

Subregional Workshop on strengthening mine tailings safety in Central Asia

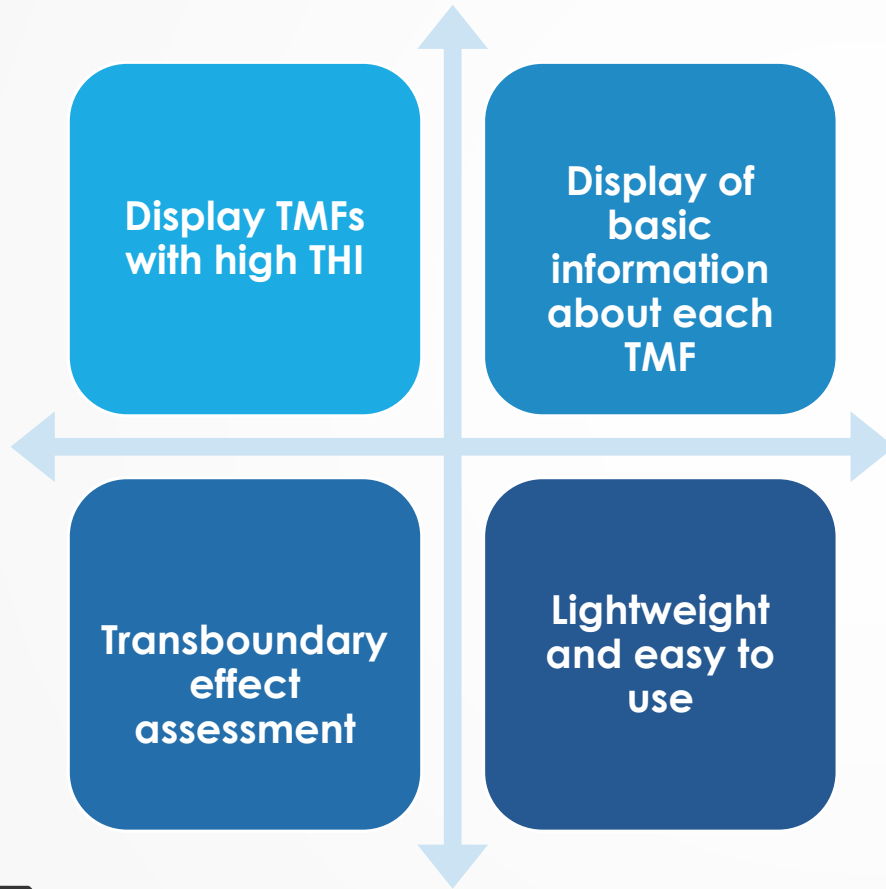
Almaty, Kazakhstan
Centre for Emergency Situations and Disaster Risk Reduction
20-21 November 2019

TMF mapping in Central Asia: Kazakhstan, Kyrgyzstan and Tajikistan in the spotlight



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Tasks assigned when creating map



Applications for the map developing



List of TMFs

Cities

Hazard level

Transboundary effect

List of TMFs

Hazard level

Map of TMF-inventories in Central Asian countries

Kyrgyzstan

54 TMFs

Kazakhstan

121 TMFs

Tajikistan

11 TMFs

Total

186 TMFs



Online TMFs Maps

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Map of Tajikistan's TMFs (en)

- <https://drive.google.com/open?id=1fQsduQ03dmwibUeWdvZOGWO3Ka6z-j9e&usp=sharing>

Map of Tajikistan's TMFs (ru)

- <https://drive.google.com/open?id=1r6LBa4EtlozEiYQfzFUEOj94sAn2XDJN&usp=sharing>

Map of Kazakhstan's TMFs (en)

- <https://drive.google.com/open?id=162g0AbCNWzFGDwhrXorF9ZxsKA-v5BFj&usp=sharing>

Map of Kazakhstan's TMFs (ru)

- <https://drive.google.com/open?id=1G5j3XZiDKm7XNru9pDVscB-nldHfnJuO&usp=sharing>



Google Maps

General information about TMFs

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Name of the TMF site

Region, city/district

Latitude, Longitude

Volume of stored tailings materials

Material stored

Hazard Class

TMF status

Seismic ground peak acceleration

Flood frequency (HQ-100)

Dam: Embankment material

Dam: Crest width

Commissioning year

THI Extended

THI range

Aspects of information visualization on the example of Tajik TMFs

← TMF nr.2 "Zarnisor" ↗

Name of TMF

TMF nr.2 "Zarnisor"

unnamed (1)

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Region, district

Sogd region, Gulistan city, settlement Zarnisor

Latitude

40.700094

Longitude

69.541465

Used capacity,million m³

0.67

Contaminants, major contaminants or materials stored

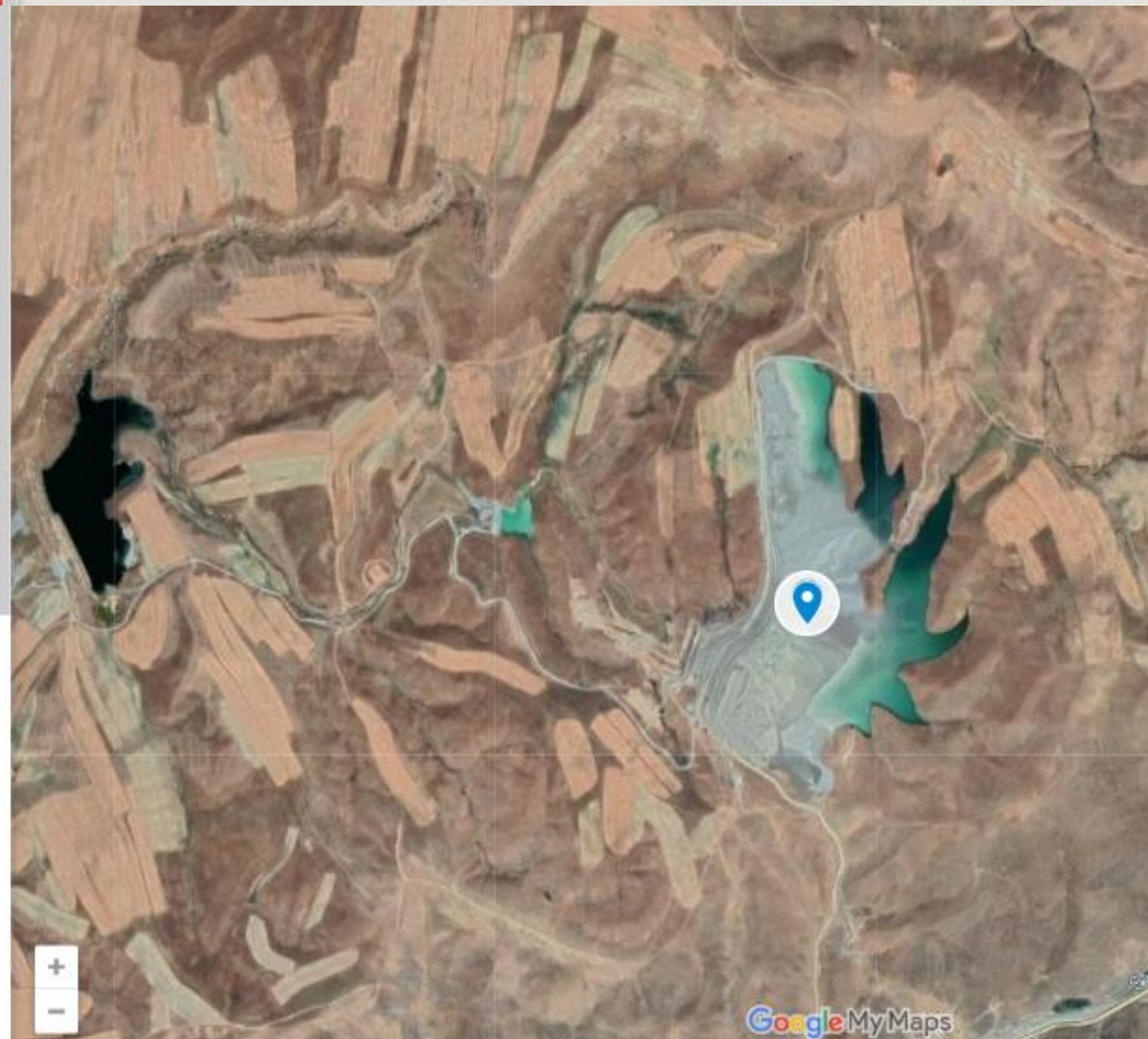
Pb, Zn

Water Hazard Class

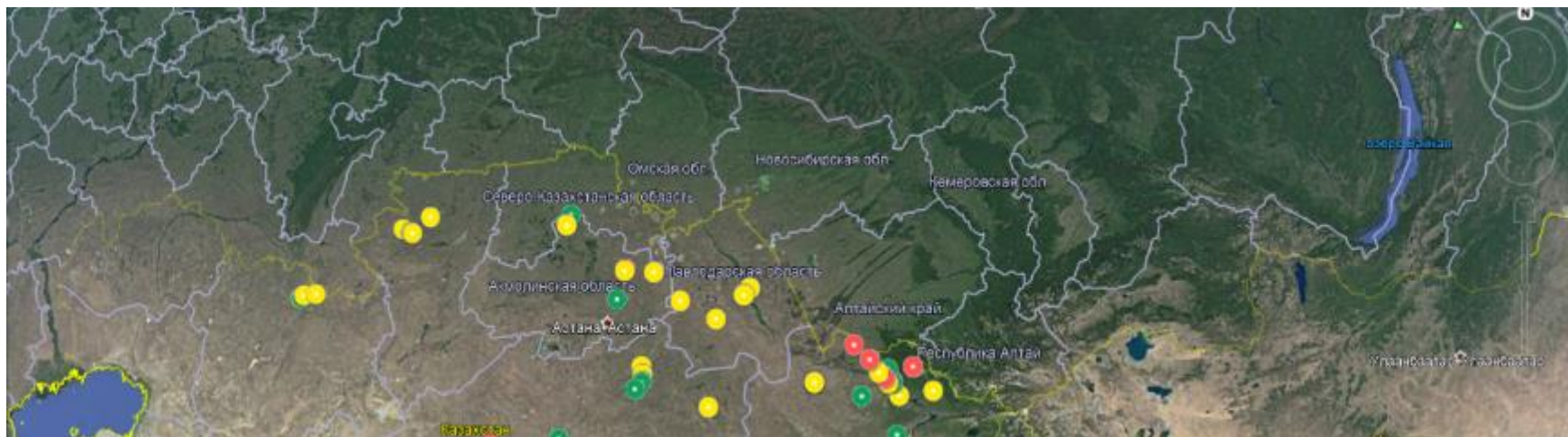
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TMF status

Active



Range of THI



The average value of THI for the country

**Kazakhstan
10.3**

**Tajikistan
10.7**

**Kyrgyzstan
13.3**

Range of THI

Low level

(35%)

42 – Kazakhstan

3 – Tajikistan

Medium level

(50%)

61 – Kazakhstan

6 – Tajikistan

High level

(15%)

18 – Kazakhstan

2 – Tajikistan

TMFs with high level of THI

TMFs of Kazakhstan

Sludge storage nr. 6 of LLP «Tioline»	TMF of Balkhash dressing plant "PO Zhezkazgantsvetmet", branch of LLP "Kazakhmys Corporation"
Sludge storage nr. 5 of LLP «Tioline»	TMF of Tekeli Enrichment plant
Sludge storage nr. 3 of LLP «Tioline»	TMF of Nikolayievsky dressing plant of LLC "Vostoktsvetmet"
Sludge storage nr. 4 of LLP «Tioline»	TMF of LLC "Nova Zinc"
Conserved TMF of Zhezkazgan dressing plants nr. 1,2. Enrichment manufacturing complex of LLP "Kazakhmys Corporation"	TMF of Belousovsky dressing plant
TMF "Koshkar-Ata"	Active TMF of Zhezkazgan dressing plants nr. 1,2. Enrichment manufacturing complex of LLP "Kazakhmys Corporation"
TMF of Zhezkazgan dressing plant nr. 3. Enrichment manufacturing complex of LLP "Kazakhmys Corporation"	TMF of LLP "SGKC", section nr. 1
TMF of LLP "SGKC", section nr. 2	TMF containing pyrits of Nikolayievsky dressing plant of LLC "Vostoktsvetmet"
Talovskoye TMF of the enrichment plant of LLP "Kazakhmys"	TMF of Orlovsky dressing plant of LLC "Vostoktsvetmet"

TMFs of Tajikistan

Old TMF of JV "Zeravshan" LLC	TMF of JV "Aznob"
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The location criteria under the Convention

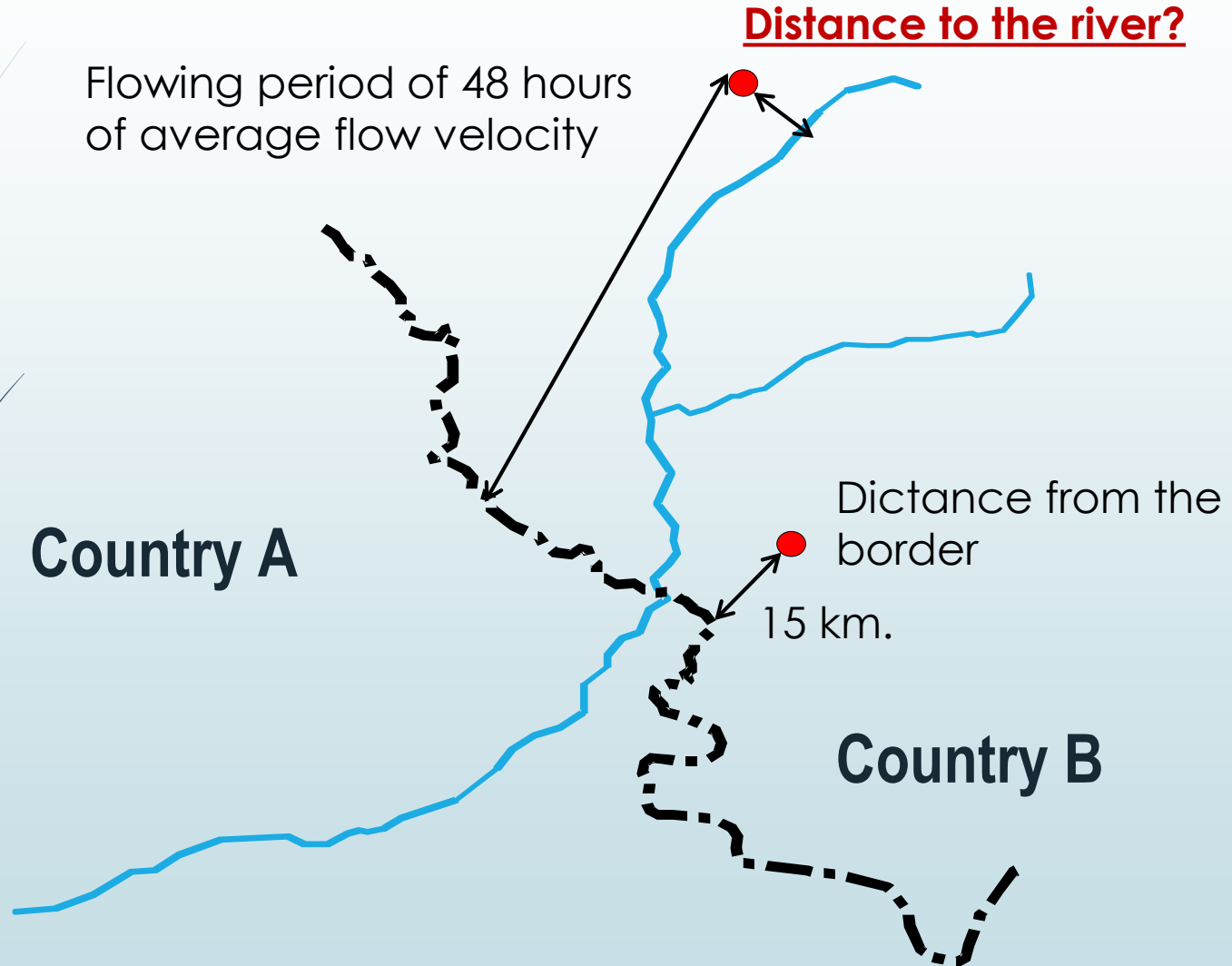
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The following two location criteria shall apply for the purpose of identifying hazardous activities capable of causing transboundary effects under the Convention:

- **a) Within 15 kilometres from the border**, for activities involving hazardous substances that: (i) may cause a fire or (ii) fall under category 1, 2 or 3 of part I of annex I to the Convention (including any substance mentioned in part II of annex I that has any of these properties) and that may be released into the air in the event of an accident;
- **b) Along or within the catchment areas of transboundary and border rivers, transboundary or international lakes**, or within the catchment areas of transboundary groundwaters, 2/ for activities involving hazardous substances falling under category 1, 2, 3, 9, 16, 17 or 18 of part I of annex I to the Convention*. **A catchment area of a transboundary river or lake is defined as the whole drainage area of this river or lake with a common outlet.**

*this distance should correspond to approx. a flowing period of two days of average flow velocity

The location criteria under the Convention



TMFs capable of causing transboundary effects in Kazakhstan

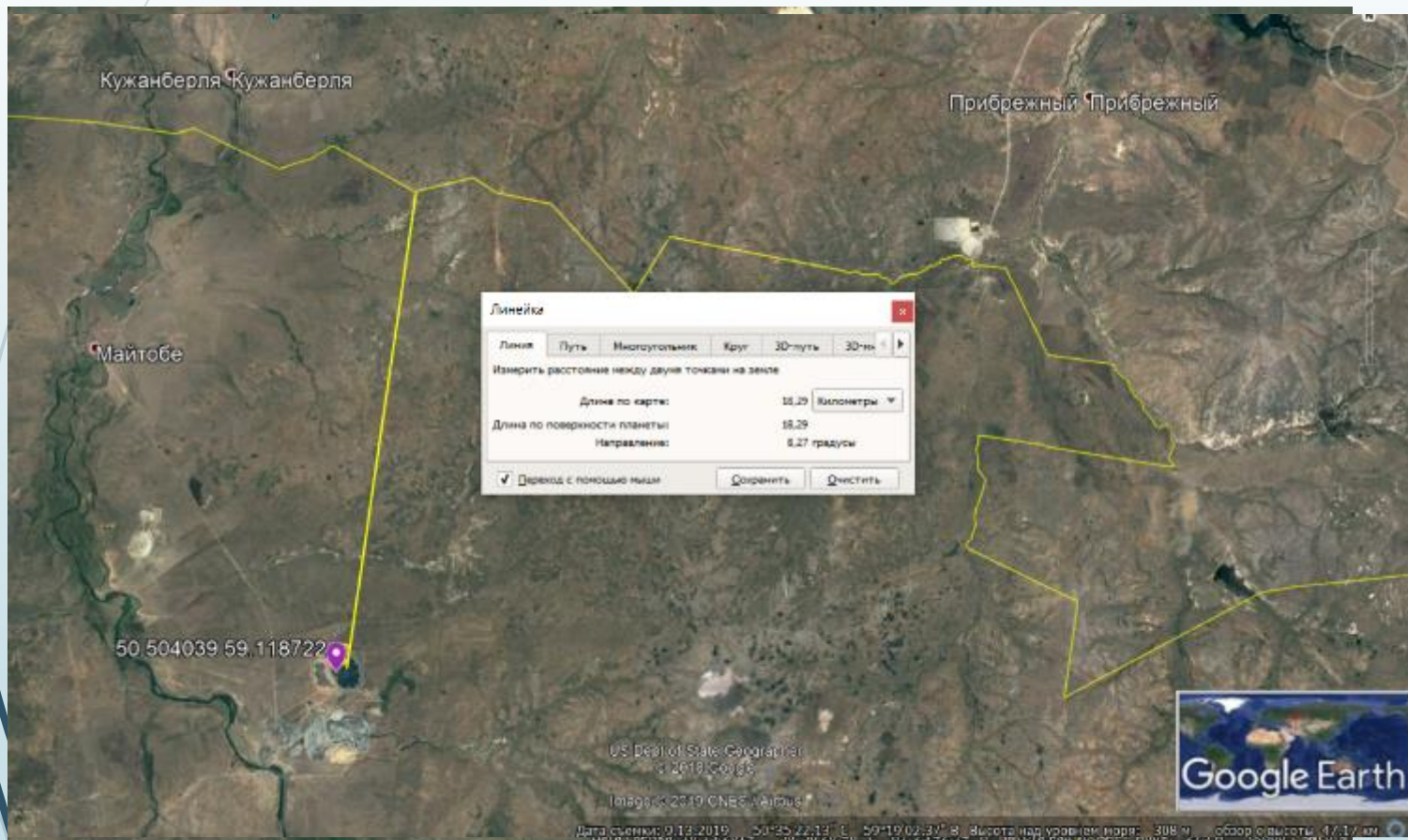
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No	Name of TMF	Region, district	THI	transboundary effect
16	TMF nr.1 of LLC "Aktyubinsk Copper Company"	Aktobe region, Khromtau district, town settlement Koktau	10.17	
41	TMF of Orlovsky dressing plant of LLC "Vostoktsvetmet"	East Kazakhstan region, Borodulikhinsky district, town settlement Zhezkent	12.03	Near to the border with Russia (3 km)
103	Sludge storage nr. 1 of JSC ""Aluminium of Kazakhstan"	Pavlodar region, Pavlodar city, industrial zone "Vostochnaya", building 65	11.61	Irtys River
104	Sludge storage nr. 2 of JSC ""Aluminium of Kazakhstan"	Pavlodar region, Pavlodar city, industrial zone "Vostochnaya", building 66	11.52	Irtys River
105	Sludge storage nr. 3 of JSC ""Aluminium of Kazakhstan"	Pavlodar region, Pavlodar city, industrial zone "Vostochnaya", building 67	11.00	Irtys River
107	Ash sludge storage nr. 1, Aksu Ferroalloy Plant	Pavlodar region, Aksu city	10.60	Irtys River
108	Ash sludge storage nr. 2, Aksu Ferroalloy Plant	Pavlodar region, Aksu city	10.95	Irtys River

TMFs capable of causing transboundary effects in Kazakhstan

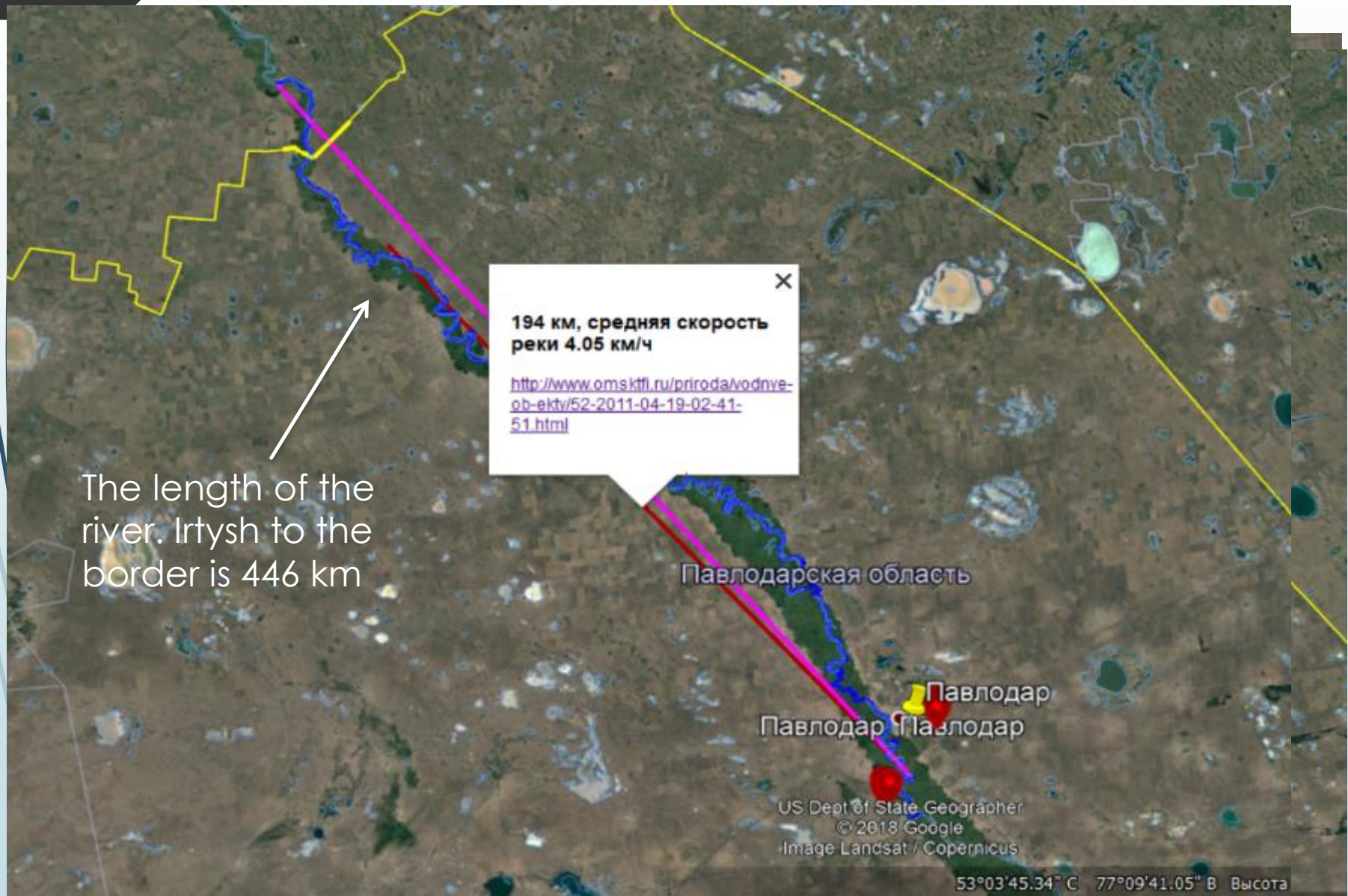
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TMF nr.1 of LLC "Aktyubinsk Copper Company"	Aktobe region, Khromtau district, town settlement Koktau	10.17	18 km from the border
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TMFs capable of causing transboundary effects in Kazakhstan

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TMFs capable of causing transboundary effects in Tajikistan

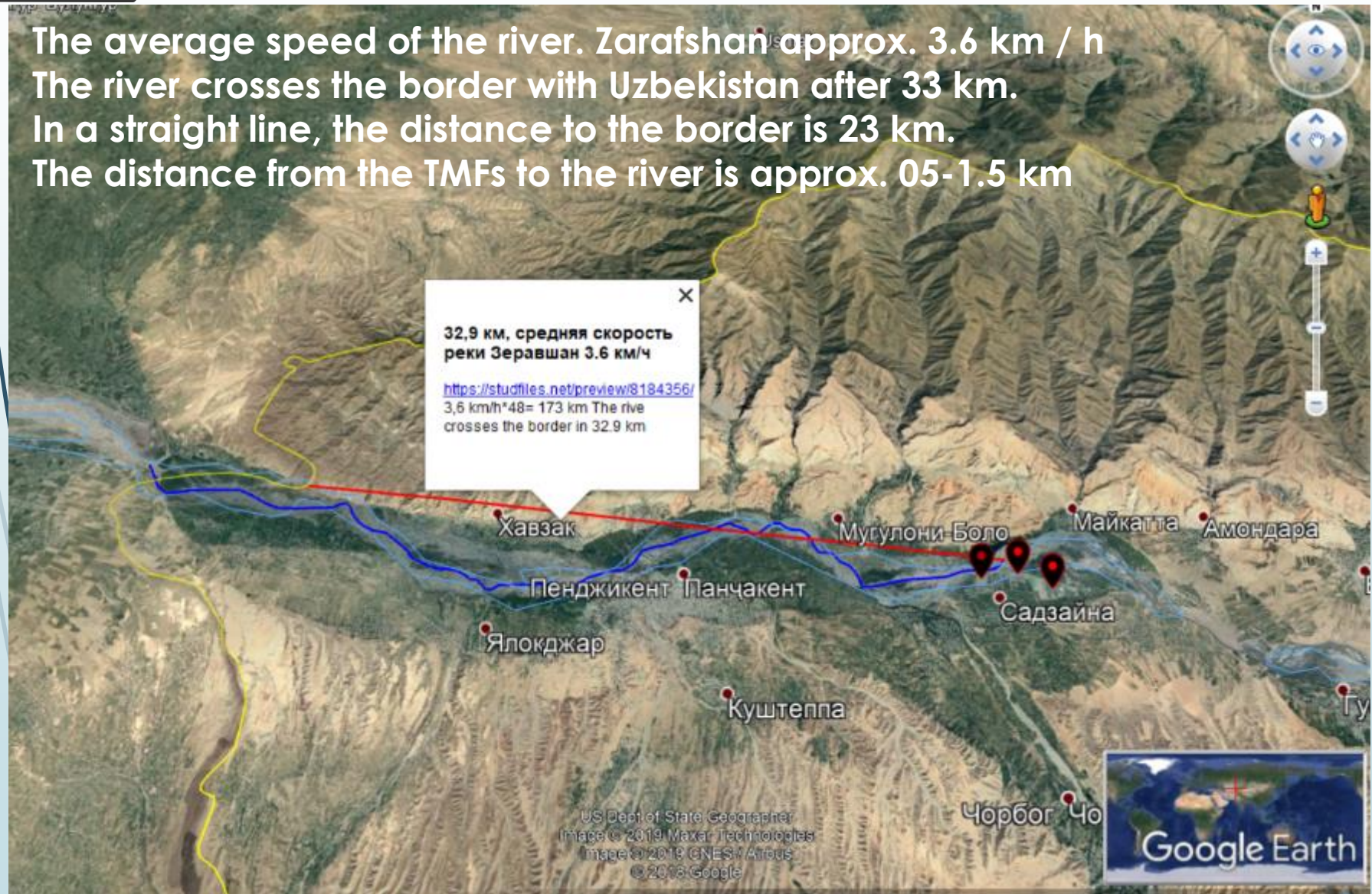
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No	Name of TMF	Region, district	THI	transboundary effect
1	Old TMF of JV "Zeravshan" LLC	Sughd region, Penjikent district, urban village Sujina	12.52	Zarevshan River(app. 0.5 km)
2	TMF of JV "Zeravshan" LLC, Dam nr. 1	Sughd region, Penjikent district, urban village Sujina	11.21	Zarevshan River (app. 1.5 km)
3	TMF of JV "Zeravshan" LLC, Dam nr. 2	Sughd region, Penjikent district, urban village Sujina	11.09	Zarevshan River (app. 0.5 km)
11	TMF nr.2 "Zarnisor"	Sogd region, Gulistan city, settlement Zarnisor	10.83	13 km to the border with Uzbekistan

TMFs capable of causing transboundary effects in Tajikistan

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The average speed of the river. Zarafshan approx. 3.6 km / h
The river crosses the border with Uzbekistan after 33 km.
In a straight line, the distance to the border is 23 km.
The distance from the TMFs to the river is approx. 0.5-1.5 km



TMFs of Kazakhstan near to a water bodies

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Name of TMF	THI	Water body nearby	Distance (km)
TMF nr.1 of LLC "Aktyubinsk Copper Company"	10,17	Zhem river	4
Marashulinskoye TMF	10,91	Lake Bilikol	13
Flotation TMF of LLC "FIK Alel", 1st phase, 1,2 stage	11,04	Samarkand reservoir	10
Cyanidation TMF of LLC "FIK Alel", 1st phase, 1,2 stage	12,42	Lake Balkhash	1
Flotation TMF of LLC "FIK Alel", 2nd phase	10,11	Lake Balkhash	6
Flotation TMF of LLC "FIK Alel", 3rd phase, 1 stage	11,28	Samarkand reservoir	7
Cyanidation TMF of LLC "FIK Alel", 3rd phase, 1 stage	11,17	Samarkand reservoir	7



Cities downstream of TMFs

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Kazakhstan

- Kentau
- Badam
- Badam2
- Rovnoye
- Tekeli
- Temirtau
- Oskemen
- Belousovka
- Ridder
- Predgornoye
- Pavlodar
- Zholymbet
- Rudny

Tajikistan

- Kalon
- Sudzhina

Thank you for attention!

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