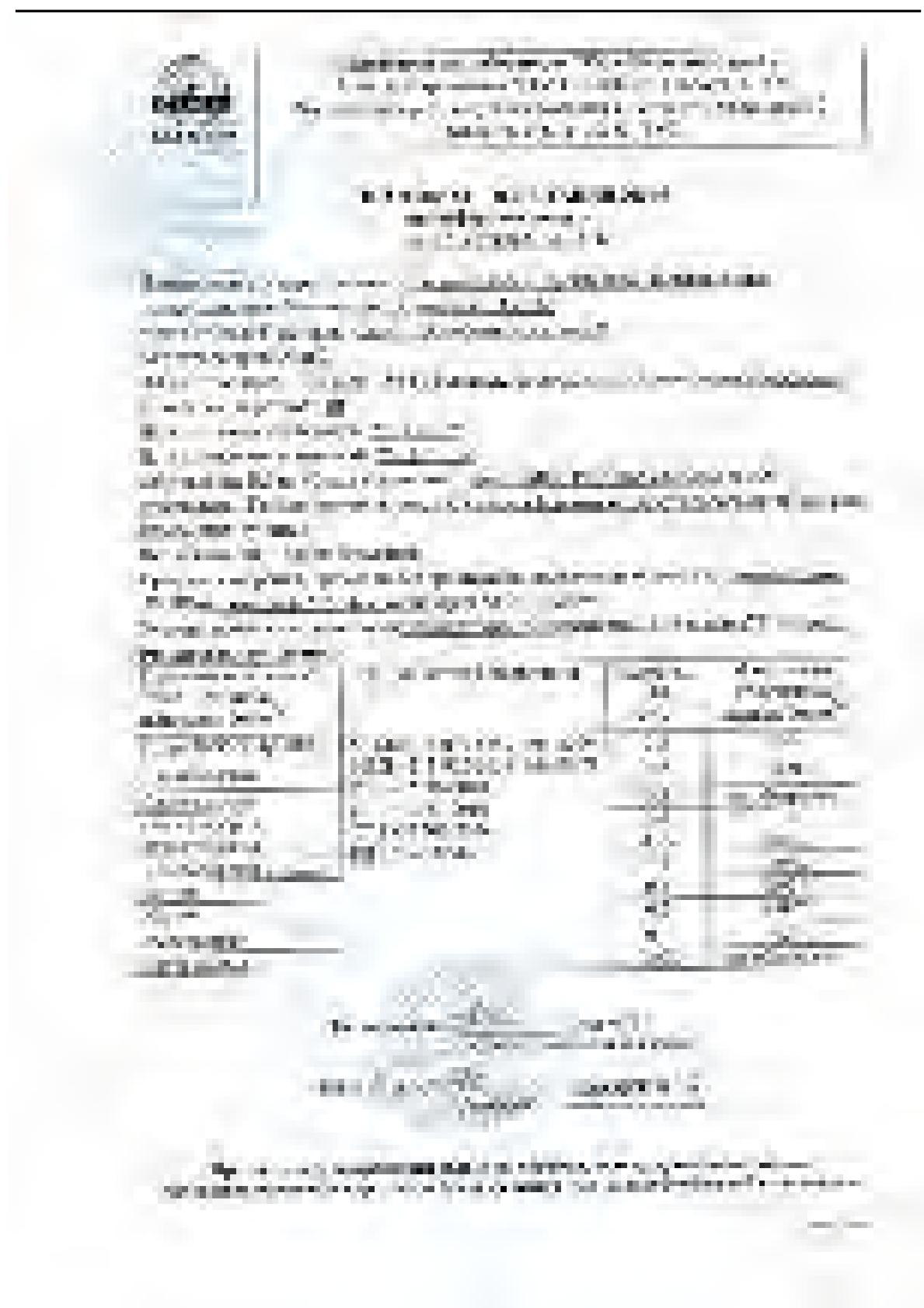




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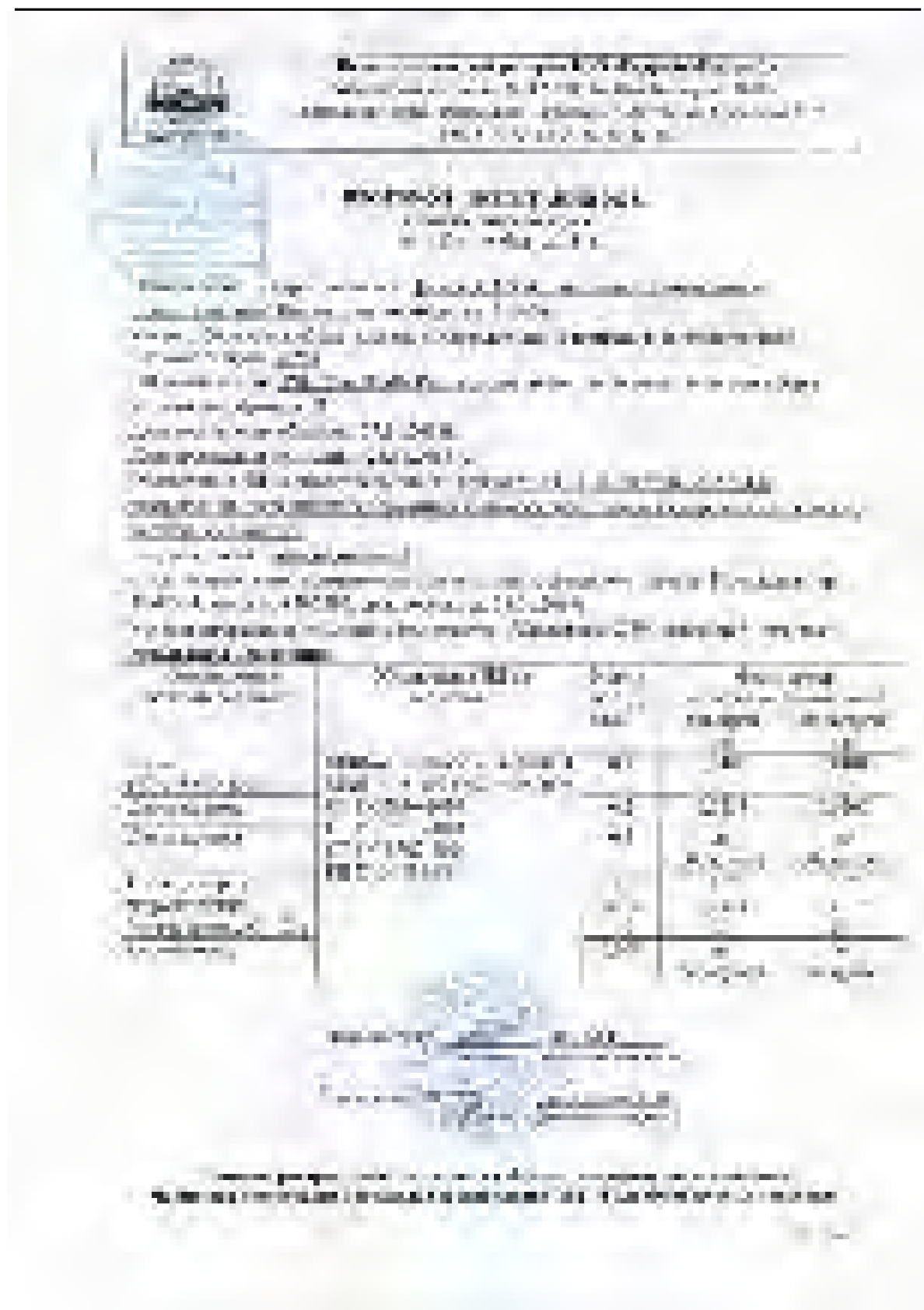














Ministry of Transport and Infrastructure of the Republic of Kazakhstan  
 Department for Environmental Protection and Safety  
 Department for Environmental Protection and Safety  
 Department for Environmental Protection and Safety

**ACTOBE-MAKAT ROAD RECONSTRUCTION PROJECT**

Environmental Monitoring Report

for the period of 1st half of 2018

The purpose of the report is to inform the public about the results of the environmental monitoring carried out in the Aktobe-Makat road reconstruction project for the period of the 1st half of 2018.

The report is prepared in accordance with the requirements of the Law of the Republic of Kazakhstan "On Environmental Protection" and the Order of the Ministry of Transport and Infrastructure of the Republic of Kazakhstan "On the Procedure for Conducting Environmental Monitoring".

The report contains information on the results of the monitoring of the environment in the Aktobe-Makat road reconstruction project for the period of the 1st half of 2018.

The report is prepared by the Department for Environmental Protection and Safety of the Ministry of Transport and Infrastructure of the Republic of Kazakhstan.

The report is approved by the Department for Environmental Protection and Safety of the Ministry of Transport and Infrastructure of the Republic of Kazakhstan.

The report is signed by the Head of the Department for Environmental Protection and Safety of the Ministry of Transport and Infrastructure of the Republic of Kazakhstan.

Object of monitoring	Monitoring results	Monitoring date	Monitoring method
Atmosphere	Concentration of pollutants in the air (PM <sub>10</sub> , PM <sub>2.5</sub> , SO <sub>2</sub> , NO <sub>2</sub> , CO, O <sub>3</sub> )	01.07.2018	Automatic monitoring system
Water	Quality of water in the Aktobe-Makat road reconstruction project (pH, temperature, conductivity, etc.)	01.07.2018	Manual monitoring
Soil	Quality of soil in the Aktobe-Makat road reconstruction project (pH, moisture, etc.)	01.07.2018	Manual monitoring
Biota	Presence of flora and fauna in the Aktobe-Makat road reconstruction project	01.07.2018	Visual monitoring
Noise	Level of noise in the Aktobe-Makat road reconstruction project	01.07.2018	Manual monitoring
Climate	Temperature, humidity, wind speed, etc.	01.07.2018	Automatic monitoring system
Other	Other information related to the environment	01.07.2018	Manual monitoring

The results of the monitoring show that the environment in the Aktobe-Makat road reconstruction project is in good condition. The concentration of pollutants in the air is within the limits of the maximum allowable concentrations (MAC). The quality of water in the Aktobe-Makat road reconstruction project is also within the limits of the MAC. The quality of soil in the Aktobe-Makat road reconstruction project is also within the limits of the MAC. The presence of flora and fauna in the Aktobe-Makat road reconstruction project is also within the limits of the MAC. The level of noise in the Aktobe-Makat road reconstruction project is also within the limits of the MAC. The temperature, humidity, wind speed, etc. are also within the limits of the MAC.

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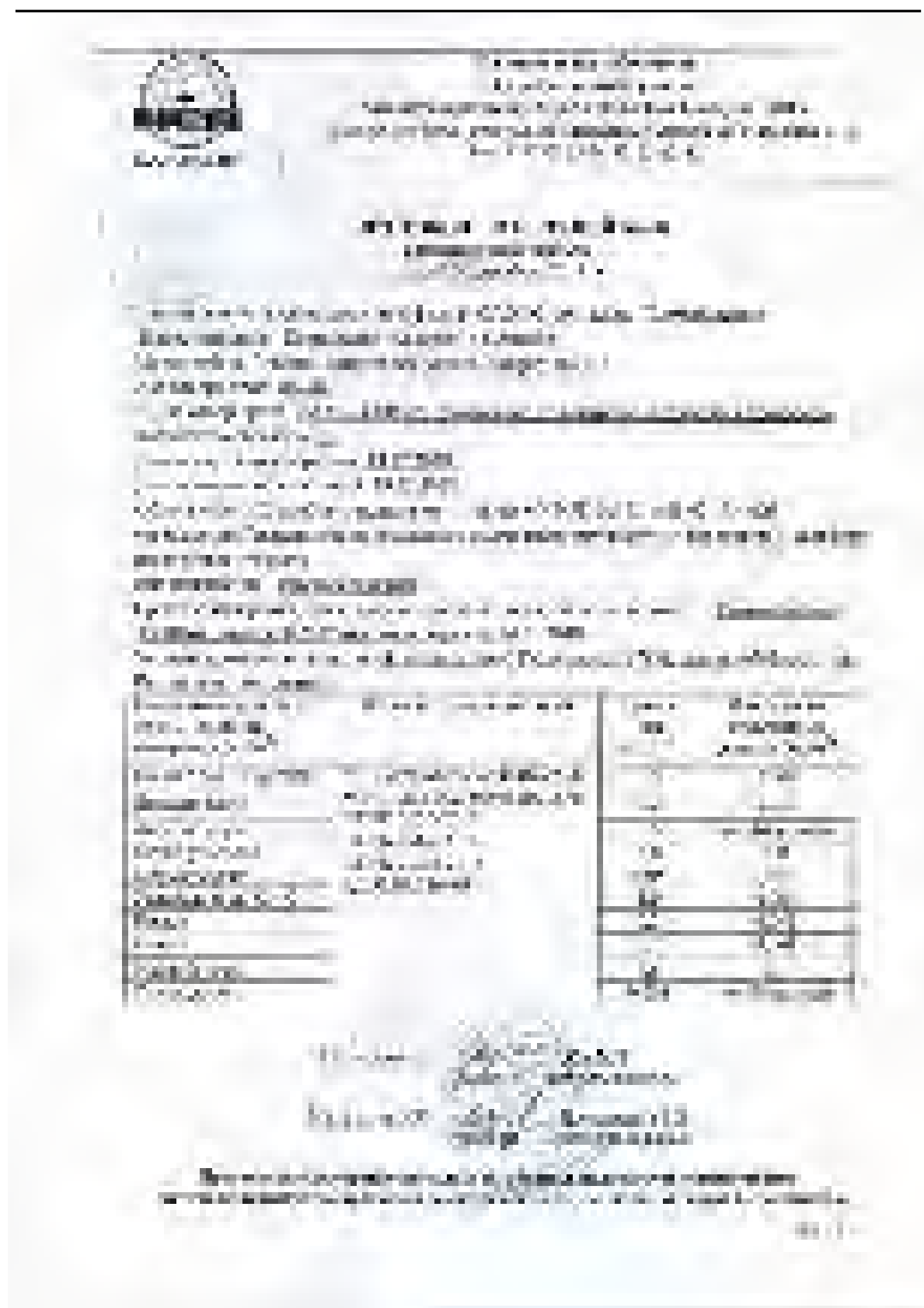
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**Ministry of Health and Family Welfare**  
Government of India

**Annual Report 2011-12**

**Part A: General Information**

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**State/Union Territory: Andhra Pradesh**

**Department: Health and Family Welfare**

**Office: Health and Family Welfare Officer, Hyderabad**

**1. Name of the Project: Strengthening of Health and Family Welfare Services in Rural Areas**

**2. Objectives of the Project: To improve the health and family welfare services in rural areas by providing essential services, health education, and family planning services.**

**3. Justification: The project is justified as it aims to improve the health and family welfare services in rural areas, which are currently under-served. The project will provide essential services, health education, and family planning services, which are essential for the health and well-being of the population.**

**4. Budget: The total budget for the project is Rs. 100.00 Lakhs. The budget is divided into three main components: Personnel (Rs. 40.00 Lakhs), Materials (Rs. 30.00 Lakhs), and Other (Rs. 30.00 Lakhs).**

**5. Implementation: The project will be implemented over a period of 12 months. The implementation will be carried out by the Health and Family Welfare Officer, Hyderabad, and the District Health and Family Welfare Officers, Hyderabad.**

**6. Monitoring and Evaluation: The project will be monitored and evaluated by the Health and Family Welfare Officer, Hyderabad, and the District Health and Family Welfare Officers, Hyderabad.**

**7. Conclusion: The project is a feasible and viable project that will improve the health and family welfare services in rural areas. The project will provide essential services, health education, and family planning services, which are essential for the health and well-being of the population.**

**Signature of the Project Officer: [Signature]**

**Name: Dr. [Name]**

**Designation: Health and Family Welfare Officer, Hyderabad**

**Address: [Address]**

**Phone: [Phone]**

**E-mail: [Email]**

**Signature of the Project Officer: [Signature]**

**Name: Dr. [Name]**

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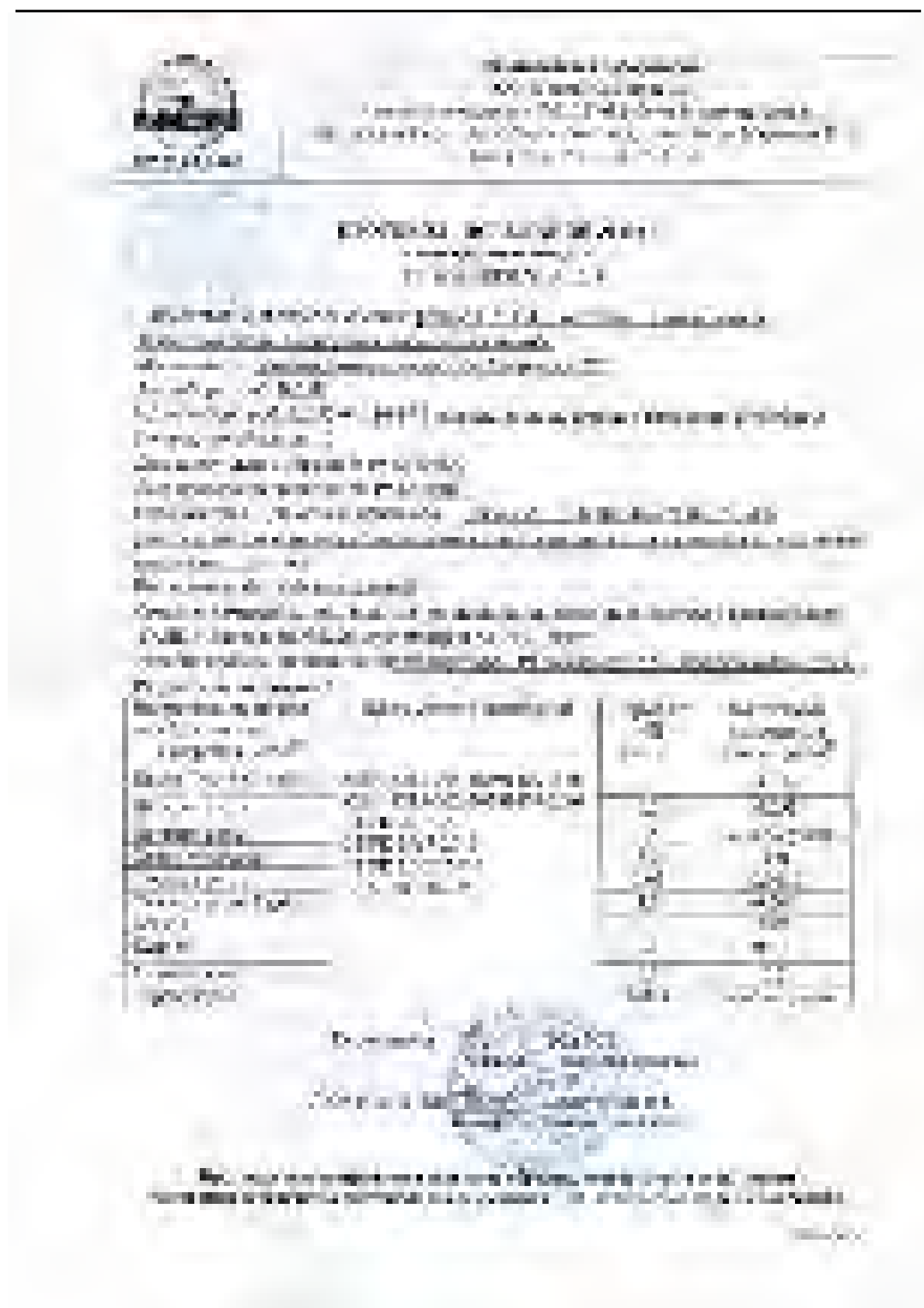
**E-mail: [Email]**

**Signature of the Project Officer: [Signature]**

**Name: Dr. [Name]**

**Designation: Health and Family Welfare Officer, Hyderabad**





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	<p>ҚАЗАҚСТАН РЕСПУБЛИКАСЫНЫҢ              ТРАНСПОРТ ЖӘНЕ              ИНФРАСТРУКТУРА МИНИСТРЛІГІ</p> <p>Қазақстан Республикасының Тұрақты Әрі Қысқартылған              Әрі Қысқартылған Әрі Қысқартылған Әрі Қысқартылған              Әрі Қысқартылған Әрі Қысқартылған Әрі Қысқартылған</p>
	<p>ҚАЗАҚСТАН РЕСПУБЛИКАСЫНЫҢ              ТРАНСПОРТ ЖӘНЕ              ИНФРАСТРУКТУРА МИНИСТРЛІГІ</p>
	<p>ҚАЗАҚСТАН РЕСПУБЛИКАСЫНЫҢ              ТРАНСПОРТ ЖӘНЕ              ИНФРАСТРУКТУРА МИНИСТРЛІГІ</p>
	<p>ҚАЗАҚСТАН РЕСПУБЛИКАСЫНЫҢ              ТРАНСПОРТ ЖӘНЕ              ИНФРАСТРУКТУРА МИНИСТРЛІГІ</p>
	<p>ҚАЗАҚСТАН РЕСПУБЛИКАСЫНЫҢ              ТРАНСПОРТ ЖӘНЕ              ИНФРАСТРУКТУРА МИНИСТРЛІГІ</p>
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<p>ҚАЗАҚСТАН РЕСПУБЛИКАСЫНЫҢ              ТРАНСПОРТ ЖӘНЕ              ИНФРАСТРУКТУРА МИНИСТРЛІГІ</p>	<p>ҚАЗАҚСТАН РЕСПУБЛИКАСЫНЫҢ              ТРАНСПОРТ ЖӘНЕ              ИНФРАСТРУКТУРА МИНИСТРЛІГІ</p>





Министерство транспорта и инфраструктуры  
 Республики Казахстан  
 Департамент автомобильных дорог  
 Департамент автомобильных дорог  
 Департамент автомобильных дорог

**СВЕДЕНИЯ ОБ ОБЪЕКТЕ МОНИТОРИНГА**  
 (наименование объекта, адрес, координаты, дата начала работ)

**ОБЪЕКТ МОНИТОРИНГА**  
 (наименование объекта, адрес, координаты, дата начала работ)

Описание объекта: ...

Адрес: ...

Координаты: ...

Дата начала работ: ...

Исполнитель: ...

Содержание работ: ...

Цели и задачи: ...

Методы исследования: ...

Результаты: ...

Выводы: ...

Рекомендации: ...

Подпись: ...

Дата: ...

Наименование объекта	Адрес	Координаты	Средние значения	
			Среднее значение	Среднее значение
Воздух	...	...	...	...
Вода	...	...	...	...
Почва	...	...	...	...
Биота	...	...	...	...
Шум	...	...	...	...
Вибрация	...	...	...	...
Радиация	...	...	...	...
Электромагнитное поле	...	...	...	...
Тепловое загрязнение	...	...	...	...
Загрязнение атмосферы	...	...	...	...
Загрязнение водных объектов	...	...	...	...
Загрязнение почв	...	...	...	...
Загрязнение биоты	...	...	...	...
Загрязнение шумом	...	...	...	...
Загрязнение вибрацией	...	...	...	...
Загрязнение радиацией	...	...	...	...
Загрязнение электромагнитным полем	...	...	...	...
Загрязнение тепловым загрязнением	...	...	...	...

251





Permit documents for Lot 3

Document title	Document information and status
Road " Aktobe-Makat-km	Permission for emissions into the environment № KZ 10VD00092057 dated 12.04.2018.
"Environmental impact assessment (EIA)" of the project	Received 30.05.2018 KZ65VDC00070584
act on the right of permanent land use on the land area 62.24 ha for the reconstruction of the road "Aktobe-Atyrau-border of Russian (Astrakhan)	Documentation submitted by the Customer as part of the tender documentation
Borrow pits and the status of work on them	Permission KZ65VDC00070584 dated 30.05.2018 for a borrow pits in Baygany region from 1 to 8 borrow pits. Permission KZ46VDD00096356 dated 11.07.2018 for borrow pits No. 9-19 Permission for development and production obtained 30.05.2018 for a period of up to 30.07.2020
Environmental monitoring	A contract with "HydroEcoResource –L" LLP on April 17, 2018. The laboratory has certificate of accreditation KZ.I. 05. dated 17.04.2013 The Data obtained prior to construction report submitted on 21.05.2018
Services for the removal, disposal of solid waste and other waste	Agreement with "Ecological technologies-XXI" LLP dated 2.05.2018 for the removal and subsequent disposal of 11 types of waste
The EMP with 10 action Plans for environmental protection	Detailed EMP approved on 19.07.2018
For special water use	Bore of technical water on the CH 440+00 On the CH 270+00 in Production base is a well for Drinking water and for technical needs Up to 50 cubic meters per day special water is not issued. 2 hydrological wells were drilled and 2 more wells at the drilling stage. Contract №01 dated 02.04.2018 and additional agreement №1 to the cont. №1 dated 02.2018

**Results of Noise and Vibration measurements,  
 2018 year, Lot 3**

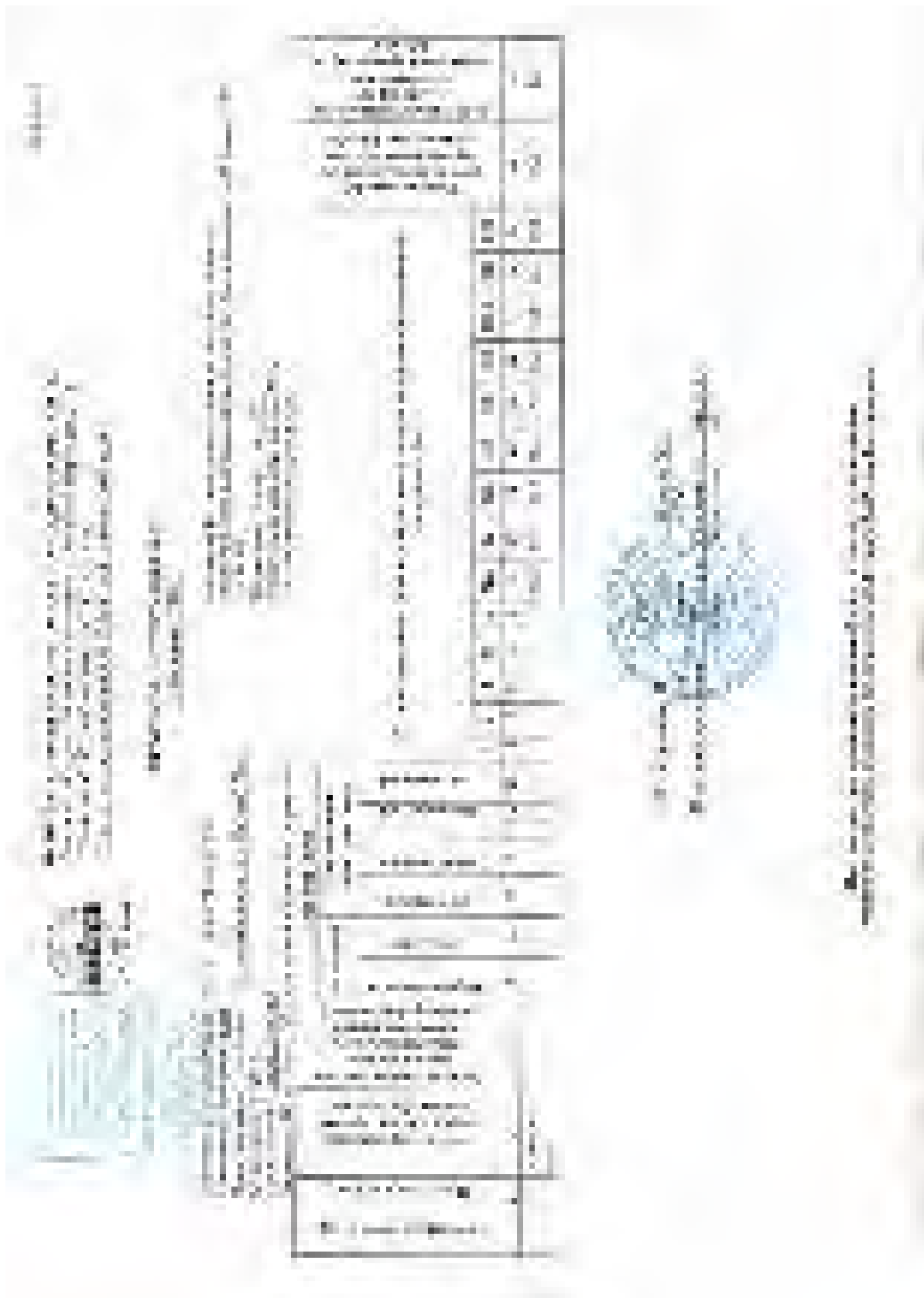
Place / points of measurements	Data obtained prior to construction	July 27-31.07.18	August 29.08.18	September 27.09.18	October 30-31.10.18	November 26.11.18
Residential area of Zharly village	37.9	38.4	-	-	38.2	37.6
Residential area of Nogayty vill.	38.0	38.5				36.8
Production base Nogayty vill.	38.4	38.7			38.2	39.1
km 275	38.4				38.2	
km 285	38.3					
km 290 (without Data obtained prior to construction log)		38.8			38.4	37.1
km 295	38.5					
km 300	38.7					
km 310	38.9					
km 320	39.4					
km 330	40.01	41.5			40.6	38.9

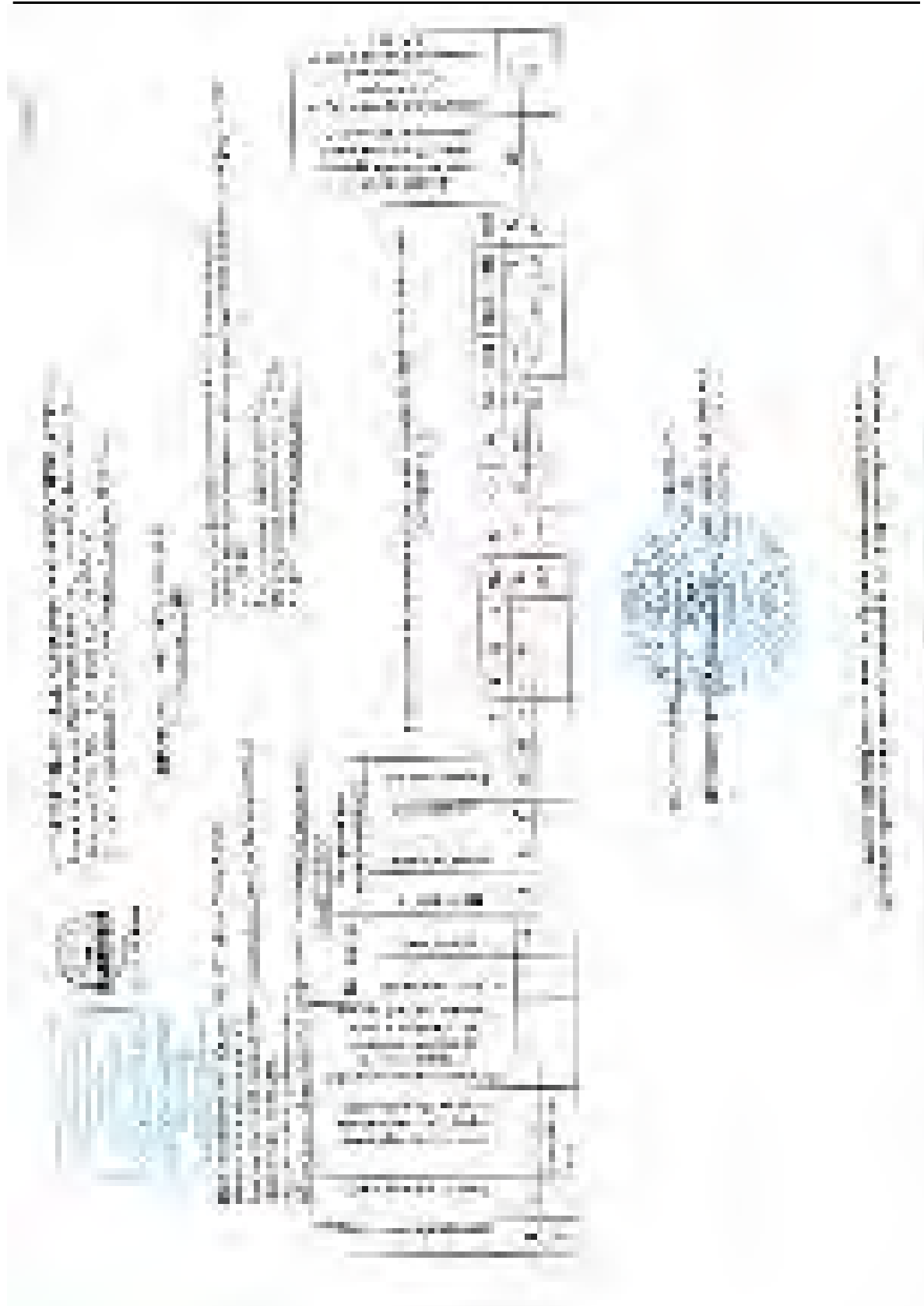
**Equivalent vibration acceleration level (dB) permissible - 95 dB**

Place / points of measurements	Data obtained prior to construction	July	August 29.08.18	September	October	November
Residential area of Zharly village	53.6	55.3		55.6	55.2	58.2
Residential area of Nogayty vill.	53.4	55.4	55.3	55.6	56.2	56.6
Production base Nogayty vill.	53.4	55.8	55.9	56.1	56.6	51.4
km 275	53.6		55.4			
km 285	52.6					
Km 290	no	54.1	54.3	54.5	54.8	54.8
km 295	52.7					
km 300	53.2					
km 310	53.4					
km 320	53.6					
km 330	53.7	53.6	54.4	55.3	55.0	62.0

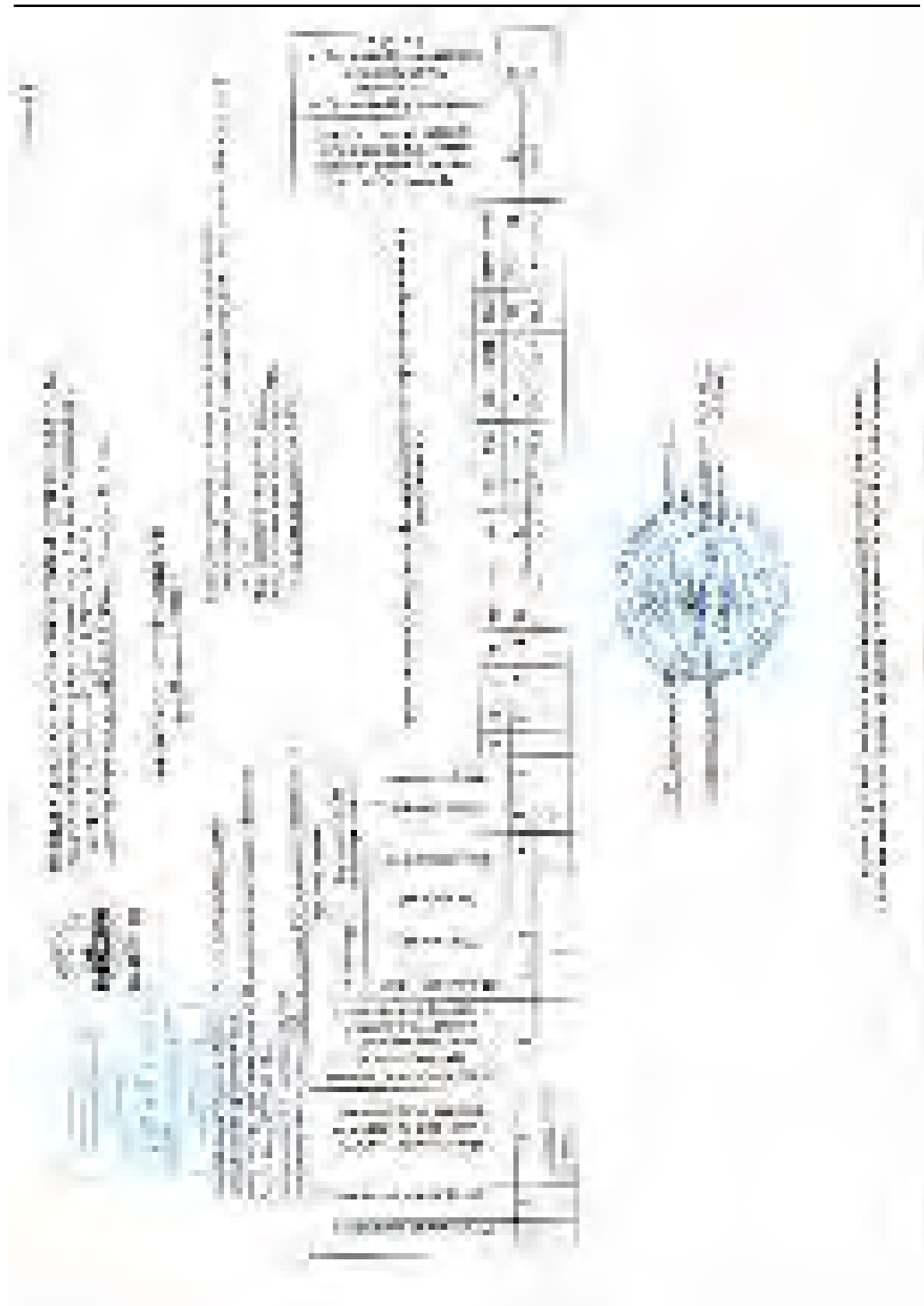
**Equivalent sound level La, dBA Acceptable level is 80 dBA**

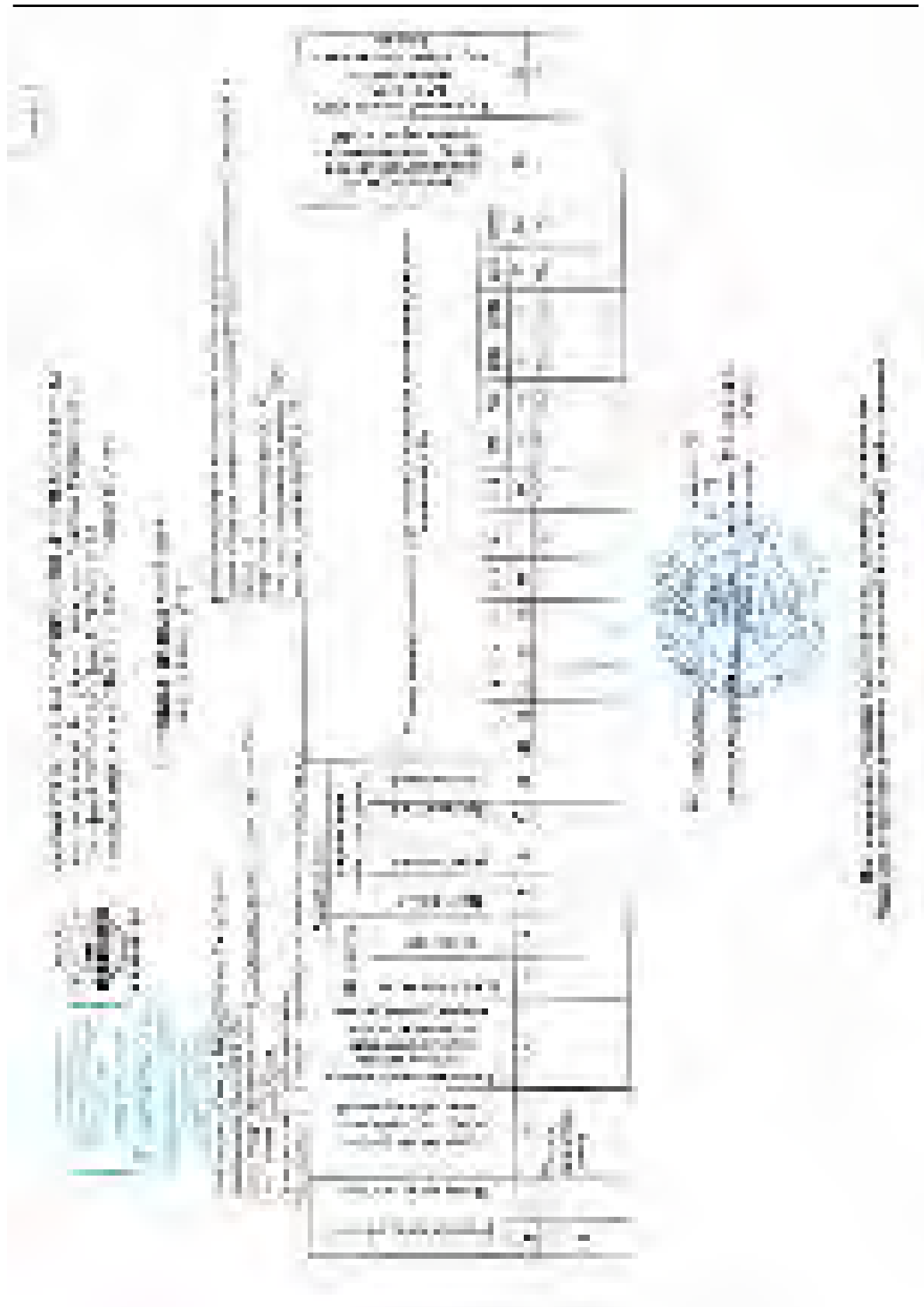
### Vibration Acceleration and Noise Measurement Protocols

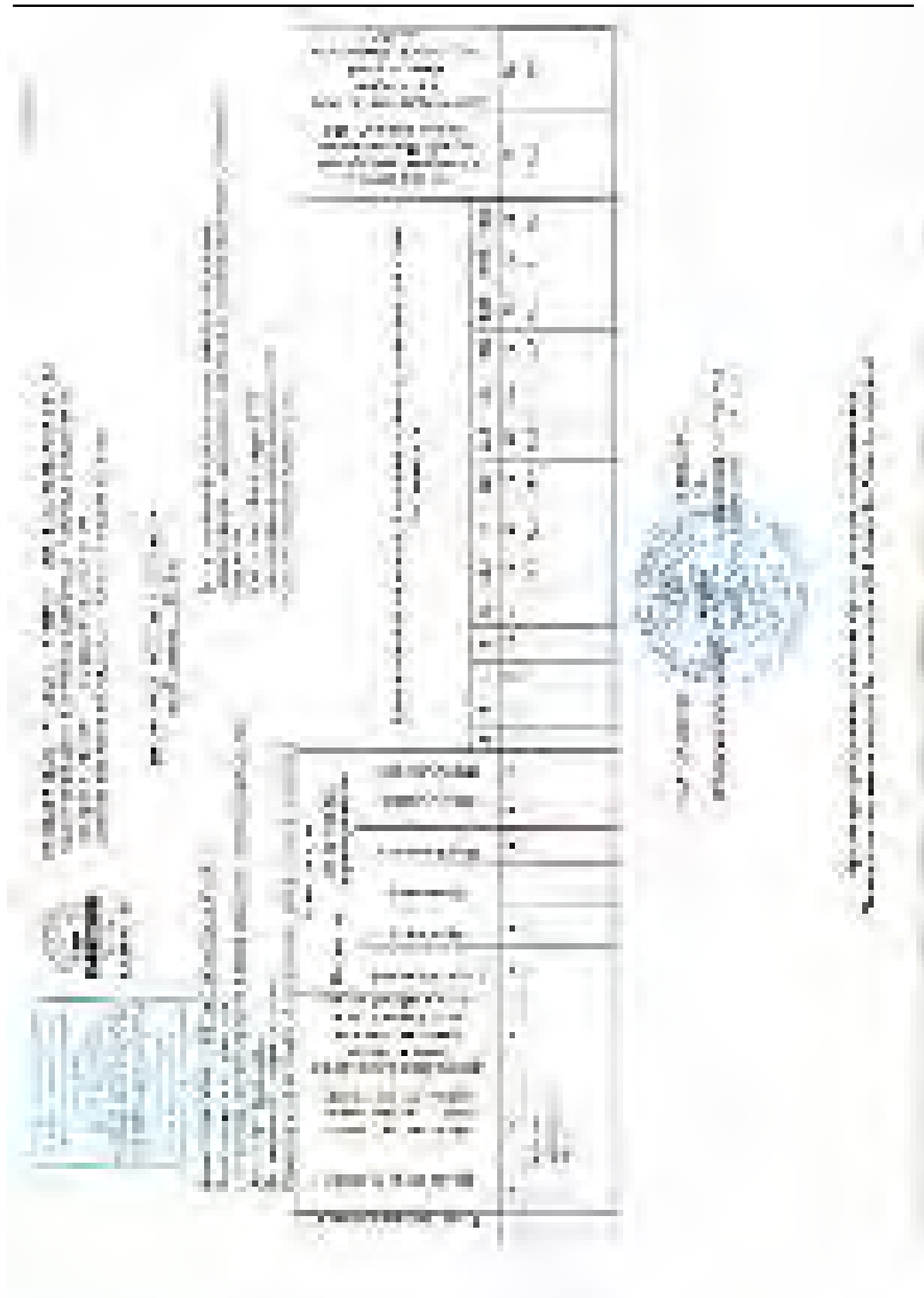




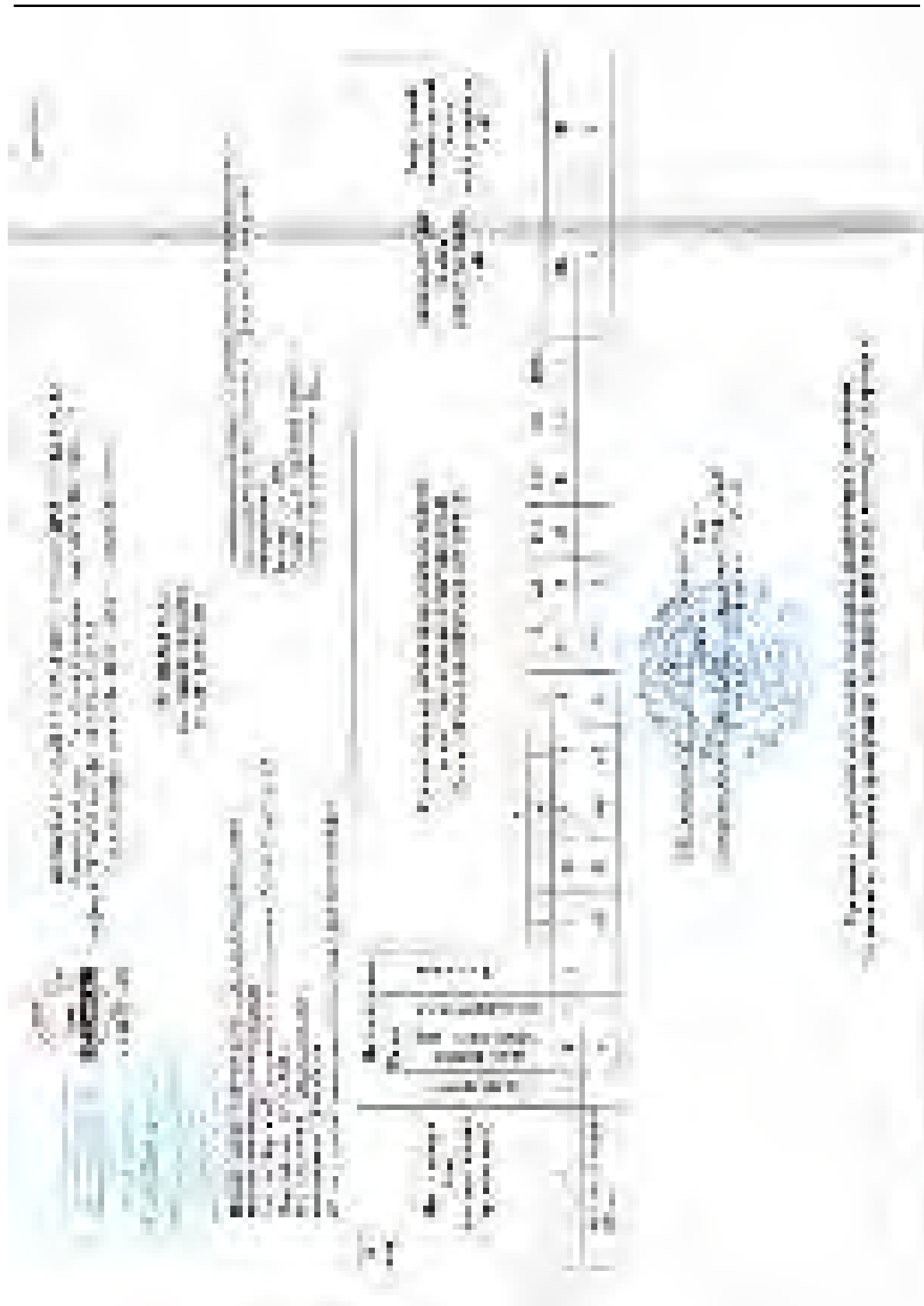


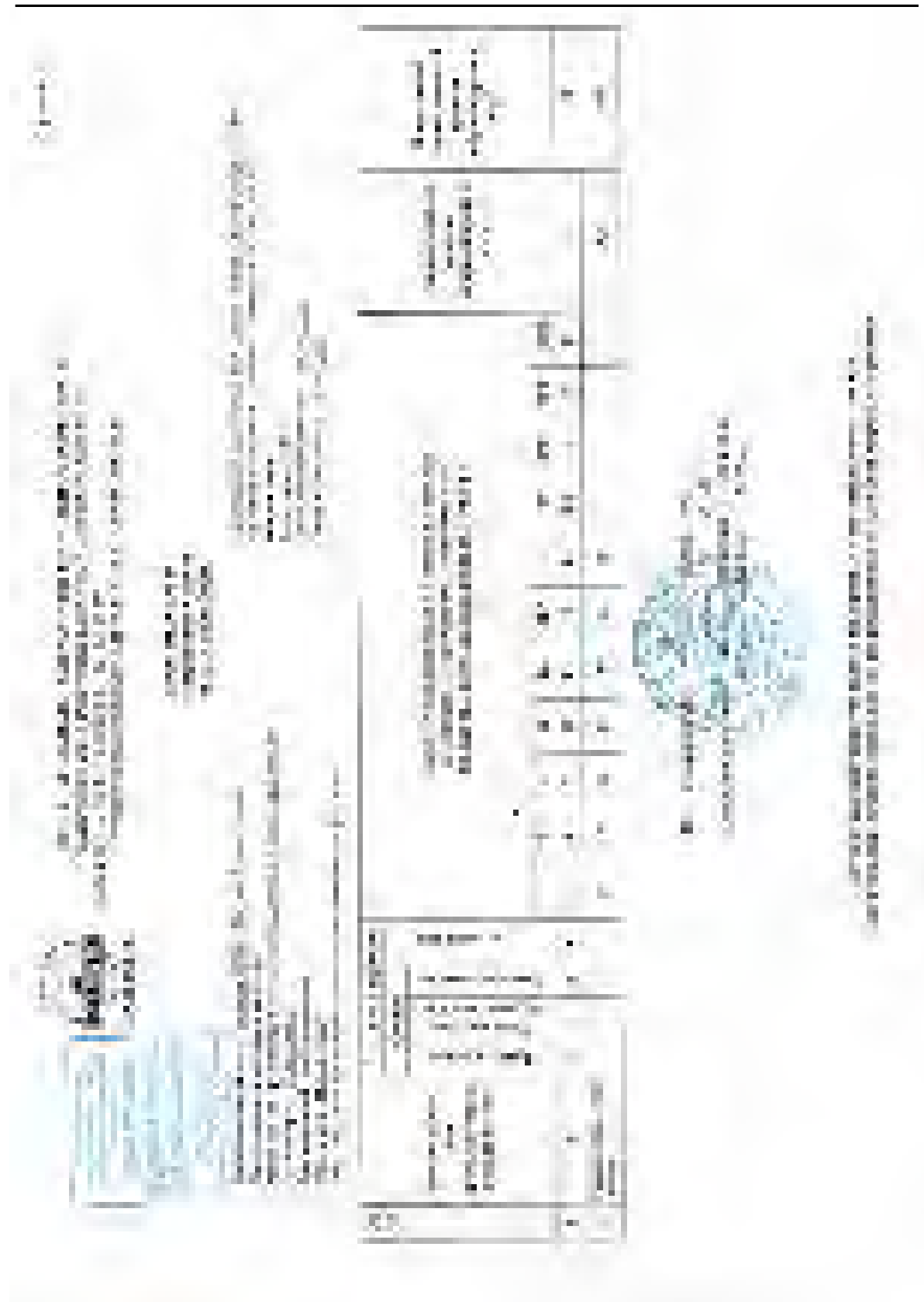


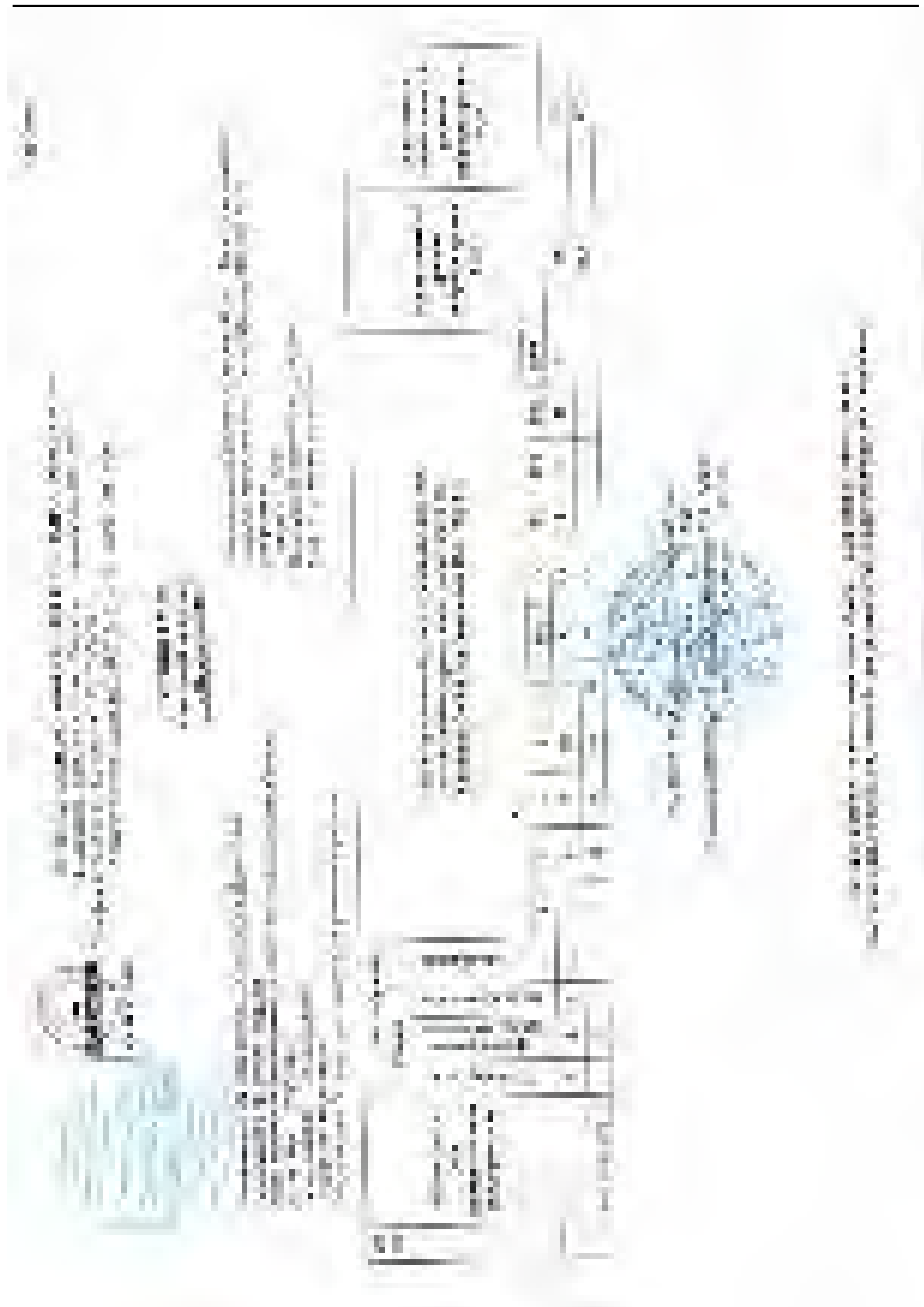


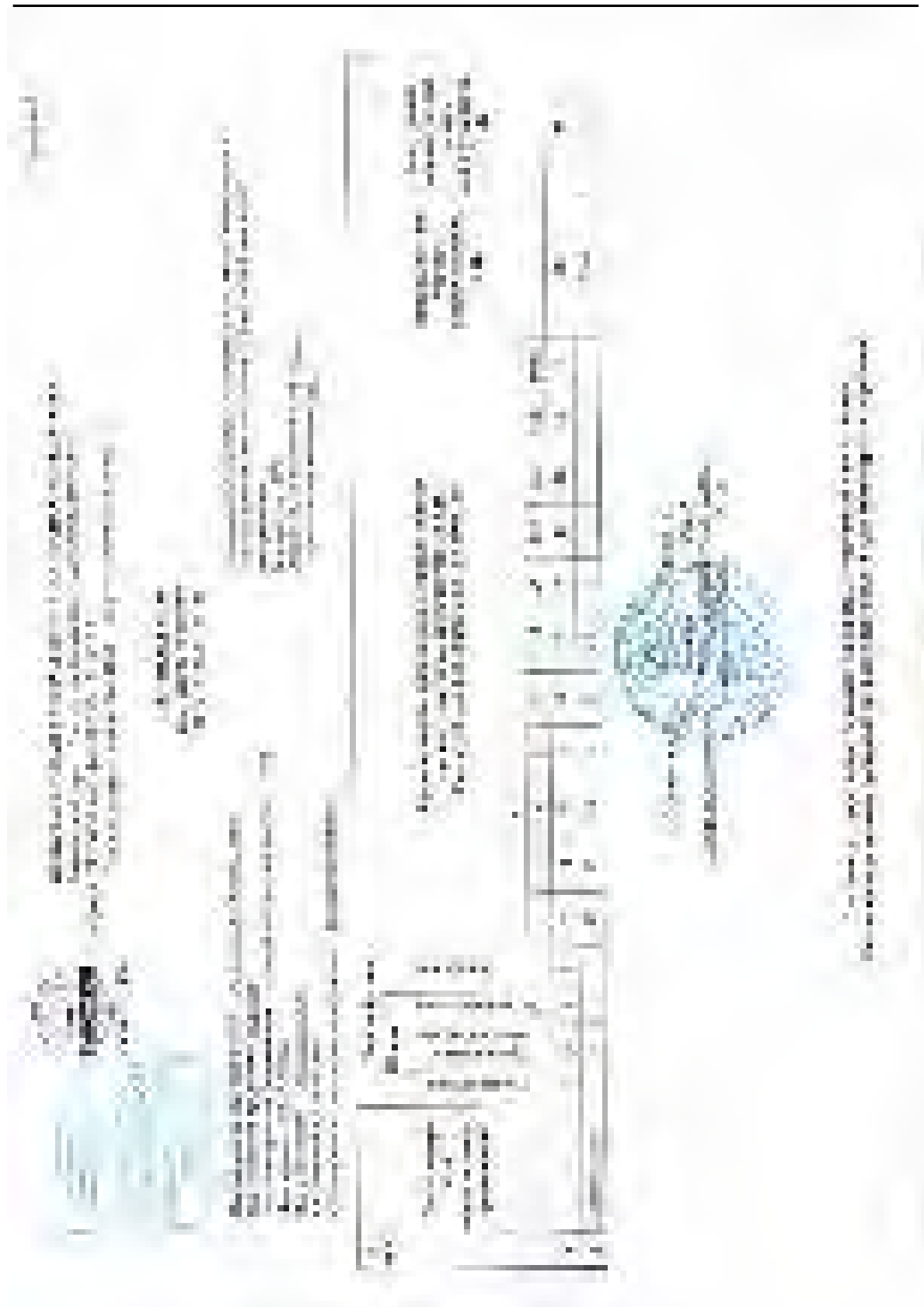




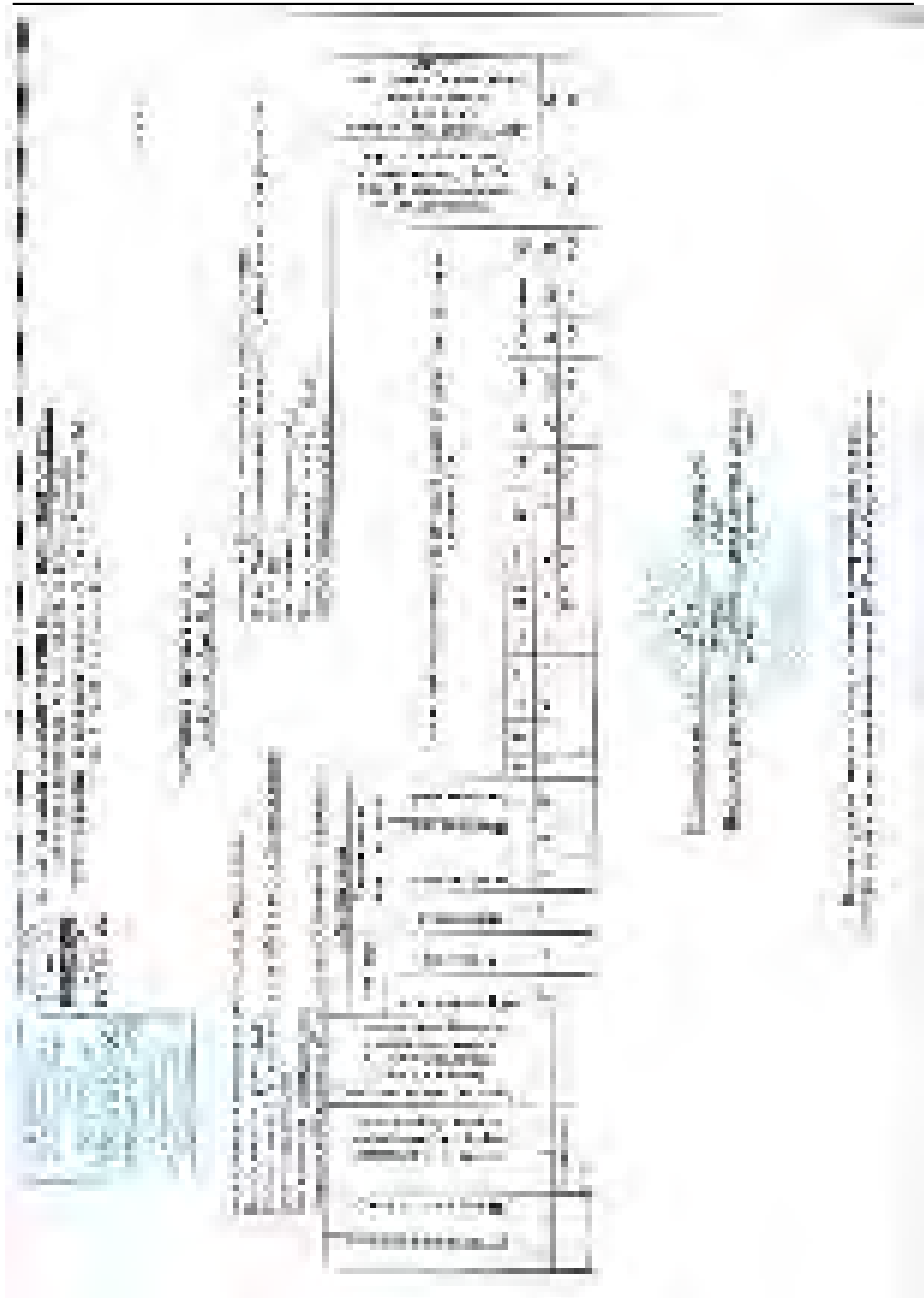


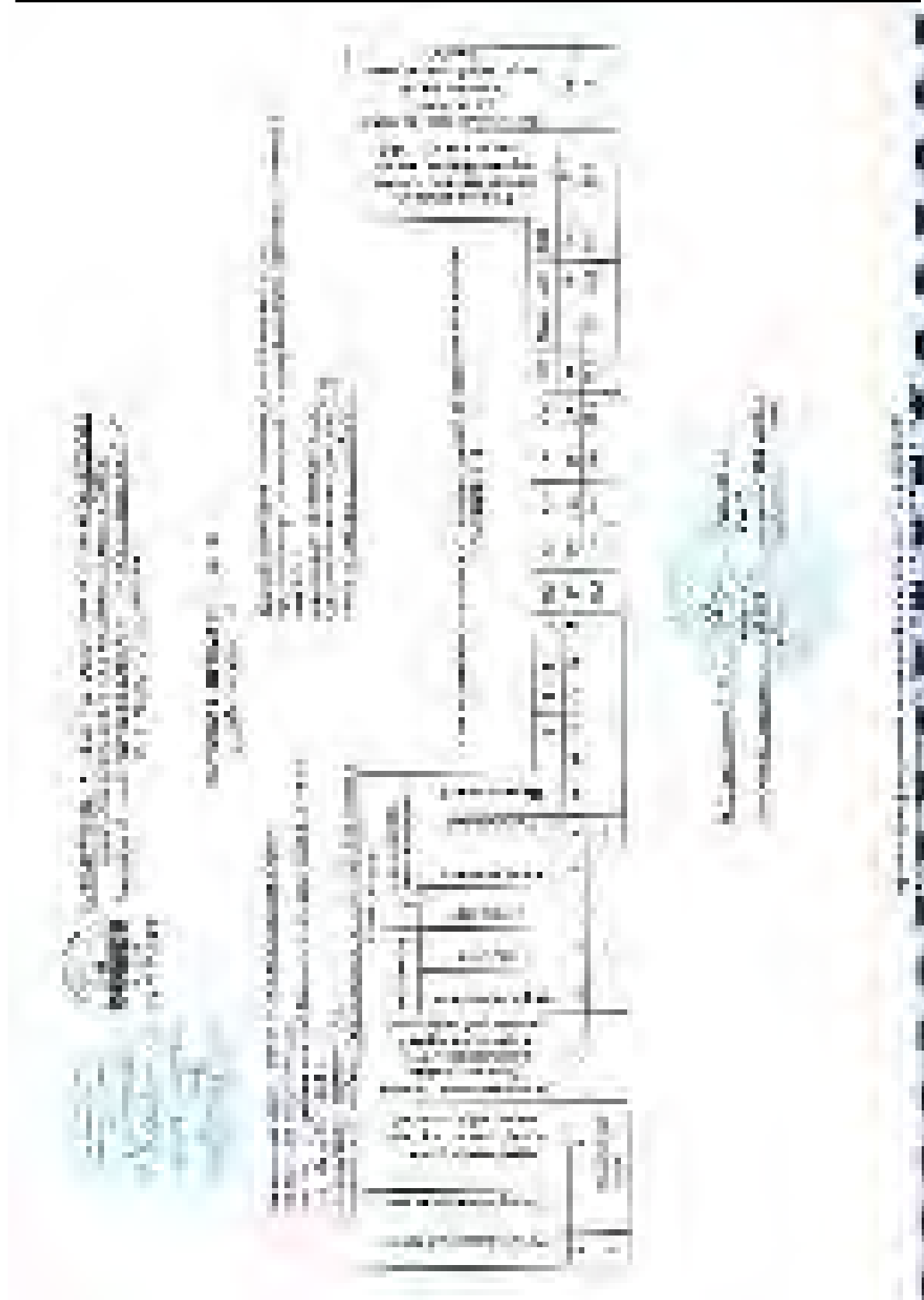


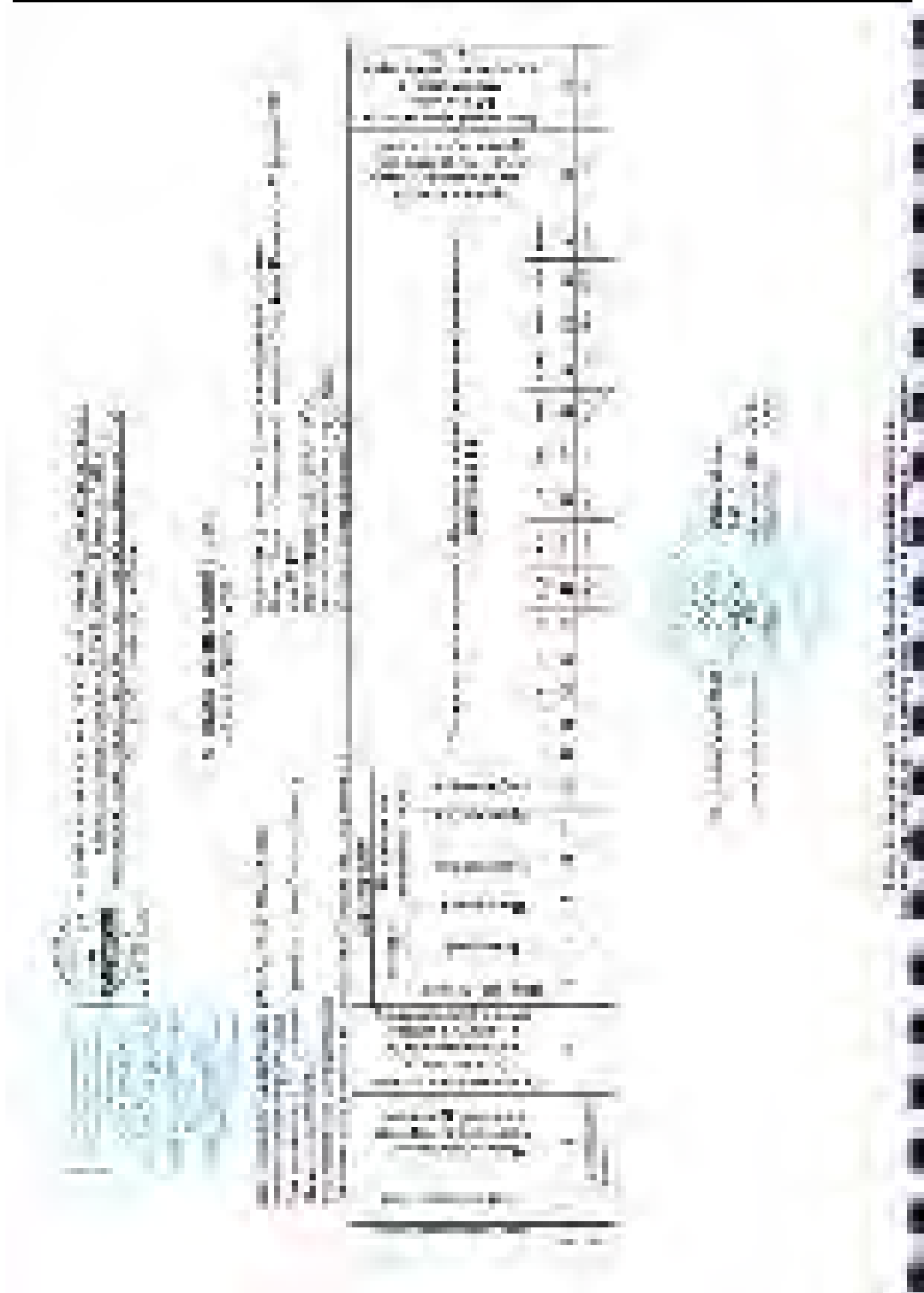








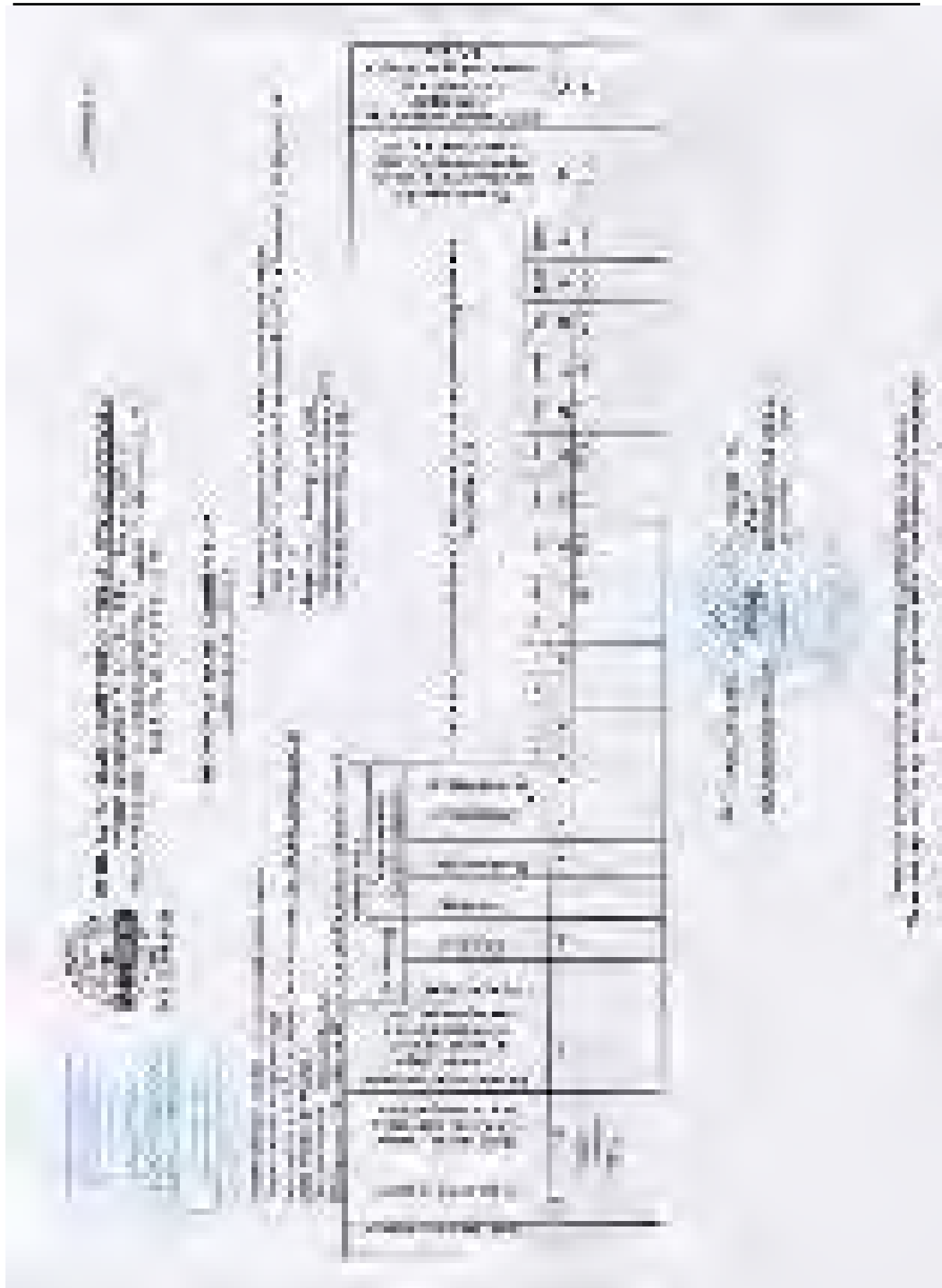


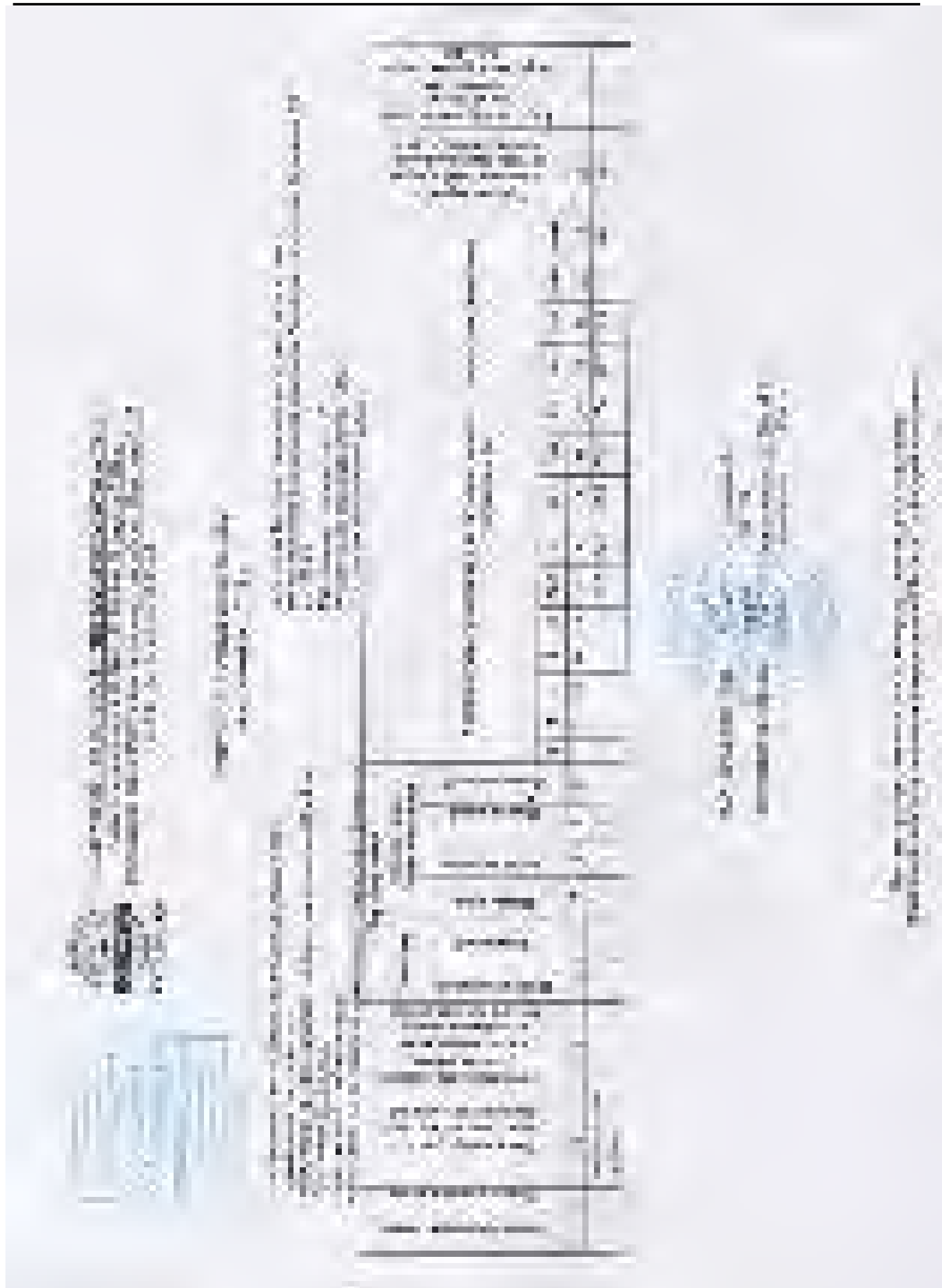




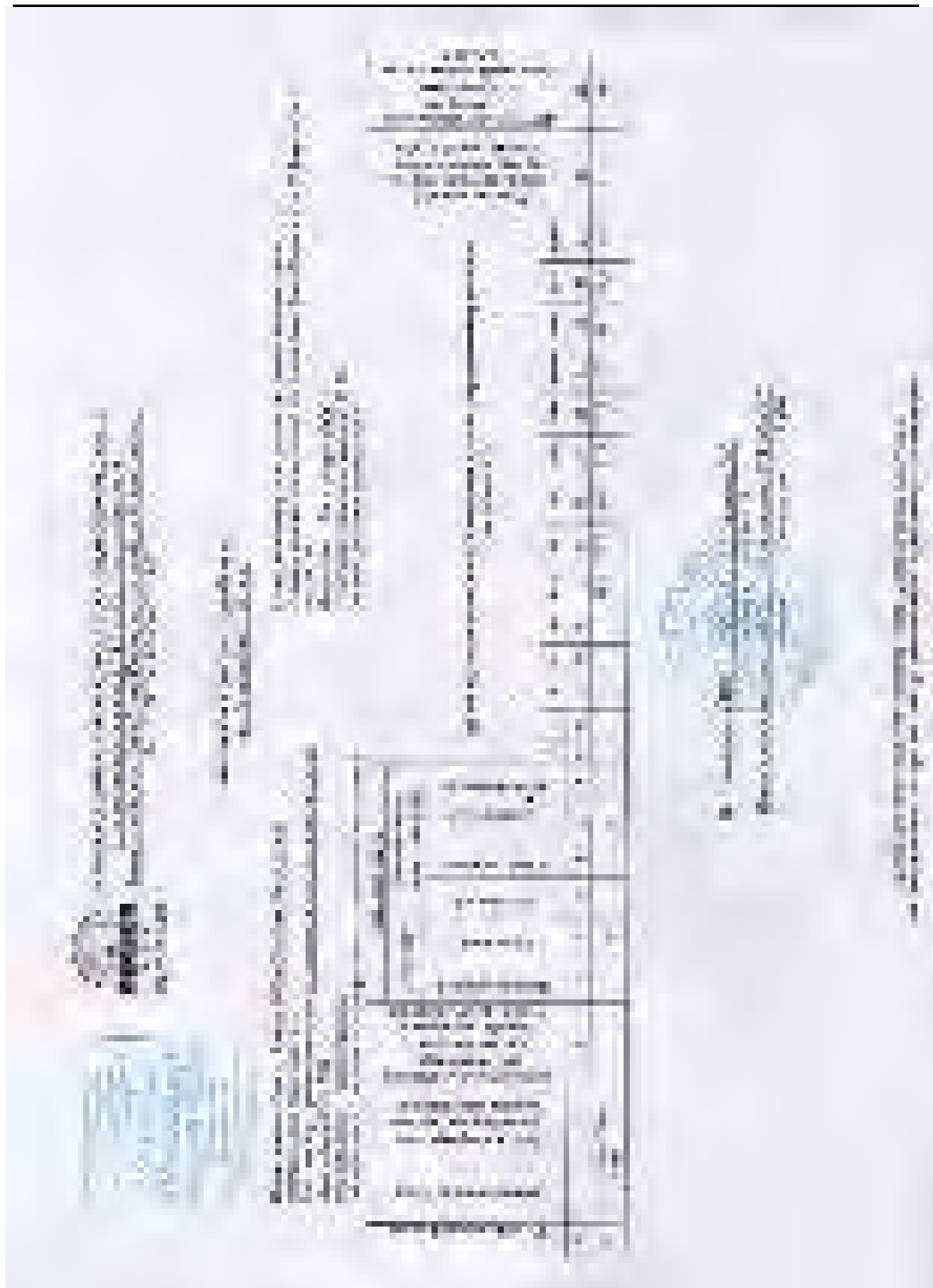


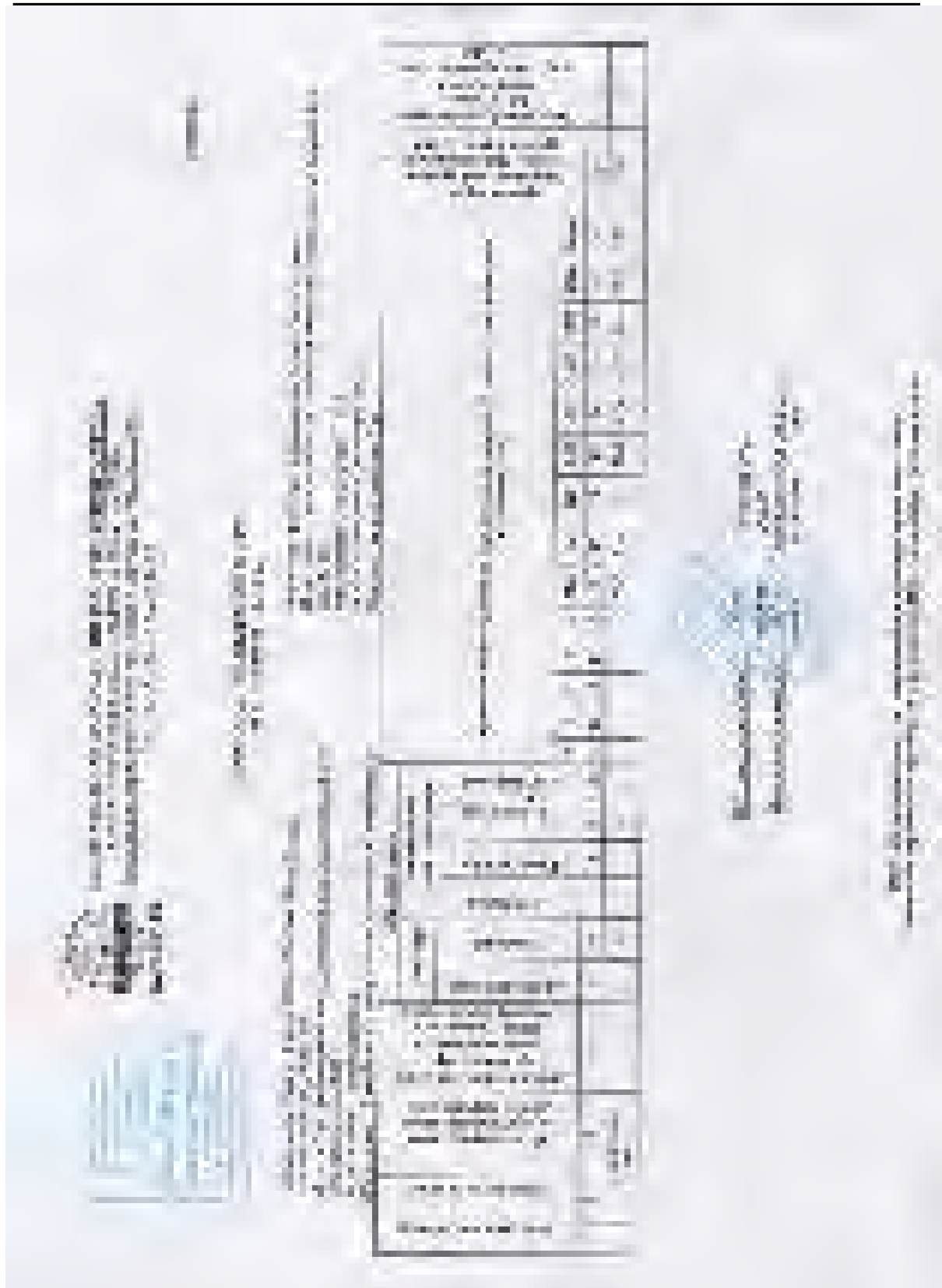






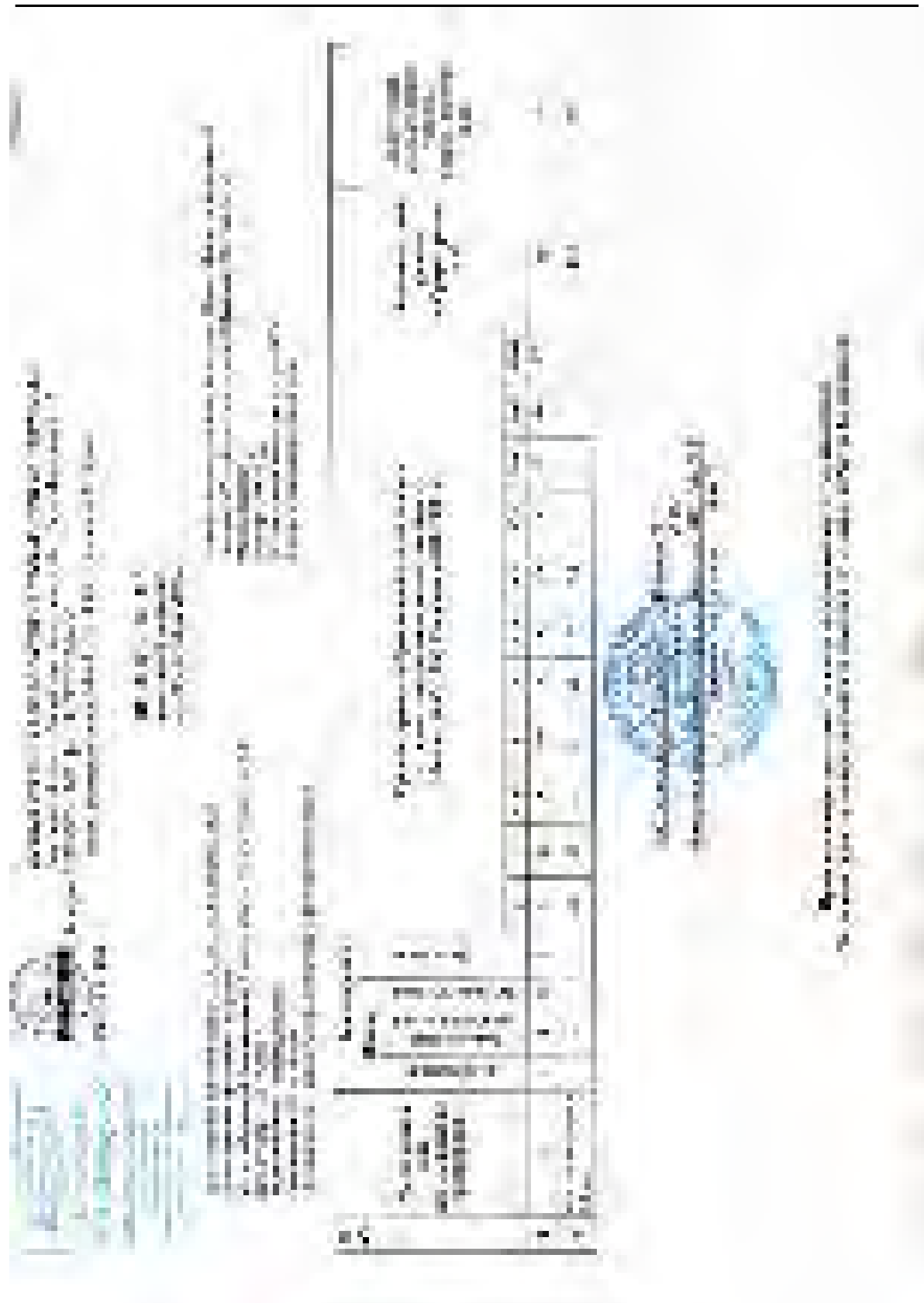


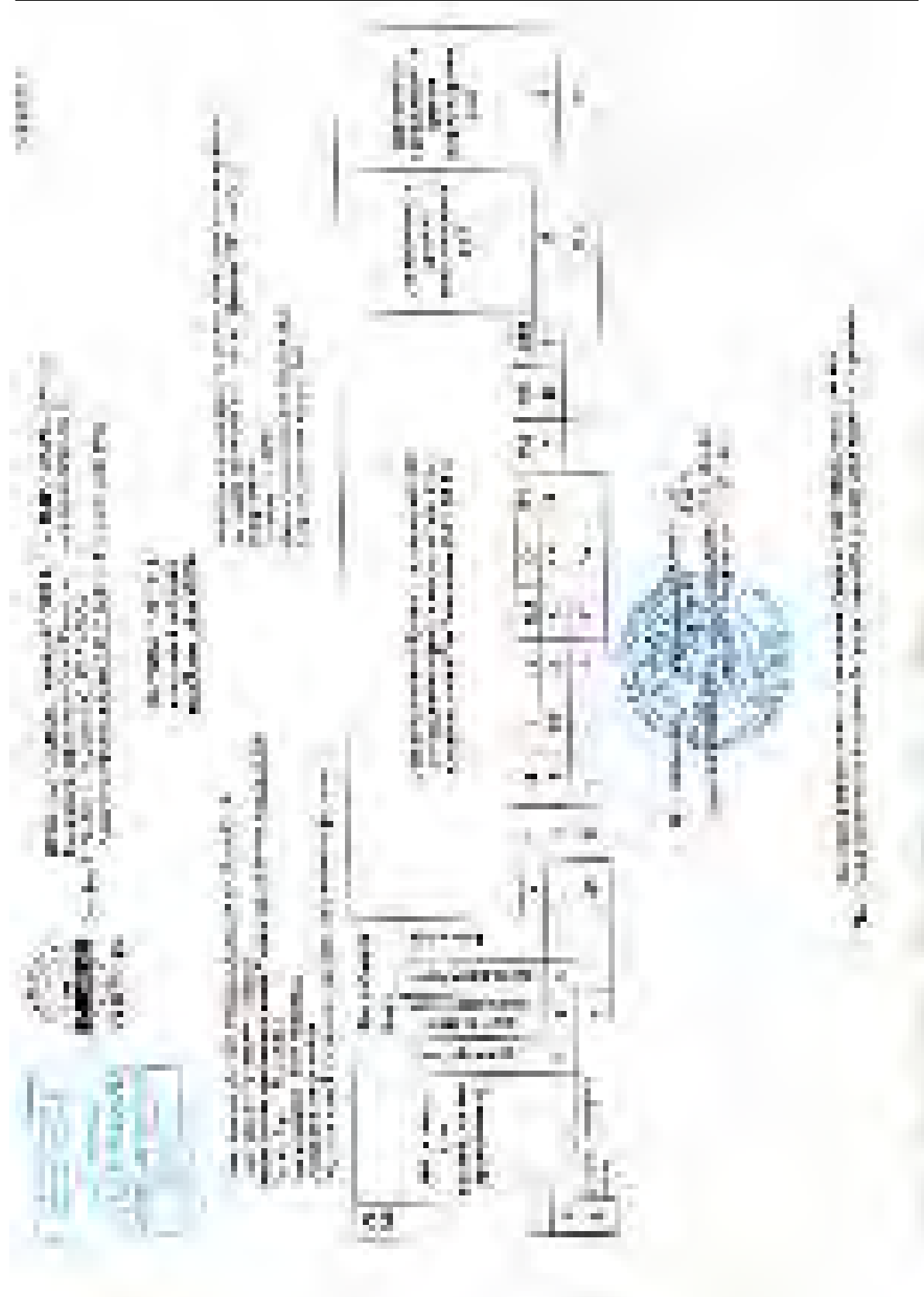


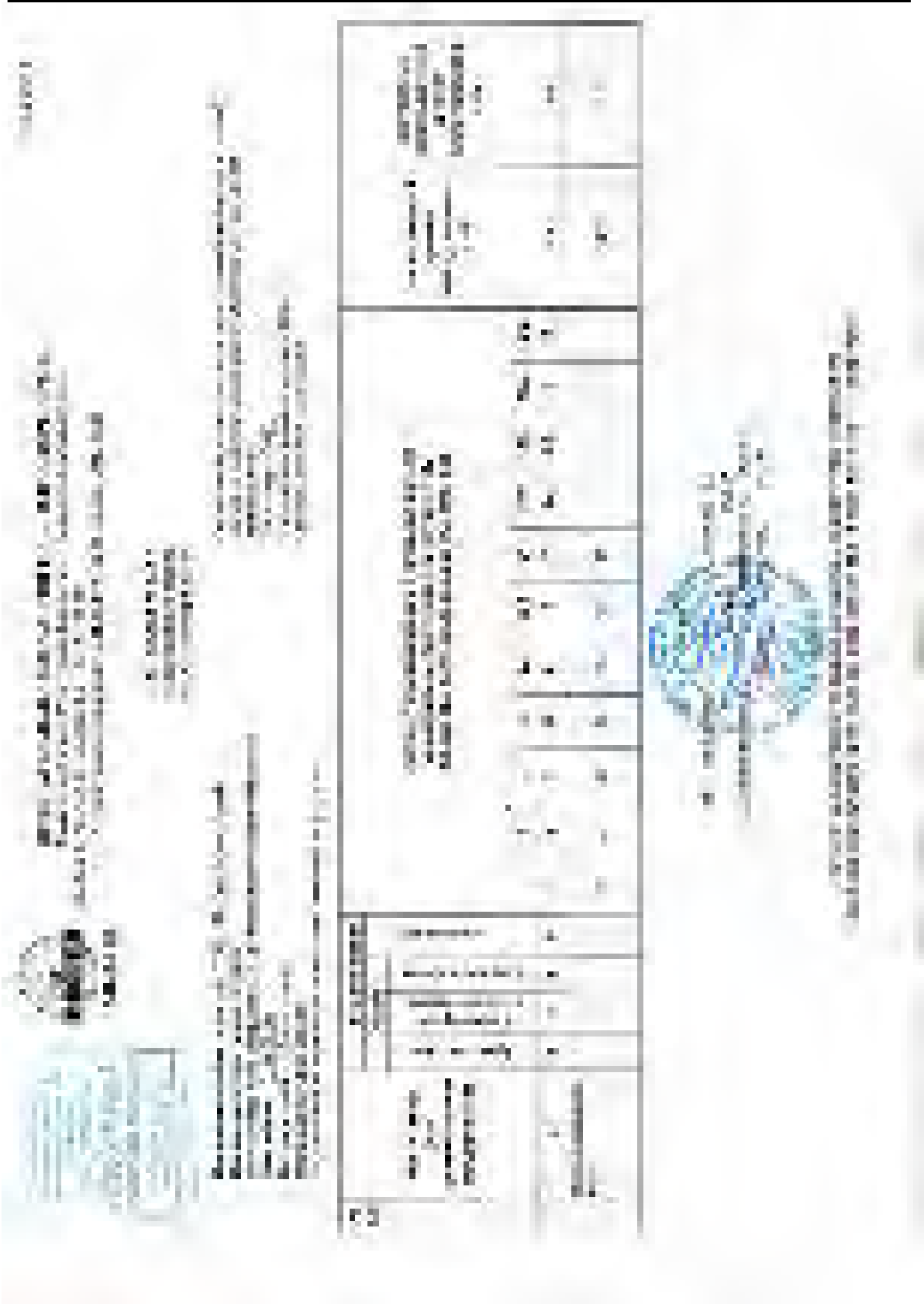


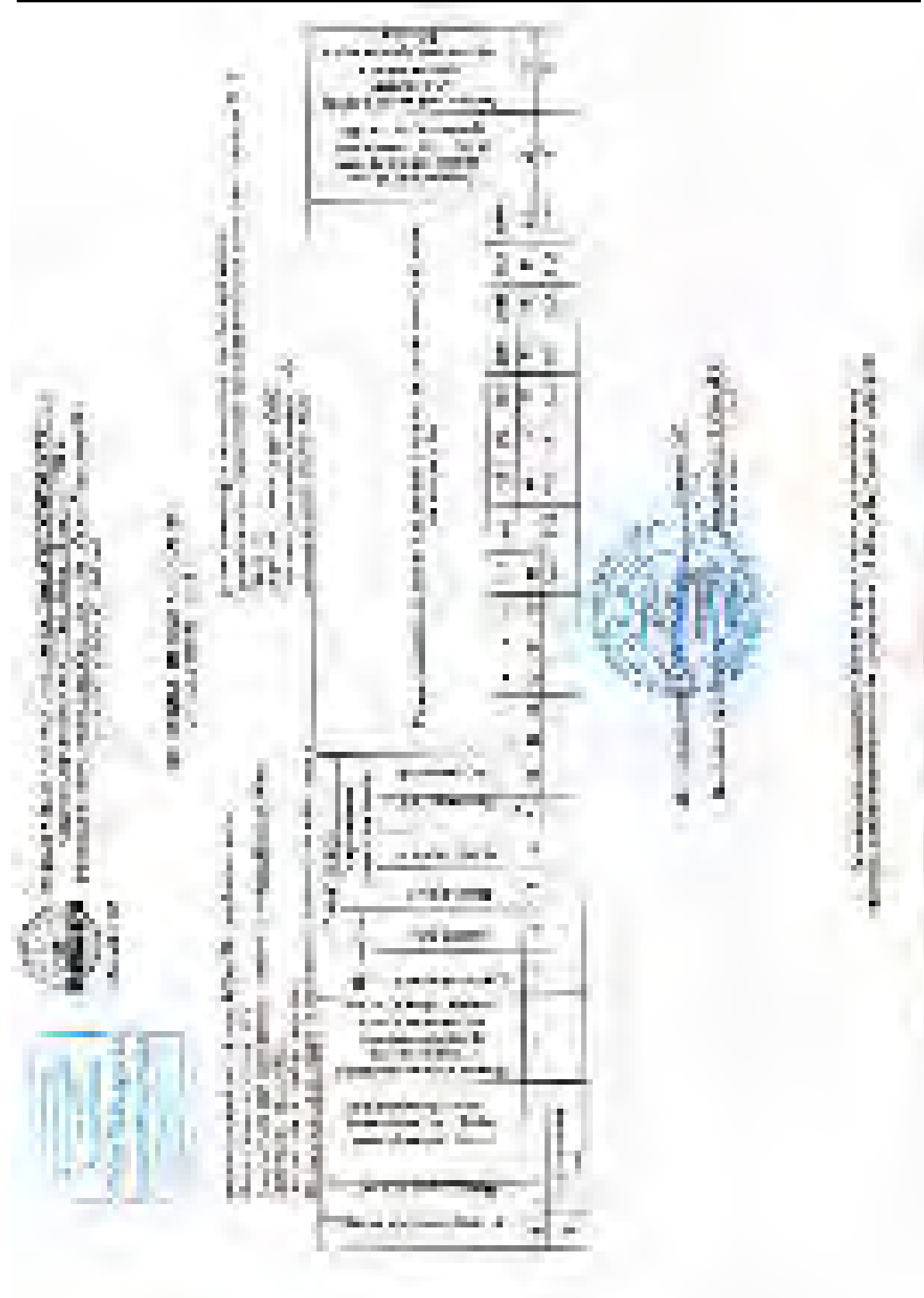






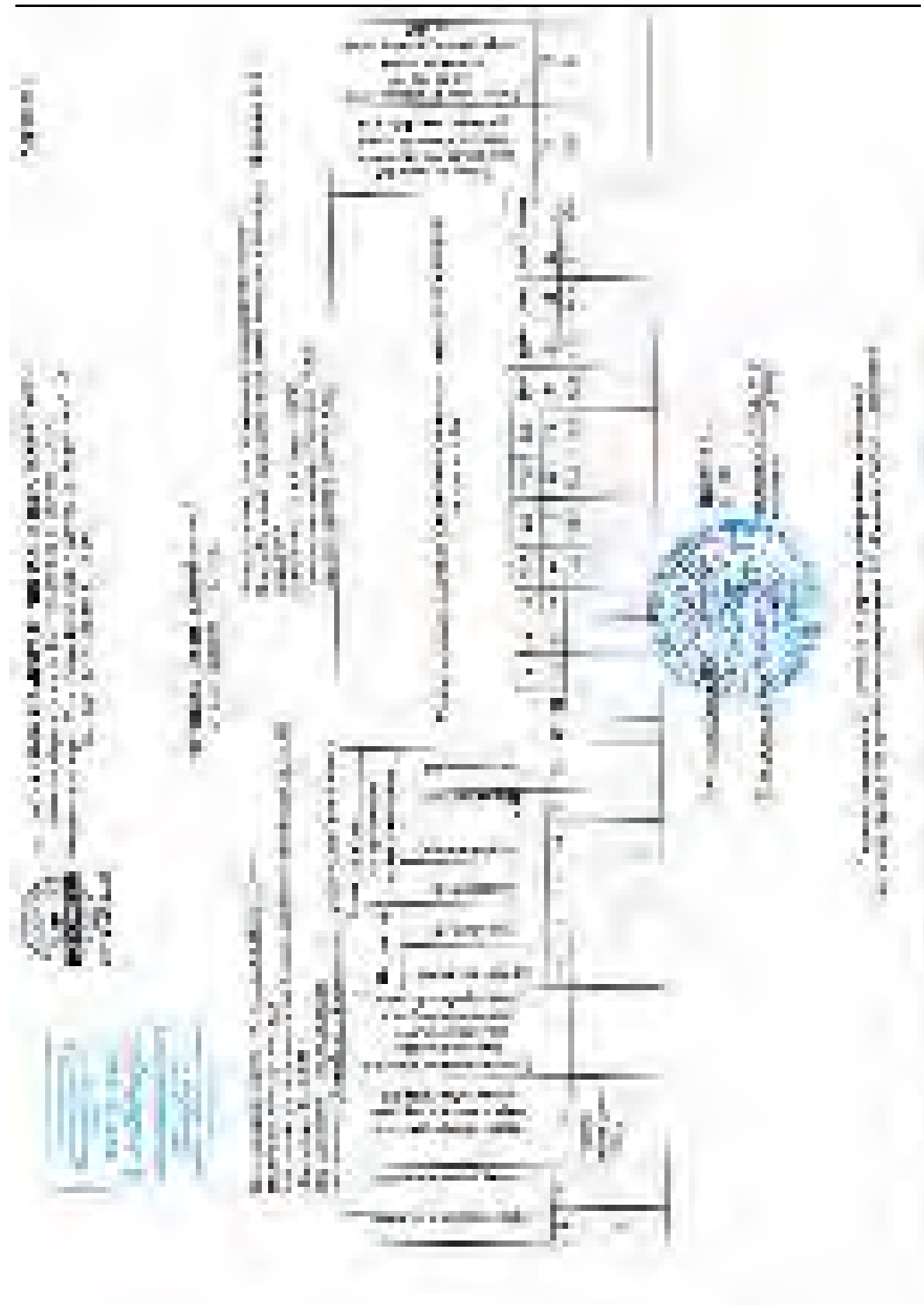


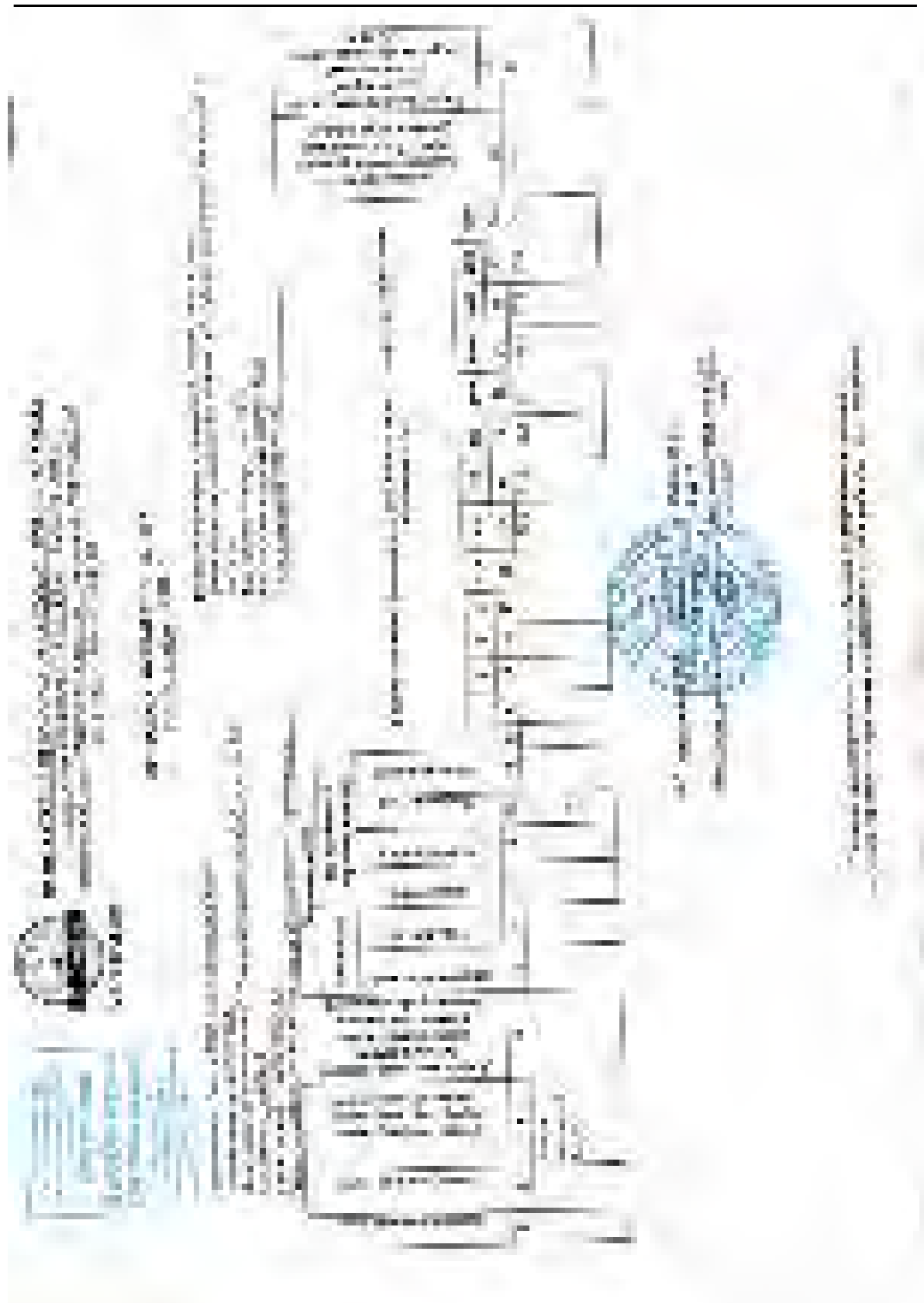


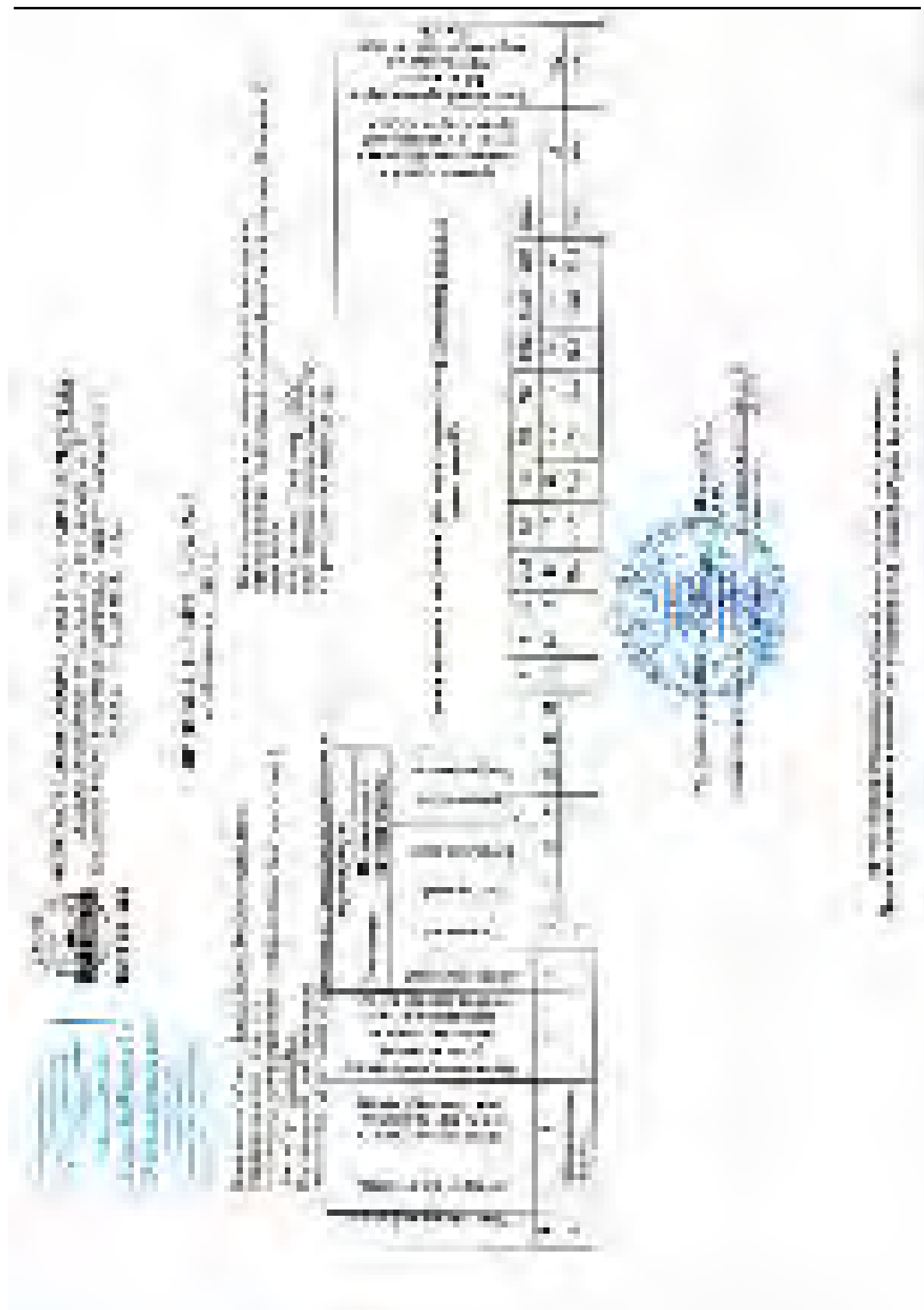


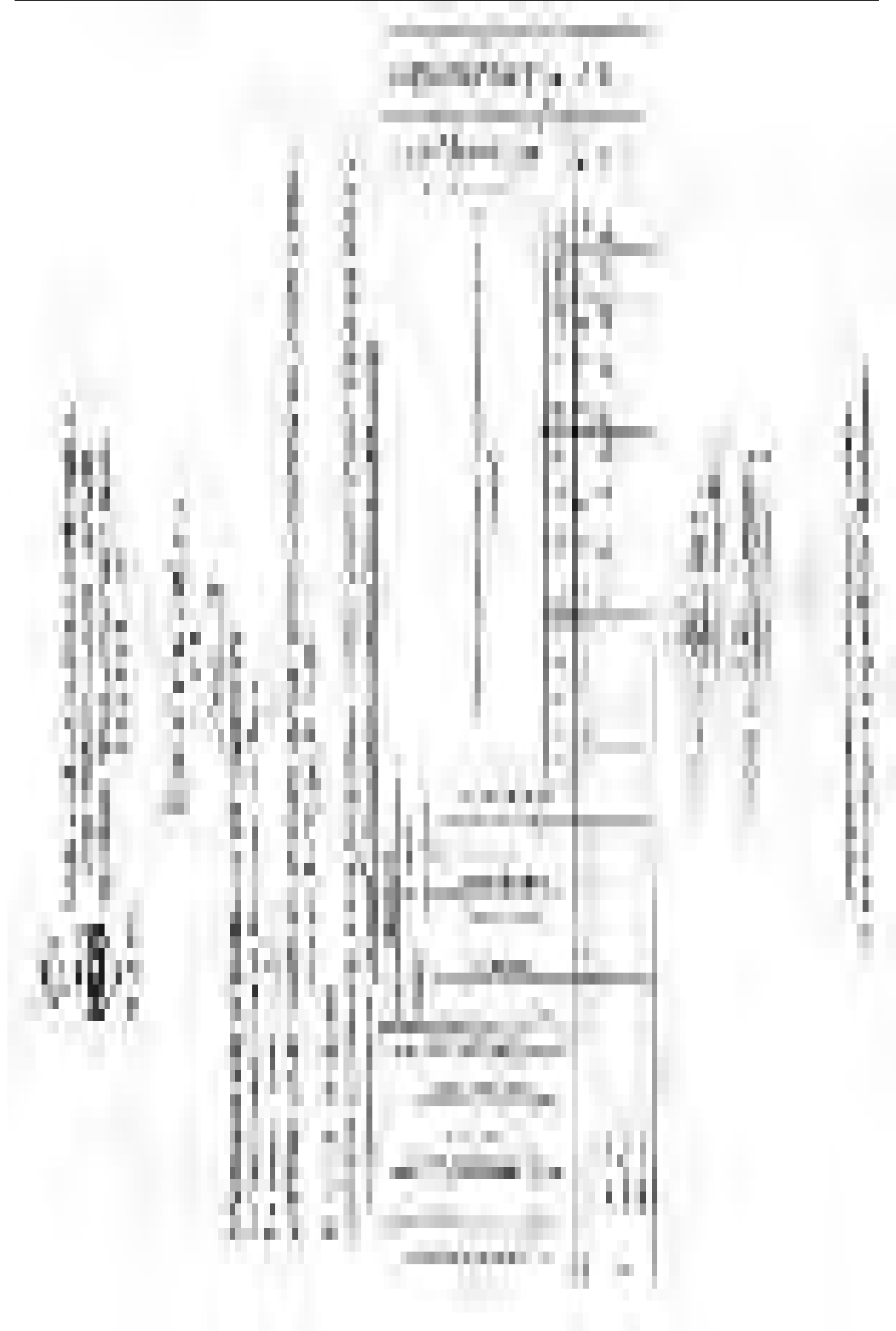


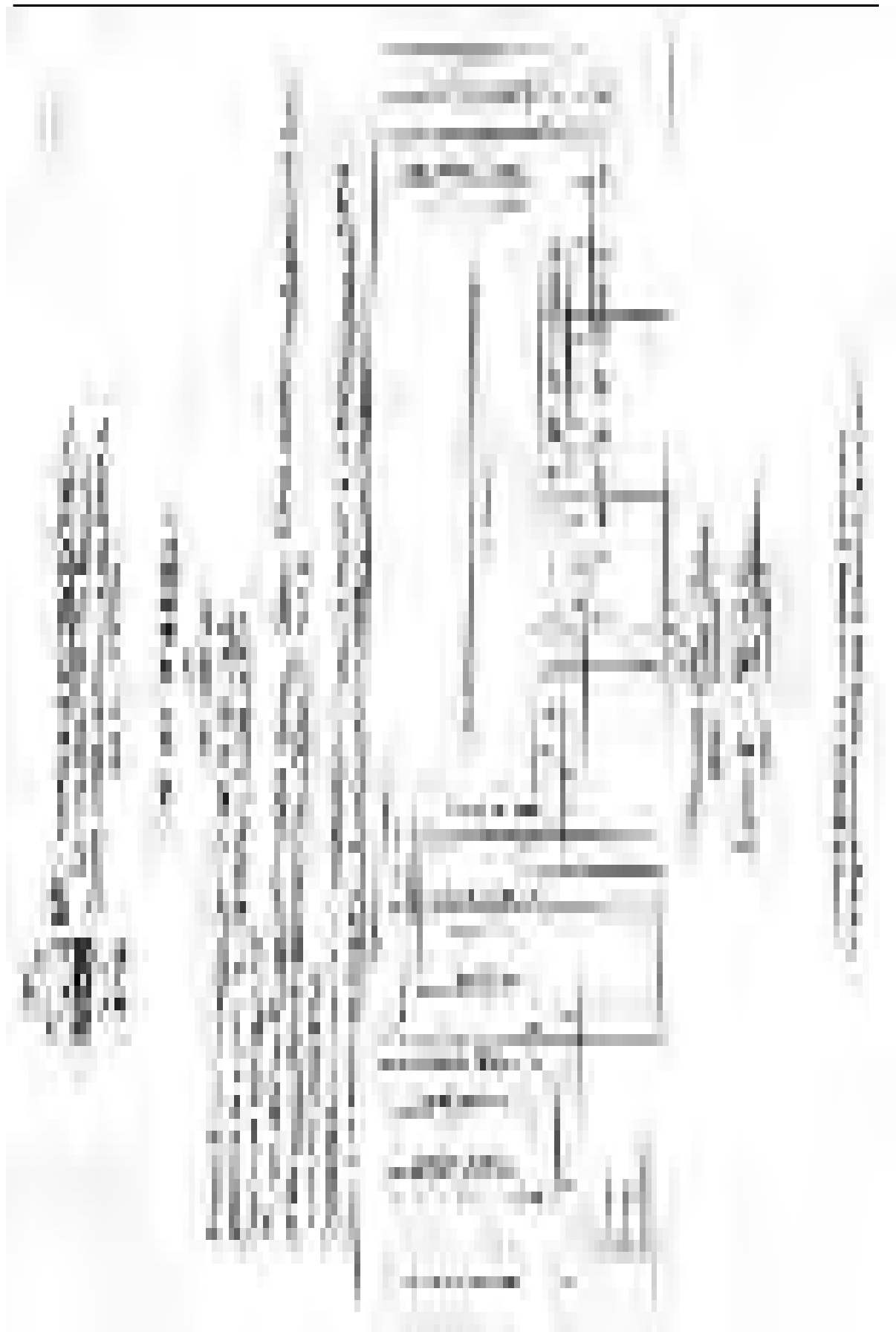


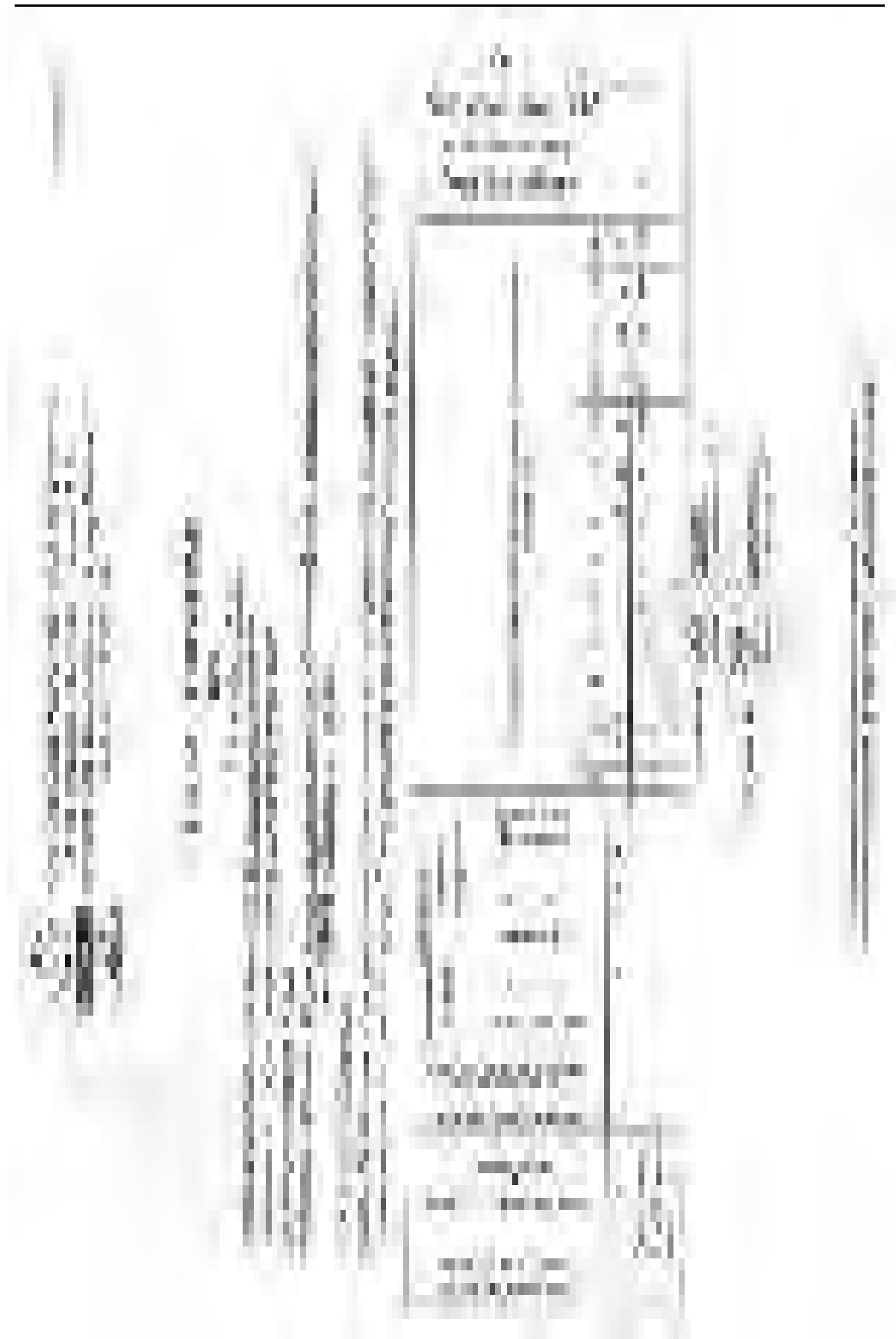


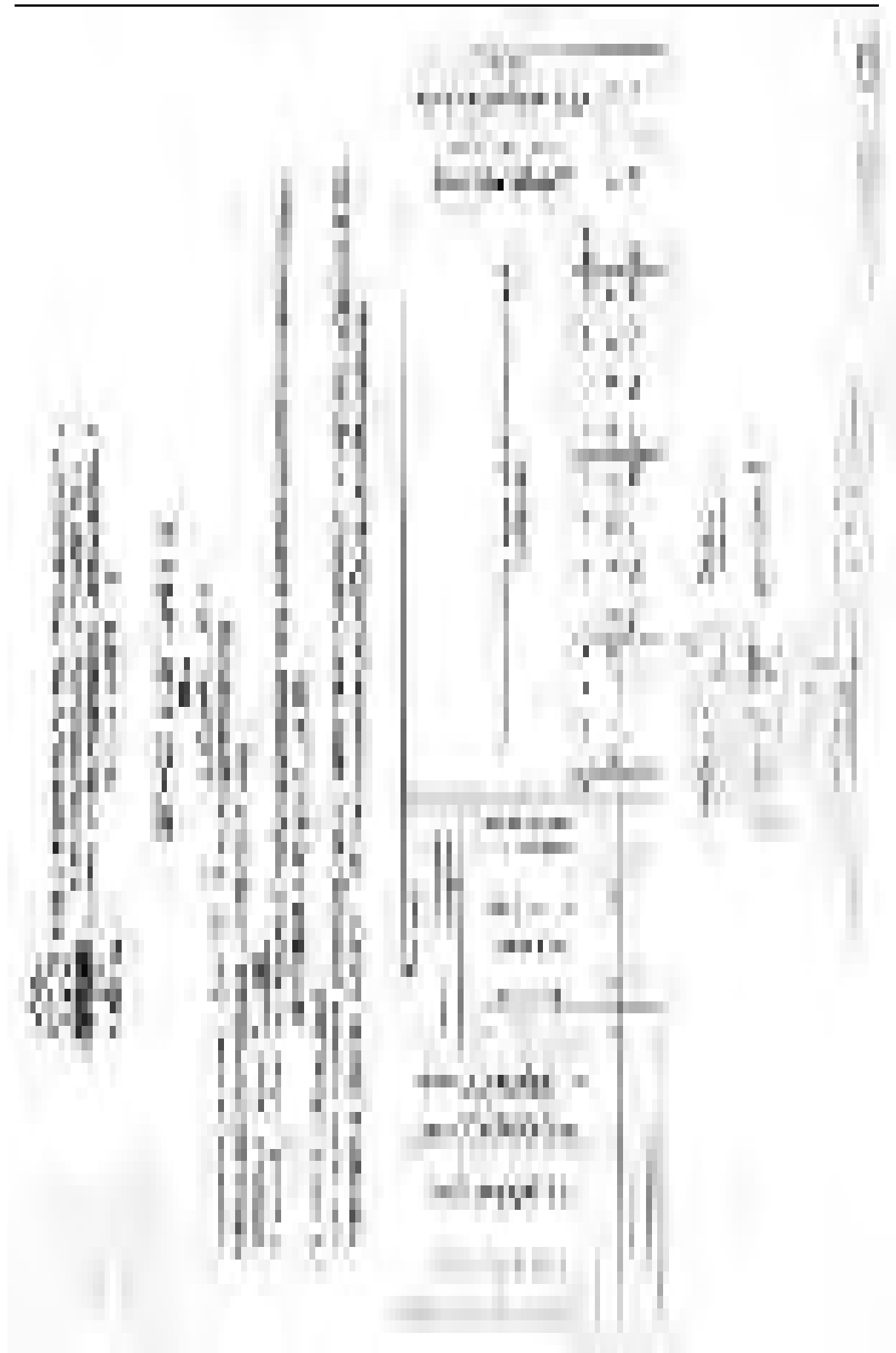






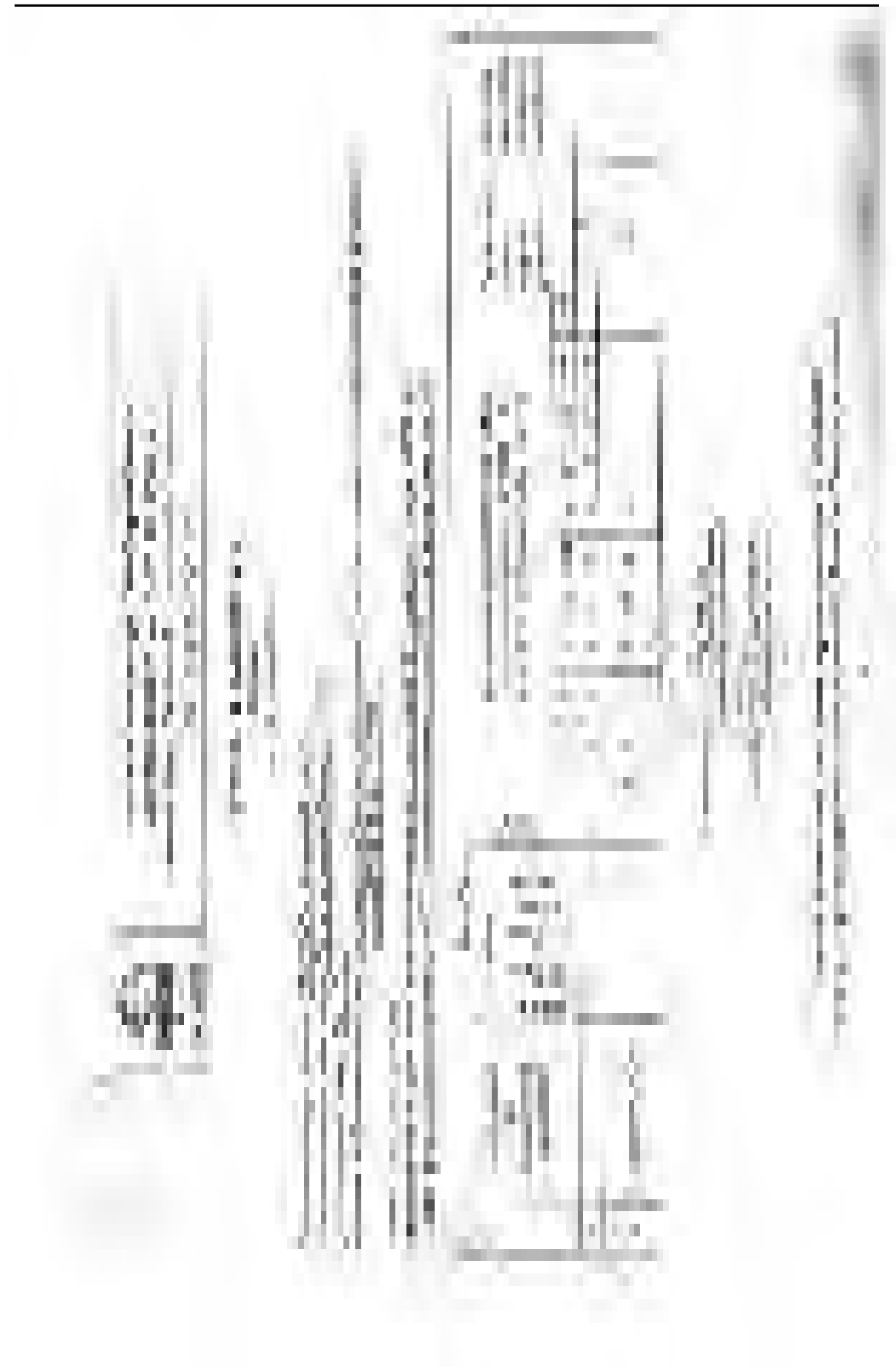


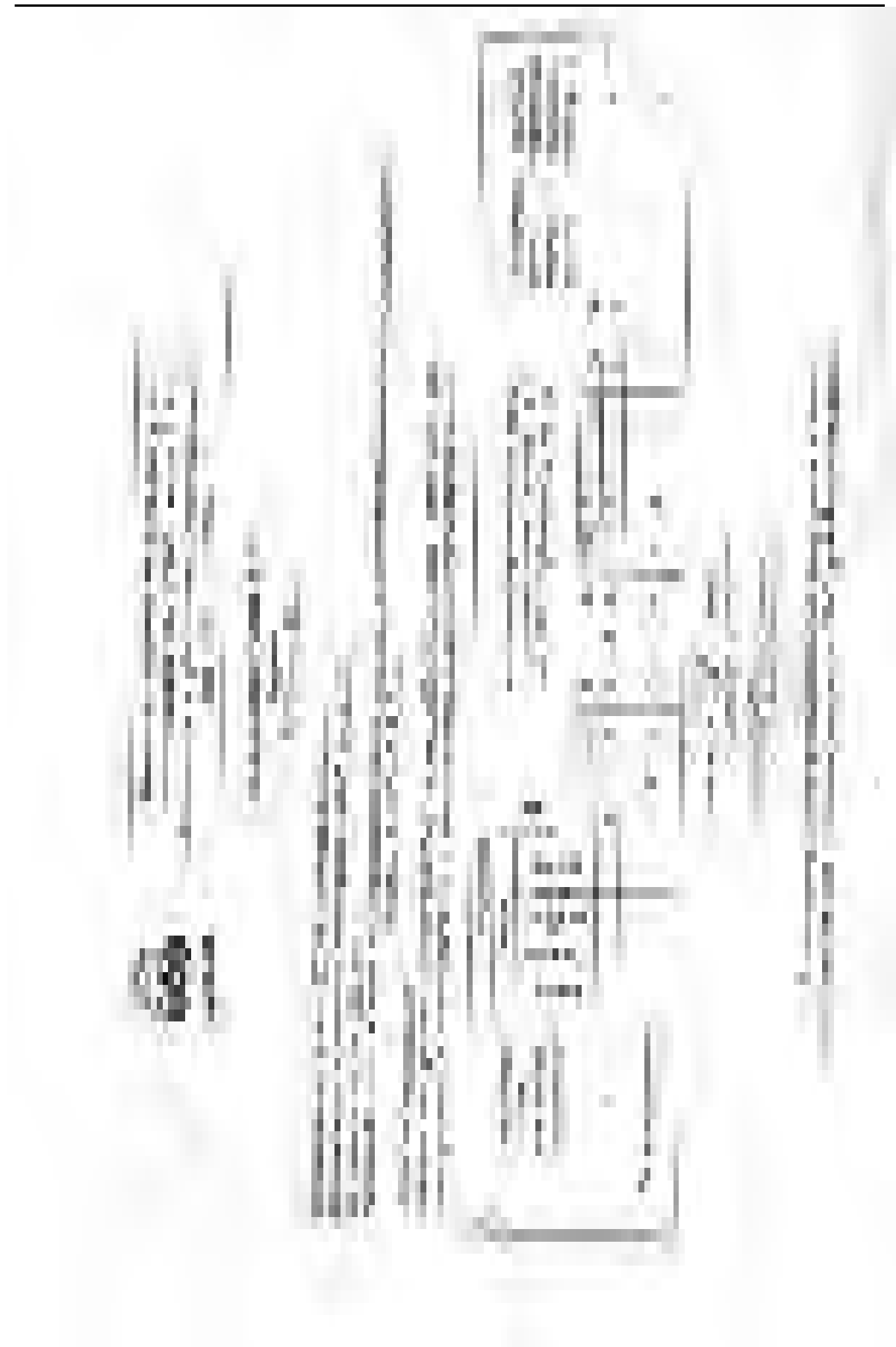




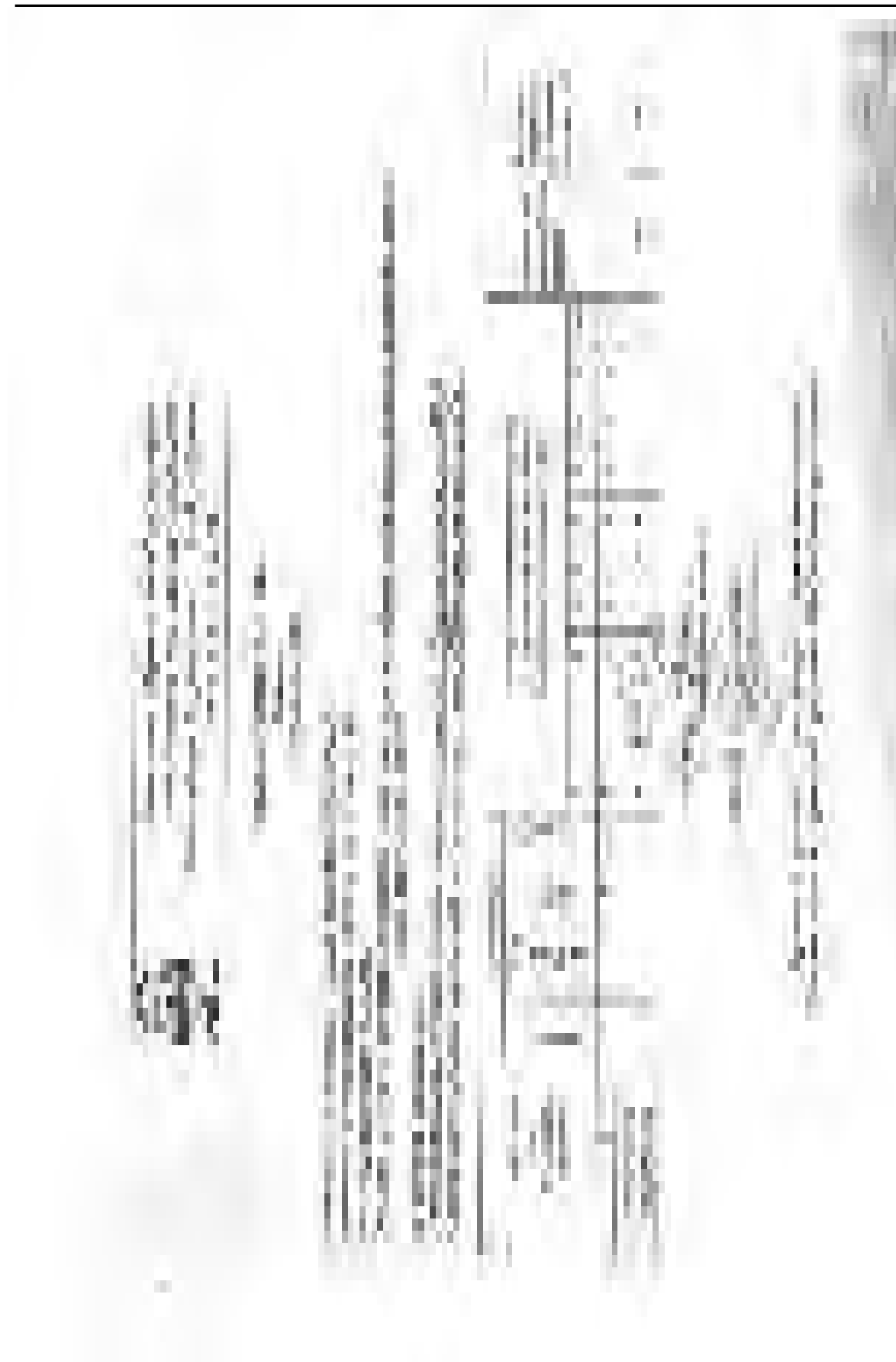


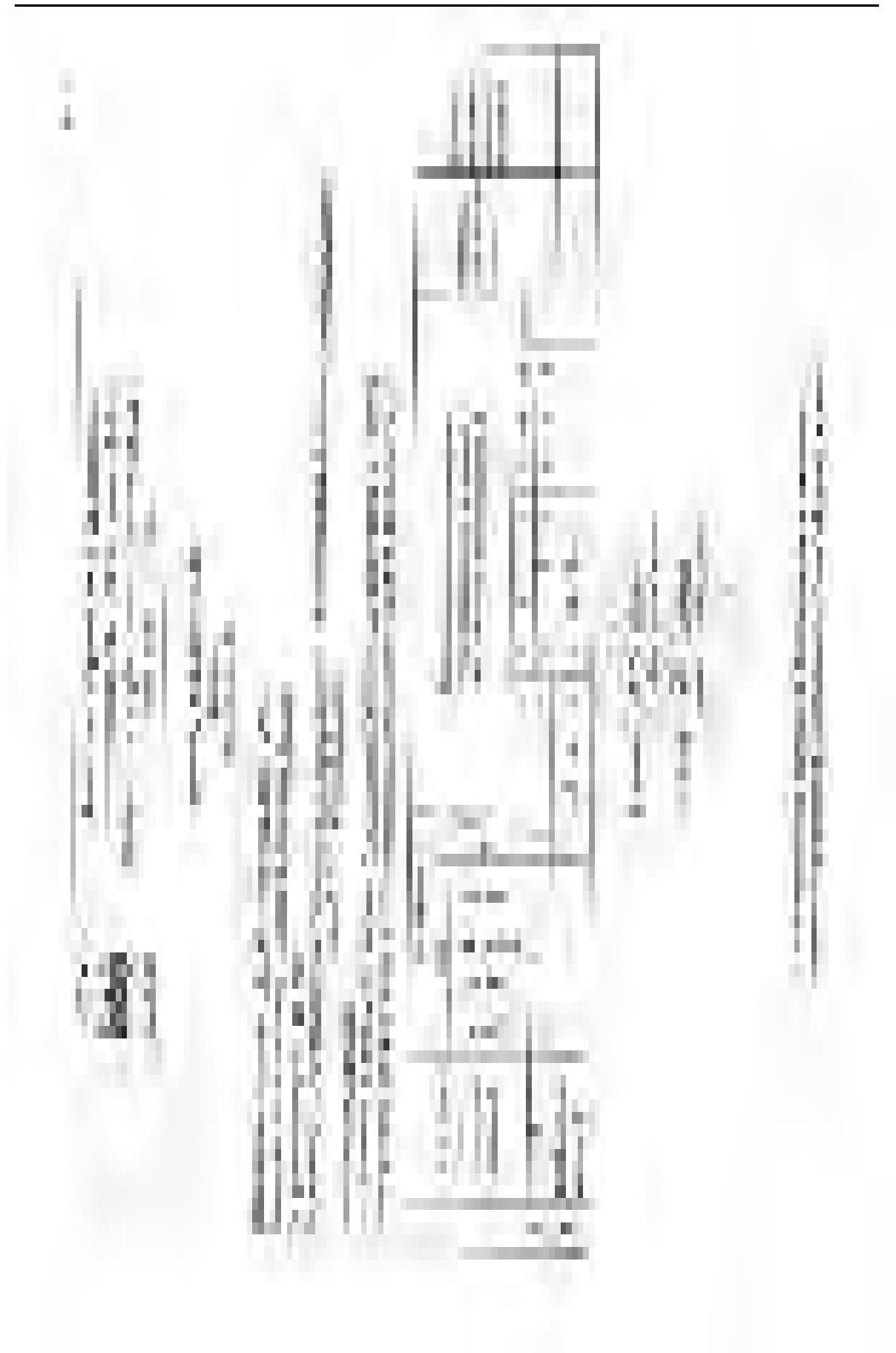




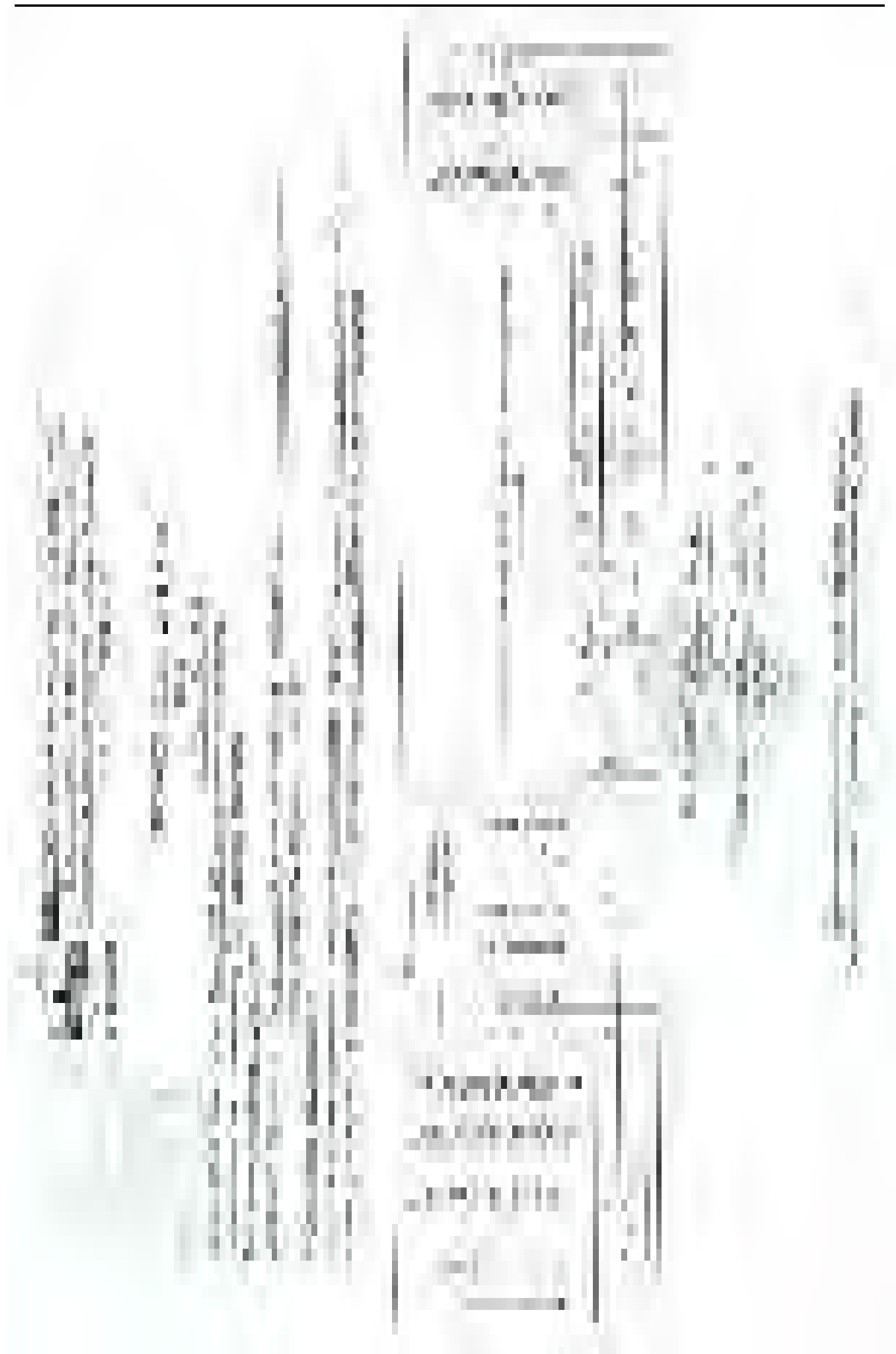










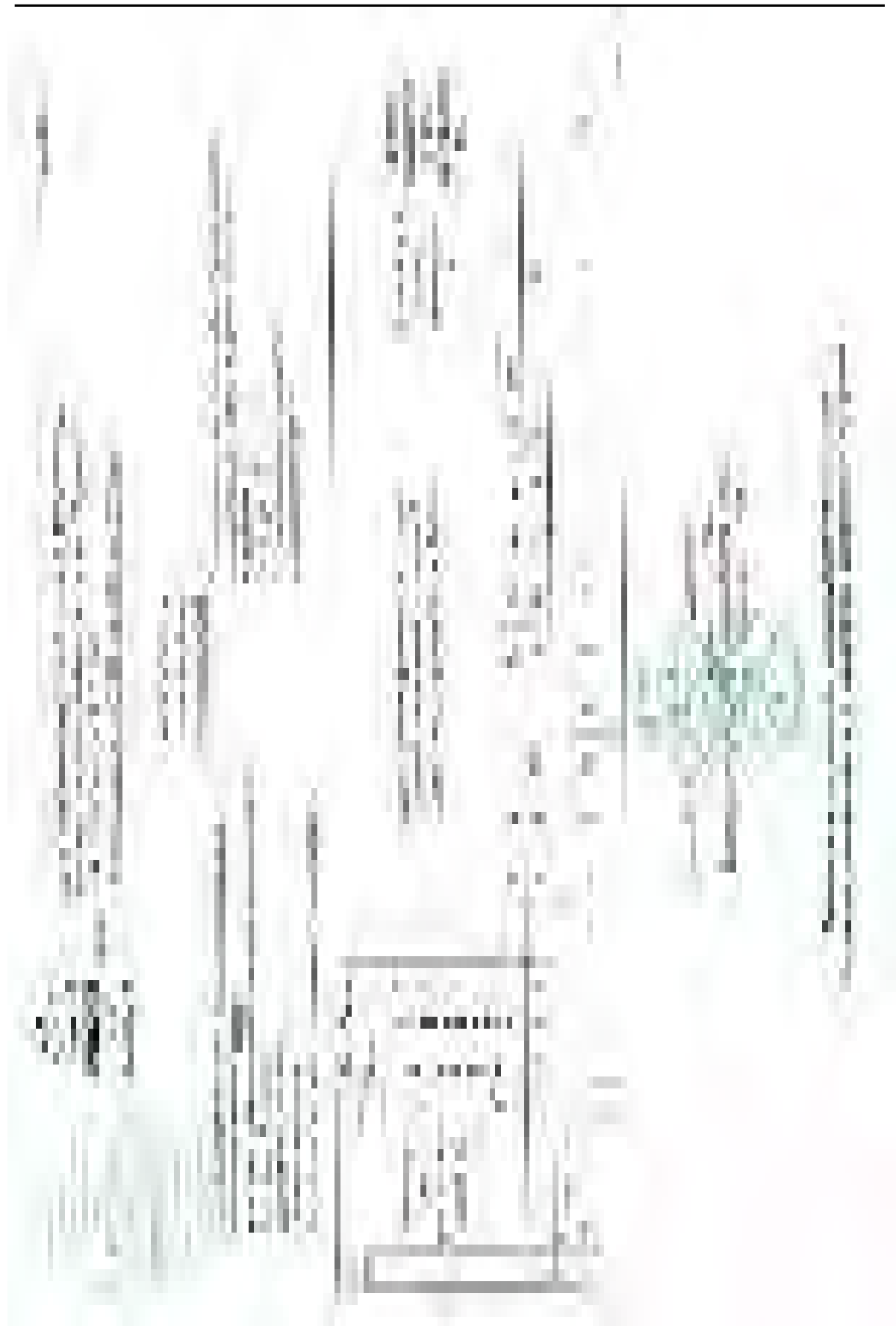


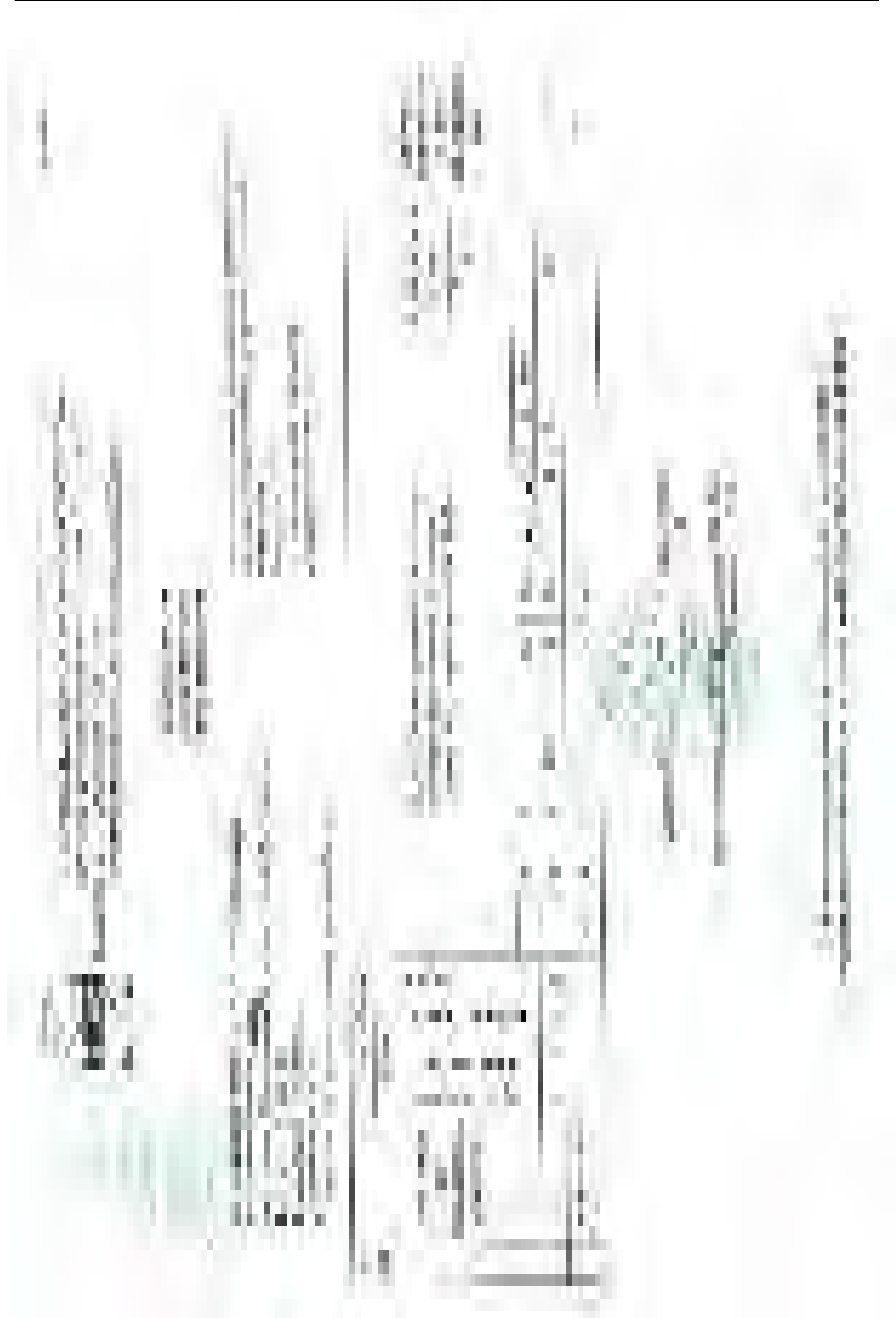


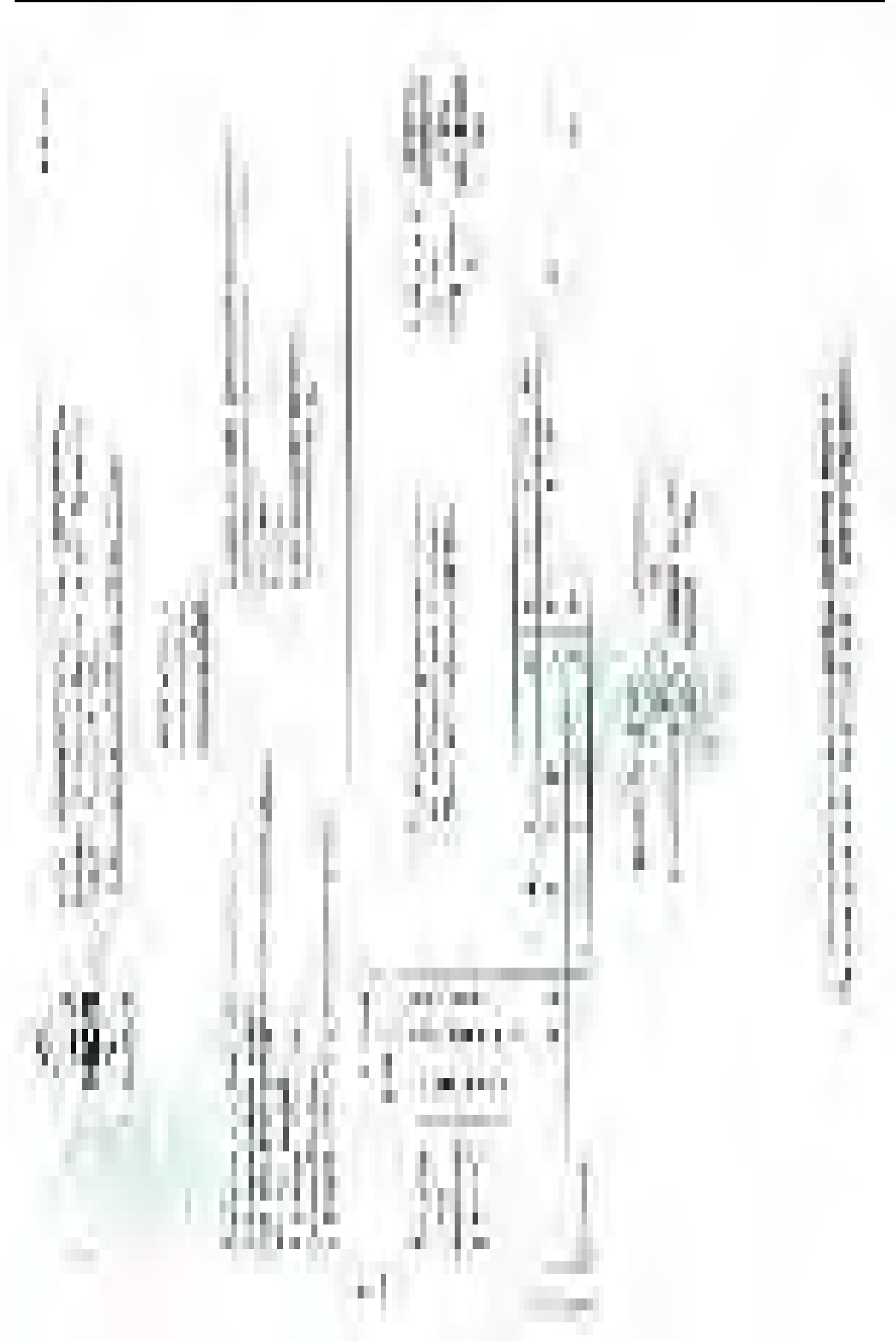














**Appendix 14**

**The results of soil samples tests, 2018 Lot 3**

**km 275**

<b>Name of indicators</b>	<b>Data obtained prior to construction</b>	<b>July</b>	<b>August</b>	<b>September</b>	<b>October</b>	<b>November</b>
Hydrogen PH	7.80	7.40	7.60	7.57	7.50	7.45
dense residue	0.257	0.267	0.170	0.175	0.168	0.164
Petroleum products, mg / g	0.020	0.02	0.04	0.03	0.02	0.021
Chlorides	0.07	0.236	0.256	0.250	0.253	0.250
Sulfates	0.448	0.5	0.475	0.471	0.475	0.471
Calcium	0.50	0.64	0.80	0.82	0.83	0.80
Magnesium	0.0	0.40	0.75	0.76	0.77	0.75
Carbonates	0.0	0.0	0.08	0.07	0.06	0.05
Bicarbonate	27.0	0.19	40.0	41.0	42.0	43.0

**KM 290**

<b>Name of indicators</b>	<b>July</b>	<b>August</b>	<b>September</b>	<b>October</b>	<b>November</b>
Hydrogen PH	7.5	7.35	7.30	7.33	7.30
dense residue	0.457	0.2	0.210	0.211	0.213
Petroleum products, mg / g	0.02	0.035	0.031	0.021	0.020
Chlorides	0.40	0.249	0.250	0.252	0.255
Sulfates	0.527	0.462	0.465	0.467	0.470
Calcium	0.50	0.87	0.88	0.89	0.90
Magnesium	0.39	0.72	0.73	0.74	0.76
Carbonates	0.0	0.077	0.076	0.074	0.077
Bicarbonate	0.20	54.00	55.0	56.0	60.00

**km 300**

<b>Name of indicators</b>	<b>Data obtained prior to construction</b>	<b>July</b>	<b>August</b>	<b>September</b>	<b>October</b>	<b>November</b>
Hydrogen PH	7.32	7.29		7.30	7.28	7.33
dense residue	0.279	0.199		0.198	0.199	0.196
Petroleum products, mg / g	0.017	0.025		0.023	0.020	0.019
Chlorides	0.09	0.250		0.252	0.250	0.255
Sulfates	0.470	0.470		0.474	0.472	0.476



Calcium	0.78	0.81		0.80	0.83	0.80
Magnesium	1.6	0.70		0.69	0.70	0.68
Carbonates	0.2	0.075		0.074	0.071	0.070
Bicarbonate	28.0	55.0		55.1	55.6	53.7

#### km 320

Name of indicators	Data obtained prior to construction	July	August	September	October	November
Hydrogen PH	7.20				7.40	
dense residue	0.250				0.200	
Petroleum products, mg / g	0.017				0.020	
Chlorides	0.08				0.242	
Sulfates	0.462				0.461	
Calcium	0.71				0.80	
Magnesium	1.1				0.73	
Carbonates	0.08				0.094	
Bicarbonate	32.0				66.0	

#### km 330

Name of indicators	Data obtained prior to construction	July	August	September	October	November
Hydrogen PH	7.23	7.6	7.30	7.42		7.44
dense residue	0.259	0.405	0.198	0.199		0.210
Petroleum products, mg / g	0.012	0.037	0.027	0.024		0.018
Chlorides	0.08	0.054	0.251	0.250		0.250
Sulfates	0.460	0.601	0.471	0.468		0.466
Calcium	0.73	0.48	0.80	0.82		0.78
Magnesium	1.12	0.40	0.73	0.75		0.62
Carbonates	0.06	0.0	0.091	0.090		0.090
Bicarbonate	33.0	0.19	67.0	65.0		68.0

### Production Base Nogayty

#### Point 1 East

Name of indicators	August	September	October	November
Hydrogen PH	7.33	7.40		7.40
dense residue	0.194	0.195		0.182

Petroleum products, mg / g	0.028	0.025		0.019
Chlorides	0.253	0.255		0.261
Sulfates	0.471	0.472		0.472
Calcium	0.82	0.85		0.87
Magnesium	0.75	0.77		0.77
Carbonates	0.090	0.088		0.082
Bicarbonate	68.0	69.0		71.0

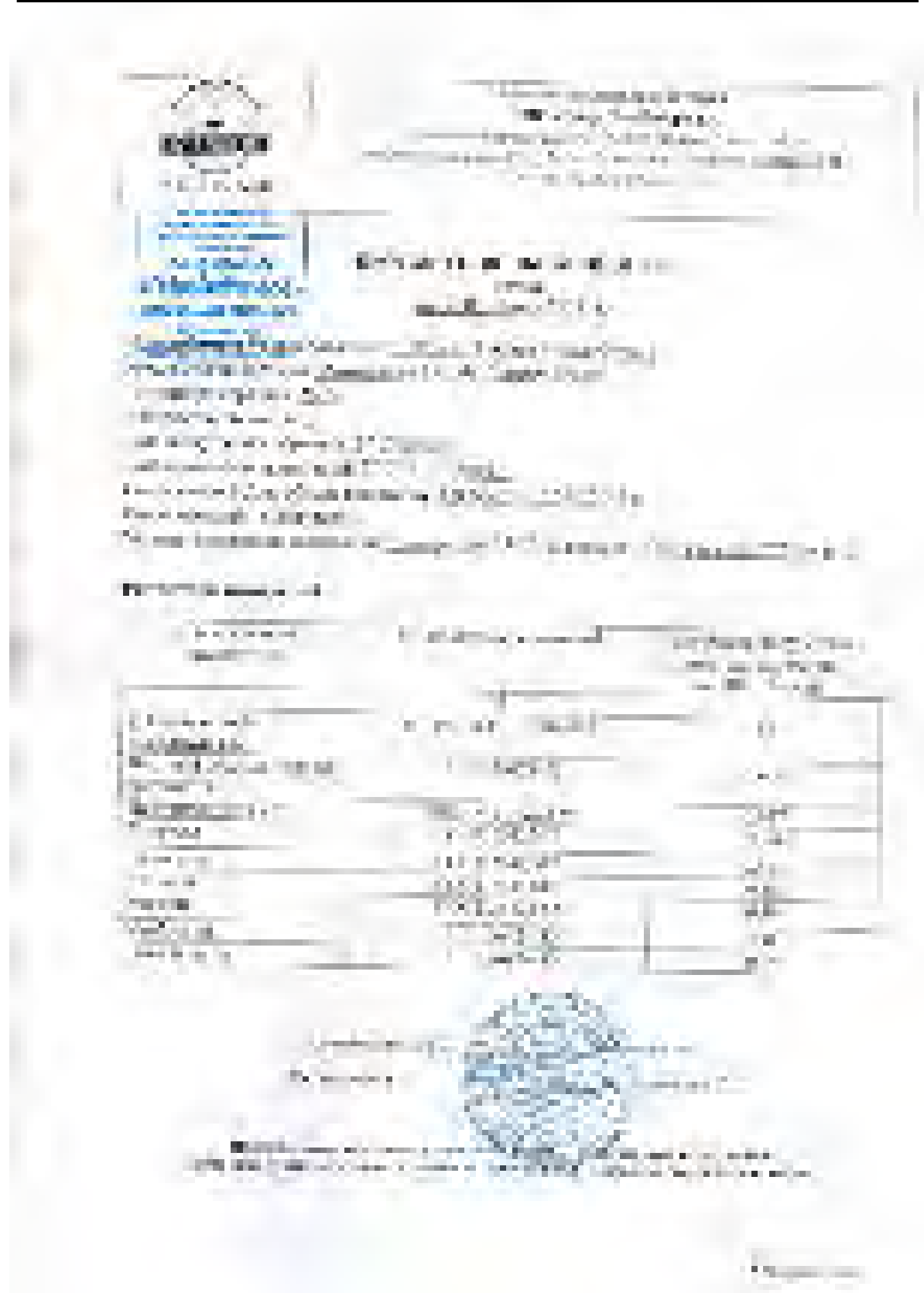
#### Point 2 South

Name of indicators	August	September	October	November
Hydrogen PH	7.38	7.37		7.36
dense residue	0.193	0.195		0.183
Petroleum products, mg / g	0.030	0.024		0.020
Chlorides	0.256	0.257		0.258
Sulfates	0.488	0.489		0.473
Calcium	0.79	0.80		0.86
Magnesium	0.77	0.75		0.75
Carbonates	0.090	0.089		0.084
Bicarbonate	68.0	69.0		69.0

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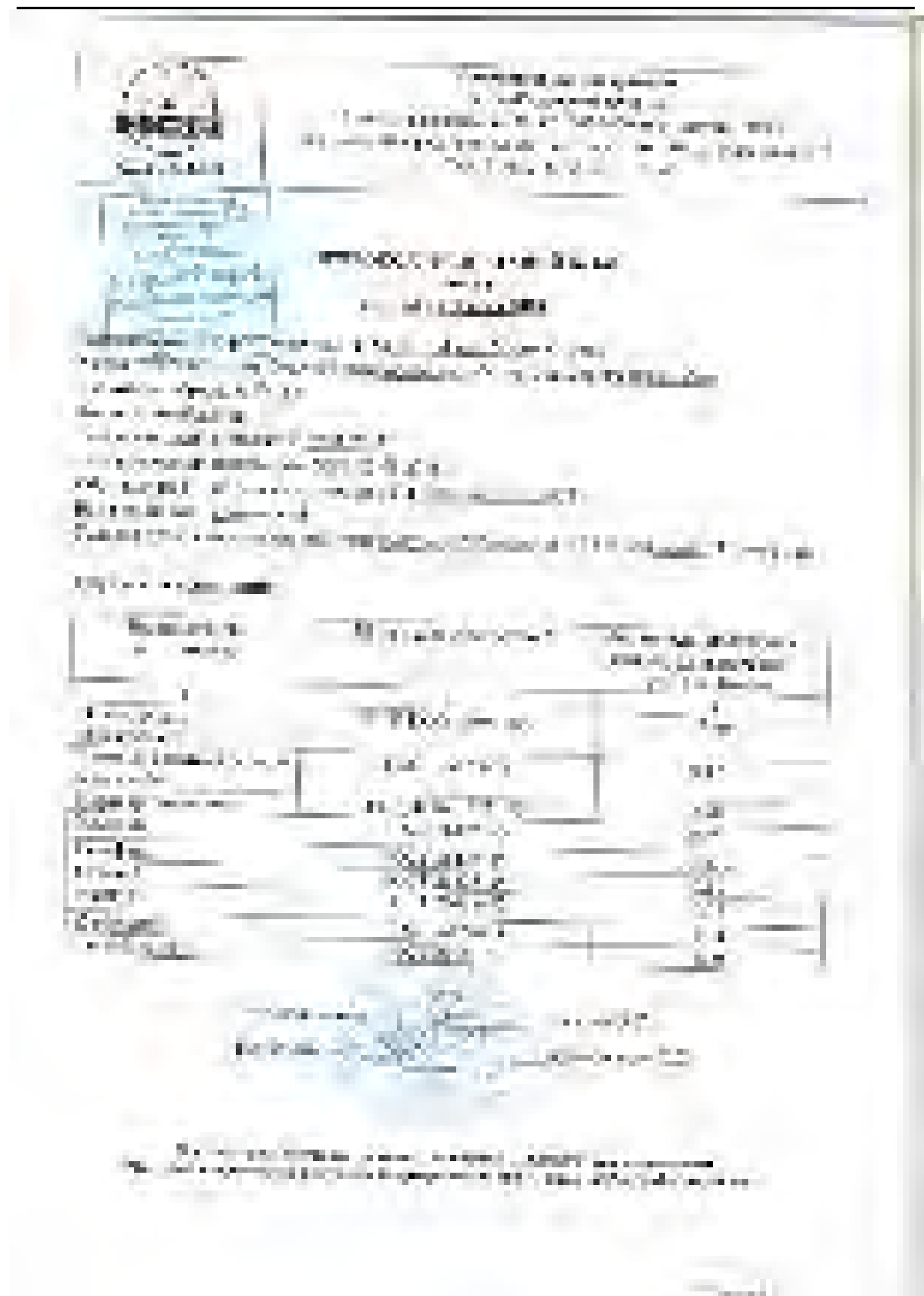
























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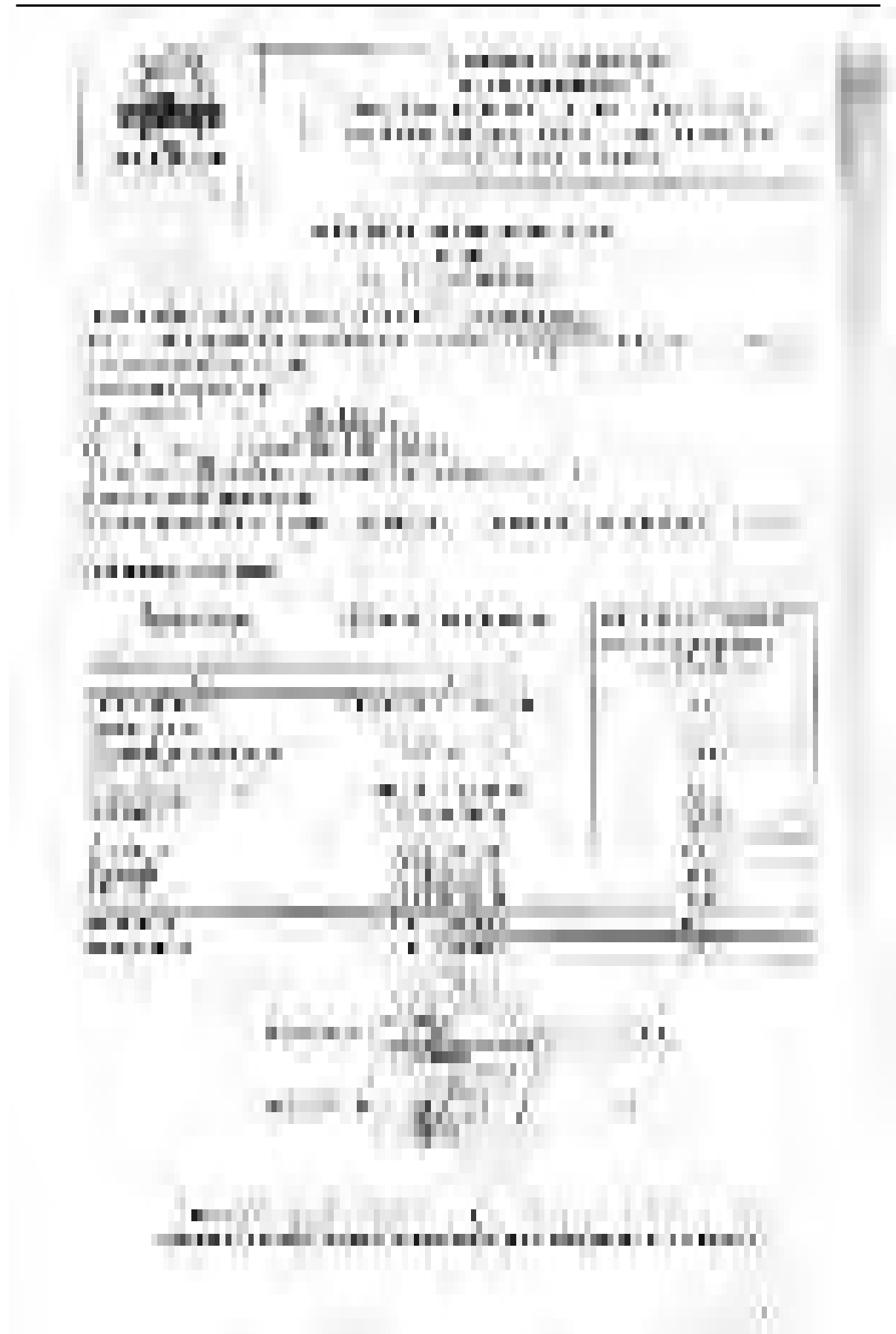


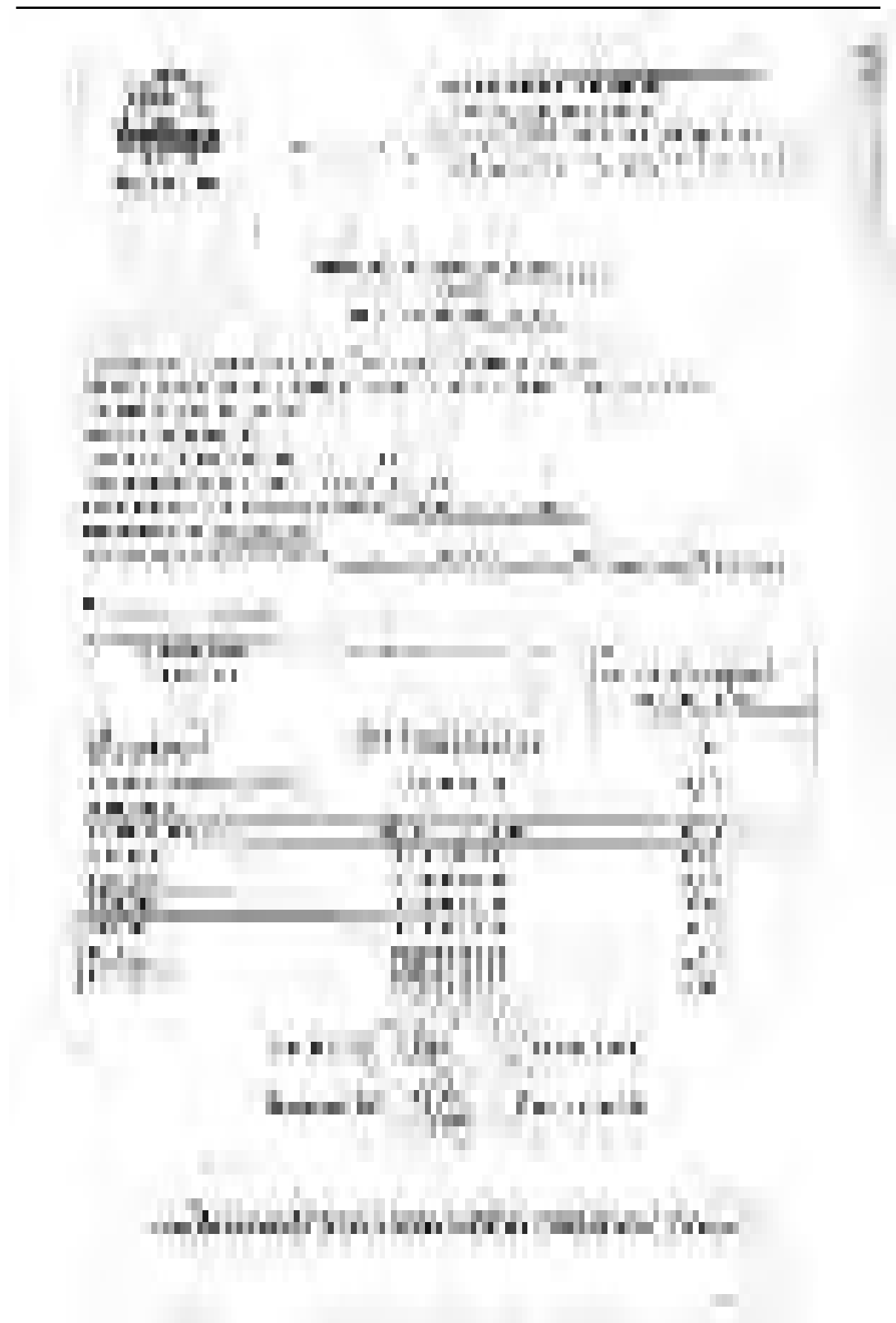


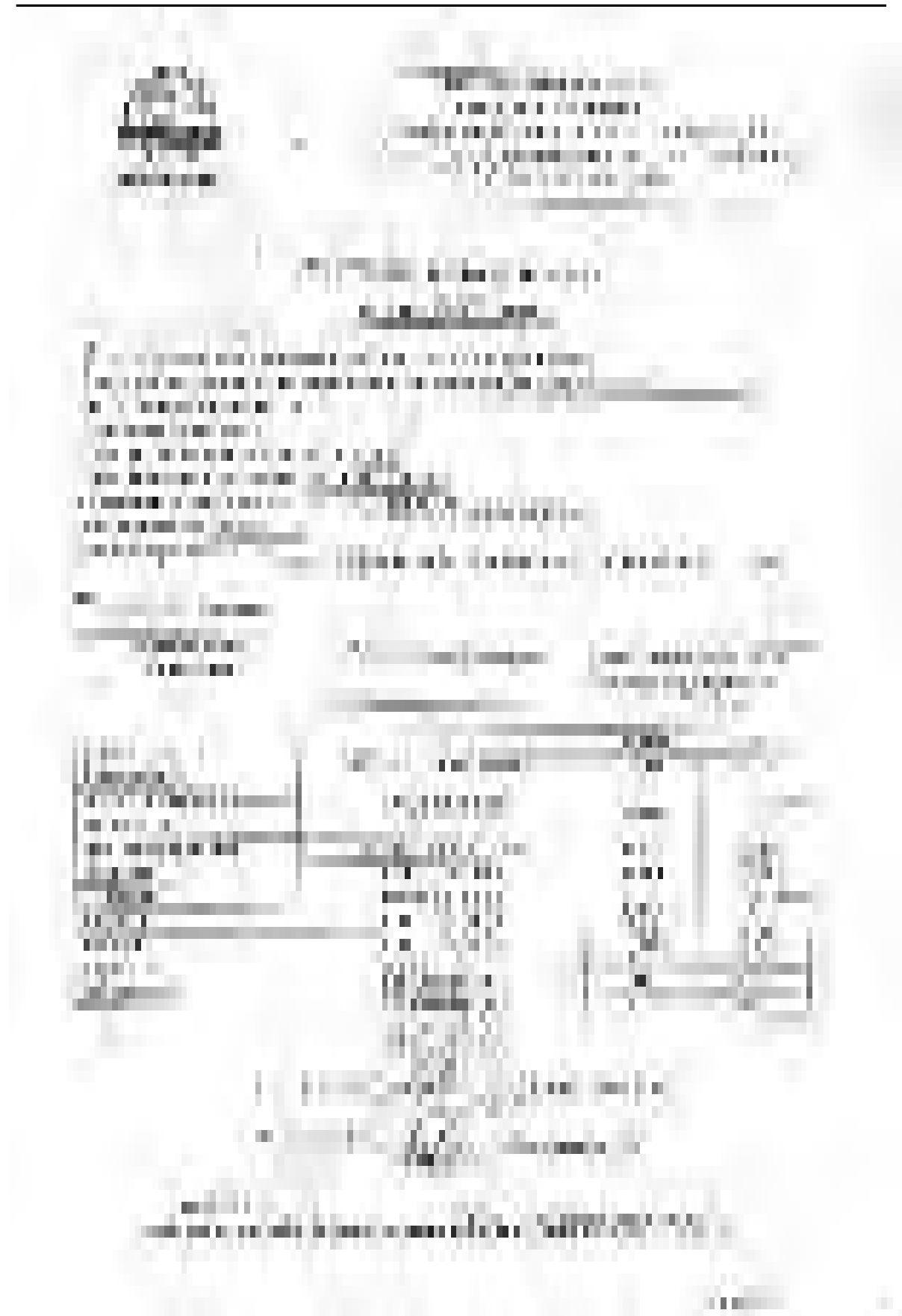












Appendix 15

The results of measurements of atmospheric air polluting substances for Lot 3 2018.

Sampling points	Name of pollutants	Data obtained prior to construction	MPC norm m.r, mg/m <sup>3</sup>	July 27.07.18	August 29.08.118	September	October	November
Road section km 275	Inorganic dust 70-20%	0.071	0.3	0.078	0.080	0.082		0.074
	Nitrogen dioxide	0.069	0.2	0.075	0.077	0.080		0.068
	Sulphur dioxide	n/d	0.5	0	n/d	n/d		n/d
	Carbon oxide	1.7	5.0	1.7	1.8	1.8		1.2
	formaldehyde	0.0013	0.051	0.0015	0.0014	0.0015		0.0016
	Hydrocarbons C <sub>12</sub> -C <sub>19</sub>	0.13	1	0.13	0.14	0.13		0.1
	Benzene	0.074	0.3	0.081	0.083	0.080		0.074
	Xylene	0.090	0.2	0.096	0.098	0.090		0.092
	Methylbenzene	0.2	0.6	0.4	0.3	0.4		0.3
	Hydrogen sulphide	n/d	0.008	0	n/d	n/d		n/d
Road section km 280	Inorganic dust 70-20%		0.3	0.079	0.081	0.083		0.070
	Nitrogen dioxide		0.2	0.072	0.074	0.076		0.065
	Sulphur dioxide		0.5	0	n/d	n/d		n/d
	Carbon oxide		5.0	1.4	1.5	1.6		1.0
	formaldehyde		0.051	0.0015	0.0016	0.0015		0.0014
	Hydrocarbons C <sub>12</sub> -C <sub>19</sub>		1	0.3	0.4	0.5		0.1
	Benzene		0.3	0.084	0.086	0.087		0.070
	Xylene		0.2	0.096	0.098	0.099		0.090
	Methylbenzene		0.6	0.2	0.3	0.4		0.2
	Hydrogen sulphide		0.008		n/d	n/d		n/d
Road section km 285	Inorganic dust 70-20%	0.069	0.3					
	Nitrogen dioxide	0.067	0.2					
	Sulphur dioxide	n/d	0.5					
	Carbon oxide	1.6	5.0					
	formaldehyde	0.0012	0.051					

	Hydrocarbons C <sub>12</sub> -C <sub>19</sub>	0.12	1					
	Benzene	0.072	0.3					
	Xylene	0.088	0.2					
	Methylbenzene	0.3	0.6					
	Hydrogen sulphide	n/d	0.008					
Road section km 295	Inorganic dust 70-20%	0.069	0.3					
	Nitrogen dioxide	0.067	0.2					
	Sulphur dioxide	n/d	0.5					
	Carbon oxide	1.6	5.0					
	formaldehyde	0.0012	0.051					
	Hydrocarbons C <sub>12</sub> -C <sub>19</sub>	0.12	1					
	Benzene	0.072	0.3					
	Xylene	0.088	0.2					
	Methylbenzene	0.3	0.6					
	Hydrogen sulphide	n/d	0.008					
Road section km 290	Inorganic dust 70-20%		0.3	0.077	0.079	0.080		0.072
	Nitrogen dioxide		0.2	0.071	0.073	0.075		0.070
	Sulphur dioxide		0.5	0	n/d	n/d		n/d
	Carbon oxide		5.0	1.6	1.7	1.6		1.0
	formaldehyde		0.051	0.011	0.0012	0.0013		0.0014
	Hydrocarbons C <sub>12</sub> -C <sub>19</sub>		1	0.17	0.18	0.17		0.1
	Benzene		0.3	0.081	0.083	0.085		0.072
	Xylene		0.2	0.1	0.2	0.1		0.090
	Methylbenzene		0.6	0.3	0.4	0.3		0.3
	Hydrogen sulphide		0.008	0	n/d	n/d		n/d
Road section km 300	Inorganic dust 70-20%	0.067	0.3	0.078	0.080	0.082		0.076
	Nitrogen dioxide	0.068	0.2	0.075	0.077	0.079		0.059
	Sulphur dioxide	n/d	0.5	0	n/d	n/d		n/d
	Carbon oxide	1.6	5.0	1.7	1.8	1.7		1.0
	formaldehyde	0.0013	0.051	0.0014	0.0015	0.0013		0.0010

	Hydrocarbons C <sub>12</sub> -C <sub>19</sub>	0.12	1	0.13	0.12	0.13		0.1
	Benzene	0.073	0.3	0.082	0.084	0.085		0.064
	Xylene	0.089	0.2	0.095	0.096	0.097		0.086
	Methylbenzene	0.2	0.6	0.3	0.4	0.3		0.2
	Hydrogen sulphide	n/d	0.008	0	n/d	n/d		n/d
Road section km 310	Inorganic dust 70-20%	0.068	0.3	0.082	0.083	0.083		0.3
	Nitrogen dioxide	0.069	0.2	0.075	0.077	0.077		0.2
	Sulphur dioxide	n/d	0.5	0	n/d	n/d		0.5
	Carbon oxide	1.6	5.0	1.5	1.6	1.6		5.0
	formaldehyde	0.0012	0.051	0.0014	0.0015	0.0015		0.05
	Hydrocarbons C <sub>12</sub> -C <sub>19</sub>	0.13	1	0.12	0.13	0.13		1.0
	Benzene	0.074	0.3	0.082	0.084	0.084		0.3
	Xylene	0.088	0.2	0.099	0.1	0.1		0.2
	Methylbenzene	0.2	0.6	0.4	0.3	0.3		0.6
	Hydrogen sulphide	n/d	0.008	0	n/d	n/d		0.008
Road section km 320	Inorganic dust 70-20%	0.070	0.3	0.085	0.086	0.087		0.074
	Nitrogen dioxide	0.071	0.2	0.078	0.079	0.080		0.068
	Sulphur dioxide	n/d	0.5	0	n/d	n/d		n/d
	Carbon oxide	1.7	5.0	1.7	1.8	1.7		1.0
	formaldehyde	0.0013	0.051	0.0012	0.0013	0.0014		0.0009
	Hydrocarbons C <sub>12</sub> -C <sub>19</sub>	0.13	1	0.14	0.15	0.16		0.2
	Benzene	0.075	0.3	0.085	0.086	0.087		0.064
	Xylene	0.089	0.2	0.098	0.099	0.1		0.072
	Methylbenzene	0.3	0.6	0.4	0.3	0.2		0.2
	Hydrogen sulphide	n/d	0.008	0	n/d	n/d		n/d
Road section km 330	Inorganic dust 70-20%	0.071	0.3	0.082	0.084	0.085		0.072
	Nitrogen dioxide	0.070	0.2	0.079	0.081	0.083		0.070
	Sulphur dioxide	n/d	0.5	0	n/d	n/d		n/d
	Carbon oxide	1.6	5.0	1.5	1.6	1.7		1.0
	formaldehyde	0.0012	0.051	0.0013	0.0014	0.0015		0.0010

	Hydrocarbons C <sub>12</sub> -C <sub>19</sub>	0.12	1	0.15	0.15	0.16		0.2
	Benzene	0.077	0.3	0.087	0.089	0.091		0.068
	Xylene	0.090	0.2	0.1	0.2	0.1		0.071
	Methylbenzene	0.3	0.6	0.3	0.4	0.3		0.2
	Hydrogen sulphide	n/d	0.008	0	n/d	n/d		n/d
		w-w	l-w					
Production base Nogayty Point 1	Inorganic dust 70-20%	0.0354	0.0356	0.3	0.0405	0.0406		0.0388
	Nitrogen dioxide	0.0269	0.0271	0.2	0.0302	0.0304	0.0305	0.0278
	Sulphur dioxide	n/d	n/d	0.5	0	n/d	n/d	n/d
	Carbon oxide	1.6	1.7	5.0	1.5	1.4	1.5	1.2
	formaldehyde	0.0014	0.0014	0.051	0.0014	0.0015	0.0014	0.0010
	Hydrocarbons C <sub>12</sub> -C <sub>19</sub>	0.099	0.1	1	0.4	0.3	0.4	0.1
	Hydrogen sulphide	n/d	n/d	0.008	0	n/d	n/d	n/d
Production base Nogayty 100 m East	Inorganic dust 70-20%				0.078	0.0407		
	Nitrogen dioxide				0.074	0.0304		
	Sulphur dioxide				n/d	n/d		
	Carbon oxide				2.0	1.4		
	formaldehyde				0.0013	0.0015		
	Hydrocarbons C <sub>12</sub> -C <sub>19</sub>				0.14	0.3		
	Hydrogen sulphide				n/d	n/d		
Production base Nogayty 100 m to the South	Inorganic dust 70-20%				0.075			
	Nitrogen dioxide				0.066			
	Sulphur dioxide				n/d			
	Carbon oxide				2.1			
	formaldehyde				0.0013			
	Hydrocarbons C <sub>12</sub> -C <sub>19</sub>				0.14			
	Hydrogen sulphide				n/d			



		Data obtained prior to construction		MPC	July		August		September		October		November	
		w-w *	l-w**		w-w *	l-w**	w-w *	l-w**	w-w *	l-w**	w-w *	l-w**	w-w *	l-w**
Residential area of Zharly village	Inorganic dust 70-20%	0.0348	0.0349	0.3	0.0406	0.0389	0.0408	0.0391	0.0408	0.0392			0.0388	0.0392
	Nitrogen dioxide	0.0265	0.0269	0.2	0.0280	0.0279	0.0283	0.0281	0.02885	0.0282			0.0282	0.0286
	Sulphur dioxide	n/d	n/d	0.5	n/d	n/d	n/d	n/d	n/d	n/d			n/d	n/d
	Carbon oxide	1.5	1.6	5.0	1.7	1.7	1.7	.8	1.6	1.7			1.5	1.6
	formaldehyde	0.0013	0.0014	0.051	0.0015	0.0015	0.0014	0.0015	0.0013	0.0014			0.0014	0.0016
	Hydrocarbons C <sub>12</sub> -C <sub>19</sub>	0.098	0.099	1	0.2	0.02	0.2	0.3	0.3	0.3			0.2	0.1
	Hydrogen sulphide	n/d	n/d	0.008	n/d	n/d	n/d	n/d	n/d	n/d			n/d	n/d

\* w-w - windward part

\*\* l-w - leeward part

\* n/d - not detected

		MPC	August		September		October		November	
			w-w *	l-w**	w-w *	l-w**	w-w *	l-w**	w-w *	l-w**
Peoduction base of Nogaity vill.	Inorganic dust 70-20%	0.3	0.080	0.077	0.082	0.080			0.0385	0.0388
	Nitrogen dioxide	0.2	0.076	0.068	0.078	0.070			0.0275	0.0278
	Sulphur dioxide	0.5	n/d	n/d	n/d	n/d			n/d	n/d
	Carbon oxide	5.0	2.1	2.1	2.1	2.2			2.0	2.1
	formaldehyde	0.051	0.0013	0.0014	0.0012	0.0013			0.0010	0.0011
	Hydrocarbons C <sub>12</sub> -C <sub>19</sub>	1	0.14	0.15	0.14	0.15			0.1	0.1
	Hydrogen sulphide	0.008	n/d	n/d	n/d	n/d			n/d	n/d

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Product category	Product type	Product name	Product description	Product price	Product weight	Product volume
Food	Meat	Beef	Beef	1.00	1.00	1.00
Food	Meat	Pork	Pork	1.00	1.00	1.00
Food	Meat	Chicken	Chicken	1.00	1.00	1.00
Food	Meat	Fish	Fish	1.00	1.00	1.00
Food	Meat	Egg	Egg	1.00	1.00	1.00
Food	Meat	Dairy	Dairy	1.00	1.00	1.00
Food	Meat	Grain	Grain	1.00	1.00	1.00
Food	Meat	Vegetable	Vegetable	1.00	1.00	1.00
Food	Meat	Fruit	Fruit	1.00	1.00	1.00
Food	Meat	Other	Other	1.00	1.00	1.00

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Учредитель: АО «Актюбеский дорожный проект»

Генеральный директор: \_\_\_\_\_

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**Исходные данные по объему работ**

Содержание работ:

1. Ремонт существующей трассы: 160+000 - 160+330

2. Строительство новой трассы: 160+330 - 160+500

3. Строительство моста через реку: 160+500 - 160+600

4. Строительство обхода: 160+600 - 160+700

5. Строительство обхода: 160+700 - 160+800

6. Строительство обхода: 160+800 - 160+900

7. Строительство обхода: 160+900 - 160+1000

8. Строительство обхода: 160+1000 - 160+1100

9. Строительство обхода: 160+1100 - 160+1200

10. Строительство обхода: 160+1200 - 160+1300

11. Строительство обхода: 160+1300 - 160+1400

12. Строительство обхода: 160+1400 - 160+1500

13. Строительство обхода: 160+1500 - 160+1600

14. Строительство обхода: 160+1600 - 160+1700

15. Строительство обхода: 160+1700 - 160+1800

16. Строительство обхода: 160+1800 - 160+1900

17. Строительство обхода: 160+1900 - 160+2000

18. Строительство обхода: 160+2000 - 160+2100

19. Строительство обхода: 160+2100 - 160+2200

20. Строительство обхода: 160+2200 - 160+2300

21. Строительство обхода: 160+2300 - 160+2400

22. Строительство обхода: 160+2400 - 160+2500

23. Строительство обхода: 160+2500 - 160+2600

24. Строительство обхода: 160+2600 - 160+2700

25. Строительство обхода: 160+2700 - 160+2800

26. Строительство обхода: 160+2800 - 160+2900

27. Строительство обхода: 160+2900 - 160+3000

28. Строительство обхода: 160+3000 - 160+3100

29. Строительство обхода: 160+3100 - 160+3200

30. Строительство обхода: 160+3200 - 160+3300

№ п/п	Наименование работ	Единица измерения	Количество	Стоимость, тенге
1	Ремонт существующей трассы	км	1,3	130000000
2	Строительство новой трассы	км	1,7	170000000
3	Строительство моста	м	100	100000000
4	Строительство обхода	км	1,0	100000000
5	Строительство обхода	км	1,0	100000000
6	Строительство обхода	км	1,0	100000000
7	Строительство обхода	км	1,0	100000000
8	Строительство обхода	км	1,0	100000000
9	Строительство обхода	км	1,0	100000000
10	Строительство обхода	км	1,0	100000000
11	Строительство обхода	км	1,0	100000000
12	Строительство обхода	км	1,0	100000000
13	Строительство обхода	км	1,0	100000000
14	Строительство обхода	км	1,0	100000000
15	Строительство обхода	км	1,0	100000000
16	Строительство обхода	км	1,0	100000000
17	Строительство обхода	км	1,0	100000000
18	Строительство обхода	км	1,0	100000000
19	Строительство обхода	км	1,0	100000000
20	Строительство обхода	км	1,0	100000000
21	Строительство обхода	км	1,0	100000000
22	Строительство обхода	км	1,0	100000000
23	Строительство обхода	км	1,0	100000000
24	Строительство обхода	км	1,0	100000000
25	Строительство обхода	км	1,0	100000000
26	Строительство обхода	км	1,0	100000000
27	Строительство обхода	км	1,0	100000000
28	Строительство обхода	км	1,0	100000000
29	Строительство обхода	км	1,0	100000000
30	Строительство обхода	км	1,0	100000000

Исполнитель: \_\_\_\_\_

Подпись: \_\_\_\_\_



Секретарь: \_\_\_\_\_

Подпись: \_\_\_\_\_

Согласовано: \_\_\_\_\_

(Подпись)

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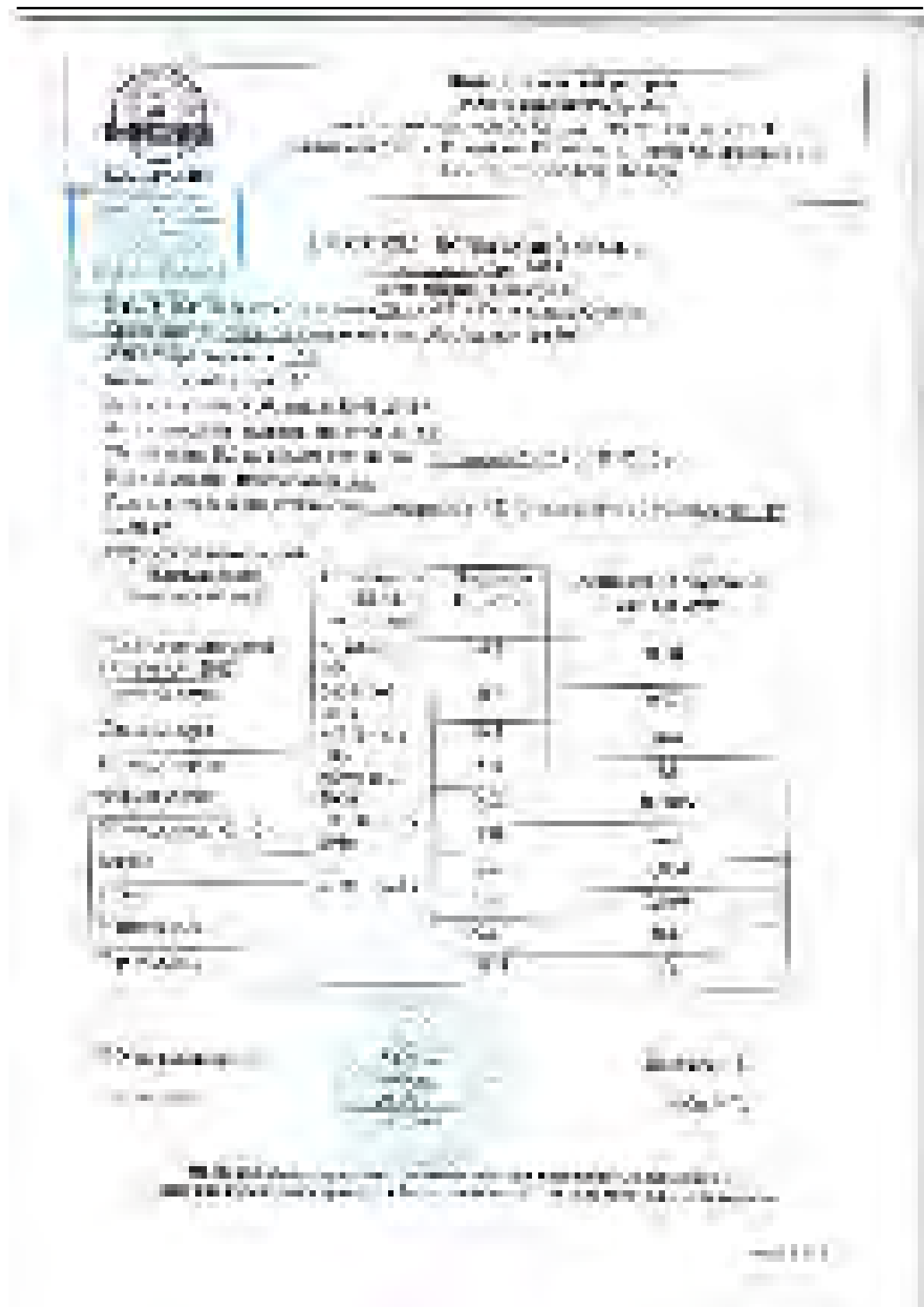


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112



Министерство  
Транспорта и  
Инфраструктуры  
Республики Казахстан

**Сводный отчет о результатах  
мониторинга окружающей среды**

по проекту «Реконструкция автомобильной дороги  
«Актобе-Мака́т» (участок 160-330) в рамках  
проекта CAREC-1 и CAREC-6

---

**1. Общие сведения о проекте**

Наименование проекта: Реконструкция автомобильной дороги «Актобе-Мака́т» (участок 160-330) в рамках проекта CAREC-1 и CAREC-6

Местоположение объекта: Республика Казахстан, Актобская область, Актобский район, село Мака́т

Сроки реализации проекта: с 2017 по 2020 гг.

Исполнитель: АО «Актотранс»

Заказчик: АО «Актотранс»

Финансирование: за счет средств государственного бюджета Республики Казахстан

Цели и задачи проекта: улучшение транспортной инфраструктуры, повышение безопасности дорожного движения, сокращение времени в пути.

Основные этапы реализации проекта: проектирование, строительство, эксплуатация.

Содержание отчета: результаты мониторинга окружающей среды за период с 1 по 30 июня 2018 года.

Наименование показателя	Единица измерения	Значение	Комментарий
Воздух	мг/м³	0,15	в пределах нормы
Вода	мг/л	0,05	в пределах нормы
Почва	мг/кг	0,01	в пределах нормы
Биота	шт./м²	10	в пределах нормы
Шум	дБ	55	в пределах нормы
Вибрация	мм/с²	0,1	в пределах нормы
Радиация	мкР/ч	0,1	в пределах нормы
Температура	°C	25	в пределах нормы
Влажность	%	60	в пределах нормы
Скорость ветра	м/с	2	в пределах нормы
Направление ветра	градусы	180	в пределах нормы
Облачность	%	10	в пределах нормы
Давление	мм.рт.ст.	760	в пределах нормы
Видимость	км	10	в пределах нормы
Осадки	мм	0	в пределах нормы

Подготовлено: 30.06.2018

Исполнитель: АО «Актотранс»



\_\_\_\_\_  
 (подпись)  
 (подпись)

Исполнитель: АО «Актотранс»

И.О. Фамилия И.И. Имя

(подпись)

(подпись)

**АКТ ОБЪЕДИНЕНИЯ**

В соответствии с требованиями законодательства Республики Казахстан, в целях обеспечения достоверности и полноты информации о фактическом состоянии окружающей среды и объектов, находящихся на территории, подлежащей мониторингу, настоящим актом объединяются следующие данные:

**1. ОБЪЕКТЫ МОНИТОРИНГА**

В соответствии с требованиями законодательства Республики Казахстан, в целях обеспечения достоверности и полноты информации о фактическом состоянии окружающей среды и объектов, находящихся на территории, подлежащей мониторингу, настоящим актом объединяются следующие данные:

**2. ПОКАЗАТЕЛИ МОНИТОРИНГА**

В соответствии с требованиями законодательства Республики Казахстан, в целях обеспечения достоверности и полноты информации о фактическом состоянии окружающей среды и объектов, находящихся на территории, подлежащей мониторингу, настоящим актом объединяются следующие данные:

Наименование объекта мониторинга	Единица измерения	Фактическое значение	Планируемое значение
Воздух	мг/м³	0,1	0,1
Вода	мг/л	0,1	0,1
Почва	мг/кг	0,1	0,1
Биологическое	шт./м²	0,1	0,1
Акустическое	дБ	0,1	0,1
Радиационное	Бк/л	0,1	0,1
Термическое	°C	0,1	0,1
Вибрационное	мм/с	0,1	0,1
Электромагнитное	В/м	0,1	0,1
Оптическое	л/с	0,1	0,1
Акустическое	дБ	0,1	0,1
Радиационное	Бк/л	0,1	0,1
Термическое	°C	0,1	0,1
Вибрационное	мм/с	0,1	0,1
Электромагнитное	В/м	0,1	0,1
Оптическое	л/с	0,1	0,1

**3. ПОДПИСИ**

В соответствии с требованиями законодательства Республики Казахстан, в целях обеспечения достоверности и полноты информации о фактическом состоянии окружающей среды и объектов, находящихся на территории, подлежащей мониторингу, настоящим актом объединяются следующие данные:

**4. ПРИМЕЧАНИЯ**

В соответствии с требованиями законодательства Республики Казахстан, в целях обеспечения достоверности и полноты информации о фактическом состоянии окружающей среды и объектов, находящихся на территории, подлежащей мониторингу, настоящим актом объединяются следующие данные:








117







121



Министерство транспорта и инфраструктуры  
 Республики Казахстан  
 Департамент автомобильных дорог  
 100000, г. Астана, ул. Токтобаева, 100

Место и время заполнения отчета  
 100000, г. Астана, ул. Токтобаева, 100  
 2018-12-31

Наименование объекта: Реконструкция участка автомобильной дороги "Актобе-Макат" (кв. 160-330)

Код объекта: 160-330

Наименование участка: Участок от 160+000 до 160+330

Код участка: 160-330

Наименование работ: Реконструкция участка автомобильной дороги "Актобе-Макат" (кв. 160-330)

Код работ: 160-330

Наименование оборудования: Оборудование для проведения мониторинга

Код оборудования: 160-330

Наименование материалов: Материалы для проведения мониторинга

Код материалов: 160-330

Наименование персонала: Персонал для проведения мониторинга

Код персонала: 160-330

Наименование техники: Техника для проведения мониторинга

Код техники: 160-330

Наименование топлива: Топливо для проведения мониторинга

Код топлива: 160-330

Наименование электроэнергии: Электричество для проведения мониторинга

Код электроэнергии: 160-330

Наименование воды: Вода для проведения мониторинга

Код воды: 160-330

Наименование других ресурсов: Другие ресурсы для проведения мониторинга

Код других ресурсов: 160-330

Наименование ресурса	Единица измерения	Количество	Стоимость
Топливо	л	100	1000
Электричество	кВт.ч	100	1000
Вода	м³	100	1000
Другие ресурсы	шт.	100	1000
<b>Итого</b>		<b>400</b>	<b>4000</b>

Подпись ответственного лица

\_\_\_\_\_

Подпись представителя заказчика

\_\_\_\_\_

Отчет о выполнении работ по мониторингу окружающей среды



124



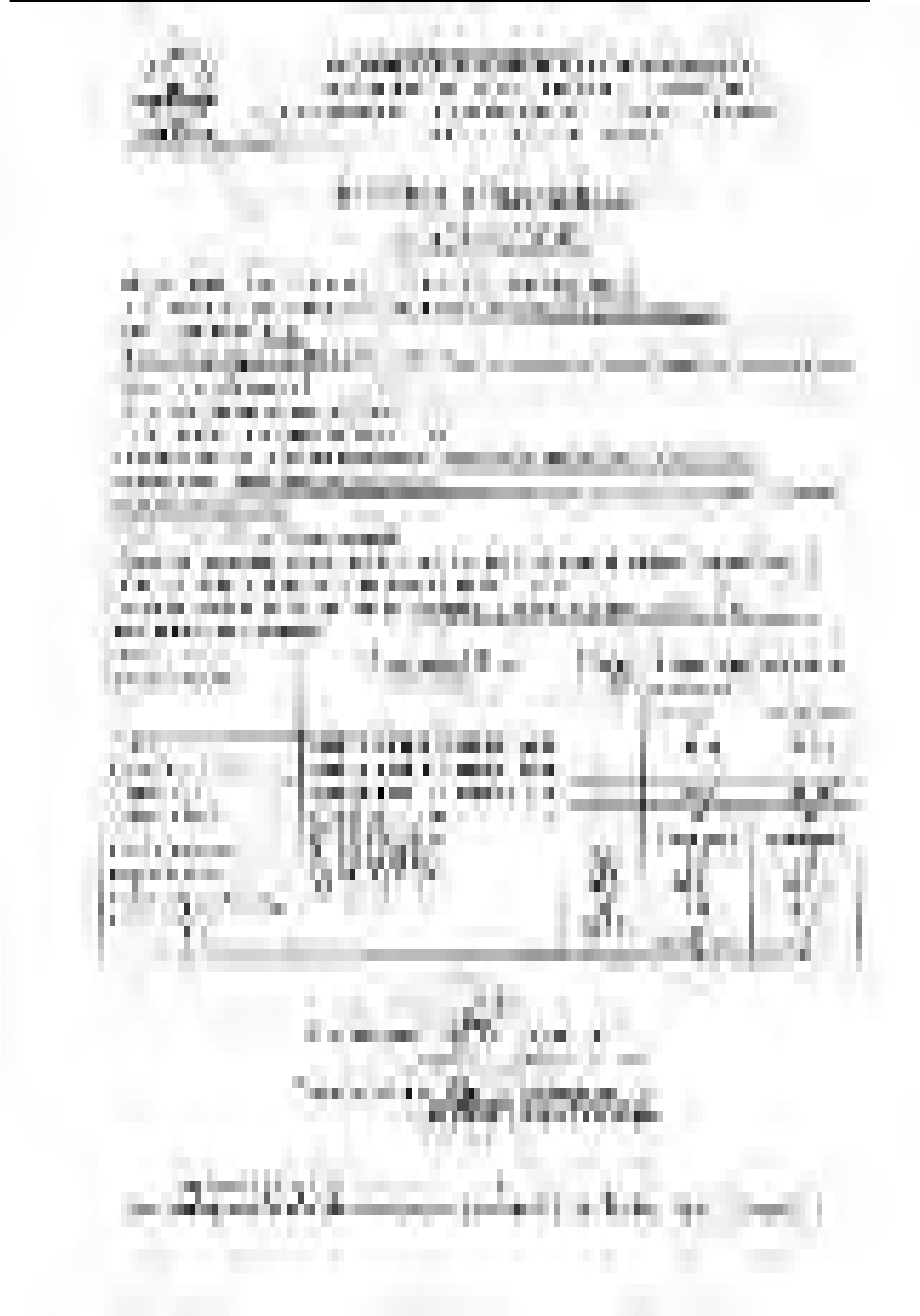
1. **Introduction**  
 2. **Background**  
 3. **Methodology**  
 4. **Results**  
 5. **Conclusion**  
 6. **References**

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<sup>1</sup> <http://www.who.int/mediacentre/factsheets/fs104/en/>



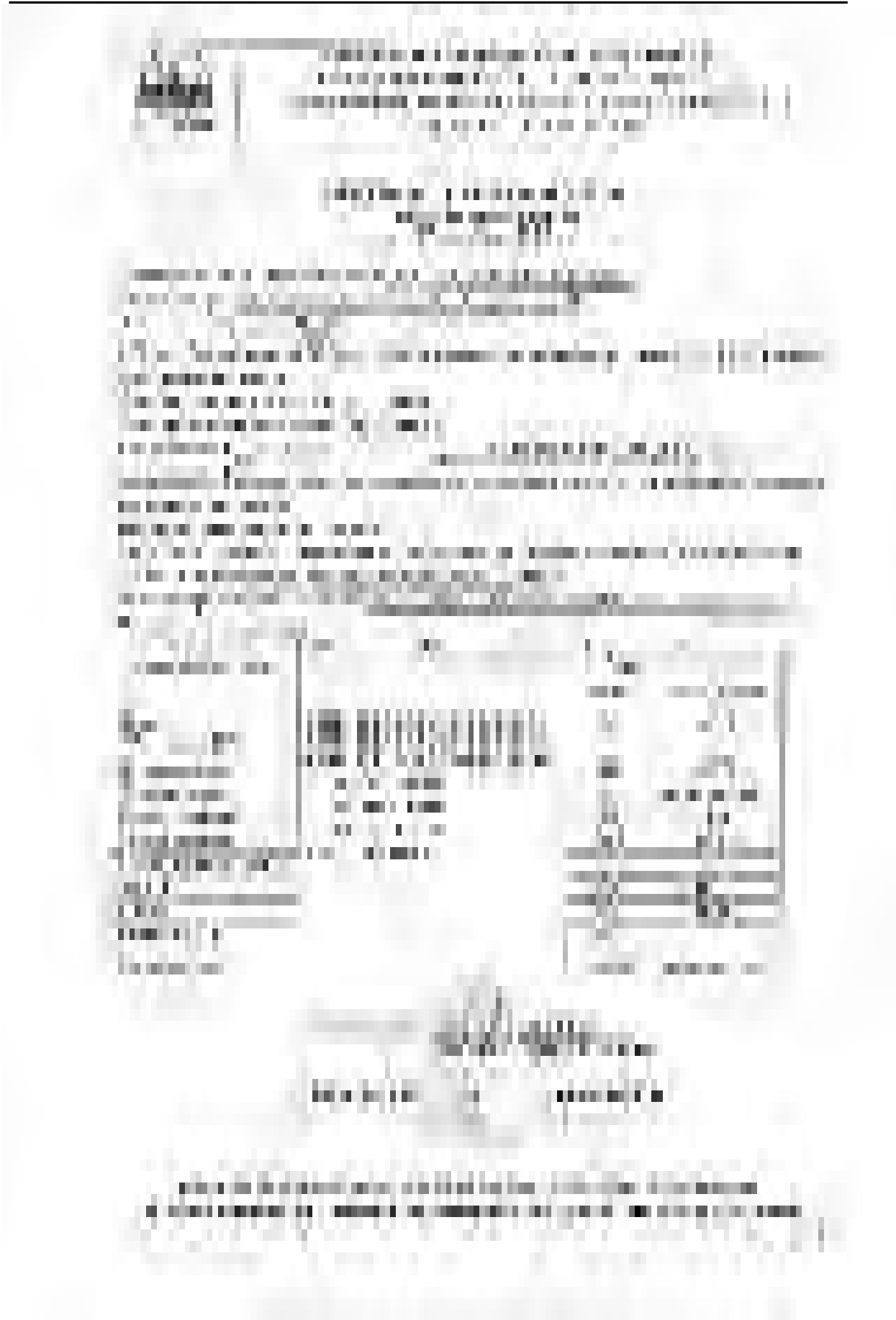




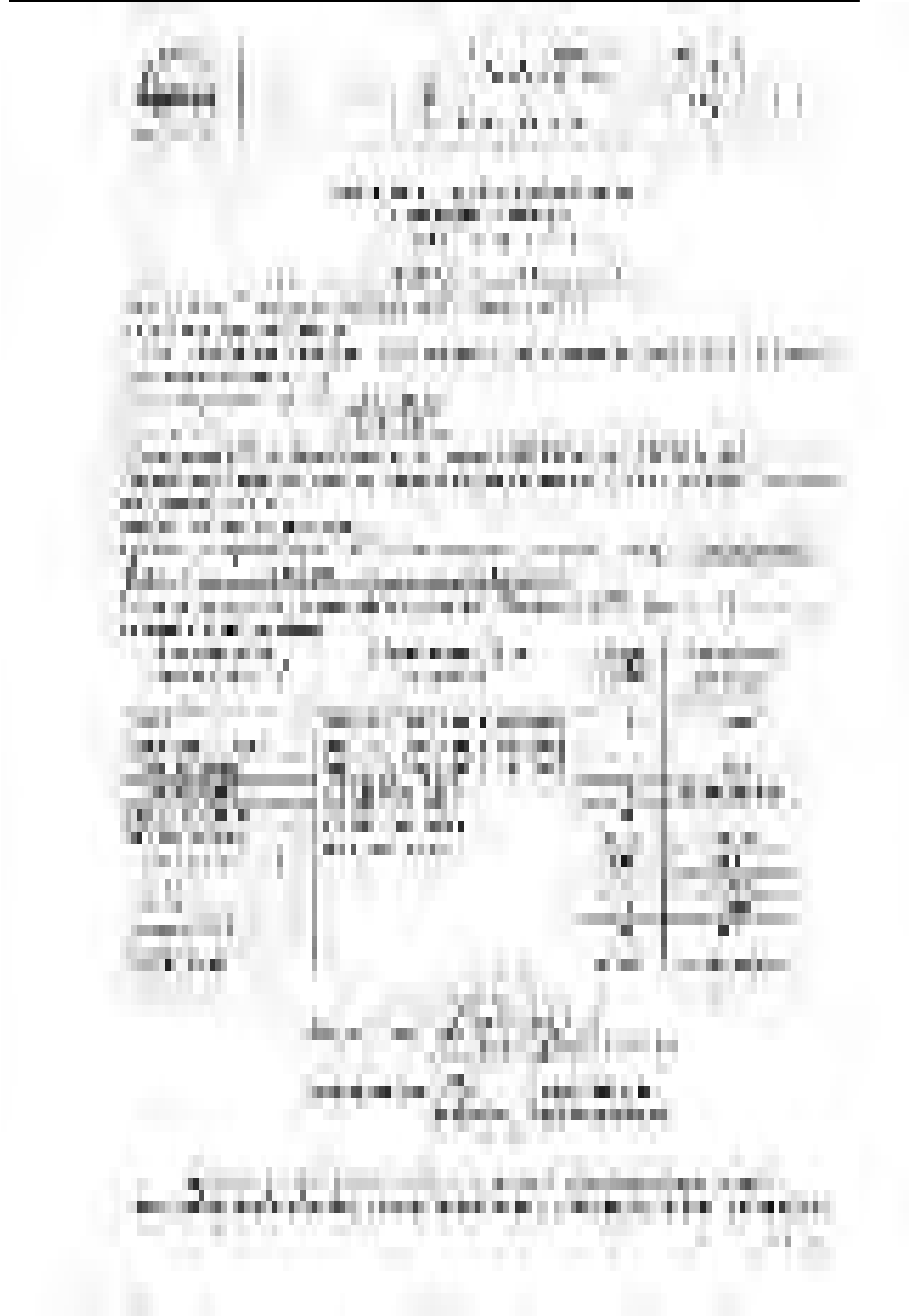










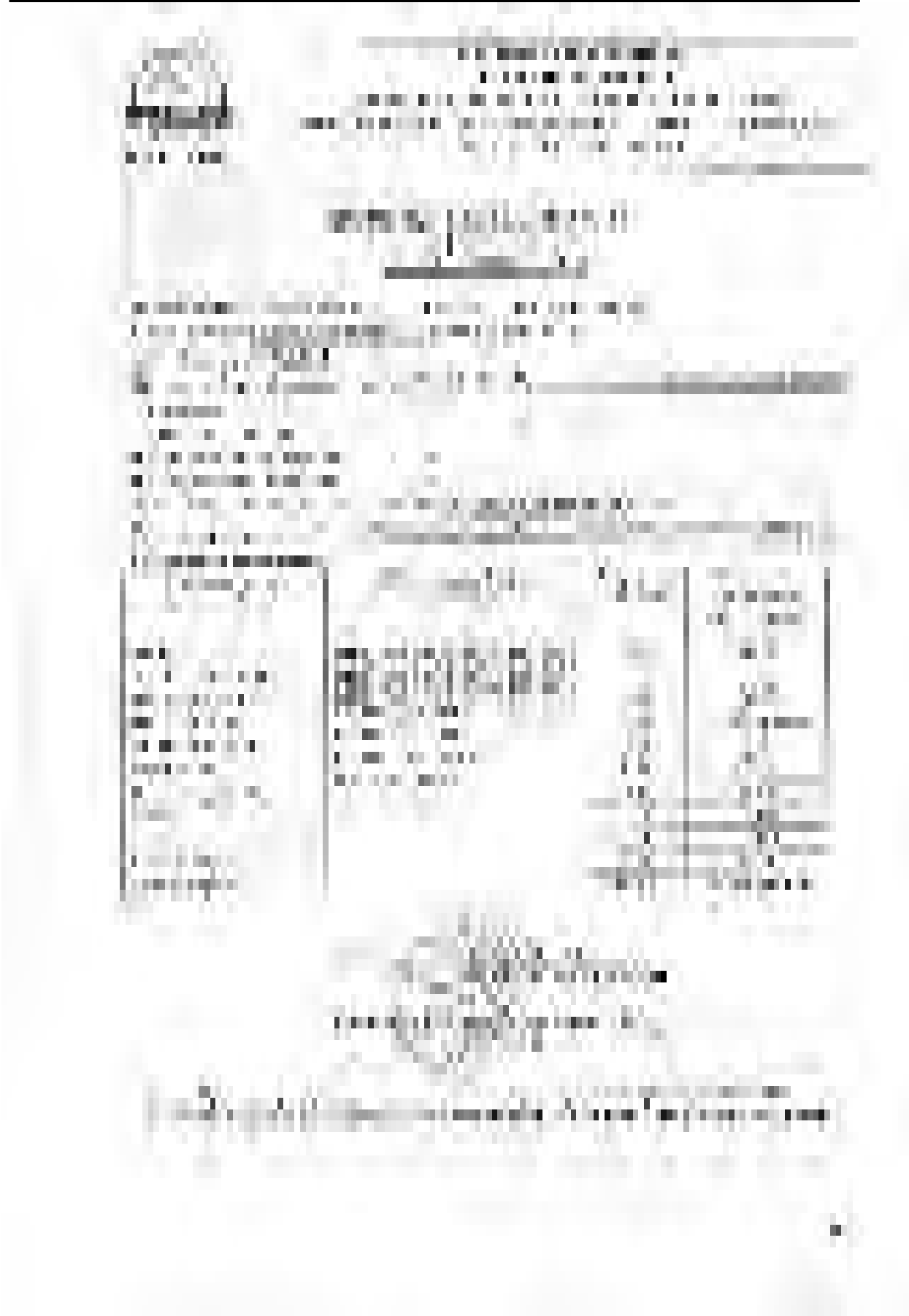


134









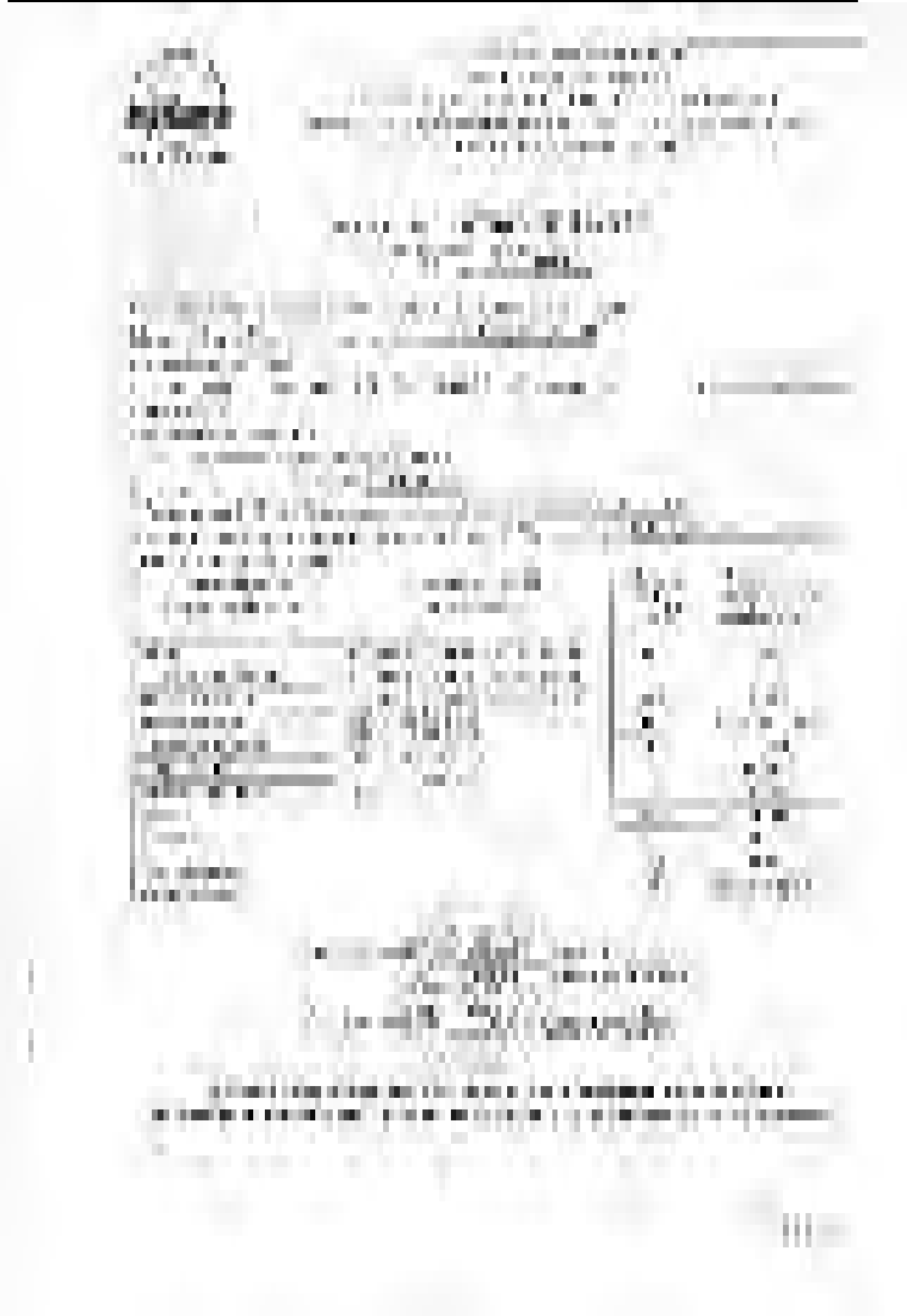






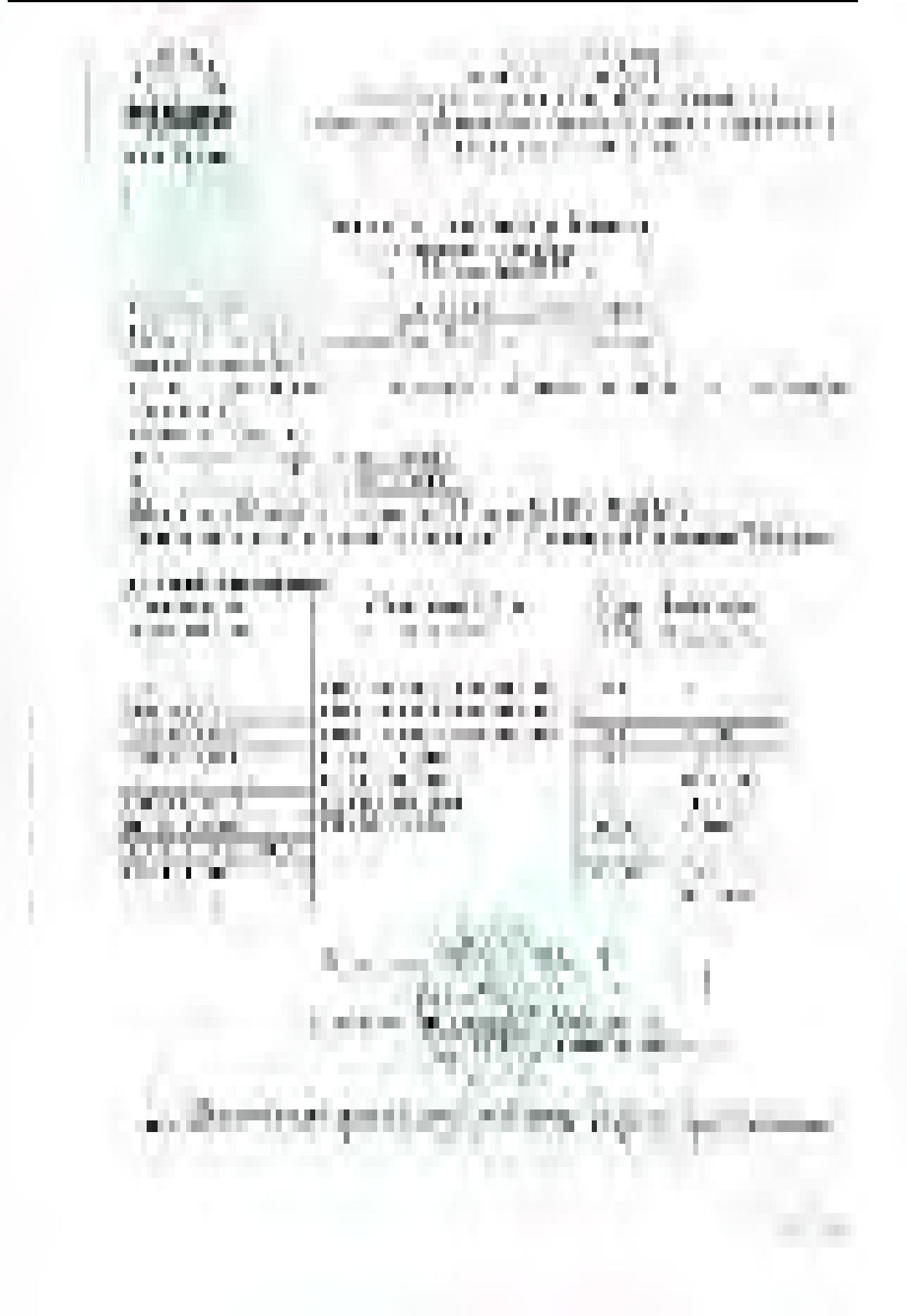














### Minutes of the working meeting on Lot 1

7 August 2018

Place: Office CSC in Shubarkuduk vill., Zheleznodorozhnaja street 32 A

Attendees: representatives of the subcontractor LLP "SMS" – Alzhanova, a specialist in human resources, Shinaliev K. Lawyer and Baris Arslan, project Manager of Lot 1; CSC – Kim Jin Woo, senior road Engineer CSC 1, Imbarawa S. E., social protection measures specialist, Khasenov Nurtlek, Deputy resident Engineer, Igor - interpreter.

The list of participants is attached.

9.10-9.30 preliminary conversation between specialists of "SMS" LLP and CSC 1. Clarification of the issue of awareness among those present about the mechanism for dealing with complaints, the basic principles and clarification of the purpose of the upcoming meeting.

9.30. the meeting began with clarifying the purpose of the working meeting and acquaintance of the participants.

The first expressed their position 2 employees (former employees at the time of the meeting). Abdikadirov Baurzhan (8 702 873 19 75) noted that his claims were quite openly voiced in the base camp. In the video you can see that he's not brawling, and do not allow themselves to bullying. Just a question on the monotonous diet (rice and buckwheat) and water is provided intermittently. Gave 5 liter bottle and then a few days there was no water. He openly expressed his indignation at the office. He didn't insult anyone. But he was approached by a new employee of "SMS" LLP, accountant, and told him that he would be fired. The next day he was approached by Alzhanova A. from HR Department and said that he should write a notice of resignation or he would be fired with cause. Then he received treatment in a medical facility. Patient chart on the medical care and records on treatment in a medical facility were presented. Those days Alzhanova A. came to the medical facility and there was a verbal confrontation between them. Alzhanova A. demanded to sign the order of dismissal, the employee refused because he did not agree with the order. This employee worked in "SMS" LLP since April. Has 7 children.

The second employee Iztileuov Tolegen said that he was forced to resign and he signed a notice of resignation because he did not want to be fired with cause. He has 38 years of work experience and he does not need it. But he said that he was also in the above situation and only asked questions and was outraged by the attitude of the "SMS" LLP manager.

From "SMS" LLP side: Alzhanova A. HR specialist showed the orders, medical certificates and noted that came to the medical facility for familiarization with the order of dismissal with signature conformation. Shinaliev Kairat noted that regarding first worker administrative act of violation of labor discipline was made, and he is informed about it.

"SMS" LLP asked their former employees:

1. Did any of them apply to the Supervisory authorities?
2. What do you want from the meeting?

On the first issue, initially they said that did not apply, but then it turned out that the appeal was from Abdikodirova B., but he was refused in consideration of his appeal. On the second question both indicated that they would like again to get a job because they have families and Abdikodirov B. admitted that he was rude when speaking to the accountant in response to his rudeness. But for verbal confrontation he apologized to the HR Department specialist of "SMS" LLP. The lawyer of the company noted on condition that there will be a monotonous food rice and buckwheat are they ready to work? Both said Yes. The lawyer of the company as an option suggested them to submit again the applications for employment, and the head on site will decide to take or not to take these persons.

Summarizing the discussion of the situation, the expert on protective measures noted that the whole situation with these workers arose due to the workers has lack of complete information social package



of the company. In particular, "SMS " LLP has not yet appointed a coordinator for complaints and appeals. The absence of such a specialist led to a situation of confusion and group rebellion, as the representatives of "SMS" LLP. Addressing to the representatives of the subcontractor, it was noted that the Grievances Redress Mechanism (GRM) is created to prevent conflict situations and, when it is launched, it eliminates misunderstandings of this kind, as a person has the opportunity to ask questions openly and get a full and detailed answer.

Further, the peoples left.

The working meeting was held without the participation of the applicants.

The lawyer of the employer's company expressed his concerns about the transformation of GRM into a bargaining tool. The specialist on protective measures noted that this mechanism is being put into practice by the CSC with the experience defined and noted that compliance with all its principles, norms prescribed in the manual on GRM will not allow to turn it into a bargaining tool.

Kim Jin-Woo noted that such issues and situations have arisen and will arise, and the Engineer's job is to regulate and enable the parties to discuss and solve the problems of the project. The CSC will periodically monitor compliance with legislation and the GRM on site.

The specialist in protective measures noted the urgency of the appointment of a person who will work with complaints and appeals. Not necessarily a separate staff unit, it can be a specialist, who will be charged with the duties of working with complaints.

**Report on the ADB visit, road "Aktobe-Makat" connecting corridors CAREC 1 and 6 reconstruction project.**

**Contract 001-ADB\CW-2017**

Arrival of the ADB mission 12.09.2017 at 12.00 at Km 160, the beginning of the bypass road.

**Members of the mission of ADB:**

1. Nianshan Rend - Head of mission
2. Nema Adilla - specialist
3. Nurlan Djenchuraev, Senior Environmental safeguards specialist
4. Aida Satylganova, social safeguards specialist

**Representative of RSE "Aktozhollaboratory":**

Karimbaev K. M., the head  
Malaev Telman, an Engineer

**Representative of CSC** Cha Joon Dae - resident engineer, Kim Jin Woo-senior road engineer, Gulmanov B.. materials engineer Lot2, Khasenov Nurtlek, Deputy resident engineer Lot 1, Temirbek Zhenisgul engineer TS and OSH Imbarova Sara - social and environmental specialist

**Contractors:** Todini.: David Carmichael branch Director, Hassan Kurais - environmental specialist

**Lot 1 (Km 160 - Km 220)**

The first stop 160 Km Bridge CH 5+71.

Inspection of the construction site, watching on work.

Questions ADB:

problems on this site, the schedule of works, materials, from where delivered, how many people work on this site, traffic safety issues, and also on the bypass road, sources of providing water for dust suppression, on the environmental report specification of problems on this site and the status of accomplishment of the list of actions for EMP.

Comments at this site: to provide dust suppression at night as works are conducted in 2 shifts, to provide the signalman on a site.

The second stop of the Production Base Km160.

Inspection ACP on a production base. Nodes, inspection of the Laboratory. Validation execution to eliminate the notification of the engineer from 12.06.18, drainage arranged, a container for solid waste is installed in accordance with the requirements and norms, fire-prevention boards are equipped according to requirements and safety standards.

Some questions about the work in the winter in the laboratory arose, as the room is hall type and concrete flooring. The OSH engineer of the contractor noted that the request for special footwear/felt boots is already submitted.

Visit the base camp Complex Anar (toyhana). Lunch



Photo 1. A visit to the laboratory



Photo 2. Inspection of production facilities Lot 1

**Contract 002-ADB\CW-2017, Lot 2 (Km 236 Km 275)**

Meeting at the beginning of the project Km 236. Contractors:

JSC “ICIC Akkord”: Matvienko S. –head of TED, Daavrisou A. - a foreman on Lot 2, Embergenov Anuar – environmental specialist, Baituganov R – head of the base

LLP “HydroEcoResources-L” Abi M. T - engineer of environmental protection

Inspection of the site where construction works are carried out.



Photo 1,2 Inspection of the overpass section for Lot 2

Visit the base camp Lot 2. Brief discussion on the status of implementation of the environmental protection activities plan. Elimination of comments on environmental audit of the Engineer. In the process of eliminating the organization of temporary storage of solid waste, the septic tank is not completed, the drinking water well is equipped for water intake, there is a pressure regulator, a crane and the territory is fenced and provided with a cover. Raised the issue of the status of approval of the EMP before the start of work or after it was agreed. Reasons for violation of the terms of development of the EMP.

The social specialist Aida Satylganova (ADB) questions in working order about the monitoring of PVP . The report for the first half of the year generally satisfies her.

154

Lot 1 Installation of tubing links



Lot 2 Production Base, Karaulkeldy



Lot 2 Dust suppression at the production base  
Karaulkeldy



Lot 2 Construction of wells in the mountain town of Karaulkeldy



Lot 2 section Borrow pit No. 2





Base camp Lot 2 p. Karaulkeldy



Lot 2. Base camp, section of temporary storage of solid waste



Lot 2 Arrangement of the septic tank in the shift camp



Lot 3 During construction works



Lot 3 Construction of the additional base layer



Lot 3 Culverts at Km 293



Lot 1. Construction of the Structure



Lot 3 Km 259 transportation of inert materials. Failure of dust suppression



Excavation on Km 259 Lot 3

**Grievances List - records of Construction Supervision Consultant and Contractor, Lot 1**

Grievance registration number	Filing date	Name of applicant	Name of the person, who has registered the grievance	Grievance form	Main problem	Summary of the problem	Actions delegated	status	When closed
GRM 001	28.12.2017	Head of the Department of architecture and urban planning  Aktobe region, Shubarkuduk vill., Zheltoksan str., 5  2 32 49 temirarhstroi@mail.ru	Nurgul Aituganova	in writing	Lack of information	request for assistance in obtaining project documentation for 160 -- 220 m	Imbarova S.	closed	30.12.2017
GRM 002	10.01.2018	Salimgerei K., head of Department of land matters of Temir area  Shubarkudyk vill., Zheltoksan str., 5	Nurgul Aituganova	in writing	Lack of information	request for information on the borders of the project road at km 140 - 204. the location of cattle crossings, junctions	Imbarova S.	closed	11.01.2018

2nd Semi-Annual Environmental Monitoring Report 2018  
 CAREC corridors 1 and 6 connector "Aktobe-Makat" road reconstruction project (section 160-330)

GRM 003	27.07.2018	Abdykadyrov Bakhytzhan Shubarkuduk vill. 87019129334	Imbarova S.	Verbally, during site inspection	Social	Abdykadyrov Bakhytzhan claims that he and at least one other person are forced to resign because they expressed dissatisfaction with the conditions of providing drinking water, the process of handing over empty containers from under the water, the unvaried food. The shared outrage of workers, SMS worker threatened with dismissal. at the time of filing one employee dismissed	Imbarova S.	closed	7.08.2018
GRM 004	28.07.2018	Iztileuov Tolegen Shubarkuduk vill.	Imbarova S.	Verbally, during site inspection	social	he was forced to resign under duress for being outraged by the quality of food and interruptions in the delivery of drinking water	Imbarova S.	closed	7.08.2018
GRM 005	12.09.2018	group of workers Base camp	Imbarova S.	Verbally, during base camp monitoring	Social/ health protection	complain of involving to works in the days off without compensation measures (additional payment or providing days off)	Imbarova S.	Not closed  The Contractor did not submit information on request	



**Grievances List - records of Construction Supervision Consultant and Contractor, Lot 3**

<b>№</b>	<b>Filing date</b>	<b>Name of applicant</b>	<b>Name of the person, who has registered the grievance</b>	<b>Grievance form</b>	<b>Main problem</b>	<b>Summary of the problem</b>	<b>Actions delegated</b>	<b>Status</b>	<b>When closed</b>
GRM 001	11.06.2018	Kadyrov Adil, Senior inspector of ODTI 8 702 492 21 90 8 7777 67 4886	Temirbek Zh.T. CSC Engineer of TS and OHS	Verbally by the phone	ecology	passing the site at 23.00 he paid attention to the dust. The area is not specified.	Imbarova S. E.	closed	12.06.2018

**Check list on environmental monitoring**

Check list on site inspection		
<b>Date of site visit:</b> 09.08.2018  <b>Time:</b> 10:00	<b>Engineer representatives:</b> EP Specialsit Imbarova S.E.  <b>Contractor representatives:</b> Khasan - Todini evironmental specialist	Engineer's ref.No.   Contractor's ref.No.
Weather condition: clear, +34 0C, wind S-E, 3 m/s		
Work, performing now	Existing pavement milling on Contract 1 section, soil compaction, asphalt-concrete coating laying, construction of artificial structuries	
Problems related to the environmental	Possible reasons	Proposed Risk Reduction Measures
Increased dustiness on the roads	Hot weather and soil cover, as well as insufficient watering of the roads.	To increase the number of water carriers, and to increase watering near the settlements.
Poor quality of bypass roads	Lack of the working group on the organization of bypass roads, or low control by the Contractor	To increase the number of water carriers, and to increase watering near the settlements.
Construction waste on site at km 187	Lack of waste management	Strengthen control by the Contractor Environmental specialist, Conduct educational work among staff on environmental protection
In some places, the topsoil layer is absent or does not meet the requirements for storage of topsoil on the roadsides	Ignorance or negligence in the removal and storage of topsoil	Control removal and storage of topsoil to avoid soil erosion.
The septic tank in the camp is not properly organized	Non-compliance with the requirements for the organization of septic tank, non-compliance with the waste management plan	Strengthen the work of the contractor's environmental specialist, bring the septic tank to the proper condition in the base camp of Lot 3
Solid waste, in the Engineer's office the area is not organized, the container is overloaded and littering of the territory of the office is observed	Removal of solid waste is not organized, there is no schedule for removal of solid waste	The Contractor's environmental specialist to strengthen the work on the control of solid waste, the observance of the export schedule
The territory of the engineer's office is not fenced, not landscaped	Lack of work of the environmental specialist thereof	To organize work on the fencing of the territory, to carry out work on landscaping the territory.

Environmental Audit conducted by: Imbarova S.E.	Contractor's representative:
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№	Environmental protection measures	Done		In progress		Remarks
		Yes	No	Yes	No	
Contractor's base camp						
1	Septic tanks are installed and cleaned according to the approved procedures	✓			✓	No cover on septic tank in base camp
2	All wastewater is directed to septic tanks or tanks for industrial water.	✓		✓		
3	All hazardous liquids are stored in a fixed place on an impermeable basis with waste collection.	✓		✓		Special concreted places are made , fencing installed.
4	Solid hazardous materials are stored in a secure place at work sites.	✓		✓		Special concreted places are made , fencing installed for hazardous materials storage in accordance with requirements.
5	Effluents are accumulated in the drainage system and disposed of by the Contractor.	✓		✓		
6	All vehicles entering and leaving the base camp are under control.	✓		✓		
7	Local communities and organizations are informed about the construction schedule and any noise-causing activities on a regular basis through employees and other events.	✓		✓		The Contractor participates in meetings in the rural district of Shubarkudyk and Sagyz and informs the administration of the akimat and the public about the stages of construction
8	Open containers for storing materials are covered with curtains	✓		✓		The tanks intended for the used oil which are in the territory of construction sites are collected in the closed tanks for the subsequent disposal
9	Open burning is prohibited	✓		✓		Not observed on the site and in the camp

№	Environmental protection measures	Done		In progress		Remarks
		Yes	No	Yes	No	
10	Firefighting equipment <ul style="list-style-type: none"> <li>Sand and shovel</li> <li>Foam fire extinguisher</li> <li>Sheeting in the canteen</li> </ul>		✓	✓		To equip the fire-fighting equipment, on boards in the base camp
11	Access of other people to the base camp is prohibited by installing fencing and organizing security.	✓		✓		At the entrance to the base camp of Lot 1 there is a security guard, on lot 3 there is a checkpoint with security
12	All employees are provided with personal protective equipment (PPE)	✓		✓		
13	Smoking is prohibited, except smoking rooms.	✓		✓		On the territory of the repair zone there is a smoking area - Lot 3. In the base camp Lot 1 equipped smoking areas
14	Related traffic signs and warning signs on the site and in dangerous areas	✓		✓		ST Plan is respected
15	Drinking water is provided to all employees from commercial and licensed sources.	✓		✓		
16	Special clothes of all employees are washed on a daily basis.		✓			Special staff clothes washed as needed
17	All employees are provided with three meals per day.	✓				Местные жители обеспечиваются только обедом поскольку не работают вахтовым методом. Does not contradict the legislation of the Republic of Kazakhstan on labor
18	Canteen with sanitary and hygienic conditions in the base camp		✓		✓	It is required to replace the floor tile in the canteen on Lot 3, it is necessary to make the zoning of the cooking zone and the storage of the daily norm of products. Redecoration is required in the area of dirty dishes receiving.
19	First-aid posts and the first-aid kit in the base camp and at work places	✓		✓		First-aid kits are replenished as needed. A log of requests for medical care is kept.
20	The health of all employees is under the supervision of the campus doctor,	✓		✓		The medical center maintains a daily pre-shift control of the state of

№	Environmental protection measures	Done		In progress		Remarks
		Yes	No	Yes	No	
	and appropriate services are provided, monthly medical examinations are also conducted.					health and a journal of daily medical examinations (alcotest, blood pressure, etc.) is kept.
21	The whole area is cleared, there is no excess waste, except for designated areas for waste disposal	✓		✓		In the Engineers office is not organized
22	Предоставление места для отдыха в городке	✓				There are no places to rest on Lot 1. Lot 3 has leisure facilities and there are also lounges in the dormitories.
23	Child labor (below 15 years)		✓			Was not observed
<b>Production area</b>						
1	The bitumen and chemical materials storages is far from the watercourse and the walls of the dam are impervious and can contain 110% of the volume of tanks	✓		✓		
2	Liquid waste from the asphalt plant are kept in the established tank and they emptied specialised suction equipment ≤MTTSTH≥ Lyman	✓		✓		
3	Bitumen is stored in a fixed place and bent in concrete to a volume of 110%	✓		✓		
4	Solid waste from the asphalt plant is stored in the prescribed place and disposed of in accordance with approved procedures	✓		✓		
5	The plant area is etched for the purpose of reducing dust levels	✓		✓		
6	The area of the plant is watered to reduce the level of dust	✓		✓		According to the schedule of dust suppression and weather conditions. On windy days, the increased frequency of dust suppression.
7	The plant cannot discharge wastewater into any watercourse; impervious concrete pools will be built to receive such water	✓		✓		
8	All workers of asphalt, concrete plant	✓		✓		

№	Environmental protection measures	Done		In progress		Remarks
		Yes	No	Yes	No	
	and crusher are provided with protective masks					
9	All workers of asphalt, concrete plant and crusher use protective masks	✓		✓		
10	Sands and fractions for concrete and asphalt are stored in a wet and covered place	✓		✓		
11	In asphalt, concrete plants and crushers there are fire-Figurehting equipment	✓		✓		It is necessary to fill the fire extinguishers on the appropriate
12	Plant or equipment causing high levels of vibration are built properly, maintained and managed accordingly	✓		✓		
13	River/canal fenced for the protection of water resources		✓		✓	No need
<b>FUEL STATION</b>						
1	Refueling will be strictly controlled and allowed only at the fuel station and workshop	✓		✓		The fuel station area needs to be concreted
2	Areas for storage tanks of fuel protected, and they are impermeable, cover tank closed		✓	✓		No fencing, no warning signs installed
3	The gas station equipped with fire-Figurehting equipment is checked weekly	✓		✓		There is, but you need to replace the fire extinguishers to powder type
4	The fuel station has warning signs		✓		✓	
5	The fuel station is equipped with a special basket for extra waste	✓			✓	
<b>Contractor's workshop and car wash</b>						
1	Liquid hazardous materials are stored in the determined place in the workshop	✓		✓		Organized on specialized areas concreted areas for storage of hazardous substances, installed fencing.
2	Solid hazardous materials are stored in the determined place in the workshop	✓		✓		
3	There are special containers for the collection of used oil products and hydraulic fluids	✓		✓		

№	Environmental protection measures	Done		In progress		Remarks
		Yes	No	Yes	No	
4	The used oil products are collected in concreted cans up to 110% and the cans are cleaned in accordance with the approved procedures		✓	✓		
5	The workshop is equipped with a drainage system	✓				
6	Each vehicle is inspected and maintained on an ongoing basis	✓		✓		Strengthen the daily supervision of special equipment
7	All construction equipment complies with European Standards and is equipped with modern noise suppression equipment		✓	✓		
8	The noise suppression equipment of all equipment is checked and maintained in accordance with approved procedures	✓		✓		
9	All workshop workers are provided with welding equipment and personal protective equipment	✓		✓		
10	All process water is collected in the concreted tank and the tank is cleaned in accordance with the approved procedures		✓	✓		
<b>The Project Road</b>						
1	All roads used for construction work watered with a water truck	✓		✓		To increase the intensity of irrigation and the number of water carriers, in periods of dry weather and keep special control for areas near settlements
2	On the project road in appropriate places there are flags for passing cattle, sheep and other animals		✓		✓	
3	Sections of culverts and bridges are equipped with safety belts and twisting signs	✓				
4	Fencing and access control services are installed in all workplaces where necessary		✓		✓	
5	Storage of waste of any type, as well as Parking of cars or vehicles is not	✓		✓		

№	Environmental protection measures	Done		In progress		Remarks
		Yes	No	Yes	No	
	allowed at a distance of 100 m from any watercourse (including drainage or irrigation facilities)					
6	Working areas and hazardous areas are equipped with all relevant road signs and warning signs	✓		✓		
7	Construction machines and plants are maintained properly to reduce gas emissions	✓		✓		To strengthen control for the machinery
8	Counter-noise measures in special facilities	✓		✓		
<b>Borrow pits and quarries</b>						
1	Borrow pits and quarries are provided with temporary drainage	✓		✓		
2	200 m from the nearest settlements, all construction work stopped from 22: 00 to 6: 00 a.m.	✓		✓		
3	The stack does not exceed 3 m in height	✓		✓		
4	All open-body vehicles are used for the transport of materials with possible dust formation, designed for these purposes with well-chosen folding bodies	✓		✓		
5	During construction works the volume of noise is limited according to national standards	✓		✓		
6	Materials with possible dust formation do not load exceeding the level of folding bodies and close with a clean tarpaulin	✓		✓		Operators and accountants monitor the level of soil loading
7	All vehicles, production equipment and devices comply with Euro exhaust emission standards		✓	✓		
8	All temporary acquired lands are restored		✓			After completion of construction works
9	All material residues and contaminated land are collected and disposed of in accordance with approved procedures		✓	✓		
10	During the delivery and processing of materials, it is watered	✓		✓		



№	Environmental protection measures	Done		In progress		Remarks
		Yes	No	Yes	No	
11	Any direct areas damaged as a result of a dump of soil, are restored to an original look	✓		✓		
12	Riverbanks are protected from the contractor's materials storage or temporary stacks	✓				
13	The negative consequences or violations due to the execution of construction work is controlled, with an acceptable level in accordance with the standards	✓				
14	The access road to the quarries, quarries, borrow pits and traffic conditions are maintained according to the approved standards	✓		✓		
15	Draining water, avoiding flooding or damage to other works or services causing erosion	✓				
<b>Flora and Fauna</b>						
1	Trees and shrubs outside the construction site, but within the road reserve, are usually protected from damage	✓		✓		On the territory of the construction site Lot 3 no green space
2	None of the ancient trees were cut down during the construction works					On the territory of the construction site there are no age-old plantings
3	Felling is not carried out without the prior permission of the relevant local authorities	✓				On Lot 1 is applicable and is executed
4	Trees and shrubs are cut down and removed only if they interfere with the necessary temporary or permanent work	✓		✓		On Lot 1 is applicable and is executed
5	Construction work is not carried out on the construction sites of the bridge during the harvest (specify Yes or No construction work in the transition, specify the date)		✓			The construction of bridges does not affect the cultivation and harvesting, as they are located in remote places.

### Check list on environmental monitoring

Check list on site inspection		
<b>Date of site visit:</b> 15.11.2018  <b>Time:</b> 10:00	<b>Engineer representatives:</b> CSC 1 Deputy Resident Engineer Nesipbekov Zhaxylyk  <b>Contractor representatives:</b> Anuar - Contractor's environmental specialist	Engineer's ref.No.   Contractor's ref.No.
Weather condition: cloudy, +21 0C, North wind 7 m/s.		
Work, performing now	Milling and scarifying of existing coating layers on the territory of the Contract 1, construction of artificial structures, clearing of the territory	
<b>Problems related to the environmental</b>	<b>Possible reasons</b>	<b>Proposed Risk Reduction Measures</b>
Increased dustiness on the roads	the peculiarity of the soil cover, it is also possible insufficient irrigation of roads	To increase the number of water carriers, and to increase watering near Karaulkeldy.
The septic tank in the camp is not properly organized	Non-compliance with the requirements for the organization of septic tank, non-compliance with the waste management plan	Strengthen the work of the contractor's environmental specialist, bring the septic tank to the proper condition in the base camp of Karaulkeldy
The territory of the base camp is not fenced	Ignoring security issues at the facility due to unauthorized passage of livestock, stray dogs, etc	To organize work on the fencing of the territory, to carry out work on landscaping the territory.
Environmental Audit conducted by: Zhaksylyk		Contractor's representative: Anuar - the environmental specialist of Lot 2 Contractor "ICIC Akkord"

№	Environmental protection measures	Done		In progress		Remarks
		Yes	No	Yes	No	
Contractor's base camp						
1	Septic tanks are installed and cleaned according to the approved procedures	✓			✓	No cover on septic tank in base camp

№	Environmental protection measures	Done		In progress		Remarks
		Yes	No	Yes	No	
2	All wastewater is directed to septic tanks or tanks for industrial water.	✓		✓		
3	All hazardous liquids are stored in a fixed place on an impermeable basis with waste collection.	✓		✓		Special concreted places are made , fencing installed.
4	Solid hazardous materials are stored in a secure place at work sites.	✓		✓		Special concreted places are made , fencing installed for hazardous materials storage in accordance with requirements.
5	Effluents are accumulated in the drainage system and disposed of by the Contractor.	✓		✓		
6	All vehicles entering and leaving the base camp are under control.	✓		✓		
7	Local communities and organizations are informed about the construction schedule and any noise-causing activities on a regular basis through employees and other events.	✓		✓		The Contractor participates in meetings in the rural district of Karaulkeldy and informs the administration of the akimat and the public about the stages of construction
8	Open containers for storing materials are covered with curtains	✓		✓		The tanks intended for the used oil which are in the territory of construction sites are collected in the closed tanks for the subsequent disposal
9	Open burning is prohibited	✓		✓		Not observed on the site and in the camp
10	Firefighting equipment <ul style="list-style-type: none"> <li>▪ Sand and shovel</li> <li>▪ Foam fire extinguisher</li> <li>▪ Sheeting in the canteen</li> </ul>	✓				
11	Access of other people to the base camp is prohibited by installing fencing and organizing security.		✓		✓	At the entrance to the base camp there is a guard, but the fence around the perimeter of the base camp is missing
12	All employees are provided with personal protective equipment (PPE)	✓		✓		
13	Smoking is prohibited, except smoking rooms.	✓		✓		Smoking areas are available

№	Environmental protection measures	Done		In progress		Remarks
		Yes	No	Yes	No	
14	Related traffic signs and warning signs on the site and in dangerous areas	✓		✓		ST Plan is respected
15	Drinking water is provided to all employees from commercial and licensed sources.	✓		✓		
16	Special clothes of all employees are washed on a daily basis.		✓			Special staff clothes washed as needed
17	All employees are provided with three meals per day.	✓				Местные жители обеспечиваются только обедом поскольку не работают вахтовым методом. Does not contradict the legislation of the Republic of Kazakhstan on labor
18	Canteen with sanitary and hygienic conditions in the base camp	✓				
19	First-aid posts and the first-aid kit in the base camp and at work places	✓		✓		First-aid kits are replenished as needed. A log of requests for medical care is kept.
20	The health of all employees is under the supervision of the campus doctor, and appropriate services are provided, monthly medical examinations are also conducted.	✓		✓		The medical center maintains a daily pre-shift control of the state of health and a journal of daily medical examinations (alcotest, blood pressure, etc.) is kept.
21	The whole area is cleared, there is no excess waste, except for designated areas for waste disposal	✓		✓		In the Engineers office is not organized
22	Предоставление места для отдыха в городке	✓				Leisure facilities and there are also lounges in the dormitories are available.
23	Child labor (below 15 years)		✓			Was not observed
<b>Production area</b>						
1	The bitumen and chemical materials storages is far from the watercourse and the walls of the dam are impervious and can contain 110% of the volume of tanks	✓		✓		
2	Liquid waste from the asphalt plant are	✓		✓		

№	Environmental protection measures	Done		In progress		Remarks
		Yes	No	Yes	No	
	kept in the established tank and they emptied specialised suction equipment ≤MTTSTH≥ Lyman					
3	Bitumen is stored in a fixed place and bent in concrete to a volume of 110%	✓		✓		
4	Solid waste from the asphalt plant is stored in the prescribed place and disposed of in accordance with approved procedures	✓		✓		
5	The plant area is etched for the purpose of reducing dust levels	✓		✓		
6	The area of the plant is watered to reduce the level of dust	✓		✓		According to the schedule of dust suppression and weather conditions. On windy days, the increased frequency of dust suppression.
7	The plant cannot discharge wastewater into any watercourse; impervious concrete pools will be built to receive such water	✓		✓		
8	All workers of asphalt, concrete plant and crusher are provided with protective masks	✓		✓		
9	All workers of asphalt, concrete plant and crusher use protective masks	✓		✓		
10	Sands and fractions for concrete and asphalt are stored in a wet and covered place	✓		✓		
11	In asphalt, concrete plants and crushers there are fire-Figurehting equipment	✓		✓		
12	Plant or equipment causing high levels of vibration are built properly, maintained and managed accordingly	✓		✓		
13	River/canal fenced for the protection of water resources		✓		✓	No need
<b>FUEL STATION</b>						
1	Refueling will be strictly controlled and allowed only at the fuel station and workshop	✓		✓		
2	Areas for storage tanks of fuel		✓	✓		No fencing, no warning

№	Environmental protection measures	Done		In progress		Remarks
		Yes	No	Yes	No	
	protected, and they are impermeable, cover tank closed					signs installed
3	The gas station equipped with fire-Figurehting equipment is checked weekly	✓		✓		There is, but you need to replace the fire extinguishers to powder type
4	The fuel station has warning signs		✓		✓	
5	The fuel station is equipped with a special basket for extra waste	✓			✓	
<b>Contractor's workshop and car wash</b>						
1	Liquid hazardous materials are stored in the determined place in the workshop	✓		✓		Organized on specialized areas concreted areas for storage of hazardous substances, installed fencing.
2	Solid hazardous materials are stored in the determined place in the workshop	✓		✓		
3	There are special containers for the collection of used oil products and hydraulic fluids	✓		✓		
4	The used oil products are collected in concreted cans up to 110% and the cans are cleaned in accordance with the approved procedures	✓		✓		
5	The workshop is equipped with a drainage system	✓				
6	Each vehicle is inspected and maintained on an ongoing basis	✓		✓		Strengthen the daily supervision of special equipment
7	All construction equipment complies with European Standards and is equipped with modern noise suppression equipment		✓	✓		
8	The noise suppression equipment of all equipment is checked and maintained in accordance with approved procedures	✓		✓		
9	All workshop workers are provided with welding equipment and personal protective equipment	✓		✓		
10	All process water is collected in the concreted tank and the tank is cleaned in accordance with the approved		✓	✓		

№	Environmental protection measures	Done		In progress		Remarks
		Yes	No	Yes	No	
	procedures					
<b>The Project Road</b>						
1	All roads used for construction work watered with a water truck	✓		✓		To increase the intensity of irrigation and the number of water carriers, in periods of dry weather and keep special control for areas near settlements
2	On the project road in appropriate places there are flags for passing cattle, sheep and other animals		✓		✓	
3	Sections of culverts and bridges are equipped with safety belts and twisting signs	✓				
4	Fencing and access control services are installed in all workplaces where necessary		✓		✓	
5	Storage of waste of any type, as well as Parking of cars or vehicles is not allowed at a distance of 100 m from any watercourse (including drainage or irrigation facilities)	✓		✓		
6	Working areas and hazardous areas are equipped with all relevant road signs and warning signs	✓		✓		
7	Construction machines and plants are maintained properly to reduce gas emissions	✓		✓		To strengthen control for the machinery
8	Counter-noise measures in special facilities	✓		✓		
<b>Borrow pits and quarries</b>						
1	Borrow pits and quarries are provided with temporary drainage	✓		✓		
2	200 m from the nearest settlements, all construction work stopped from 22: 00 to 6: 00 a.m.	✓		✓		
3	The stack does not exceed 3 m in height	✓		✓		
4	All open-body vehicles are used for the transport of materials with possible	✓		✓		

№	Environmental protection measures	Done		In progress		Remarks
		Yes	No	Yes	No	
	dust formation, designed for these purposes with well-chosen folding bodies					
5	During construction works the volume of noise is limited according to national standards	✓		✓		
6	Materials with possible dust formation do not load exceeding the level of folding bodies and close with a clean tarpaulin	✓		✓		Operators and accountants monitor the level of soil loading
7	All vehicles, production equipment and devices comply with Euro exhaust emission standards		✓	✓		
8	All temporary acquired lands are restored		✓			After completion of construction works
9	All material residues and contaminated land are collected and disposed of in accordance with approved procedures		✓	✓		
10	During the delivery and processing of materials, it is watered	✓		✓		
11	Any direct areas damaged as a result of a dump of soil, are restored to an original look	✓		✓		
12	Riverbanks are protected from the contractor's materials storage or temporary stacks	✓				
13	The negative consequences or violations due to the execution of construction work is controlled, with an acceptable level in accordance with the standards	✓				
14	The access road to the quarries, quarries, borrow pits and traffic conditions are maintained according to the approved standards	✓		✓		
15	Draining water, avoiding flooding or damage to other works or services causing erosion	✓				
<b>Flora and Fauna</b>						
1	Trees and shrubs outside the construction site, but within the road reserve, are usually protected from damage	✓		✓		On the territory of the construction site there are no plantings



№	Environmental protection measures	Done		In progress		Remarks
		Yes	No	Yes	No	
2	None of the ancient trees were cut down during the construction works					On the territory of the construction site there are no age-old plantings
3	Felling is not carried out without the prior permission of the relevant local authorities					No need because there are no planting
4	Trees and shrubs are cut down and removed only if they interfere with the necessary temporary or permanent work					No need because there are no planting
5	Construction work is not carried out on the construction sites of the bridge during the harvest (specify Yes or No construction work in the transition, specify the date)					The construction of bridges does not affect the cultivation and harvesting, as they are located in remote places.