

# **Establishment of a new Commercial Environmental Monitoring - General Analytical Services Laboratory in Kazakhstan**

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**Stepnogorsk, Republic of Kazakhstan**

**September 28, 2004**



# Overview

- Background and Objectives of Effort
- Accomplishments to date
- Current business activities
- Current scientific activities
- Future directions

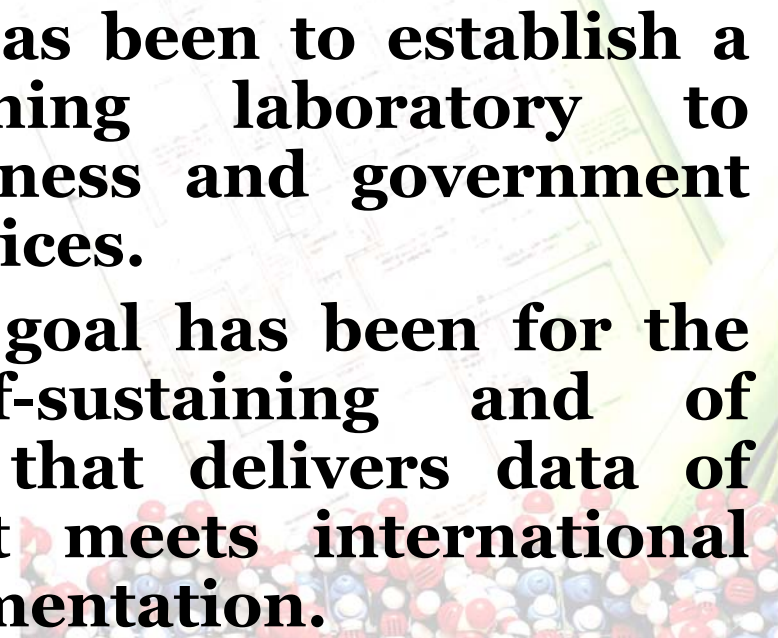


# Background and Objectives




- **Until 1991, JSC “Biomedpreparat” was one of the largest USSR bio-defense enterprises engaged in technological development and manufacture of biological weapons.**
  - **In 1997, the United States began to assist JSC “Biomedpreparat” in establishing an environmental monitoring/general analytical services laboratory in Stepnogorsk as part of Cooperative Threat Reduction Program and with the objective to retrain former bioweaponers and engage them in peaceful applications.**
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## Background and Objectives (contd.)

- **The focus of this effort has been to establish a commercial, self-sustaining laboratory to provide Kazakhstan business and government with expert analytical services.**
  - **From the beginning, the goal has been for the laboratory to be self-sustaining and of unimpeachable integrity that delivers data of unassailable quality that meets international standards of quality documentation.**
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# Accomplishments



- **Construction and technical and methodical equipping of modern laboratory**
  - **Training of laboratory management and staff in modern research methods and quality control**
  - **Demonstration of capability and competency through ISTC-sponsored research studies and National research programs**
  - **Laboratory accreditation in Kazakhstan**
  - **Establishment of commercial business in the field of control-and-analytical services**
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# Laboratory Services Scope

## Design and Carrying Out of Environmental Assessment Studies

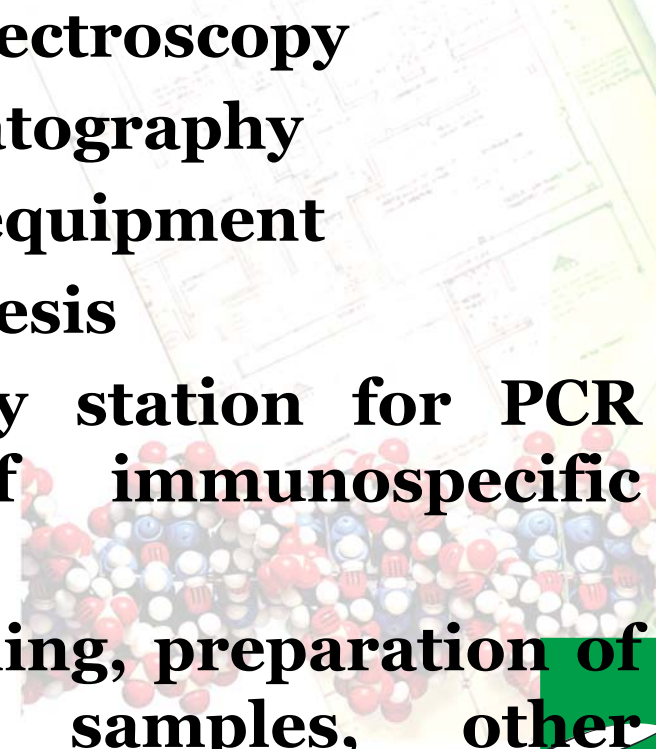
- **Statistical design and implementation of water, soil, and biota characterization studies**
- **Inorganic and organic trace analysis**
- **Conventional water pollutant parameters**
- **Microbiological contamination of environmental objects and microbiological consortiums**

## Testing of finished products



# Facilities and Equipment

## Equipment

- Atomic absorption spectroscopy
  - GC and HPLC chromatography
  - Spectrophotometric equipment
  - Capillary electrophoresis
  - Automatic laboratory station for PCR and all types of immunospecific researches
  - Equipment for sampling, preparation of solid and liquid samples, other conventional auxiliary environmental lab equipment
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## Facilities and Equipment (contd.)

### ✦ Facilities

- Newly renovated facilities for sample storage, sample preparation, organic analysis, inorganic analysis, microbiological analysis, reagent preparation, glassware cleaning, offices, meeting with clients, field equipment cleaning and storage, etc.

Total laboratory area is over 1200 square meters equipped with systems of ventilation and air purification, drains collection and treatment.



# Training

## ✦ Analytical science

- Training in EPA laboratories, on-site and outside courses, and through performance of ISTC-sponsored scientific studies

## ✦ Laboratory management, marketing and sales

- On-going training in laboratory management, financial management, marketing and sales by American experts

## ✦ Quality assurance


- Training by EPA experts in ISO 17025 and US National Environmental Laboratory Accreditation Program standards

# Capability and Competency

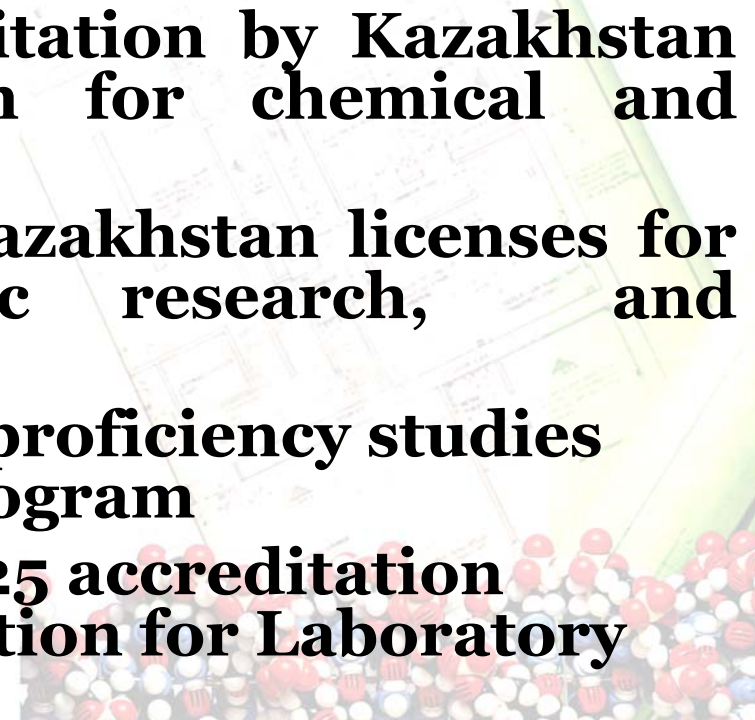
- **Demonstration and documentation through the conduct of ISTC-sponsored research studies and commercial work**
  - **Assessment of possible contamination in city of Stepnogorsk with specific microorganisms from microbiological production facilities of Scientific and Production Association “Progress”**
  - **Assessment of specific contamination of production facilities and production area of JSC “Biomedpreparat” during dismantling of specialized equipment and infrastructure of the defense enterprise**

# Capability and Competency



- **Assessment of quality of surface waters and drinking water sources in Northern Kazakhstan and within Borovoye National Park**
  - **Assessment of surface and ground waters contamination at Pavlodar Chemical Plant which was subject to mercury pollutions**
  - **Other researches carried out under National biotechnological program (environmental researches in Karaganda and Astana regions)**
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## Accreditation

- **In 2004, awarded accreditation by Kazakhstan Center for Accreditation for chemical and microbiological analysis**
  - **Possesses all necessary Kazakhstan licenses for ecological and hygienic research, and environmental auditing**
  - **Participates in laboratory proficiency studies approved by US NELAC program**
  - **Currently seeking ISO 17025 accreditation through American Association for Laboratory Accreditation**
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**Last year the laboratory began to conduct analytical studies on behalf of commercial and governmental clients.**

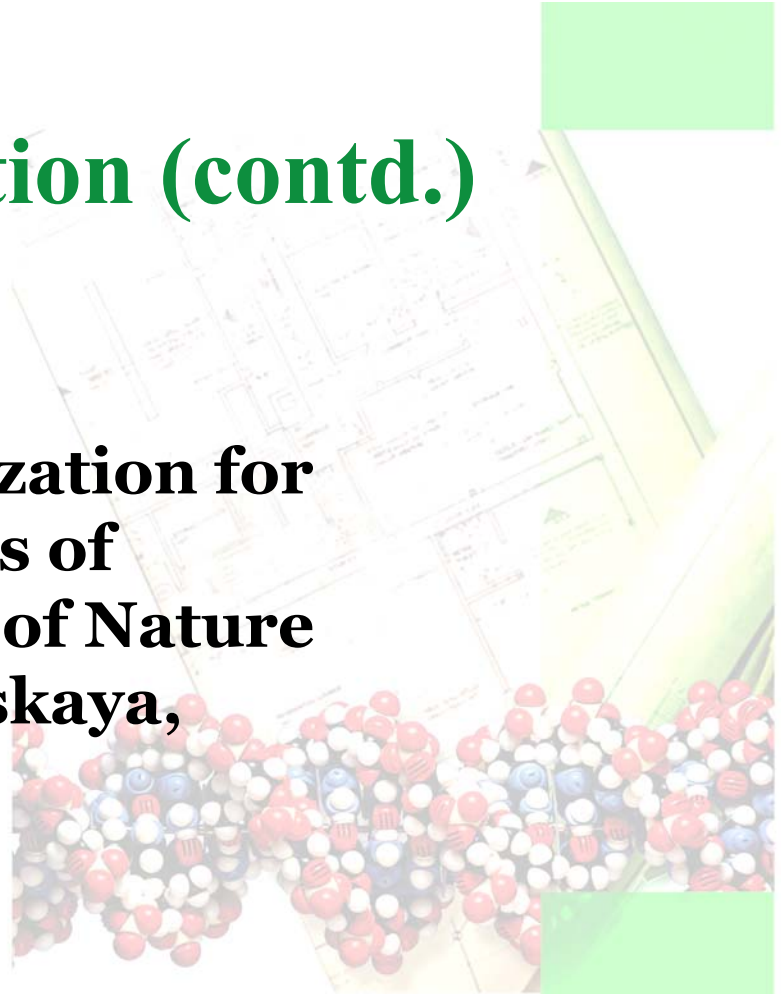
## **☀ Commercial**

- Testing of finished products and conducting ecological monitoring for biological pesticide producer**
- Testing of finished products and conducting ecological monitoring for chemical pesticide producer**
- Ecological monitoring for producer of rare-earth and precious metals**

## Commercialization (contd.)

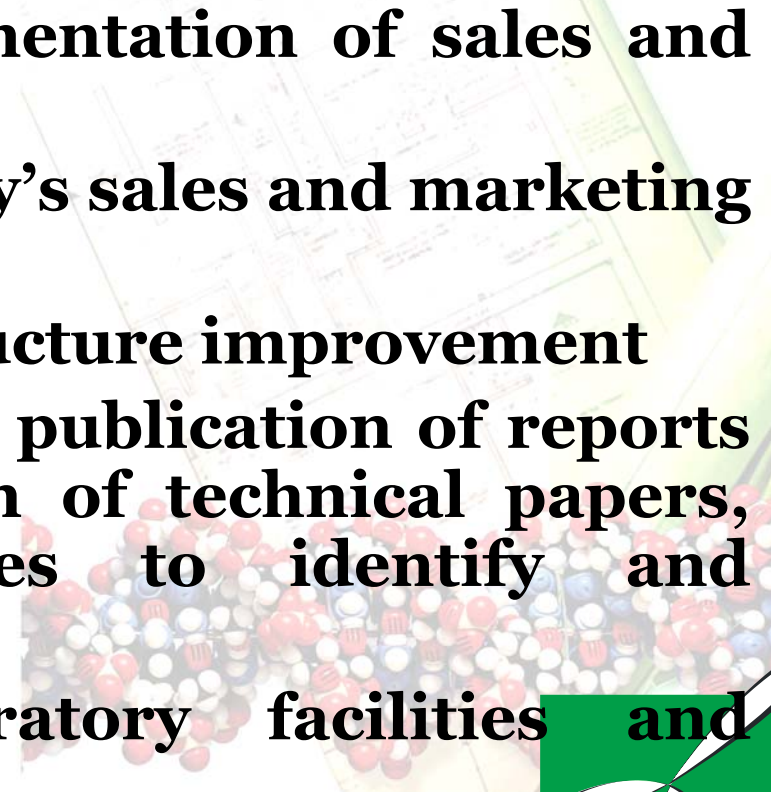

### Governmental

- **Ecological characterization for Regional departments of Kazakhstan Ministry of Nature Protection (Akmolinskaya, Pavlodarskaya and Atyrauskaya oblasts)**



# Current Business Activities



- **Development and Implementation of sales and marketing programs**
  - **Development of laboratory's sales and marketing team**
  - **Communications infrastructure improvement**
  - **Active marketing through publication of reports and articles, presentation of technical papers, market research studies to identify and prioritize potential clients**
  - **Modernization of laboratory facilities and engineering**
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# Current Scientific Activities

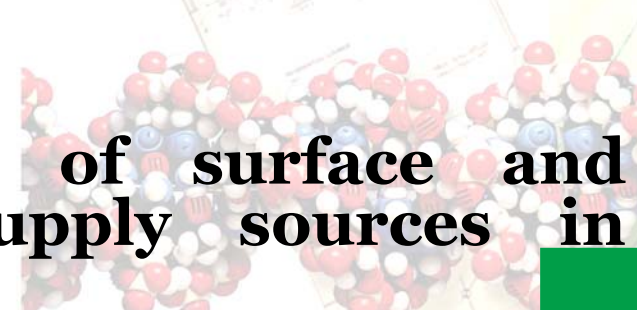



✦ **Laboratory presently participates in and supports the work of a number of ISTC projects:**

- **K-338 – laboratory establishment**
  - **K-487 – decontamination technology development**
  - **K-750 – decontamination technology development**
  - **K-756 – decontamination technology development**
  - **K-790 – natural product identification and isolation**
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## Current Scientific Activities (contd.)

### Newly established ISTC-sponsored projects:

- **Monitoring of oil pollutions in the lower flow and delta of the Ural River; isolation of oil-degrading microorganisms from water and soil within Atyrau oil-producing region.**
  - **Monitoring of quality of surface and underground water supply sources in Northern Kazakhstan**
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# Immediate plans for the future

## ✦ 2004

- Active marketing and sales program to attract additional commercial clients
- Complete renovation and expansion of laboratory facilities

## ✦ 2005

- Expand laboratory capabilities with additional research technologies, analytes and matrixes
- Attain international accreditation (ISO 17025)
- Establish a joint business relationship with foreign partner

## ✦ 2006

- Attain self-sufficiency
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# Contact Information

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