

Abstracted water salinity change on pilot plot of vertical drainage depending on complexity of top soil desalinization

Plot index	Lithology and thickness, (M _T), m	Permeability, m/day		Groundwater table lowering rate, cm/day		Initial salinity; salt distribution	Dry residue chlorine, %	Initial ground water salinity, g/l	Abstracted water salinity, g/l	
		top soil permeability	aquifer permeability	under natural conditions	under vertical drainage operation				initial	achieved

Syrdarya upper reaches

Objects of Uzbekistan

02.17. Uz.	multi-layer m ₁ = 20-50 m	0.5-1.0	20-40	1.5-2.0	>10	NS., WS	<u>up to 0.5 %</u> 0.015	2.5-7.0	0.5-1.0	0.5-1.0
02.24. Uz.	two-layer m ₁ = 6-18 m	0.5	12.5-22.4	1.5-2.0	8-15	WS, MS, SS	<u>1.5-2.0 %</u> 0.5	5-10	0.45-1.6	0.45-1.6
02.33. Uz.	two-layer m ₁ = 6-18 m	0.17-1.0	12.5-19.0	-	-	NS., WS	<u>0.3-0.5 %</u> 0.02	5-6	0.6-1.5	0.6-1.5

Objects of Kyrgyzstan

02.1. Kyr.	multi-layer m ₁ = 14-16 m	0.1-1.0	-	-	-	SS, MS	0.5-1.2 % sodium	3-30	0.26	0.37
02.2. Kyr.	multi-layer m ₁ = 15-25 m	0.1-1.0	field investigations have not been conducted							

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Syrdarya middle reaches

Objects of Uzbekistan

02.4. Uz.	two-layer m ₁ = 25-30 m	0.05	5-10	-	>6	WS, MS	1.2-1.5 %	10-50	4-5	4-5
02.18. Uz.	two-layer m ₁ = 26-34 m	0.1-0.5	30-50	1.5-2.4	>6	MS, SS up to 3.5 m	<u>0.7-1.2 %</u> 0.01-0.03	2.5-5.0	0.67-1.0	0.67-1.0
02.19. Uz.	two-layer m ₁ = 18-25 m	0.07-0.1	40-45	2.5	>8-10	SS	<u>2.03 %</u> 0.16 %	16-17	1.3-1.9	1.3-1.9
02.27. Uz.	two-layer m ₁ = 20-30 m	0.03-0.07	20-45	0.3-0.5	3-4	WS, MS, SS - superficial and deep	<u>0.5-3.5 %</u> 0.03-1.2 %	8-25	0.8-1.5	2.5-3.7
02.30. Uz.	two-layer m ₁ = up to 35 m	0.1-0.3	15-20	0.3-0.5	3-6	WS, MS,SS	<u>0.5-1.2</u> 0.02-0.03	11.9	1.5-5.0	2-5
02.36. Uz.	two- and multi-layer m ₁ = 3-400 m	0.02-3.0	5-100	1.5-2.5	>6-8	MS, SS different	<u>0.5-3.5</u> 0.03-1.2	5-36	1.5-15.0	1.5-15.0
02.37. Uz.	two-layer	0.07-0.1	40-45	0.5-1.5	5-10	MS, SS	<u>1.5-3.0 %</u>	15-25	1.5	2.5

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		top soil permeability	aquifer permeability	under natural conditions	under vertical drainage operation				initial	achieved

m₁ = 18-25 m

superficial

0.2-0.4 %

Objects of Kazakhstan

02.11. Uz.	two- and multi-layer m ₁ = 20-80 m	0.07-0.12	16-30	0.1-0.5	2.5-4.0	WS, MS, SS on full depth	<u>0.5-1.2</u> 0.03-0.2	5-10	3-5	5-6
02.12. Uz.	two-layer m ₁ = 15-40 m	0.03-0.07	16-30	0.5	3.5-4.0	WS, MS, SS on full depth	<u>0.5-1.8</u> 0.03-0.3	8-15	3.5-4.0	4.0-4.5
02.13. Uz.	two-layer m ₁ = 8-40 m	0.05-0.25	16-25	0.5	3-5	MS, SS	<u>1.2-2.4</u> 0.2-0.4	10-40	1-3	1.5-3.5
02.14. Uz.	two-layer m ₁ = 0.2-20 m	0.5-0.8	20-400	0.5-1.0	5-10	WS, MS	<u>0.2-0.5</u> 0.01-0.03	2-5	0.5-1.5	0.5-1.5
02.7. Uz.	two- and multi-layer m ₁ = 15-25 m	0.1-0.15	20-30	0.2-0.4	>5	WS, MS, SS on full depth	<u>0.7-1.5</u> 0.03-0.3	5-10	4-4.5	4.5-5.0
02.9. Uz.	two- and multi-layer m ₁ = 5-25 m	0.13-0.15	25-35	0.6	>10	WS, MS, SS on full depth	<u>0.6-1.8</u> 0.04-0.3	5-10	4-5	4-5

Objects of Kazakhstan

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		top soil permeability	aquifer permeability	under natural conditions	under vertical drainage operation					initial	achieved
02.1. Kaz.	two- and multi-layer m ₁ = 0.8-20 m	0.2-0.5	20-50-150	up to 1.0	>5	NS, MS	WS,	<u>0.2-0.5</u> 0.01-0.03	3-5	0.5-1.5	0.7-2.5
02.2. Kaz.	two- and multi-layer m ₁ = 0.8-20 m	0.2-0.5	20-50-150	up to 1.0	>5	NS, MS	WS,	<u>0.2-0.5</u> 0.01-0.03	2.0	0.5-0.6	0.5-0.6
<u>Syrdarya low reaches</u>											
<u>Objects of Uzbekistan</u>											
02.8. Uz.	two-layer, m ₁ = 0.5-11 m	0.3-0.4	>12	0.5-3.0	5-10	NS, WS	superficial	<u>0.3-0.4</u> 0.06-0.65	3.8-5.0	1-3.5	1-3.5
02.10. Uz.	two-layer, m ₁ = 0.1-10 m	0.3-0.4	9-16	0.07	>8-10	WS,MS	superficial	<u>0.2-1.0</u> 0.03-0.07	2-3	0.94	1.38
<u>Objects of Kazakhstan</u>											
02.3. Kaz.	two-layer, m ₁ = 0.1-3 m	0.37	12	-	-	MS	superficial	<u>0.3-0.4</u> 0.06-0.075	2.2	0.8	0.8

Amudarya upper reaches

Objects of Tadjikistan

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02.1. Tad.	two-layer, m ₁ = 6-7 m	0.02-1.0	10-20	0.5	>2.8	WS,MS, SS	2.5-3.0 % up to 0.8	10-50	6.0	10.4
<u>Amudarya middle reaches</u>										
<u>Objects of Uzbekistan</u>										
02.31. Uz.	two-layer, m ₁ = up to 15 m	0.5-1.0	40-45	1.5-3.0	>8-10	MS, SS superficial 0.2-0.5 m	0.5-1.0 %	5-10	1.5-3.0	1.5-3.0
02.40. Uz.	two-layer, m ₁ = 4-12 m	0.5-4.0	10-50	0.1-0.2	>3-5	MS, SS	0.5-1.0 %	20-40	1-3	3-8

Explanations: NS - non-saline; WS - slightly saline; MS - medium saline; SS - strongly saline.